Bond Reimbursement and Grant Review Committee Meeting Agenda

February 21, 2019
2:00pm - 4:00pm

Teleconference – School Finance Conf. Room
801 W. Tenth Street, Juneau, Alaska

Audio Teleconference available through free online WebEx application. Meeting Number 285 067 355
1-650-479-3207 Call-in toll number (US/Canada)

Chair: Heidi Teshner

Thursday, February 21, 2019

Agenda Topics

2:00 – 2:05 PM	Committee Preparation • Call-in, Roll Call, Introductions • Chair's Opening Remarks • Agenda Review/Approval
2:05 – 2:15 PM	Regulation Projects Update
2:15 – 2:35 PM	Cost Model Geographic Factors Comments
2:35 – 3:05 PM	FY2021 CIP Application Preparation • Reuse of School Plans • Miscellaneous
3:05 – 3:35 PM	Construction Standards for Cost-effective Construction • Subcommittee Reports • Commissioning ▪ Commissioning agent standards ▪ 5-system minimum criteria • Design Ratios ▪ Energy and cost modeling contract update • Model School ▪ Cost Model enhancements contract update BR&GR Calendar and Work Plan Review & Update
3:35 – 3:50 PM	Publication Update • *Swimming Pool Guidelines*
3:50 – 4:00 PM	Committee Member Comments
4:00 PM	Adjourn

Education and Early Development

Geographic Cost Factors

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December 19, 2018

Abstract

This document provided by HMS Inc. of Anchorage, Alaska is comprised of 65 unique geographic area cost factors for cities, towns, villages, and regions throughout Alaska. Using both the *Program Demand Cost Model* and the *Model School Building Escalation Study*, along with consultation from local architects, engineers, contractors, and freight handlers, HMS Inc. has developed a methodology to apply these cost variables in a consistent fashion with the goal being accurate results and an auditable process easily understood by the user. Tasked by the Alaska Department of Education and Early Development to revise the cost factors last updated in 2008, this study builds on the information and methodologies developed in a trial study of three sites performed in 2017 and vetted by the EED. Anchorage is used as the baseline cost for the purpose of this study.

Contents

Education and Early Development

Geographic Cost Factors

The State of Alaska, Department of Education and Early Development has used the *Program Demand Cost Model* developed by HMS Inc., to verify and bench-mark costs of new and existing school construction projects. For the development of the *Program Demand Cost Model,* the geographic cost factor was designed to modify the overall cost of the project to provide a more accurate analysis of cost within the state of Alaska. The cost factor was originally developed utilizing approximately 20 criteria to incorporate averages of material, freight, equipment costs, and Title 36 labor rates, among many other factors. HMS Inc. was tasked to create a clearly defined methodology and more accurate estimate of the costs associated with the varied locations within the state.

Alaska has a land area of 570,380 square miles, with widely variable terrain including over 188,000 square miles of permafrost covered terrain. Annual temperatures for individual locations also vary greatly, with low average annual temperatures of 9.3°F in the north, to averages close to 40°F in the south and along the coast (NOAA, n.d.). In addition, there are large climate and weather variations throughout the state, and differing levels of development in infrastructure. To account for this, HMS Inc. has developed 65 geographic cost factors for the many locations throughout the state with very different conditions affecting the cost of construction.

The original geographic cost factors were developed by Cliff Hitchins of HMS Inc., for the Department of Education and Early Development in 1978 and were most recently updated in 2008. The utilization of these factors is critical when developing programmatic costs in the challenging landscape that is Alaska construction. There are design criteria to consider, structural

and thermal requirements, shortages of skilled labor throughout Alaska (particularly in remote communities), high costs of freight and travel, long equipment rental durations, complicated logistics, and increased risks anticipated by contractors. When designing a project in rural Alaska, it is necessary to consider support for imported labor, additional material to cover loss and damage. Scheduling delays in resources or funding by a matter of weeks can delay construction an entire year in some locations throughout Alaska.

This document contains the methodology for developing geographic cost factors, a breakdown of the components of the overall factor, and the updated 2018 geographic cost factors for all locations.

Methodology

A number of key factors were recognized by local construction and design professionals as affecting the cost of construction an appreciable amount in direct relation to the location of a construction project. General requirements vary from site to site, as well as local costs, and labor productivity. Climate may also affect requirements for structural, architectural, and mechanical design. The cost model allows the incorporation of structural, architectural, and mechanical factors based on requirements for any given location. It was important to analyze rate and factor data for geographical location and makeup of workforce incorporated into the geographic cost factor (Accountability, 2009). Following is an explanation of assumptions and methodologies utilized in the development of the most significant cost drivers associated with the general requirements.

Costs reviewed but omitted from the development of the geographical cost factor include those associated directly with site preparation, site earthwork, site improvements, and site infrastructure. In the design of the *Program Demand Cost Model* these costs are entered into the

model by the user, and also include anticipated dewatering, shoring, excavating, grading, landscaping, support structures and storm drainage (HMS Inc., 2017).

To develop the individual components of the geographical cost factor, contractors, architects, engineers, and freight handlers were contacted to provide their expertise and experience in Alaska construction. Other sources including publications, reports, and websites were used to further define the cost and percentages associated with factors. To develop the conceptual cost of a school in a particular location, these factors and considerations were all applied to the model school developed by HMS Inc., as well as the *Program Demand Cost Model.*

General Requirements

For the purpose of developing the geographical cost factors, general requirements also include on site general conditions. General requirements and conditions include the site requirements and facility costs associated with a specific project. Administrative requirements can include submittal, scheduling, inspection, and project documentation. Facility costs can include site management, safety, utilities, project engineers, and other management costs.

Method. General requirements were modified based upon location and include Mobilization, Demobilization, Bonds, and Insurances. Throughout the state of Alaska, highly variable general requirements include freight crew, travel and per diem, utilities, and fuel. In estimating rural costs, HMS Inc. modified the general requirements of the Model School Building Escalation Study to adjust for location. Freight was the largest increase, followed by travel and per diem for crew, which factored round trip tickets, three week rotations, and man days on site. Fuel was also locally costed. Fuel cost as indicated for individual locations are based primarily on the Alaska Fuel Price Report dated July 2017 and escalated to current pricing

based on the percentage of rise in fuel prices experienced in Anchorage, Alaska, between the date the Alaska Fuel Price Report was published and November 19, 2018. When specific locations were not available in the Alaska Fuel Price Report, a similar location was used. For locations in the North Slope Borough, no fuel subsidies are assumed or included. Community costs for utilities are based on the percentage delta between the Anchorage baseline and the cost for fuel at the subject location, as most remote utilities rely heavily on fuel driven devices. Rural locations also have increased scheduling, management, logistical, and site office requirements.

Freight. Freight costs have been calculated based on the delivery of a standard material and equipment package to the referenced sites (Appendix A). Alaska Marine Lines provided budgetary freight quotes to hub locations and the appropriate factors to use for movement of the freight from the hub to the location in question, as necessary. Air freight rates have been assumed at locations where this is typical for freight delivery. Freight costs do not take into consideration standby time for weather, including barge standby time. It is assumed that contractor risk will provide for this.

Per Diem and Crew Rotation Costs. The number of man days, utilized for both the calculation of per diem costs and crew rotation air fares, was based on the number of man hours for performance of work for each Uniformat Elemental Category and assumes a similar duration for the purpose of determination of man days regardless of location. Drop in crew productivity and the associated delays are discussed elsewhere in this report. Determination of the percentage of imported crew assumes no more than a 90% imported crew at the most remote locations, 0% imported crew at urban centers, and between 20% and 80% imported crew at the balance of sites throughout the state depending on the availability of local work force as judged by the authors of

this report. Per diem rates, where possible, have been taken from the Department of Defense per diem rates for Alaska 2019.

Labor Adjustment

There are two Title 36 wage rates for the State of Alaska, and the divide is illustrated in Figure 1.

Method. With Anchorage as a baseline, the corresponding S1201-S1206 region of the state was set as the base cost for labor. To adjust the local costs an overall weight factor was used to adjust the Model School Building Escalation Study. The weight factors took into account the total percentage of the job each component of local cost affected, and subsequently adjusted the differences by locations.

Labor. Title 36 labor rates are modified within the Model School Bldg. Escalation Study spreadsheet to include FICA and Medicare, FUTA, ESC, Workers' Comp, Taxes and Insurance, and Fringe benefits along with the published Base Hourly rates. Comparing the rates from two regions it was determined that labor cost would increase 1.3% for the N1201-N1206 region of the state based on the standard time wage rate. This along with a weighted factor of 0.422 adjusted the overall project cost 0.55% at any location within the N1201-N1206 region of the state.

Labor Productivity

Significant consideration was given to adjusting labor productivity based on the cost impacts of cold or inclement weather and job site conditions. Reduced production will result from severe working conditions.

Method. Using published rates for modifying the labor productivity for temperature below 40 degrees or above 85 degrees Fahrenheit, an equation was developed to adjust the cost factor. To determine the variables, data needed to be collected on average annual temperature for the region and on the estimated cost of labor to the overall job. Labor composes roughly 42% of the project cost for the model school developed, and average temperature was collected from U.S. climate data (Climate Alaska - Anchorage, 2017).

Job site condition is also a driving factor in estimating the effectiveness of labor time. To determine whether the site should be categorized as good, average, or poor, several factors were considered. These factors include annual precipitation, weather, land and soil types, and urban versus rural locations (J. Kent Holland, 2000).

Temperature Productivity Adjustment. The equation below, was used to adjust the baseline to factor productivity loss due to cold weather.

Equation 1 – Temperature Adjustment

$$\left(\left(40-T\right)+100\right)-3=112.7$$

T - Average Temperature $T:=24.9$
L - Labor Adjustment Factor

For example, the average temperature for the Bering Strait region (24.90°F) was determined by averaging the temperatures recorded in both Unalakleet and Wales. With the average temperature in Anchorage being 37, three was subtracted from the factor to account for the difference. The overall adjustment for temperature alone is 12.7% for the Bering St. region.

Job Site Condition Adjustment. For the development of a standard methodology for job site condition, severe weather day data was collected from the USACE (United States Army Corp of Engineers) (See Figure 2). General site topography and soil type was considered along with annual precipitation. To account for the difference in condition due to wet soil and slope of terrain, the topography and soil type was generalized into two categories each: flat or hilly for topography and dry/developed or wetland for soil type. To account for the difference HMS Inc assumed that the baseline would have no effect along with precipitation, but if the condition was either hilly or wetlands (or both) it would create an unfavorable job site condition. As an additional factor considered for overall site and working conditions, weather days based on a five-day work week were used and compared to Anchorage as the base line. Equation 2 was developed to create an objective way of measuring the overall job site condition or working condition for a site. A maximum worst case job condition is set to 25%.

Equation 2 – Job Site Condition

$$J_c := \left((T + G - 2) \cdot \frac{AP}{10} \right) + \frac{WD}{5} = 14.6\%$$

T - Topgraphy Factor $T := 1$ $AP := 75.2\%$
G - Soil Factor
AP - Adjusted Annual Precipitation $G := 2$ $WD := 35.4\%$
WD - $\Delta\%$ Weather Days

For the overall factor, the Temperature Productivity Adjustment is averaged with the Job Site Condition Adjustment, then multiplied by the total cost of labor for the construction of the model school. For Bering St. the overall cost adjustment factor is 113.65.

Structural Requirements

With snow or wind loads driving the structural requirements there was a need to determine the most stringent design criteria (lateral wind/seismic with snow load) and develop a relationship between the anticipated weight of steel and the geographical area for construction.

Method. With consultation, a linear factor was developed in relation to the Model School Building Escalation Study. Research was required for each location to determine the snow and wind/seismic load factors. All loads were then compared to Anchorage as the basis of design to develop the increase or decrease in snow, wind or seismic factors for design. For example, Anchorage has a ground snow design load of 40 psf, while Fairbanks has a 60 psf design load for snow. This correlates to a factor of 60/40 or 1.5.

Example. In Fairbanks, the factors for wind, seismic, and snow are 0.86, 0.73 and 1.50, respectively. The factors were averaged by choosing the greatest of the lateral loads and the snow load along with both a 1.0 DL and 1.0 LL. This accounts for a standard live and dead load for any region, irrespective of geographical factors that a structural engineer will have to account for. This new factor (1.09 for Fairbanks) becomes the driving design consideration.

Equation 3 – Average Structural Factor

$$f_s := \frac{(PL + LF + LL + DL)}{4} = 1.09$$

PL - Snow Load
LL - Live Load
DL - Dead Load
WL - Wind Load
SL - Snow Load

$PL := 1.50$ $WL := 0.86$ $SL := 0.73$
$LL := 1.0$ $LF := \max(WL, SL) = 0.86$
$DL := 1.0$

The super structure cost from the model school is adjusted by the load factor and the construction cost prior to general requirements, profit, and contingencies being taken into

account compared to the original baseline cost. The equation below demonstrates the linear relationship between the construction cost and the structural factor.

Equation 4 – Structural Adjustment

$$S \cdot f_s + (F - S) = 11278546.66$$

S - Cost of Model School Super Strucutre $S := 2075206$
F - Direct cost of Model School $F := 11050274$
f_s - Average structural factor $f_s := 1.11$

Comparing the adjusted cost with the original it was determined for Fairbanks to increase the structural cost due to snow loading by 1.71%.

Architectural Requirements

Exterior enclosures and roof systems are typically designed differently in far north regions, or rural regions as opposed to urban settings. This provided not just for added insulation and durability, but to create a simpler system for construction workers to build.

Method. The model school was developed using a standard model for exterior walls and roof design in Anchorage, Alaska. There are two ASHRAE Climate Zones in the state of Alaska, Zone 7 and Zone 8. For Zone 7 the standard cost assumed with Anchorage was considered.
To adjust for the cost of exterior envelope, a second standard envelope was developed utilizing structurally insulated panels, both for higher R value and ease of construction in rural areas. The costs were then compared to create the average of 2.25% increase in cost for schools in Zone 8.

Mechanical Requirements

Depending on the region in the state the mechanical requirements will change, due to availability of plumbing and fire protection storage, including the potential for mist fire protection systems. These items need to be considered in rural areas. HVAC will have an

increased size and cost in arctic regions. Other costs considered were testing and commissioning the mechanical systems, as well as training and education requirements.

Method. Utilizing our historic cost library and our estimates developed for schools since the year 2000, HMS developed a methodology to standardize the SF cost of mechanical systems based on the year of construction and overall square footage. While several hundred school estimates were completed by HMS in that time, several factors narrowed down the schools selected, to consider new construction projects only.

To standardize all costs the actual square footages were ratioed with a 25,000 square foot base design, along with the size adjustment factor from the *Intro, Instructions and Tables, 17th Edition – Final* provided with the Program Demand Model. To account for the change in cost per year, a year adjustment factor was developed using Table No. 3 from the aforementioned document.

Location	Region	Construction Year	Actual Area (SF)	Area Scaled to 25,000 SF	Size Adjustment Factor	Year Adjustment Factor	Mechanical (Adjusted)
Akiachak	Southwest	2003	42,394	1.70	0.96	0.80	1,742,909
Alakanuk	Southwest	2009	53,890	2.16	0.93	1.00	1,832,471
Ambler	Far North	2004	23,862	0.95	1.01	0.83	1,342,474
Anchorage	Southcentral	2005	181,232	7.25	0.93	0.86	1,037,027
Anchorage	Southcentral	2018	41,000	1.64	0.96	1.32	1,129,559
Anchorage	Southcentral	2002	64,861	2.59	0.93	0.77	1,045,992

Table 1 – A sample of the HMS historic cost workbook study of mechanical factors. Highlighted in yellow is the Program Demand Model (2018).

The average adjusted mechanical cost for Anchorage Schools was determined to be $1,070,860 which was used as the base line. This equates to a $42.83 per square foot cost. Figure 3 (p. 21) shows the mechanical factors developed throughout the state. Equation 5 utilizes an adjusted mechanical factor multiplied by the mechanical cost of the model school. The adjusted final cost was then compared to Anchorage as the base line.

Equation 5 – Mechanical Cost Adjustment

$$\left(f_m{}^{0.7} \cdot Mc\right) + \left(F - Mc\right) = 11615202.481$$

f_m - Mechanical Factor $f_m := 1.36$
Mc - Initial Mechanical Cost $Mc := 2352314$
F - Direct cost of Model School $F := 11050274$

Risk Factor

To develop realistic cost associated by location, it was also important to factor in experience with work in a given region. HMS Inc. has worked on over 6,000 construction estimates in Alaska alone. In estimating the total construction cost it was essential to include an estimate of the contractor's consideration of increased risks for remote projects, which raise mark-ups on all costs.

Method. To adjust the project cost for risk, two main factors were considered. Anticipated number of bidders, and an adjustment to freight based on weather days at the site.

Below are the calculations used for each site.

Equation 6 – Bidder Adjustment

$$Y := \frac{1}{\left(0.74 \cdot n^{.14}\right)} = 1.113$$

Assumed Bidders (n)

$n := 4$

Equation 7 – Risk to Freight

$$\frac{(F \cdot WD)}{2} \cdot \frac{1}{CC} = 1.856\%$$

F - Estimated Cost of Freight $F := 1647692$

WD - $\Delta\%$ Weather Days $WD := 35.4\%$

$CC := 15714707$

Note: CC is the overall construction cost from the 2018 Model.

These factors were then added together and compared to the base factor of 103, to calculate an overall increase in cost of construction due to risk for each location. It should be noted that contractors perception of risk is highly subjective and the methodology for quantification of risk will vary widely from contractor to contractor.

Summary

Using both the *Program Demand Cost Model* and the *Model School Bldg. Escalation Study* along with consultation from local architects, engineers and contractors, HMS Inc. has developed a methodology to factor in over 65 unique cost factors to adjust the geographical area cost factors from 2008 to 2018. Foundations and certain unique site concerns are omitted from the overall factor and are considered and accounted for when using the *Program Demand Cost Model.* For more information, please refer to the foundation and site options presented in the latest *Program Demand Cost Model*.

Design and costs associated with areas throughout the state continue to change rapidly. Temperatures in Alaska are rising at twice the rate as the rest of country, and permafrost conditions are changing dramatically in the North Slope and Yukon River delta. Travel, freight, and fuel costs vary year-to-year along with the rest of the logistical and general requirement costs

for construction throughout the state. With this, it is recommended that the geographical cost factors are updated every two years to more accurately estimate the construction cost of school projects in Alaska.

Additional Notes

This is an estimate of geographic area cost factors based several component factors. The cost factors are based on an institutional building in Alaska using a standard AIA contract or similar contract. This is merely a guide; actual costs will vary. This study represents only a collection of costs normally found on some construction projects, rather than the custom requirements of a particular project. This is not an index. This is a geographic area cost factor which includes not merely cost changes and logistical consideration, but also design criteria and how it may be applied in select locations. The calculation used in developing these cost factors are based on reasonable assumptions. Village-to-village costs can vary widely. When using this geographic cost factor, consider how the location for which the estimate is being prepared is different from surrounding places. Regional cost factors are based on general and approximate calculations for anticipated conditions generally found in the area and logistic considerations.

References

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HMS Inc. (November 24, 2018). Standardized Equipment Package.

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Department of Defense Per Diem Rates for Alaska. (2019). Retrieved from www.perdiem101.com/oconus/2019/alaska.

Weather Days Master for SCR-36 Monthly Anticipated Adverse Weather Delay Work Days

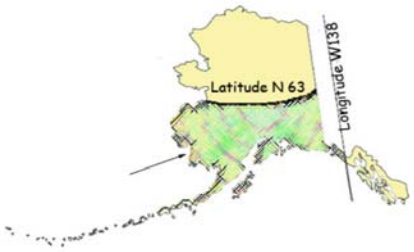
Based on a 5-Day Work Week.

Figures

LABORER CLASSIFICATION CLARIFICATION

The laborer rates categorized in class code S1201-S1206 apply in one area of Alaska; the area that is south of N63 latitude and west of W138 Longitude. The laborer rates categorized in class code N1201-N1206 apply in two areas of Alaska; the Alaska areas north of N63 latitude and east of W138 longitude. The following graphic representations should assist with clarifying the applicable wage rate categories:

S1201-
S1206



N1201-
N1206

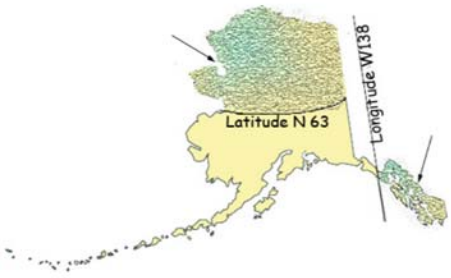


Figure 1. Labor Classification Clarification. This figure shows the regions separating the two Title 36 labor rates used within the state of Alaska. (Development, 2006)

Monthly Anticipated Adverse Weather Delay Work Days Based on a 5-Day Work Week														
SITE	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total	Difference (%)
Anchorage	22	20	14	0	0	0	4	3	4	1	20	22	110	0.00%
Attu	11	11	19	11	9	10	11	18	20	21	16	16	173	57.3%
Bethel	22	20	22	13	0	0	4	10	4	4	21	22	142	29.1%
Cape Lisburne	22	20	22	21	0	0	3	8	1	19	21	22	159	44.5%
Cape Newenham	22	20	22	13	1	7	15	17	21	19	12	22	191	73.6%
Cape Romanzof	22	20	22	20	0	3	7	18	18	6	21	22	179	62.7%
Clear	22	20	21	21	0	4	4	6	0	14	21	22	155	40.9%
Cold Bay, King Cove	6	11	4	1	3	2	4	15	15	16	16	6	99	-10.0%
Deering, Kotzebue	22	20	22	21	0	0	1	1	0	16	21	22	146	32.7%
Eareckson	3	5	3	2	1	2	6	11	7	13	14	8	75	-31.8%
Eielson	22	20	21	0	0	1	1	1	0	10	21	22	119	8.2%
Emmonak	22	20	22	17	0	0	4	10	4	5	21	22	147	33.6%
Fairbanks	22	20	21	0	0	1	1	1	0	10	21	22	119	8.2%
Ft. Greely	22	20	21	2	0	4	5	0	0	10	21	22	127	15.5%
Ft Yukon	22	20	22	6	0	0	0	0	0	16	21	22	129	17.3%
Galena	22	20	22	11	0	0	1	5	0	14	21	22	138	25.5%
Haines	22	15	13	8	4	1	2	9	21	22	20	22	159	44.5%
Homer	22	20	20	18	19	5	5	22	20	20	22	22	215	95.5%
Indian Mountain	22	20	22	13	0	1	5	7	6	17	21	21	155	40.9%
Juneau	22	11	11	9	11	6	15	21	21	22	19	21	189	71.8%
Kake	10	10	10	10	4	4	4	4	4	10	10	10	90	-18.2%
King Salmon	22	20	17	0	0	1	1	7	5	2	18	22	115	4.5%
Kodiak	19	17	13	12	19	10	9	14	18	20	17	17	185	68.2%
Larsen Bay	19	17	13	12	19	10	9	14	18	20	17	17	185	68.2%
McGrath	22	20	22	6	0	1	6	4	1	11	21	22	136	23.6%
Nome	22	20	22	21	0	0	3	9	3	6	21	22	149	35.5%
Nunivak	22	20	22	12	1	5	11	17	19	13	17	22	181	64.5%
Ouzinkie	19	17	13	12	19	10	9	14	18	20	17	17	185	68.2%
Seward	22	19	20	13	14	4	4	19	21	22	21	22	201	82.7%
Sitka	10	10	10	10	4	4	4	4	4	10	10	10	90	-18.2%
Sparrevohn	22	20	22	6	0	1	6	4	1	1	21	22	126	14.5%
St. Paul	17	20	22	8	0	0	2	6	5	8	5	7	100	-9.1%
Tin City	22	20	22	21	0	0	4	4	1	16	21	22	153	39.1%
Whittier	22	20	22	21	21	21	21	21	21	22	21	22	255	131.8%
Yakutat	25	13	13	10	13	7	17	24	24	25	22	24	217	97.3%

Figure 2. Adverse weather days. The table shows the anticipated weather days for a number of regions, provided by the Army Corp of Engineers, and then the increase or decrease as compared to Anchorage.

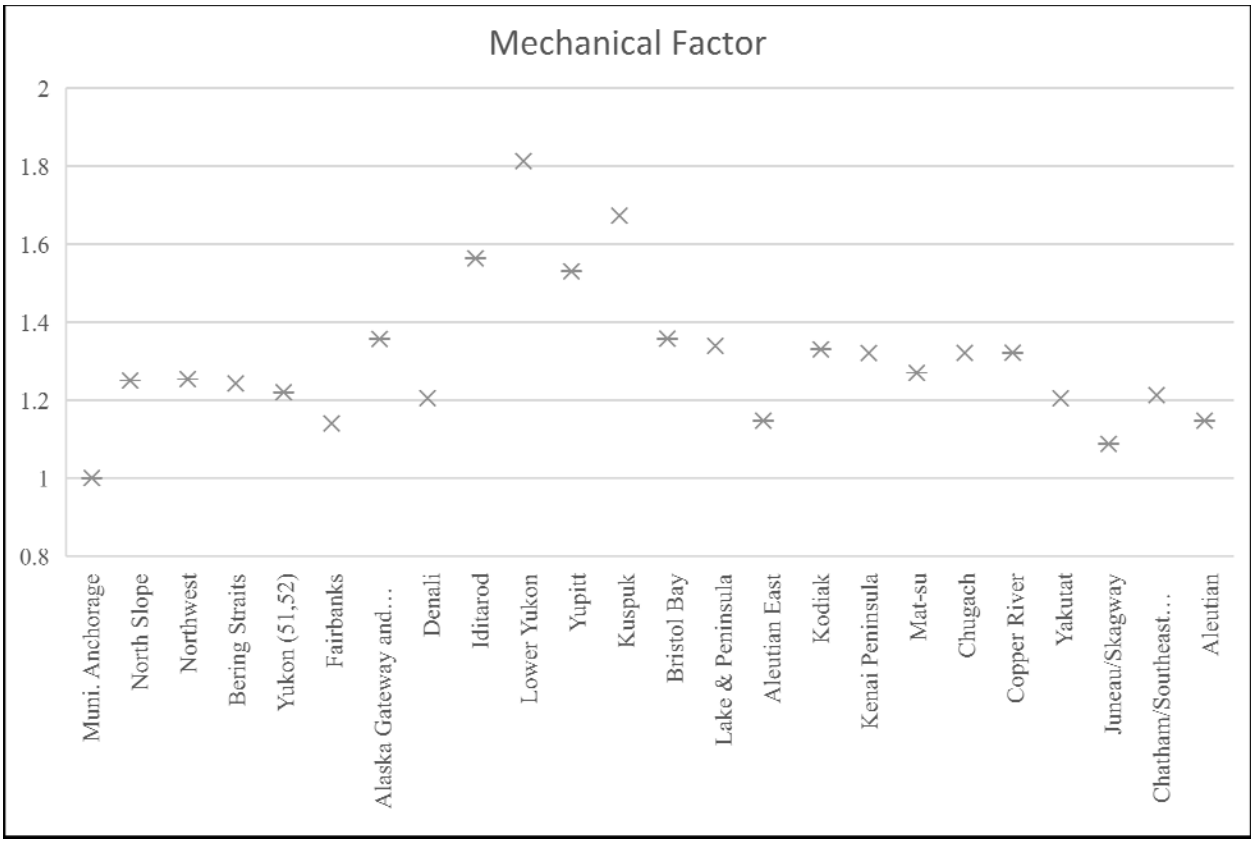


Figure 3. Mechanical Factor. The graph shows the spread of expected mechanical cost for a number of selected regions.

APPENDIX A
EED GEOGRAPHIC COST FACTORS
ALASKA

DATE: 12/19/2018

HMS Project No.: 18086

STANDARDIZED EQUIPMENT PACKAGE COSTS

	Rate per Month
Note: Rental rates are based on United Rentals published rates as of November 15, 2018.	
Flatbed Truck	$ 1,605
Pick-Up (x2)	1,410
Articulating 45'0" Boom Lift (4WD)	3,065
30'0"x35'0" Electric Scissor Lift	1,295
Reach Forklift	2,630
Backhoe/Loader	3,318
FULL RENTAL PACKAGE COST:	*$ 13,323*
Assume 20% Savings for Package	-2,665
TOTAL MONTHLY RENTAL REMOTE SITE:	***$ 10,658***
Total Monthly Rental Cost as Above	10,658
Assume Savings at Urban Areas with Locally Owned Equipment	-5,000
TOTAL MONTHLY RENTAL URBAN SITE:	***$ 5,658***
Rural (80% + Time)	$ 8,469
Bush (All Imported Equipment + Time)	10,658
Urban/Rural (60% + Time)	6,352

	QUANTITY	*UNIT*		
STANDARDIZED FREIGHT PACKAGE				
Supersack concrete	750	TONS		
Rigid insulation	38,585	CF		
Plywood/lumber for forms	34	TONS		
Reinforcing steel	18	TONS		
Structural steel	188	TONS		
Metal decking	61	TONS		
Gypsum wall board	129	TONS		
Batt insulation	6,250	CF		
Containers of doors and windows (x2)	18	TONS		
Metal roofing panels and related	15	TONS		
Siding	20	TONS		
Miscellaneous specialties (2 containers)	18	TONS		
Lumber bundles	1,300	TONS		
Containers of finish materials (carpet, sheet vinyl, acoustic tile	27	TONS		
Containers of plumbing materials (4x18,000 lbs.)	36	TONS		
Containers of electrical materials (4x18,000 lbs.)	36	TONS		
Containers of miscellaneous furnishings, fixtures and equipment (8x12,000 lbs.)	48	TONS		
Containers of miscellaneous materials (x8)	64	TONS		
8'0"x20'0" job shacks	4	EA		
Pick-ups	3	EA		

	QUANTITY	*UNIT*		
STANDARDIZED FREIGHT PACKAGE (Continued)				
All-terrain fork lift	1	EA		
Boom lift	1	EA		
Telescoping boom crane truck	1	EA		
4-wheelers	2	EA		

Geographic Cost Factor

Site	General Requirements	Labor Adjustment	Productivity Factor	Structural Factor	Architectural Factor	Mechanical Factor	Risk Factors	Cost Adjustment Factor
Anchorage	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Alaska Gateway	108.75	100.55	107.60	98.42	100.00	105.11	109.12	129.55
Aleutian Region	143.36	100.00	104.11	101.26	100.00	102.19	113.01	163.92
Aleutians East Borough	118.88	100.00	97.07	100.77	100.00	102.19	107.18	126.08
Annette Island	106.16	100.00	103.13	101.73	100.00	103.04	107.18	121.23
Bering Strait	130.62	100.55	113.65	102.10	100.00	103.46	110.09	160.48
Bristol Bay Borough	119.33	100.00	110.01	98.50	100.00	105.11	105.80	138.74
Chatham	108.13	100.00	94.06	106.20	100.00	103.04	105.80	117.21
Chugach	115.84	100.00	99.00	112.83	100.00	104.57	104.82	137.05
Copper River	106.17	100.00	106.58	102.01	100.00	104.57	105.80	125.12
Cordova City	112.36	100.00	106.96	116.34	100.00	104.57	105.80	146.01
Craig City	103.42	100.00	103.13	104.17	100.00	103.04	101.21	114.97
Delta/Greely	108.97	100.55	107.93	99.83	100.00	105.11	103.15	125.54
Denali Borough	112.39	100.00	106.28	100.30	100.00	102.90	103.15	125.02
Dillingham City	117.43	100.00	102.20	109.00	102.25	105.11	105.80	141.79
Fairbanks North Star Borough	100.08	100.55	105.63	101.71	102.25	102.04	100.97	113.24
Galena City	122.66	100.55	112.46	101.45	100.00	103.18	105.80	146.09
Haines Borough	103.42	100.00	102.43	104.66	100.00	101.32	101.21	113.04
Hoonah City	108.13	100.00	104.61	113.54	100.00	102.19	101.21	129.67
Hydaburg City	106.16	100.00	103.13	104.88	100.00	103.04	103.85	121.06
Iditarod Area, Yukon River Village	120.36	100.00	112.70	108.41	100.00	107.77	109.12	158.37
Iditarod Area, Kuskokwim River Village	128.31	100.00	112.70	103.08	100.00	107.77	106.77	158.63
Iditarod Area, Landlocked Village	133.61	100.00	107.26	107.94	100.00	107.77	110.09	166.68
Juneau City/Borough	97.83	100.00	109.93	104.66	100.00	101.32	97.18	110.91
Kake City	107.58	100.00	109.50	104.19	100.00	101.32	105.80	128.38
Kashunamuit	130.64	100.00	112.29	109.16	100.00	110.96	106.77	169.82
Kenai Peninsula, Kenai/Soldotna	99.55	100.00	105.36	103.51	100.00	104.57	99.12	112.11
Kenai Peninsula, Homer Area	102.68	100.00	108.65	101.26	100.00	104.57	100.97	118.12
Ketchikan Gateway Borough	98.25	100.00	108.45	104.04	100.00	102.19	99.03	111.95
Klawock City	103.40	100.00	103.13	104.38	100.00	103.04	101.21	115.16
Kodiak Island, Kodiak	111.14	100.00	104.89	100.43	100.00	104.70	104.13	125.29
Kodiak Island, Village	118.27	100.00	104.89	103.23	100.00	104.70	106.77	137.87
Kuspuk	125.76	100.00	111.64	107.79	100.00	109.19	106.77	161.16
Lake & Peninsula, Gulf of Alaska Village	132.37	100.00	110.58	99.14	100.00	104.84	107.04	153.96
Lake & Peninsula, Bristol Bay Village	135.32	100.00	110.01	101.88	100.00	104.84	105.80	157.84
Lake & Peninsula, Landlocked Village	134.94	100.00	110.01	99.21	100.00	104.84	109.12	158.13
Lower Kuskokwim, Bethel	114.50	100.00	106.05	100.73	102.25	107.12	100.97	131.63
Lower Kuskokwim, Villages	126.02	100.00	111.64	109.35	102.25	110.96	105.80	166.01
Lower Yukon	133.76	100.00	112.29	118.99	102.25	110.96	110.09	188.34
Mat-Su Borough, Palmer - Wasilla	99.51	100.00	100.05	98.87	100.00	103.88	100.00	102.31
Mat-Su Borough, Other Areas	100.14	100.00	100.53	109.62	100.00	103.88	102.18	116.34
Nenana City	104.45	100.00	105.45	104.06	100.00	103.18	105.80	122.92
Nome City	116.50	100.55	108.35	104.75	102.25	103.46	103.15	139.01
North Slope Borough, Utqiagvik (Barrow)	133.78	100.55	117.05	98.97	102.25	103.60	115.51	171.71
North Slope Borough, Villages	154.45	100.55	118.41	99.47	102.25	103.60	118.42	197.16
North Slope Borough, Atqasuk/Pt. Lay	157.36	100.55	118.41	98.69	102.25	103.60	118.42	199.28
Northwest Arctic , Kotzebue	125.97	100.55	110.40	103.00	100.00	103.60	104.13	147.64
Northwest Arctic, Villages	134.11	100.55	113.71	103.04	100.00	103.60	113.01	168.01
Pelican City	109.98	100.00	103.13	108.94	100.00	103.04	101.21	126.30
Petersburg City	106.11	100.00	104.18	110.59	100.00	103.04	101.21	125.13
Pribilof Island	124.16	100.00	99.34	113.30	100.00	104.82	101.21	142.83
Skagway Borough	105.78	100.00	94.06	101.45	100.00	103.04	100.97	105.30
Sitka City Borough	108.67	100.00	102.25	102.69	100.00	101.32	101.21	116.14
Southeast Island	106.16	100.00	108.45	97.93	100.00	103.04	103.85	119.43
Southwest Region	129.97	100.00	112.47	104.38	100.00	105.11	110.09	162.02
St. Mary's City	127.88	100.00	106.06	106.23	102.25	110.96	106.77	160.15
Tanana City	117.54	100.00	108.35	105.00	102.25	103.18	109.12	145.44
Unalaska City	113.24	100.00	102.73	98.54	100.00	102.19	109.12	125.81
Valdez City	110.49	100.00	111.50	114.65	100.00	104.57	103.15	144.36
Wrangell Borough	105.91	100.00	109.05	102.69	100.00	102.19	101.21	121.04
Yakutat Borough	114.16	100.55	108.16	113.67	100.00	102.90	105.80	145.23
Yukon Flats, Village on Road System	107.99	100.55	109.93	98.54	102.25	103.18	105.80	128.23
Yukon Flats, Village on River	133.02	100.55	111.78	101.71	102.25	103.18	110.09	162.59
Yukon Flats, Landlocked Village	136.59	100.55	112.09	100.53	102.25	103.18	114.54	169.73
Yukon-Koyukuk, Village on Road System	109.00	100.55	108.55	102.76	102.25	103.18	103.15	129.44
Yukon-Koyukuk, Village on Yukon River	143.17	100.55	108.55	102.16	102.25	103.18	107.74	167.60
Yukon-Koyukuk, Village on Koyukuk River	147.30	100.55	112.46	109.56	102.25	103.18	107.74	183.05
Yupiit	121.33	100.00	111.59	101.01	100.00	107.38	105.80	147.10

General Requirements

Site	Freight ($)	Fuel ($/Month)	Per Diem ($/Day)	Duration (Months)	Equipment ($/Month)	Adjusted Final Cost ($)	Cost Adjustment Factor
Anchorage	$ 19,960	$ 780	$ 0	14	$ 8,780	$ 13,924,771	100.00
Alaska Gateway	163,558	888	207	15	8,780	15,142,873	108.75
Aleutian Region	2,248,833	2,224	249	18	13,938	19,962,279	143.36
Aleutians East Borough	609,171	1,188	199	16	13,938	16,553,891	118.88
Annette Island	-262,000	1,004	208	14.5	11,806	14,782,209	106.16
Bering Strait	1,647,692	2,207	188	17	13,938	18,188,929	130.62
Bristol Bay Borough	357,642	1,215	373	15	11,806	16,616,082	119.33
Chatham	-262,000	1,004	268	15	11,806	15,056,370	108.13
Chugach	-183,400	1,757	300	15	11,806	16,130,033	115.84
Copper River	181,000	969	181	15	9,675	14,784,394	106.17
Cordova City	31,050	1,090	257	15	9,675	15,645,369	112.36
Craig City	-262,000	959	208	14.5	11,806	14,401,331	103.42
Delta/Greely	152,800	876	230	14	8,938	15,173,734	108.97
Denali Borough	181,000	910	207	15	9,675	15,650,099	112.39
Dillingham City	106,114	1,215	373	15	11,806	16,352,482	117.43
Fairbanks North Star Borough	23,000	852	0	14	8,780	13,936,349	100.08
Galena City	699,361	1,887	250	18	13,938	17,080,311	122.66
Haines Borough	-262,000	959	208	14.5	11,806	14,401,331	103.42
Hoonah City	-262,000	1,004	268	15	11,806	15,056,370	108.13
Hydaburg City	-262,000	1,004	208	14.5	11,806	14,782,209	106.16
Iditarod Area, Yukon River Village	499,412	1,771	235	18	13,938	16,759,971	120.36
Iditarod Area, Kuskokwim River	1,499,386	1,838	235	18	13,938	17,867,234	128.31
Iditarod Area, Landlocked Village	1,799,310	1,968	275	18	13,938	18,604,940	133.61
Juneau City/Borough	-262,000	866	0	14	8,780	13,622,305	97.83
Kake City	-262,000	1,004	268	15	8,780	14,979,787	107.58
Kashunamuit	1,439,827	1,968	275	18	13,938	18,191,575	130.64
Kenai Peninsula, Kenai/Soldotna	22,355	812	0	14	8,780	13,862,600	99.55
Kenai Peninsula, Homer Area	22,954	846	218	14	8,780	14,297,713	102.68
Ketchikan Gateway Borough	-262,000	876	0	14.5	9,675	13,680,629	98.25
Klawock City	-262,000	959	208	14.5	11,806	14,398,596	103.40
Kodiak Island, Kodiak	531,288	960	266	15	9,675	15,475,842	111.14
Kodiak Island, Village	674,416	1,107	319	16	11,806	16,469,098	118.27
Kuspuk	1,099,489	1,673	250	18	13,938	17,512,426	125.76
Lake & Peninsula, Gulf of Alaska	2,248,833	1,188	199	16	13,938	18,432,727	132.37
Lake & Peninsula, Bristol Bay Village	1,762,195	1,292	373	15	13,938	18,842,603	135.32
Lake & Peninsula, Landlocked	699,361	1,476	285	18	13,938	18,790,279	134.94
Lower Kuskokwim, Bethel	163,558	1,338	327	16	11,806	15,944,248	114.50
Lower Kuskokwim, Villages	705,972	1,727	327	16	13,938	17,547,952	126.02
Lower Yukon	1,647,692	1,727	327	16	13,938	18,626,396	133.76
Mat-Su Borough, Palmer - Wasilla	20,558	795	0	14	8,780	13,856,858	99.51
Mat-Su Borough, Other Areas	20,958	816	0	14	8,780	13,944,095	100.14
Nenana City	23,000	989	181	14	9,675	14,543,862	104.45
Nome City	531,288	1,163	299	16	11,806	16,221,875	116.50
North Slope Borough, Utqiagvik	1,989,827	1,742	387	19	11,806	18,629,138	133.78
North Slope Borough, Villages	4,200,000	1,823	289	19	13,938	21,507,332	154.45
North Slope Borough, Atqasuk/Pt.	4,200,000	1,700	346	19	13,938	21,912,151	157.36
Northwest Arctic , Kotzebue	1,058,499	1,594	433	16	13,938	17,540,508	125.97
Northwest Arctic, Villages	3,986,247	1,772	456	18	13,938	18,673,866	134.11
Pelican City	-262,000	1,191	199	15	13,938	15,314,260	109.98
Petersburg City	-262,000	1,075	217	14	9,675	14,775,356	106.11
Pribilof Island	498,498	2,234	271	19	13,938	17,289,187	124.16
Skagway Borough	-262,000	876	311	14	13,938	14,730,053	105.78
Sitka City Borough	-262,000	906	311	14	9,675	15,132,356	108.67
Southeast Island	-262,000	1,004	208	14.5	11,806	14,782,209	106.16
Southwest Region	1,227,116	1,660	327	16	13,938	18,098,221	129.97
St. Mary's City	1,719,257	1,710	270	16	13,938	17,806,990	127.88
Tanana City	31,050	1,567	275	16	13,938	16,367,767	117.54
Unalaska City	196,062	1,036	265	16	11,806	15,768,359	113.24
Valdez City	222,700	910	309	14	9,675	15,385,977	110.49
Wrangell Borough	-262,000	906	217	14	9,675	14,747,537	105.91
Yakutat Borough	209,600	1,665	199	15	13,938	15,896,784	114.16
Yukon Flats, Village on Road	28,750	876	230	14	8,938	15,036,941	107.99
Yukon Flats, Village on River	1,819,447	2,215	250	19	13,938	18,523,302	133.02
Yukon Flats, Landlocked Village	1,989,827	2,953	275	19	13,938	19,019,821	136.59
Yukon-Koyukuk, Village on Road	28,750	1,181	230	15	11,806	15,178,104	109.00
Yukon-Koyukuk, Village on Yukon	2,821,148	1,943	310	17	13,938	19,936,683	143.17
Yukon-Koyukuk, Village on Koyukuk	3,212,847	2,215	310	18	13,938	20,511,726	147.30
Yupiit	812,328	1,525	350	16	13,938	16,894,525	121.33

Labor Adjustment

Site	Labor Increase (1=yes)	Cost Adjustement Factor
Anchorage	0	100.00
Alaska Gateway	1	100.55
Aleutian Region	0	100.00
Aleutians East Borough	0	100.00
Annette Island	0	100.00
Bering Strait	1	100.55
Bristol Bay Borough	0	100.00
Chatham	0	100.00
Chugach	0	100.00
Copper River	0	100.00
Cordova City	0	100.00
Craig City	0	100.00
Delta/Greely	1	100.55
Denali Borough	0	100.00
Dillingham City	0	100.00
Fairbanks North Star Borough	1	100.55
Galena City	1	100.55
Haines Borough	0	100.00
Hoonah City	0	100.00
Hydaburg City	0	100.00
Iditarod Area, Yukon River Village	0	100.00
Iditarod Area, Kuskokwim River Village	0	100.00
Iditarod Area, Landlocked Village	0	100.00
Juneau City/Borough	0	100.00
Kake City	0	100.00
Kashunamuit	0	100.00
Kenai Peninsula, Kenai/Soldotna	0	100.00
Kenai Peninsula, Homer Area	0	100.00
Ketchikan Gateway Borough	0	100.00
Klawock City	0	100.00
Kodiak Island, Kodiak	0	100.00
Kodiak Island, Village	0	100.00
Kuspuk	0	100.00
Lake & Peninsula, Gulf of Alaska Village	0	100.00
Lake & Peninsula, Bristol Bay Village	0	100.00
Lake & Peninsula, Landlocked Village	0	100.00
Lower Kuskokwim, Bethel	0	100.00
Lower Kuskokwim, Villages	0	100.00
Lower Yukon	0	100.00
Mat-Su Borough, Palmer - Wasilla	0	100.00
Mat-Su Borough, Other Areas	0	100.00
Nenana City	0	100.00
Nome City	1	100.55
North Slope Borough, Utqiagvik (Barrow)	1	100.55
North Slope Borough, Villages	1	100.55
North Slope Borough, Atqasuk/Pt. Lay	1	100.55
Northwest Arctic , Kotzebue	1	100.55
Northwest Arctic, Villages	1	100.55
Pelican City	0	100.00
Petersburg City	0	100.00
Pribilof Island	0	100.00
Skagway Borough	0	100.00
Sitka City Borough	0	100.00
Southeast Island	0	100.00
Southwest Region	0	100.00
St. Mary's City	0	100.00
Tanana City	0	100.00
Unalaska City	0	100.00
Valdez City	0	100.00
Wrangell Borough	0	100.00
Yakutat Borough	1	100.55
Yukon Flats, Village on Road System	1	100.55
Yukon Flats, Village on River	1	100.55
Yukon Flats, Landlocked Village	1	100.55
Yukon-Koyukuk, Village on Road System	1	100.55
Yukon-Koyukuk, Village on Yukon River	1	100.55
Yukon-Koyukuk, Village on Koyukuk River	1	100.55
Yupiit	0	100.00

Productivity Factor

Site	Average Temp (°F)	Weather Days (Delta %)	Topography	Ground and Soil Type	Annual Precipitation (in.)	Final Cost ($)	Cost Adjustment Factor
Anchorage	37.00	0.00%	Flat	Dry/Developed	16.63	$ 11,050,274	100.00
Alaska Gateway	24.90	15.50%	Flat	Dry/Developed	9.38	11,890,095	107.60
Aleutian Region	40.25	57.30%	Flat	Dry/Developed	54.06	11,503,888	104.11
Aleutians East Borough	40.85	-10.10%	Flat	Dry/Developed	78.04	10,725,948	97.07
Annette Island	45.10	71.80%	Flat	Dry/Developed	141.16	11,396,148	103.13
Bering Strait	24.30	35.40%	Flat	Wetlands	12.50	12,558,445	113.65
Bristol Bay Borough	33.50	4.50%	Flat	Wetlands	25.98	12,156,537	110.01
Chatham	45.25	-18.20%	Flat	Dry/Developed	86.72	10,393,335	94.06
Chugach	39.00	0.00%	Flat	Dry/Developed	69.00	10,939,771	99.00
Copper River	26.95	15.50%	Flat	Dry/Developed	13.98	11,776,830	106.58
Cordova City	42.55	97.30%	Flat	Dry/Developed	148.37	11,818,821	106.96
Craig City	45.10	71.80%	Flat	Dry/Developed	141.00	11,396,148	103.13
Delta/Greely	26.05	24.50%	Flat	Dry/Developed	20.35	11,926,008	107.93
Denali Borough	29.55	25.50%	Flat	Dry/Developed	15.11	11,743,679	106.28
Dillingham City	33.50	4.50%	Flat	Dry/Developed	25.98	11,293,380	102.20
Fairbanks North Star Borough	27.50	8.81%	Flat	Dry/Developed	10.83	11,672,515	105.63
Galena City	25.00	25.45%	Flat	Wetlands	13.02	12,427,095	112.46
Haines Borough	41.05	44.50%	Flat	Dry/Developed	48.51	11,318,243	102.43
Hoonah City	42.15	71.80%	Flat	Dry/Developed	62.24	11,559,139	104.61
Hydaburg City	45.10	71.80%	Flat	Dry/Developed	141.00	11,396,148	103.13
Iditarod Area, Yukon River Village	27.20	23.60%	Flat	Wetlands	18.08	12,453,212	112.70
Iditarod Area, Kuskokwim River Village	27.20	23.60%	Flat	Wetlands	18.08	12,453,212	112.70
Iditarod Area, Landlocked Village	27.20	23.60%	Flat	Dry/Developed	18.08	11,852,524	107.26
Juneau City/Borough	42.15	71.80%	Hilly	Dry/Developed	62.24	12,147,014	109.93
Kake City	43.00	-18.20%	Hilly	Dry/Developed	109.20	12,100,050	109.50
Kashunamuit	30.70	35.50%	Flat	Wetlands	18.58	12,407,943	112.29
Kenai Peninsula, Kenai/Soldotna	36.05	48.80%	Flat	Dry/Developed	18.16	11,642,016	105.36
Kenai Peninsula, Homer Area	38.80	95.50%	Flat	Dry/Developed	24.30	12,006,123	108.65
Ketchikan Gateway Borough	45.10	71.80%	Hilly	Dry/Developed	141.16	11,984,022	108.45
Klawock City	45.10	71.80%	Flat	Dry/Developed	141.16	11,396,148	103.13
Kodiak Island, Kodiak	40.85	68.18%	Flat	Dry/Developed	78.04	11,590,964	104.89
Kodiak Island, Village	40.85	68.18%	Flat	Dry/Developed	78.04	11,590,964	104.89
Kuspuk	30.70	29.10%	Flat	Wetlands	18.55	12,336,224	111.64
Lake & Peninsula, Gulf of Alaska Village	40.85	68.20%	Flat	Wetlands	78.04	12,218,840	110.58
Lake & Peninsula, Bristol Bay Village	33.50	4.50%	Flat	Wetlands	25.98	12,156,537	110.01
Lake & Peninsula, Landlocked Village	33.50	4.50%	Flat	Wetlands	25.98	12,156,537	110.01
Lower Kuskokwim, Bethel	30.70	29.00%	Flat	Dry/Developed	18.58	11,718,816	106.05
Lower Kuskokwim, Villages	30.70	29.00%	Flat	Wetlands	18.58	12,336,116	111.64
Lower Yukon	30.70	35.50%	Flat	Wetlands	18.58	12,407,943	112.29
Mat-Su Borough, Palmer - Wasilla	36.90	0.00%	Flat	Dry/Developed	16.65	11,055,799	100.05
Mat-Su Borough, Other Areas	35.95	0.00%	Flat	Dry/Developed	28.03	11,108,288	100.53
Nenana City	27.75	8.20%	Flat	Dry/Developed	9.38	11,651,961	105.45
Nome City	27.40	35.45%	Flat	Dry/Developed	16.34	11,972,419	108.35
North Slope Borough, Utqiagvik (Barrow)	11.80	44.50%	Flat	Dry/Developed	4.53	12,934,346	117.05
North Slope Borough, Villages	11.80	44.50%	Flat	Wetlands	4.53	13,084,850	118.41
North Slope Borough, Atqasuk/Pt. Lay	11.80	44.50%	Flat	Wetlands	4.53	13,084,850	118.41
Northwest Arctic , Kotzebue	22.75	32.70%	Flat	Dry/Developed	11.02	12,198,950	110.40
Northwest Arctic, Villages	22.75	32.70%	Flat	Wetlands	11.02	12,565,078	113.71
Pelican City	45.10	71.80%	Flat	Dry/Developed	141.00	11,396,148	103.13
Petersburg City	43.00	71.80%	Flat	Dry/Developed	109.20	11,512,175	104.18
Pribilof Island	36.50	-9.10%	Flat	Dry/Developed	25.00	10,977,342	99.34
Skagway Borough	45.25	-18.18%	Flat	Dry/Developed	86.72	10,393,556	94.06
Sitka City Borough	41.40	44.50%	Flat	Dry/Developed	27.06	11,298,905	102.25
Southeast Island	45.10	71.80%	Hilly	Dry/Developed	141.00	11,984,022	108.45
Southwest Region	33.50	29.10%	Flat	Wetlands	25.98	12,428,374	112.47
St. Mary's City	30.70	29.10%	Flat	Dry/Developed	18.58	11,719,921	106.06
Tanana City	25.40	25.50%	Flat	Dry/Developed	11.57	11,972,972	108.35
Unalaska City	43.00	57.30%	Flat	Dry/Developed	62.00	11,351,946	102.73
Valdez City	39.00	131.80%	Flat	Dry/Developed	69.00	12,321,056	111.50
Wrangell Borough	43.90	71.80%	Hilly	Dry/Developed	79.33	12,050,324	109.05
Yakutat Borough	40.15	97.30%	Flat	Dry/Developed	155.08	11,951,424	108.16
Yukon Flats, Village on Road System	20.60	17.30%	Flat	Dry/Developed	8.16	12,147,566	109.93
Yukon Flats, Village on River	20.85	17.30%	Flat	Wetlands	6.57	12,352,034	111.78
Yukon Flats, Landlocked Village	20.00	17.30%	Flat	Wetlands	6.20	12,386,705	112.09
Yukon-Koyukuk, Village on Road System	25.00	25.50%	Flat	Dry/Developed	13.02	11,995,072	108.55
Yukon-Koyukuk, Village on Yukon River	25.00	25.50%	Flat	Dry/Developed	13.02	11,995,072	108.55
Yukon-Koyukuk, Village on Koyukuk River	25.00	25.50%	Flat	Wetlands	13.02	12,427,648	112.46
Yupiit	30.70	29.10%	Flat	Wetlands	18.38	12,330,576	111.59

Structural Factor

Site	Average Factor	Final Cost ($)	Cost Adjustement Factor
Anchorage	1.00	$ 11,050,274	100.00
Alaska Gateway	0.92	10,875,957	98.42
Aleutian Region	1.07	11,189,313	101.26
Aleutians East Borough	1.04	11,135,357	100.77
Annette Island	1.09	11,241,193	101.73
Bering Strait	1.11	11,282,697	102.10
Bristol Bay Borough	0.92	10,884,258	98.50
Chatham	1.33	11,735,092	106.20
Chugach	1.68	12,467,640	112.83
Copper River	1.11	11,272,321	102.01
Cordova City	1.87	12,855,703	116.34
Craig City	1.22	11,510,970	104.17
Delta/Greely	0.99	11,031,597	99.83
Denali Borough	1.02	11,083,477	100.30
Dillingham City	1.48	12,044,298	109.00
Fairbanks North Star Borough	1.09	11,239,118	101.71
Galena City	1.08	11,210,065	101.45
Haines Borough	1.25	11,564,925	104.66
Hoonah City	1.72	12,546,498	113.54
Hydaburg City	1.26	11,589,828	104.88
Iditarod Area, Yukon River Village	1.45	11,979,966	108.41
Iditarod Area, Kuskokwim River	1.16	11,390,608	103.08
Iditarod Area, Landlocked Village	1.42	11,928,086	107.94
Juneau City/Borough	1.25	11,564,925	104.66
Kake City	1.22	11,513,045	104.19
Kashunamuit	1.49	12,062,975	109.16
Kenai Peninsula, Kenai/Soldotna	1.19	11,438,338	103.51
Kenai Peninsula, Homer Area	1.07	11,189,313	101.26
Ketchikan Gateway Borough	1.22	11,496,443	104.04
Klawock City	1.23	11,533,797	104.38
Kodiak Island, Kodiak	1.02	11,098,004	100.43
Kodiak Island, Village	1.17	11,407,209	103.23
Kuspuk	1.42	11,911,484	107.79
Lake & Peninsula, Gulf of Alaska	0.95	10,954,815	99.14
Lake & Peninsula, Bristol Bay Village	1.10	11,257,795	101.88
Lake & Peninsula, Landlocked	0.96	10,963,115	99.21
Lower Kuskokwim, Bethel	1.04	11,131,207	100.73
Lower Kuskokwim, Villages	1.50	12,083,727	109.35
Lower Yukon	2.01	13,148,307	118.99
Mat-Su Borough, Palmer - Wasilla	0.94	10,925,762	98.87
Mat-Su Borough, Other Areas	1.51	12,112,779	109.62
Nenana City	1.22	11,498,518	104.06
Nome City	1.25	11,575,301	104.75
North Slope Borough, Utqiagvik	0.95	10,936,138	98.97
North Slope Borough, Villages	0.97	10,992,168	99.47
North Slope Borough, Atqasuk/Pt.	0.93	10,905,010	98.69
Northwest Arctic , Kotzebue	1.16	11,382,307	103.00
Northwest Arctic, Villages	1.16	11,386,457	103.04
Pelican City	1.48	12,038,072	108.94
Petersburg City	1.56	12,220,690	110.59
Pribilof Island	1.71	12,519,520	113.30
Skagway Borough	1.08	11,210,065	101.45
Sitka City Borough	1.14	11,347,028	102.69
Southeast Island	0.89	10,822,001	97.93
Southwest Region	1.23	11,533,797	104.38
St. Mary's City	1.33	11,739,242	106.23
Tanana City	1.27	11,602,279	105.00
Unalaska City	0.92	10,888,408	98.54
Valdez City	1.78	12,668,935	114.65
Wrangell Borough	1.14	11,347,028	102.69
Yakutat Borough	1.73	12,561,024	113.67
Yukon Flats, Village on Road System	0.92	10,888,408	98.54
Yukon Flats, Village on River	1.09	11,239,118	101.71
Yukon Flats, Landlocked Village	1.03	11,108,380	100.53
Yukon-Koyukuk, Village on Road	1.15	11,355,329	102.76
Yukon-Koyukuk, Village on Yukon	1.12	11,288,923	102.16
Yukon-Koyukuk, Village on Koyukuk	1.51	12,106,554	109.56
Yupiit	1.05	11,162,335	101.01

Architectural Factor

Site	Enclosure Type	Cost Adjustment Factor
Anchorage	Zone 7	100.00
Alaska Gateway	Zone 7	100.00
Aleutian Region	Zone 7	100.00
Aleutians East Borough	Zone 7	100.00
Annette Island	Zone 7	100.00
Bering Strait	Zone 7	100.00
Bristol Bay Borough	Zone 7	100.00
Chatham	Zone 7	100.00
Chugach	Zone 7	100.00
Copper River	Zone 7	100.00
Cordova City	Zone 7	100.00
Craig City	Zone 7	100.00
Delta/Greely	Zone 7	100.00
Denali Borough	Zone 7	100.00
Dillingham City	Zone 8	102.25
Fairbanks North Star Borough	Zone 8	102.25
Galena City	Zone 7	100.00
Haines Borough	Zone 7	100.00
Hoonah City	Zone 7	100.00
Hydaburg City	Zone 7	100.00
Iditarod Area, Yukon River Village	Zone 7	100.00
Iditarod Area, Kuskokwim River	Zone 7	100.00
Iditarod Area, Landlocked Village	Zone 7	100.00
Juneau City/Borough	Zone 7	100.00
Kake City	Zone 7	100.00
Kashunamuit	Zone 7	100.00
Kenai Peninsula, Kenai/Soldotna	Zone 7	100.00
Kenai Peninsula, Homer Area	Zone 7	100.00
Ketchikan Gateway Borough	Zone 7	100.00
Klawock City	Zone 7	100.00
Kodiak Island, Kodiak	Zone 7	100.00
Kodiak Island, Village	Zone 7	100.00
Kuspuk	Zone 7	100.00
Lake & Peninsula, Gulf of Alaska	Zone 7	100.00
Lake & Peninsula, Bristol Bay Village	Zone 7	100.00
Lake & Peninsula, Landlocked	Zone 7	100.00
Lower Kuskokwim, Bethel	Zone 8	102.25
Lower Kuskokwim, Villages	Zone 8	102.25
Lower Yukon	Zone 8	102.25
Mat-Su Borough, Palmer - Wasilla	Zone 7	100.00
Mat-Su Borough, Other Areas	Zone 7	100.00
Nenana City	Zone 7	100.00
Nome City	Zone 8	102.25
North Slope Borough, Utqiagvik	Zone 8	102.25
North Slope Borough, Villages	Zone 8	102.25
North Slope Borough, Atqasuk/Pt.	Zone 8	102.25
Northwest Arctic , Kotzebue	Zone 7	100.00
Northwest Arctic, Villages	Zone 7	100.00
Pelican City	Zone 7	100.00
Petersburg City	Zone 7	100.00
Pribilof Island	Zone 7	100.00
Skagway Borough	Zone 7	100.00
Sitka City Borough	Zone 7	100.00
Southeast Island	Zone 7	100.00
Southwest Region	Zone 7	100.00
St. Mary's City	Zone 8	102.25
Tanana City	Zone 8	102.25
Unalaska City	Zone 7	100.00
Valdez City	Zone 7	100.00
Wrangell Borough	Zone 7	100.00
Yakutat Borough	Zone 7	100.00
Yukon Flats, Village on Road System	Zone 8	102.25
Yukon Flats, Village on River	Zone 8	102.25
Yukon Flats, Landlocked Village	Zone 8	102.25
Yukon-Koyukuk, Village on Road	Zone 8	102.25
Yukon-Koyukuk, Village on Yukon	Zone 8	102.25
Yukon-Koyukuk, Village on Koyukuk	Zone 8	102.25
Yupiit	Zone 7	100.00

Mechanical Factor

Site	Factor	Adjusted Mechanical Cost ($)	Adjusted Final Cost ($)	Cost Adjustment Factor
Anchorage	1.00	$ 2,352,314	$ 11,050,274	100.00
Alaska Gateway	1.36	2,917,242	11,615,202	105.11
Aleutian Region	1.15	2,594,082	11,292,042	102.19
Aleutians East Borough	1.15	2,594,082	11,292,042	102.19
Annette Island	1.21	2,688,098	11,386,058	103.04
Bering Strait	1.24	2,734,579	11,432,539	103.46
Bristol Bay Borough	1.36	2,917,242	11,615,202	105.11
Chatham	1.21	2,688,098	11,386,058	103.04
Chugach	1.32	2,856,913	11,554,873	104.57
Copper River	1.32	2,856,913	11,554,873	104.57
Cordova City	1.32	2,856,913	11,554,873	104.57
Craig City	1.21	2,688,098	11,386,058	103.04
Delta/Greely	1.36	2,917,242	11,615,202	105.11
Denali Borough	1.20	2,672,527	11,370,487	102.90
Dillingham City	1.36	2,917,242	11,615,202	105.11
Fairbanks North Star Borough	1.14	2,578,272	11,276,232	102.04
Galena City	1.22	2,703,629	11,401,589	103.18
Haines Borough	1.09	2,498,583	11,196,543	101.32
Hoonah City	1.15	2,594,082	11,292,042	102.19
Hydaburg City	1.21	2,688,098	11,386,058	103.04
Iditarod Area, Yukon River Village	1.56	3,211,312	11,909,272	107.77
Iditarod Area, Kuskokwim River Village	1.56	3,211,312	11,909,272	107.77
Iditarod Area, Landlocked Village	1.56	3,211,312	11,909,272	107.77
Juneau City/Borough	1.09	2,498,583	11,196,543	101.32
Kake City	1.09	2,498,583	11,196,543	101.32
Kashunamuit	1.81	3,563,447	12,261,407	110.96
Kenai Peninsula, Kenai/Soldotna	1.32	2,856,913	11,554,873	104.57
Kenai Peninsula, Homer Area	1.32	2,856,913	11,554,873	104.57
Ketchikan Gateway Borough	1.15	2,594,082	11,292,042	102.19
Klawock City	1.21	2,688,098	11,386,058	103.04
Kodiak Island, Kodiak	1.33	2,872,046	11,570,006	104.70
Kodiak Island, Village	1.33	2,872,046	11,570,006	104.70
Kuspuk	1.67	3,368,192	12,066,152	109.19
Lake & Peninsula, Gulf of Alaska Village	1.34	2,887,145	11,585,105	104.84
Lake & Peninsula, Bristol Bay Village	1.34	2,887,145	11,585,105	104.84
Lake & Peninsula, Landlocked Village	1.34	2,887,145	11,585,105	104.84
Lower Kuskokwim, Bethel	1.51	3,138,912	11,836,872	107.12
Lower Kuskokwim, Villages	1.81	3,563,447	12,261,407	110.96
Lower Yukon	1.81	3,563,447	12,261,407	110.96
Mat-Su Borough, Palmer - Wasilla	1.27	2,780,724	11,478,684	103.88
Mat-Su Borough, Other Areas	1.27	2,780,724	11,478,684	103.88
Nenana City	1.22	2,703,629	11,401,589	103.18
Nome City	1.24	2,734,579	11,432,539	103.46
North Slope Borough, Utqiagvik (Barrow)	1.25	2,749,998	11,447,958	103.60
North Slope Borough, Villages	1.25	2,749,998	11,447,958	103.60
North Slope Borough, Atqasuk/Pt. Lay	1.25	2,749,998	11,447,958	103.60
Northwest Arctic , Kotzebue	1.25	2,749,998	11,447,958	103.60
Northwest Arctic, Villages	1.25	2,749,998	11,447,958	103.60
Pelican City	1.21	2,688,098	11,386,058	103.04
Petersburg City	1.21	2,688,098	11,386,058	103.04
Pribilof Island	1.34	2,884,843	11,582,803	104.82
Skagway Borough	1.21	2,688,098	11,386,058	103.04
Sitka City Borough	1.09	2,498,583	11,196,543	101.32
Southeast Island	1.21	2,688,098	11,386,058	103.04
Southwest Region	1.36	2,917,242	11,615,202	105.11
St. Mary's City	1.81	3,563,447	12,261,407	110.96
Tanana City	1.22	2,703,629	11,401,589	103.18
Unalaska City	1.15	2,594,082	11,292,042	102.19
Valdez City	1.32	2,856,913	11,554,873	104.57
Wrangell Borough	1.15	2,594,082	11,292,042	102.19
Yakutat Borough	1.20	2,672,527	11,370,487	102.90
Yukon Flats, Village on Road System	1.22	2,703,629	11,401,589	103.18
Yukon Flats, Village on River	1.22	2,703,629	11,401,589	103.18
Yukon Flats, Landlocked Village	1.22	2,703,629	11,401,589	103.18
Yukon-Koyukuk, Village on Road System	1.22	2,703,629	11,401,589	103.18
Yukon-Koyukuk, Village on Yukon River	1.22	2,703,629	11,401,589	103.18
Yukon-Koyukuk, Village on Koyukuk River	1.22	2,703,629	11,401,589	103.18
Yupiit	1.53	3,167,957	11,865,917	107.38

Risk Factor

Site	Anticipated # Bidders	Weather Days (Delta %)	Freight ($)	Cost Adjustment Factor
Anchorage	7	0.00%	$ 19,960	100.00
Alaska Gateway	4	15.50%	163,558	109.12
Aleutian Region	4	57.30%	2,248,833	113.01
Aleutians East Borough	4	-10.10%	609,171	107.18
Annette Island	4	71.80%	-262,000	107.18
Bering Strait	4	35.40%	1,647,692	110.09
Bristol Bay Borough	5	4.50%	357,642	105.80
Chatham	5	-18.20%	-262,000	105.80
Chugach	5	0.00%	-183,400	104.82
Copper River	5	15.50%	181,000	105.80
Cordova City	5	97.30%	31,050	105.80
Craig City	6	71.80%	-262,000	101.21
Delta/Greely	6	24.50%	152,800	103.15
Denali Borough	6	25.50%	181,000	103.15
Dillingham City	5	4.50%	106,114	105.80
Fairbanks North Star Borough	7	8.81%	23,000	100.97
Galena City	5	25.45%	699,361	105.80
Haines Borough	6	44.50%	-262,000	101.21
Hoonah City	6	71.80%	-262,000	101.21
Hydaburg City	5	71.80%	-262,000	103.85
Iditarod Area, Yukon River Village	4	23.60%	499,412	109.12
Iditarod Area, Kuskokwim River Village	5	23.60%	1,499,386	106.77
Iditarod Area, Landlocked Village	4	23.60%	1,799,310	110.09
Juneau City/Borough	8	71.80%	-262,000	97.18
Kake City	5	-18.20%	-262,000	105.80
Kashunamuit	5	35.50%	1,439,827	106.77
Kenai Peninsula, Kenai/Soldotna	8	75.90%	22,355	99.12
Kenai Peninsula, Homer Area	7	151.80%	22,954	100.97
Ketchikan Gateway Borough	7	71.80%	-262,000	99.03
Klawock City	6	71.80%	-262,000	101.21
Kodiak Island, Kodiak	6	68.18%	531,288	104.13
Kodiak Island, Village	5	68.18%	674,416	106.77
Kuspuk	5	29.10%	1,099,489	106.77
Lake & Peninsula, Gulf of Alaska Village	6	68.20%	2,248,833	107.04
Lake & Peninsula, Bristol Bay Village	5	4.50%	1,762,195	105.80
Lake & Peninsula, Landlocked Village	4	4.50%	699,361	109.12
Lower Kuskokwim, Bethel	7	29.00%	163,558	100.97
Lower Kuskokwim, Villages	5	29.00%	705,972	105.80
Lower Yukon	4	35.50%	1,647,692	110.09
Mat-Su Borough, Palmer - Wasilla	7	0.00%	20,558	100.00
Mat-Su Borough, Other Areas	6	0.00%	20,958	102.18
Nenana City	5	8.20%	23,000	105.80
Nome City	6	35.45%	531,288	103.15
North Slope Borough, Utqiagvik (Barrow)	3	44.50%	1,989,827	115.51
North Slope Borough, Villages	3	44.50%	4,200,000	118.42
North Slope Borough, Atqasuk/Pt. Lay	3	44.50%	4,200,000	118.42
Northwest Arctic , Kotzebue	6	32.70%	1,058,499	104.13
Northwest Arctic, Villages	4	32.70%	3,986,247	113.01
Pelican City	6	71.80%	-262,000	101.21
Petersburg City	6	71.80%	-262,000	101.21
Pribilof Island	6	-9.10%	498,498	101.21
Skagway Borough	7	-18.18%	-262,000	100.97
Sitka City Borough	6	44.50%	-262,000	101.21
Southeast Island	5	71.80%	-262,000	103.85
Southwest Region	4	29.10%	1,227,116	110.09
St. Mary's City	5	29.10%	1,719,257	106.77
Tanana City	4	25.50%	31,050	109.12
Unalaska City	4	57.30%	196,062	109.12
Valdez City	6	131.80%	222,700	103.15
Wrangell Borough	6	71.80%	-262,000	101.21
Yakutat Borough	5	97.30%	209,600	105.80
Yukon Flats, Village on Road System	5	17.30%	28,750	105.80
Yukon Flats, Village on River	4	17.30%	1,819,447	110.09
Yukon Flats, Landlocked Village	3	17.30%	1,989,827	114.54
Yukon-Koyukuk, Village on Road System	6	25.50%	28,750	103.15
Yukon-Koyukuk, Village on Yukon River	5	25.50%	2,821,148	107.74
Yukon-Koyukuk, Village on Koyukuk River	5	25.50%	3,212,847	107.74
Yupiit	5	29.10%	812,328	105.80

From: Kathy Christy
To: Weed, Lori (EED)
Subject: RE: Public Comment: School Construction Geographic Area Cost Factors Updates
Date: Monday, January 14, 2019 9:31:46 PM

I appreciate the effort but, I do not feel that I can provide much meaningful comment. This update does not seem much more transparent to me than the previous version.
From the information I accessed It is not clear to me how percentages and zones were determined. There are some areas where I have specific familiarly, for example soils in Kotzebue are not dry and developed as described in the update. Soils are not any better and in fact are worse than some of the villages in the region. Three of the NWABSD villages are only accessible by air (Noatak, Kobuk and Ambler and Shungnak is unpredictable) but are categorized the same as other villages in the region with barge service. I am assuming there are a few other villages in other regions of the state that are only accessible by air that are not identified.

The determination of mechanical factors are even less clear.

Begin forwarded message:

From: "Weed, Lori (EED)" <lori.weed@alaska.gov>
Subject: RE: Public Comment: School Construction Geographic Area Cost Factors Updates
Date: January 10, 2019 at 3:03:32 PM AKST
To: "Mearig, Timothy C (EED)" <tim.mearig@alaska.gov>

TO: Interested Parties

This is a reminder that the department is seeking public review and comment on the school construction geographic cost factors used in the department's Program Demand Cost Model for Alaskan Schools to adjust the cost of construction in the tool's index location of Anchorage to other geographic regions around the state. Public comment closes January 22 at 12 p.m. (noon).

We look forward to your responses.
Thank you,
Lori Weed
FSS/Facilities, School Finance Specialist II
Department of Education and Early Development
(907) 465-2785 | lori.weed@alaska.gov

From: Weed, Lori (EED)
Sent: Friday, December 21, 2018 2:37 PM
To: Timothy C Mearig (EED) (tim.mearig@alaska.gov) <tim.mearig@alaska.gov>
Subject: Public Comment: School Construction Geographic Area Cost Factors Updates

TO: Interested Parties

The Department of Education & Early Development, Facilities Section, with its consultant, HMS, Inc., has completed an update of the school construction Geographic Area Cost Factors used in the department's ***Program Demand Cost Model for Alaskan Schools***.

The geographic factors were created with the first cost model in 1978; they were expanded to additional locations in 1996, and were last systematically updated in 2008. However, since their inception, and throughout all adjustments and updates, no record was retained by the department describing the makeup and basis of the factors—neither has there ever been a 'public' review of the factors. The intent of this 2018 update is to address both of those matters.
Attached for review are three documents:

1) Geographic Area Cost Factors Change Summary,
2) Geographic Area Cost Factors Component Element Matrix, and
3) Geographic Area Cost Factors Component Backup.

DEED invites review of these documents and any feedback regarding the makeup of the factors and any data points used to make the specific calculations in support of the factors. In addition, the geographic factors are intended to reflect significant variations in construction costs when compared to other locations. If you believe that a particular location is improperly grouped within a listed geographic area, the department would welcome any support for that understanding. A rule of thumb in this consideration would be support that construction costs would vary more than +/- 5% from the geographic area in which that location is listed.

The public comment period for responses will be 30 days. Comments may be emailed to Tim Mearig, Facilities Manager, at Tim.Mearig@alaska.gov or mailed to Tim Mearig, Division of Finance and Support Services, Department of Education & Early Development, P.O. Box 110500, Juneau, AK 99811-0500, so that it is **received by noon (12:00 p.m.) January 22, 2019**.

Thank you for your time and assistance.

Lori Weed
FSS/Facilities, School Finance Specialist II
Department of Education and Early Development
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Submitted By	Comment
1/10/2019 3:15:48 PM Kevin Lyon klyon@kpb.us Unknown location Anonymous User	A third geographic cost factor area should be generated for the Kenai Peninsula Borough School District that addresses the schools that are off the road system and are only accessible by water / air. The rest of the update looks good.

PROGRAM DEMAND COST MODEL
GEOGRAPHIC AREA COST FACTOR
Historical Comparison - As of Feb 2019

Geographic Area	6th Ed 1996 Jun-96	7th Ed 1997 Aug-97	8th Ed 1999 Dec-98	9th Ed 2001 Apr-01	9th Ed 2003 Jun-03	9th Ed 2004 Jun-04	10th Ed 2005 Jan-05	10th Ed 2006 Jan-05	11th Ed 2007 Mar-07	% change 2007 to 2008	11th Ed 2008 Mar-08	11th Ed 2009 Apr-09	12th Ed 2010 Apr-10	12th Ed 2011 Apr-11	12th Ed 2012 Apr-12	13th Ed 2013 Apr-13	13th Ed 2014 Apr-14	14th Ed 2015 Apr-15	15th Ed 2016 Apr-16	16th Ed 2017 Apr-17	17th Ed 2018 Apr-18	DRAFT % change 2018 to 2019	DRAFT 18th Ed 2019 Apr-19
Alaska Gateway	*121.90*	*121.90*	123.90	118.45	118.45	118.45	122.70	122.70	122.70	*2.04%*	125.20	125.20	125.20	125.20	125.20	125.20	125.20	125.20	125.20	125.20	125.20	*3.47%*	129.55
Aleutian Region	138.20	138.20	149.50	149.50	149.50	149.50	149.50	149.50	149.50	*3.34%*	154.50	154.50	154.50	154.50	154.50	154.50	154.50	154.50	154.50	154.50	154.50	*6.10%*	163.92
Aleutians East	121.90	121.90	126.20	126.20	126.20	126.20	126.20	126.20	126.20	*1.98%*	128.70	128.70	128.70	128.70	128.70	128.70	128.70	128.70	128.70	128.70	128.70	*-2.04%*	126.08
Anchorage	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	-	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	-	100.00
Annette Island	*118.90*	*118.90*	121.90	121.90	121.90	121.90	121.90	121.90	121.90	*2.05%*	124.40	124.40	124.40	124.40	124.40	124.40	124.40	124.40	124.40	124.40	124.40	*-2.55%*	121.23
Bering Strait	*176.50*	*176.50*	176.50	161.09	161.09	161.09	161.09	161.09	176.20	*2.84%*	181.20	181.20	181.20	181.20	181.20	181.20	181.20	181.20	181.20	181.20	177.53	*-9.60%*	160.48
Bristol Bay Borough Schools	*138.20*	*138.20*	126.20	126.20	126.20	126.20	126.20	126.20	126.20	*1.98%*	128.70	128.70	128.70	128.70	128.70	128.70	128.70	128.70	128.70	128.70	128.70	*7.80%*	138.74
Chatham	*130.40*	*130.40*	121.90	121.90	121.90	121.90	121.90	121.90	121.90	*2.05%*	124.40	124.40	124.40	124.40	124.40	124.40	124.40	124.40	124.40	124.40	124.40	*-5.78%*	117.21
Chugach	*111.40*	*111.40*	107.50	107.50	107.50	107.50	107.50	107.50	107.50	*0.93%*	108.50	108.50	108.50	108.50	108.50	108.50	108.50	108.50	108.50	108.50	108.50	*26.31%*	137.05
Copper River	*110.90*	*110.90*	110.90	112.90	112.90	112.90	112.90	112.90	112.90	*0.89%*	113.90	113.90	113.90	113.90	113.90	113.90	113.90	113.90	113.90	113.90	113.90	*9.85%*	125.12
Cordova	*118.90*	*118.90*	107.50	107.50	107.50	107.50	107.50	107.50	107.50	*0.93%*	108.50	108.50	108.50	108.50	108.50	108.50	108.50	108.50	108.50	108.50	108.50	*34.57%*	146.01
Craig City Schools	*118.90*	*118.90*	111.40	111.40	111.40	111.40	111.40	111.40	111.40	*0.90%*	112.40	112.40	112.40	112.40	112.40	112.40	112.40	112.40	112.40	112.40	112.40	*2.29%*	114.97
Delta/Greely	*110.90*	*110.90*	110.90	114.90	114.90	114.90	117.13	117.13	117.13	*2.13%*	119.63	119.63	119.63	119.63	119.63	119.63	119.63	119.63	119.63	119.63	119.63	*4.94%*	125.54
Denali Borough	*110.90*	*110.90*	110.90	114.90	114.90	114.90	117.13	117.13	117.13	*2.13%*	119.63	119.63	119.63	119.63	119.63	119.63	119.63	119.63	119.63	119.63	119.63	*4.51%*	125.02
Dillingham City Schools	*138.20*	*138.20*	111.40	131.04	131.04	131.04	131.04	131.04	131.04	*1.91%*	133.54	133.54	133.54	133.54	133.54	133.54	133.54	133.54	133.54	133.54	133.54	*6.18%*	141.79
Fairbanks	105.00	105.00	105.00	105.00	105.00	105.00	105.00	105.00	105.00	*0.00%*	105.00	105.00	105.00	105.00	105.00	105.00	105.00	105.00	105.00	105.00	111.83	*1.26%*	113.24
Galena	*136.80*	*136.80*	136.80	136.80	136.80	136.80	136.80	136.80	136.80	*1.83%*	139.30	139.30	139.30	139.30	139.30	139.30	139.30	139.30	139.30	139.30	139.30	*4.87%*	146.09
Haines	*118.90*	*118.90*	111.40	111.40	111.40	111.40	111.40	111.40	111.40	*0.90%*	112.40	112.40	112.40	112.40	112.40	112.40	112.40	112.40	112.40	112.40	112.40	*0.57%*	113.04
Hoonah City Schools	*130.40*	*130.40*	121.90	121.90	121.90	121.90	121.90	121.90	121.90	*2.05%*	124.40	124.40	124.40	124.40	124.40	124.40	124.40	124.40	124.40	124.40	124.40	*4.24%*	129.67
Hydaburg City Schools	*130.40*	*130.40*	121.90	121.90	121.90	121.90	121.90	121.90	121.90	*2.05%*	124.40	124.40	124.40	124.40	124.40	124.40	124.40	124.40	124.40	124.40	124.40	*-2.68%*	121.06
Iditarod Area Schools			149.50																				
Iditarod Area Schools - *Yukon River Village*	*136.80*	*136.80*		138.05	138.05	138.05	138.05	138.05	138.05	*3.62%*	143.05	143.05	143.05	143.05	143.05	143.05	143.05	143.05	143.05	143.05	143.05	*10.71%*	158.37
Iditarod Area Schools - *Kuskokwim River Village*	*162.10*	*162.10*		149.50	149.50	149.50	149.50	149.50	149.50	*3.34%*	154.50	154.50	154.50	154.50	154.50	154.50	154.50	154.50	154.50	154.50	154.50	*2.67%*	158.63
Iditarod Area Schools - *Landlocked Village*	*136.80*	*136.80*		154.73	154.73	154.73	156.90	156.90	156.90	*2.55%*	160.90	160.90	160.90	160.90	160.90	160.90	160.90	160.90	160.90	160.90	160.90	*3.59%*	166.68
Juneau City/Borough Schools	101.60	101.60	101.60	103.60	103.60	103.60	103.60	103.60	103.60	-	103.60	103.60	103.60	103.60	103.60	103.60	103.60	103.60	103.60	103.60	103.60	*7.06%*	110.91
Kake City Schools	*130.40*	*130.40*	121.90	121.90	121.90	121.90	121.90	121.90	121.90	*0.82%*	122.90	122.90	122.90	122.90	122.90	122.90	122.90	122.90	122.90	122.90	122.90	*4.46%*	128.38
Kashunamuit	*162.10*	*162.10*	162.10	147.36	147.36	147.36	147.36	147.36	147.36	*3.39%*	152.36	152.36	152.36	152.36	152.36	152.36	152.36	152.36	152.36	152.36	152.36	*11.46%*	169.82
Kenai Peninsula																							
Kenai Peninsula - Kenai/Soldotna	98.60	98.60	98.60	98.60	98.60	98.60	98.60	98.60	98.60	-	98.60	98.60	98.60	98.60	98.60	98.60	98.60	98.60	98.60	98.60	98.60	*13.70%*	112.11
Kenai Peninsula - Homer Area	104.50	104.50	104.50	104.50	104.50	104.50	104.50	104.50	104.50	*0.96%*	105.50	105.50	105.50	105.50	105.50	105.50	105.50	105.50	105.50	105.50	105.50	*11.96%*	118.12
Ketchikan	109.80	109.80	109.80	109.80	109.80	109.80	109.80	109.80	109.80	*0.91%*	110.80	110.80	110.80	110.80	110.80	110.80	110.80	110.80	110.80	110.80	110.80	*1.04%*	111.95
Klawock City Schools	*130.40*	*130.40*	121.90	121.90	121.90	121.90	117.90	117.90	121.90	*2.05%*	124.40	124.40	124.40	124.40	124.40	124.40	124.40	124.40	124.40	124.40	124.40	*-7.43%*	115.16
Kodiak Island - Kodiak	111.40	111.40	111.40	111.40	111.40	111.40	111.40	111.40	111.40	*0.90%*	112.40	112.40	112.40	112.40	112.40	112.40	112.40	112.40	112.40	112.40	112.40	*11.47%*	125.29
Kodiak Island - *Village*			121.90	121.90	121.90	121.90	121.90	121.90	121.90	*2.05%*	124.40	124.40	124.40	124.40	124.40	124.40	124.40	124.40	124.40	124.40	124.40	*10.83%*	137.87
Kuspuk Schools	*136.80*	*136.80*	162.10	149.00	149.00	149.00	149.00	149.00	149.00	*3.36%*	154.00	154.00	154.00	154.00	154.00	154.00	154.00	154.00	154.00	154.00	154.00	*4.65%*	161.16
Lake & Peninsula			121.90																				
Lake & Peninsula - Gulf of Alaska Village	*121.90*	*121.90*		121.90	121.90	121.90	121.90	121.90	121.90	*2.05%*	124.40	124.40	124.40	124.40	124.40	124.40	124.40	124.40	124.40	124.40	124.40	*23.76%*	153.96
Lake & Peninsula - *Bristol Bay Village*				131.04	131.04	131.04	131.04	131.04	131.04	*3.82%*	136.04	136.04	136.04	136.04	136.04	136.04	136.04	136.04	136.04	136.04	136.04	*16.02%*	157.84
Lake & Peninsula - *Landlocked Village*	*138.20*	*138.20*		154.73	136.80	136.80	154.73	154.73	154.73	*3.88%*	160.73	160.73	160.73	160.73	160.73	160.73	160.73	160.73	160.73	160.73	160.73	*-1.62%*	158.13

Geographic Area	6th Ed 1996 Jun-96	7th Ed 1997 Aug-97	8th Ed 1999 Dec-98	9th Ed 2001 Apr-01	9th Ed 2003 Jun-03	9th Ed 2004 Jun-04	10th Ed 2005 Jan-05	10th Ed 2006 Jan-05	11th Ed 2007 Mar-07	% change 2007 to 2008	11th Ed 2008 Mar-08	11th Ed 2009 Apr-09	12th Ed 2010 Apr-10	12th Ed 2011 Apr-11	12th Ed 2012 Apr-12	13th Ed 2013 Apr-13	13th Ed 2014 Apr-14	14th Ed 2015 Apr-15	15th Ed 2016 Apr-16	16th Ed 2017 Apr-17	17th Ed 2018 Apr-18	DRAFT % change 2018 to 2019	DRAFT 18th Ed 2019 Apr-19
Lower Kuskokwim - Bethel	151.10	151.10	151.10	137.36	137.36	137.36	137.36	137.36	151.10	*3.31%*	156.10	156.10	156.10	156.10	156.10	156.10	156.10	156.10	156.10	156.10	156.10	*-15.68%*	131.63
Lower Kuskokwim - Villages	162.10	162.10	162.10	147.36	147.36	147.36	147.36	147.36	162.10	*3.08%*	167.10	167.10	167.10	167.10	167.10	167.10	167.10	167.10	167.10	167.10	167.10	*-0.65%*	166.01
Lower Yukon	*162.10*	*162.10*	169.10	147.36	147.36	147.36	147.36	147.36	162.10	*3.08%*	167.10	167.10	167.10	167.10	167.10	167.10	167.10	167.10	167.10	167.10	167.10	*12.71%*	188.34
Mat-Su Borough Schools - Palmer - Willow	97.00	97.00	97.00	99.00	99.00	99.00	99.00	99.00	99.00		99.00	99.00	99.00	99.00	99.00	99.00	99.00	99.00	99.00	99.00	99.00		102.31
Mat-Su Borough Schools - *Other Areas*			104.50	104.50	104.50	104.50	104.50	104.50	104.50	*0.96%*	105.50	105.50	105.50	105.50	105.50	105.50	105.50	105.50	105.50	105.50	105.50	*10.27%*	116.34
Nenana City Schools	*110.90*	*110.90*	107.50	109.50	109.50	109.50	114.00	114.00	114.00	*2.19%*	116.50	116.50	116.50	116.50	116.50	116.50	116.50	116.50	116.50	116.50	116.50	*5.51%*	122.92
Nome City Schools	*159.70*	*159.70*	159.70	145.18	145.18	145.18	145.18	145.18	151.10	*3.31%*	156.10	156.10	156.10	156.10	156.10	156.10	156.10	156.10	156.10	156.10	156.10	*-10.95%*	139.01
North Slope Borough - Barrow	165.80	165.80	165.80	150.73	150.73	150.73	150.73	150.73	165.80	*3.62%*	171.80	171.80	171.80	171.80	171.80	171.80	171.80	171.80	171.80	171.80	171.80	*-0.05%*	171.71
North Slope Borough - Villages	177.20	177.20	177.20	161.09	161.09	161.09	161.09	161.09	177.20	*2.82%*	182.20	182.20	182.20	182.20	182.20	182.20	182.20	182.20	182.20	182.20	182.20	*8.21%*	197.16
North Slope Borough - *Atqasuk/Pt. Lay*			194.90	177.18	177.18	177.18	177.18	177.18	194.90	*2.57%*	199.90	199.90	199.90	199.90	199.90	199.90	199.90	199.90	199.90	199.90	199.90	*-0.31%*	199.28
Northwest Arctic Schools - Kotzebue	159.70	159.70	159.70	145.18	145.18	145.18	145.18	145.18	145.18	*3.44%*	150.18	150.18	150.18	150.18	150.18	150.18	150.18	150.18	150.18	150.18	150.18	*-1.69%*	147.64
Northwest Arctic Schools - *Villages*	176.50	176.50	176.50	160.45			160.45	160.45	176.50	*2.83%*	181.50	181.50	181.50	181.50	181.50	181.50	181.50	181.50	181.50	181.50	181.50	*-7.43%*	168.01
Northwest Arctic Schools - Village on River					161.09	161.09																	
Northwest Arctic Schools - Landlocked Village					165.00	165.00																	
Pelican City Schools	130.40	130.40	121.90	121.90	121.90	121.90	121.90	121.90	121.90	*2.05%*	124.40	124.40	124.40	124.40	124.40	124.40	124.40	124.40	124.40	124.40	124.40	*1.53%*	126.30
Petersburg City Schools	*109.80*	*109.80*	109.80	109.80	109.80	109.80	109.80	109.80	109.80	*0.91%*	110.80	110.80	110.80	110.80	110.80	110.80	110.80	110.80	110.80	110.80	110.80	*12.93%*	125.13
Pribilof Island Schools	*138.20*	*138.20*	149.50	156.50	156.50	156.50	159.70	159.70	159.70	*3.13%*	164.70	164.70	164.70	164.70	164.70	164.70	164.70	164.70	164.70	164.70	164.70	*-13.28%*	142.83
Sitka City Borough	*109.80*	*109.80*	109.80	109.80	109.80	109.80	109.80	109.80	109.80	*0.91%*	110.80	110.80	110.80	110.80	110.80	110.80	110.80	110.80	110.80	110.80	110.80	*-4.96%*	105.30
Skagway City Schools	*109.80*	*109.80*	109.80	109.80	109.80	109.80	109.80	109.80	109.80	*0.91%*	110.80	110.80	110.80	110.80	110.80	110.80	110.80	110.80	110.80	110.80	110.80	*4.82%*	116.14
Southeast Island Schools	130.40	130.40	121.90	120.69	120.69	120.69	120.69	120.69	120.69	*2.07%*	123.19	123.19	123.19	123.19	123.19	123.19	123.19	123.19	123.19	123.19	123.19	*-3.05%*	119.43
Southwest Region Schools	*138.20*	*138.20*	149.50	135.91	135.91	135.91	135.91	135.91	135.91	*3.68%*	140.91	140.91	140.91	140.91	140.91	140.91	140.91	140.91	140.91	140.91	140.91	*14.98%*	162.02
St. Mary's School District	*162.10*	*162.10*	162.10	147.36	147.36	147.36	147.36	147.36	154.75	*3.23%*	159.75	159.75	159.75	159.75	159.75	159.75	159.75	159.75	159.75	159.75	159.75	*0.25%*	160.15
Tanana City Schools	110.90	110.90	107.50	138.05	138.05	138.05	132.15	132.15	132.15	*1.89%*	134.65	134.65	134.65	134.65	134.65	134.65	134.65	134.65	134.65	134.65	134.65	*8.01%*	145.44
Unalaska City Schools	121.90	121.90	116.50	126.20	126.20	126.20	135.00	135.00	135.00	*3.70%*	140.00	140.00	140.00	140.00	140.00	140.00	140.00	140.00	140.00	140.00	140.00	*-10.14%*	125.81
Valdez City Schools	*104.50*	*104.50*	104.50	104.50	104.50	104.50	108.30	108.30	108.30	*0.92%*	109.30	109.30	109.30	109.30	109.30	109.30	109.30	109.30	109.30	109.30	109.30	*32.08%*	144.36
Wrangell City Schools	*109.80*	*109.80*	109.80	109.80	109.80	109.80	109.80	109.80	109.80	*0.91%*	110.80	110.80	110.80	110.80	110.80	110.80	110.80	110.80	110.80	110.80	110.80	*9.24%*	121.04
Yakutat City Schools	118.90	118.90	111.40	114.40	114.40	114.40	114.40	114.40	114.40	*0.87%*	115.40	115.40	115.40	115.40	115.40	115.40	115.40	115.40	115.40	115.40	115.40	*25.85%*	145.23
Yukon Flats			136.80																				
Yukon Flats - *Village on Road System*	*119.90*	*119.90*		120.45	120.45	120.45	120.45	120.45	120.45	*2.08%*	122.95	122.95	122.95	122.95	122.95	122.95	122.95	122.95	122.95	122.95	122.95	*4.29%*	128.23
Yukon Flats - Village on River	*136.80*	*136.80*		136.80	136.80	136.80	136.80	136.80	136.80	*3.65%*	141.80	141.80	141.80	141.80	141.80	141.80	141.80	141.80	141.80	141.80	141.80	*14.66%*	162.59
Yukon Flats - *Landlocked Village*	*136.80*	*136.80*		154.73	154.73	154.73	154.73	154.73	154.73	*3.23%*	159.73	159.73	159.73	159.73	159.73	159.73	159.73	159.73	159.73	159.73	159.73	*6.26%*	169.73
Yukon-Koyukuk			149.50																				
Yukon-Koyukuk - *Village on Road System*	*110.90*	*110.90*		120.45	120.45	120.45	120.45	120.45	120.45	*2.08%*	122.95	122.95	122.95	122.95	122.95	122.95	122.95	122.95	122.95	122.95	122.95	*5.28%*	129.44
Yukon-Koyukuk - *Village on Yukon River*	*136.80*	*136.80*		136.80	136.80	136.80	136.80	136.80	136.80	*3.65%*	141.80	141.80	141.80	141.80	141.80	141.80	141.80	141.80	141.80	141.80	141.80	*18.19%*	167.60
Yukon-Koyukuk - Village on Koyukuk River	*136.80*	*136.80*		149.50	149.50	149.50	149.50	149.50	149.50	*3.34%*	154.50	154.50	154.50	154.50	154.50	154.50	154.50	154.50	154.50	154.50	154.50	*18.48%*	183.05
Yupiit Schools	162.10	162.10	162.10	147.36	147.36	147.36	147.36	147.36	147.36	*3.39%*	152.36	152.36	152.36	152.36	152.36	152.36	152.36	152.36	152.36	152.36	152.36	*-3.45%*	147.10

Review Comment Worksheet

Project Title / Number(s): 2018 Geographic Area Cost Factor Study
Reviewer's Name / Phone #: Tim Mearig - 465-6906

No.	Document	Page/ Sheet	Comment	Response	Resolved
1	Report	5	3rd paragraph - Shouldn't the paragraph end "the most significant cost drivers associated with the *geograpic cost factors.*"? Not "general requirements."		
2	Report	various	There are still several "geographical cost factor" to be changed to "geographic cost factor". Please do a find-and-replace.		
3	Report	6	Last paragraph - sentence two should read, "variable general requirements include freight, crew~~,~~ travel, ~~and~~ per diem, utilities, and fuel. In". This sentence may also need adjustment to incorporate equipment packages and management costs (ref. comments below).		
4	Report & Methodolgy	6	Method section - where does the equipment package factor into general requirements? It should be listed in sentence two and discussed in its own paragraph titled, Equipment. Appendix A, which shows the equipment package should probably be only the equipment package with the standard materials+equipment list for freight going to Appendix B (and so on).		
5	Report & Methodolgy	6	The equipment package in Appendix A appears to develop four 'classes' of equipment cost: Urban ($5685), Rural ($8469), Bush ($10,658), and Urban/Rural ($6352). However, the General Requirements Cost Factors table has five equipment costs listed ($8780, $8938, $9675, $11,806, and $13,938). Shouldn't these align in values and # of classes?		
6	Report & Methodolgy	Appendix A	Should the standard equipment package and the equipment listed in the standardized freight package match? Currently, they do not.		
7	Report & Methodolgy	Appendix A	Though the equipment packages by geographic location are shown in the backup, for additional transparency, I'd like the equipment package appendix (see comment #4) to list the geographic locations assigned to each class/category.		
8	Report	6	Last paragraph - is your best information indicating that the three-week rotation is most common. We have seen some project information that would suggest a four-week rotation.		
9	Report	7	First paragraph - last sentence should either be omitted or explained as to how these costs are included in the general requirements factor or were not included for some reason. (I think they're included.)		
10	Backup	7	Please provide the AML source document on freight and the HMS souce document on the standard equipment package with the final deliverables.		

No.	Document	Page/ Sheet	Comment	Response	Resolved
11	Report	7	Freight - The report indicates that "air freight rates have been assumed at locations where this is typical for freight delivery." I could not find any listing in the report of those locations. For transparency, please add them to the report's Appendix B, Freight Package. [Also, see later comments on possible additional locations.]		
12	Report	7	Last paragraph - in support of transparency, please develop an Appendix C showing the backup for the imported crew and per diem calculation. List the assumed imported crew percentage for each site.		
13	Backup	7	The HMS source document for backup on General Requirements calculations seems to be missing a column for crew rotation. It also included a column for Duration which is not discussed in the Report.		
14	Backup	various	Please provide the HMS source document on the General Requirements calculations for each geographic factor location with the final deliverables		
15	Backup	8	Please provide the DOD document showing 2019 per diem rates with the final deliverables.		
16	Report	8	Figure 1 - consider putting Figure 1 in the body of the document similar to how you've handled table and equation illustrations.		
17	Report	8	Labor Adjustment - in the **Method** paragraph, consider revising to, "To ~~adjust~~ determine the local costs, an overall weight factor was used to adjust the labor cost portion (42.4%) of the Model School . . ." Otherwise the 0.422 factor used later has no basis of reference.		
18	Report	9	Temperature productivity adjustment - Equation 1 should be written using the variables vs. the Bering Strait sample numbers. So . . . ((40-T)+100)-3=L. If you want to show how the equation calculates for the Bering Strait example, show that as a separately from the base equation.		
19	Report & Methodolgy	9	Equation 1 and explantatory paragraph - from the document, I'm not clear where the number "3" comes from and whether it's a constant, a variable or what. (I think it's a constant for norming the average temp in Anchorage of 37F to the "published rates" factor of 40F.)		
20	Report	10	Figure 2 - see comment #16.		
21	Report	10	Similar to comment #18 - For equation 2, write it first just using the variables, then add a separate Example equation showing the numbers for Bering Strait. Also, the equation says 14.6% but the text says the Bering Strait example is 113.65.		
22	Report	various	The comments above look like they could possibly apply to all the Equations listed in the report. As a default, could you list the equations first just showing the variables? Then, if you have a specific example, plug the actual numbers for that location in a separate equation.		

No.	Document	Page/ Sheet	Comment	Response	Resolved
23	Report & Methodolgy	10	Job Site Condition Adjustment - several issues: a. Neither possible values for Topography and Soil Type, nor actual values for these factors for each geographic locaton are identified (the backup table shows the "class" but what determines the value?). Consider adding an Appendix D showing all values used for each location for the complete Labor Productivity analysis (similar to the table provided in the backup). b. What is the function of the constant, "-2"? c. What is the source for the annual precipitation, *Climate Alaska* or *NOAA*, and why is it being divided by 10? d. For the WD factor, I'm not convinced the USACE document is what we want to use. What is the basis for their categorization? (It looks to be heavy on precipitation and also temperature.) The whole basis for their document is CYA against a contractor claiming weather delays by preloading the specification with the greatest number of possible adverse days for any location. e. What about creating our own WD taking temperature, precipitation, **and wind** into account?		
24	Report & Methodolgy	9/10	Job Site Condition Adjustment - in the Method section on p.9 the following factors are listed presumably based on the J. Kent Holland citation: annual precipitation, weather, land and soil types, and urban versus rural locations. Equation 2 seems to have a factor for each of these except urban/rural. Is there a factor for job site conditions that should be included for this?		
25	Report & Methodolgy	9/10	Temperature productivity adjustment & Job site condition adjustment - Can we devise a way on both of these to account for smaller projects where all work would happen in summer months, or projects where the work is primarily interior renovation, or projects with winter shutdowns?		
26	Report	11	Structural - consider revising the opening paragraph as follows: "The superstructure of a building, and to a lesser extent its foundation, must respond to several factors which could change based on geographic location. Primary among these for Alaskan schools are snow loads and wind/seismic lateral loads on the superstructure. Since dead loads (snow) and lateral loads (wind/seismic) drive the structural requirements to different extents, there was a need to determine the most stringent of these design criteria and develop a relationship between the loads and the resulting superstructure in each geographic area."		
27	Report	11	Method section - consider adding after sentence one, "Since the model school uses a steel superstructure, the weight of steel is the measured cost variable. Costs for other structural systems are likely to be comparable." Also, can we state somewhere the cost value of the steel superstructure in the model school (apparently $11,050,274 per the backup table) which was used as the cost basis?		

No.	Document	Page/ Sheet	Comment	Response	Resolved
28	Report & Methodolgy	11	Method section - the IBC, Table 1608.2 shows ground snow loads for Anchorage at 50psf vs. 40psf.		
29	Report & Backup	11	Example - the beginning of this section lists three factors for Fairbanks without any description of their source or calculation. Move these factors to the Method section and include the by-site calculations either in an Appendix E or as a Figure in the report. Provide backup for structural factors with final deliverables (the current backup only shows developed factors and resulting costs).		
30	Report & Methodolgy	11	Equation 3 - five variables are listed but snow load is duplicated with the variables PL and SL. The equation also lists the variable LF but doesn't define it.		
31	Report & Methodolgy	11	Example - the second sentence explains a portion of the equation, "The factors were averaged by choosing the greatest of the lateral loads and the snow loads along with both a 1.0 DL and 1.0 LL." This sentence should be moved to the Methods paragraph and additional explanation as to why this is the "right" approach to determining an overall structural value added.		
32	Report	11	Equation 3 - move the equation ahead of the example and show only variables, then follow with the Example and its specific factors (see earlier comments).		
33	Report	12	Equation 4 - suggest moving this to the Method section as the necessary second calculation to determine the cost adjustment factor. Also, I typically see superstructure as one word and there's a misspell here too.		
34	Report & Methodolgy	12	Structural - so in the end, the structural geographic factors ranges between -2.07% in SISD and 18.99 in LYSD. Maybe the numbers are the numbers but both ends seem a little stretched to me. Also, there are some adjacency anomlies (e.g., Hydaburg/Klawock/Craig @ 104.17:SISD @ 97.93; LKSD Village @109.35:LYSD @ 118.99)		
35	Report & Methodolgy	12	Architectural Requirements - I'm a little disappointed that we let go of the architectural feature "elevated main floor". It seems like this insulated, soffited floor assembly would be easy to cost and compare to the model school's slab on grade. Did this occur and there just wasn't much delta?		
36	Report & Methodolgy	12	Architectural Requirements - The department is adopting the BEES climate zones in our upcoming work supporting cost-effective school construction. BEES separates the state into four climate zones (see attached). Please revise to reference the four zones and consider zone 6 for a reduction, zone 7 as = Anchorage, and zones 8 & 9 to receive the 2.25% uplift. For clarity, include the BEES zones information as a Figure in the report at this section.		
37	Backup	12	Architectural Requirements - Please provide the assembly cost backup for each variation with the final deliverables.		
38	Report	12	Mechanical Requirements - Is there a specific factor associated with a mist system? If not, let's take that reference out. It seems the latest from the owner/designer community is that they are not getting the support out of the mist system manufacturers and have stopped using/specifiying them.		

No.	Document	Page/ Sheet	Comment	Response	Resolved
39	Report & Methodolgy	13	Mechanical Methods - The methodology used--HMS historical estimates--doesn't seem to be nearly as repeatable and scalable as any of the other methods. Was there no way to build geograpic variants from the model school based on the factors described in the prior paragraph (i.e., plumbing, fire protection, HVAC size, testing/commissioning, and training? If not, and this method needs to stand, please describe how you would plan to update this factor year to year.		
40	Backup	13	Please include the complete version of the Table 1 data set in the final deliverables.		
41	Report	13	Method - second paragraph add a final sentence, "All costs were normed to the year 2010 . . . " and explain that basis.		
42	Report	13	Method - last paragraph add at 2nd sentence " . . . in 2010 dollars."		
43	Report	13	Last paragraph - please move Figure 3 into the body of the report (see similar comments on other Figures).		
44	Report & Methodolgy	21	Figure 3 - Questions related to these Mechanical Factors: a. Is this the same Mechanical Factor (f_m) from Equation 5? b. Are all Mechanical Factors above Anchorage; none lower? c. Iditarod, Lower Yukon, Yupiit, Kuspuk seem to be significant outliers relative to other climate zone 8/9 locations. Should sampling analysis of any type be used to norm a range? d. Do you have no samples from LKSD; one of the most active school construction districts in the past 10 years? If not, we could provide some in the DEED CostFormat. e. In the end, I just don't think the mechanical factors are this big (up to an 11% total cost increase (81% mechanical cost increase!).		
45	Report & Methodolgy	14	Equation 5 - (see comment 22) Also, I can't determine what/who the example values were from.		
46	Report	14	Risk Factor Method - Additional development/description is needed. Suggest an italicized paragraph for each of the factors *Anticipated Bidders* and *Freight Risk* similar to other sections.		
47	Report & Methodolgy	14	Anticipated Bidders: a) how was the number of anticipated bidders determined, actual bid tabulations over X years, averaged? b) explain the other constants in the equation (i.e., 0.74 and 0.14 exponent).		
48	Report	14	Equation 6 - Add variable definitions under the equation per the normal format (see also comment 22).		
49	Report	15	Freight Risk: a) is the cost of freight the Anchorage cost of the geographically adjusted cost? b) Explain the other constants in the equation (i.e., why divide by 2, etc.)		
50	Report	15	Equation 7 - Add a definition to the variable CC within the equation 'picture' vs. a separate text line (see also comment 22).		

No.	Document	Page/ Sheet	Comment	Response	Resolved
51	Report & Methodolgy	15	First paragraph - What is the base factor of 103? I don't see this explained anywhere. The second sentence is an opinion/caution and not a description of the methodology. It should be moved to the Risk Factor paragraph on p.13.		
52	Report	15	Summary - suggest revising the first sentence to, " . . . HMS has developed a methodology to address seven major categories of construction costs that are impacted by geographic location. These methodologies have been applied to 67 school-district oriented regions of the state. These geographic regions are those established in both the current and previous editions of the Program Demand Cost Model back to the 10th Ed. in 2005. The scope of this study did not include analysis of the adequacy of the 67 regions."		
53	Report	15	Summary - paragraph two - suggest revising sentence one to, "Rapidly changing conditions throughout the state are impacting both design solutions, construction methods, and thereby construction costs."		
54	Report	17/18	Revise line spacing as needed to get the References to show on a single page.		
55	By-Year Comparison	n/a	DEED remains suspicious of the following changes to the 2008 factors: a. Bering Strait's and Nome's 10%, 17.1% total drop (compared to others in the region) b. Bristol Bay Borough's and Dillingham's increases. c. Chugach, Cordova, Yakutat, and Valdez's 30% increases. d. Klawock's 7%, 9.2% total drop (compared to Craig) e. Bethel's and Kotzebue's drop. f. Petersburg's 13%, 14.3% total increase (and Wrangell?) g. Sitka and SISD's drops (though small). h. Unalaska's 10%, 14.2% total drop i. LYSD's 13%, 21.2% total increase j. YKSD's 18% remote increases, and k. Yupiit's 3%, 5.3% total drop (though small). Additional analysis of each of these is needed prior to inclusion of these factors in the 18th Edition Cost Model.		
56	Reduced Areas	General	Guidance to reviewers indicated that cost variation within a current region of 5% or greater might warrant a new/separate geographic region. The inverse of that may also be true. If so, the following areas should be considered for elimination: a. Iditarod - Kuskokwim River (158.63) vs. Yukon River (158.37) – could these be combined to "Village on River" (if kept, these references should change to conform to others "Village on XX River") b. Lake & Pen - Bristol Bay (157.84) and Landlocked (158.13) are within .3 percentage points. c. NSBSD - only 2 percentage points between Villages and Atqasuk/Pt. Lay. Additional analysis of each of these is needed to determine why, in the past, there seemed to be an accepted geographic variance but under the new methodology, it was erased.		

No.	Document	Page/ Sheet	Comment	Response	Resolved
57	Added Areas	General	Feedback provided to DEED indicates the possible need for the following additonal geographic areas: a. Bering Strait - villages north of Nome, and offshore villages b. NW Arctic - villages without barge service c. LYSD - coastal villages, and inland/river villages d. Kenai - remote villages		

From: Kent Gamble
To: Mearig, Timothy C (EED); Alex Mannion
Subject: RE: 2018 Geographic Factors Update - Comments
Date: Friday, January 25, 2019 10:03:48 AM
Attachments: image002.jpg

Tim,

Thanks for this. I will be reviewing these comments over the next few days. Alex is currently out on vacation and I will need his input on a few, so those may need to wait until his return (approximately two weeks.). I think we can resolve most pretty quickly. I think it will be important to try to stay away from analyzing individual sites but rather to let the methodology stand on its own. If the methodology falls down for particular areas we will want to judge why and how to incorporate variables into the methodology that can provide for the cost drivers. Let us get all the easy ones resolved and then I think we will be able to focus our efforts on the few that remain where we may need to address methodology in order to provide the most effective tool possible. As you know this is a work in progress and we will continue to work with EED to resolve the outstanding issues and provide a tool that is both valuable and effective.

Best Regards

Kent Gamble
Principal
HMS Inc.
907.743.4407 Direct
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From: Mearig, Timothy C (EED) [mailto:tim.mearig@alaska.gov]
Sent: Friday, January 25, 2019 8:16 AM
To: Kent Gamble; Alex Mannion
Subject: 2018 Geographic Factors Update - Comments

Kent & Alex,

Thank you for providing a timely and complete final product on the 2018 Geographic Cost Factors Update project for review by the department and other interested parties. Attached is a consolidated set of review comments from that effort. The comments are range of micro to macro issues. As you review and respond to each of them, please indicate those items you believe can/will be addressed as part of the fixed-price agreement we had for this work (which has been paid in full) and which will require additional work by HMS.

Spoiler alert: In spite of our joint efforts to develop a rigorous, transparent, repeatable, and scalable

methodology, at the end of the review, I was not convinced that we have a new set of factors that accurately represents reality.

I look forward to your responses as a means of helping nail these factors down.

Regards,

Tim Mearig, Manager
FSS/Facilities
Education & Early Development
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THE STATE of ALASKA
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To: Bond Reimbursement & Grant Review Committee
From: School Facilities
Date: February 11, 2019

CIP APPLICATION BRIEFING

Protection of Structure / Life Safety / Code Deficiencies

Based on review of application during the FY2020 cycle using the new matrix, the department is recommending a few clarifications and additions.

Rater Guideline Bullets

Proposals to edit the bullets to include the following:

- A condition may only receive points in one scoring area.
- Age of building system is considered based on the application calendar year.
- Points for mixed-conditions can total more than the possible points. Combined points are weighted using a ratio of construction cost for correcting scored conditions to the total requested construction cost of the project.
- Revising the second-to-last bullet regarding building failure and unhouse students, which provided guidance on scoring above 35 points on the previous matrix, to be relevant to the new condition-specific matrix.

Matrix

Current Matrix provided for reference:

Site

Condition Issue	Pts
Vehicle Surfaces	3
Walking Surfaces	4
Drainage Issues	6
Playground Code	12
Wastewater Issues	15
Water Issues	16
Wastewater Failure	24
Water Failure	25

Structural

Condition Issue	Pts
Seismic - no restrictions	3
Foundation/Floor - no PE	4
Seismic - minimal restrictions	6
Upper Floor Structure - no PE	9
Vertical Structure - no PE	9
Roof Structure - no PE	10
Foundation/Floor - PE	15
Seismic - moderate restriction	15
Upper Floor Structure - PE	20
Vertical Structure - PE	20
Roof Structure - PE	24
Seismic/Gravity Partial Closure[1]	28
Seismic/Gravity Full Closure[1]	50

Roof/Envelope

Condition Issue	Pts
Siding Failure, age <20yr	2
Siding Finish	2
Roof, age >Warranty +5	3
Trim/Flashings, age >20yr	6
Roof, age Warranty +10	6
Siding Material, age >20yr	8
Roof Leaks - avg WO<3/yr^2	8
ASHRAE 90.1 Windows	8
ASHRAE 90.1 Insulation	10
Siding Failure, age <30yr	12
Siding, age >20yr	12
Windows/Doors, age >20yrs	12
Roof Leaks, avg WO >3/yr^2	15
Windows/Doors, age >30yr	15
Doors w/Egress issues	15
Roof Leaks affect space	25

Arch/Interior/ADA

Condition Issue	Pts
ADA - 1 issue	1
ADA - 2 issues	2
DEC Sanitation	2
ADA - 3 issues	3
Ceiling Finishes age >15yr	3
Wall Finishes age >15yr	3
ADA - 4 issues	4
Floor Finishes >15yr	4
Wall Finishes >20yr	6
Ceiling Finishes >20yr	7
Floor Finishes >20yr	8
Bldg Egress	10
Rated Assemblies	12
Codes + Arch	15

Mechanical

Condition Issue	Pts
Narrative, System age >20yr	2
Narrative, System age >30yr	4
Ventilation, WO <3/yr[2]	5
Plumbing, WO <3/yr[2]	6
Heating, WO <3/yr[2]	7
Ventilation, WO >3/yr[2]	9
Plumbing, WO >3/yr[2]	10
Heating, WO >3/yr[2]	11
Codes: Ventilation	12
Codes: Plumbing	12
Codes: Heating	13
Boilers, 1 of 2 Non-op	13
Codes + PE	15
HVAC age >40yr	15
Boilers, 2 of 3 Non-op	18
Mechanical Systems, WO >5/yr[2]	21
Heating Failure	25

Electrical

Condition Issue	Pts
Narrative, Lighting age >20yr	2
Narrative, Electrical age >30yr	4
Power, WO <3/yr[2]	4
Lighting, WO <3/yr[2]	4
Egress/EM lights, WO <3/yr[2]	5
Power, WO >3/yr[2]	7
Lighting, WO >3/yr[2]	7
Egress/EM lights, WO >3/yr[2]	8
Intercom Issues, WO >3/yr[2]	8
Codes, Lighting	10
Codes, Power	10
Intercom Failure	10
Codes + PE	13
Electrical, age >40yr	15
Light Levels, <50% of code	16
Electrical Systems, WO >5/yr[2]	21
Power Failure	25

Fire Alarm/Sprinkler

Condition Issue	Pts
Narrative, Fire Alarm age >10yr	2
Narrative, Sprinkler >30yr	2
Heads Failing, age >30yr	5
Non-addressable FA	6
FA/Sprinkler, WO >1/yr[2]	8
Heads Failing, age >40yr	10
FA/Sprinkler, WO >3/yr[2]	15
Fire Alarm Non-op, <3 floors	17
FA/Sprinkler, WO >5/yr[2]	20
Fire Alarm Non-op, >3 floors	25
Sprinkler Non-op	30

UST/AST/HazMat

Condition Issue	Pts
HazMat (all) Low Exposures	3
Narrative, UST age >30yr	2
Narrative, AST age >40yr	5
UST/AST Leak	7
USCG/40 CFR Cite	10
HazMat (all) Mod Exposures	10
HazMat (all) High Exposures	22

Definitions:

PE = documented by a Professional Engineer

No PE = not documented by a Professional Engineer

WO = Work Orders provided w/ appln

Notes:

[1] If district does not qualify for space, points limited to 15.

[2] Average of prior 3 years, provide work orders. See application instructions.

Recommend updating the matrix for the following conditions:

Site FY20 Condition	FY20 Pts	Proposed FY21 Condition	FY21 Pts
Walking Surfaces	4	Walkways and Surfaces	4

Structural – no changes

Roof/Envelope FY20 Condition	FY20 Pts	Proposed FY21 Condition	FY21 Pts
ASHRAE 90.1 Windows	8	ASHRAE 90.1 Windows[4] Add note 4: Provide existing R-value or code violation of system	8
ASHRAE 90.1 Insulation	10	ASHRAE 90.1 Insulation[4] Add note 4: Provide existing R-value or code violation of system	10
Siding, age >20yr	12	Siding, age >30yr	12

Arch/Interior/ADA FY20 Condition	FY20 Pts	Proposed FY21 Condition	FY21 Pts
Ceiling Finishes age >15yr	3	Ceiling Finishes age >25yr	3
Wall Finishes age >15yr	3	Wall Finishes age >25yr	3
Floor Finishes >15yr	4	Floor Finishes >15yr	4
Ceiling Finishes age >20yr	6	Ceiling Finishes age >30yr	6
Wall Finishes age >20yr	7	Wall Finishes age >30yr	7
Codes + Arch	15	Codes + Arch (each system)	+3

Mechanical FY20 Condition	FY20 Pts	Proposed FY21 Condition	FY21 Pts
[add new]		DDC Deficiency	3
[add new]		Pneumatic Controls	8
Codes + PE	15	Codes + PE (each system)	+3

Electrical FY20 Condition	FY20 Pts	Proposed FY21 Condition	FY21 Pts
[add new]		Back-up Generator In-operable	5
Codes + PE	13	Codes + PE (each system)	+3

Fire Alarm/Sprinkler FY20 Condition	FY20 Pts	Proposed FY21 Condition	FY21 Pts
[add new]		Sprinkler Coverage Gaps	5

UST/AST/HazMat FY20 Condition	FY20 Pts	Proposed FY21 Condition	FY21 Pts
[add new]		Sewage Lagoon Failure/Exposure	5

Evaluation of Prototype Design

See the separate briefing paper on prototypes for background, discussion, and other recommendations.

Statutory language changes to AS 14.11.013 (department review of grant applications) necessitate a need to include a scoring element for: 1) the use previously used design plans/building systems, and 2) a project's consideration of regionally based model school standards.

> (a) With regard to projects for which grants are requested under AS 14.11.011, the department shall . . .
>
> (4) encourage each school district to use previously approved school construction design plans and building systems if the use will result in cost savings for the project;
>
> (5) consider the regionally based model school construction standards developed under AS 14.11.017(d).
>
> (b) In preparing the construction grant schedule, the department shall establish priorities among projects for which grants are requested and shall award school construction grants in the order of priority established. In establishing priorities, **the department shall evaluate at least the following factors, without establishing an absolute priority for any one factor**:
>
> (1) emergency requirements;
>
> (2) priorities assigned by the district to the projects requested;
>
> (3) new local elementary and secondary programs;
>
> (4) existing regional, community, and school facilities, and their condition; this paragraph does not include administrative facilities;
>
> (5) the amount of district operating funds expended for maintenance;
>
> (6) other options that would reduce or eliminate the need for the request;
>
> **(7) the district's use of previously approved school construction design plans and building systems if the use will result in cost savings for the project; and**
>
> **(8) consideration of regionally based model school construction standards under AS 14.11.017(d).**

Recommend adding one or more questions to Section 6 – Planning and Design requesting information regarding the availability/use of a prior approved design plan (with an evaluation of the cost savings), and one or more questions in Section 3 or Section 6 requesting information on how model school standards were considered. Provide supporting instructions.

Note: The scoring listed in these examples is for illustration purpose only and is not a recommendation. Recommend scoring will need to be developed by the committee. Example questions:

6x. Use of prior school design (0 or 20 points)

1. Is the district proposing to use a previously approved design for this project? yes no
2. If yes, in additional to the space eligibility analysis in Section 5, are the design plans and a cost analysis that includes both design and construction costs demonstrating how the use will result in cost savings for the project attached?

6x. Use of prior building system design (0 or 20 points)

1. Is the district proposing to use one or more previously approved building system designs for this project? yes no
2. If yes, provide a narrative on how the use of the building system(s) would meet the needs of the proposed project and will result in a cost savings for the project.

Once model school construction standards are adopted, the something like the following question would be added to the application (not proposed for FY2021 CIP cycle):

3x. Consideration of Model School Construction Standards (0 or 20 points)

1. Have model school construction standards been considered for incorporation into the project? yes no
2. If yes, provide a narrative on which model school standards are planned or have been incorporated into the project.

Regulation Changes

On February 4, 2019 the State Board of Education and Early Development approved two packages of regulation changes relating to school facility planning and construction on commissioning of school facilities. The following table identifies regulation changes affecting the CIP application and support materials, with proposed edits:

Amended 4 AAC 31	**Regulation Change or Requirement**	**Proposed Edits to CIP Application & Support Materials**
.013(a)(2)(B)	Adds regular evaluation of the effectiveness and need for commissioning existing buildings to a district energy management plan.	*Instructions*: amend Q.9e to include district process for reviewing effectiveness and need for commissioning of existing buildings. *Guidelines for Raters*: add bullet for assessing district evaluation of commissioning of existing buildings.
.016(i)(b)	Allows charter school enrollment to add to unhoused when housed in a leased facility if the lease terminates within two years of the application.	*Instructions*: amend Q.5f to specify that a copy of the terminating lease be included as part of the ADM projection justification.
.021(e)	Allows districts to submit a re-use of scores request for 'completed projects' for five cycles.	*Application* and *Instructions*: amend "Preparing" section, to include guidance on reuse of scores for additional years.
.900(21)	Increases grant minimum total project from $25,000 to $50,000	*Instructions*: updated Appendix A Category C and D definitions and Appendix E "Major Maintenance" definition.

State of Alaska

Department of Education & Early Development
Bond Reimbursement & Grant Review Committee

By: School Facilities

Phone: 465-6906

For: Bond Reimbursement & Grant Review Committee

Date: February 11, 2019

File: G:\SF Facilities\BR_GRCom\Dept Staff Briefings\2019-02-21 Dept Briefing _RFPs.docx

Subject: Update on School Construction Standards Request for Proposals

P R O C U R E M E N T U P D A T E

Cost Model Enhancement

The department sought a vendor to enhance the DEED Cost Model for more detailed cost estimating and possible future use as a cost control tool. In order to meet this objective, several sections of the current cost model need additional unit pricing on typical systems and components. The work will analyze shortfalls, identify possible additional cost elements, and develop the detailed costs for those elements within the model. The final deliverable will be revised DEED Cost Model electronic files with the enhanced cost elements, plus detailed back up. These are anticipated to be incorporated into the 18th Edition.

Budget: Not to exceed $65,000

Schedule & Tasks

- **Task 1**
  A written assessment of desired work items and recommendations for any changes and refinements
  Deadline: NTP +14 days
  After reviewing the Demand Cost Model Desired Enhancements document, provide an assessment of opportunity and options for achieving the added elements. Meet with the department's project team to discuss and finalize cost elements and scope.
- **Task 2**
  Updated DEED Cost Model files showing the structure of the updated model.
  Deadline: April 1, 2019
  Based on review comments, develop the structure of the cost elements and their support (unit pricing is not part of this task). The DEED project team will provide review comments to these drafts within 5 work days.
- **Task 3**
  Updated DEED Cost Model files with structure and pricing elements complete
  Deadline: April 26, 2019
  Based on review comments, complete the revised/expanded structure and complete all unit pricing.

Update

The request for proposal (RFP) for the cost model enhancements was issued on January 22nd and the department received one response from HMS, Inc. As of this writing, HMS, Inc. is preparing their cost proposal for review.

School Construction Design Ratios

The Bond Review & Grant Committee of the Division of School Finance and Facilities of the Alaska Department of Education and Early Development has recommended the development of design ratios to establish efficiency parameters for cost effective school construction. In order to meet this objective, analysis is needed on when and how a defined set of four ratios will impact both construction costs and operating costs. The department sought a qualified offeror to complete this project. The project will provide energy modeling based on varying ratios and, using appropriate climate and cost data, identify possible ranges for acceptable ratios. The modeling results will be used to develop guidelines related to the ratios and locations in the review of new and renovated facility plans. The final deliverable will be a report with recommendations.

Budget: $60,000

Schedule & Tasks

- **Task 1**
  Kickoff Meeting – Conduct a project kickoff meeting to present and refine the project's methodology, parameters, and data needs. Provide Scoping Report prior to beginning modeling, containing a list of modeling details, settings and assumptions to be used in the modeling program. DEED will review and comment.
  Deadline: Date of Award +14 days
- **Task 2**
  Pre-modeling Meeting – After DEED review of the Scoping Report, conduct a confirmation meeting for final conceptual designs and proposed building assemblies.
- **Task 3**
  Draft Report – 30 days prior to the scheduled date of the Final Report, the consultant will provide a Draft Report for review by DEED.
  Deadline: May 3, 2019
- **Task 4**
  Final Report – The consultant will produce a Final Report which contains energy use comparison for each specific ratio, four ratio options and in all four climate zones. Within each ratio comparison apply cost to each of the results based on current year energy and fuel costs for each location.
  Deadline: June 3, 2019

Update

The RFP for design ratio energy modeling and construction estimates was issued on January 23rd and received two proposals, one from ECI Alaska and one from HMS, Inc. Both teams gave strong proposals and after ratings were performed by three persons, HMS, Inc. was chosen to perform the work with Coffman Engineers as key sub-consultant. As of this writing HMS, Inc. is preparing their cost proposal for review.

Department of Education & Early Development
Division of Finance & Support Services/Facilities

Work Topics for the BR & GR Committee

As Of: ~~December 12, 2018~~February 21, 2018

BR&GR 2019-2020 Work Items	Responsibility	Due Date
1. CIP Grant Priority Review – [(b)(1)]		
1.1. FY20 MM & SC Grant Fund Final Lists (4 AAC 31.022(a)(2)(B))	Committee	Mar 2019
1.2. FY20 MM & SC Grant Fund Initial List	Committee	Dec 2018
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. Geographic Cost Adjustments		Aug-Jan
3.1.1.1. Prepare Statement Of Services	Dept	Aug 2018
3.1.1.2. Solicit, Award And Manage Contract	Dept	Dec 2018
3.1.1.3. Review Public Comment	Dept	Feb 2019
3.1.2. Site Work + Major Maintenance Line Items		Oct 18-Mar 19
3.1.2.1. Prepare Statement Of Services	Subcommittee	Oct 2018
3.1.2.2. Solicit, Award, Manage Contract	Dept	Apr 2019
3.1.3. Cost Model As Cost Control Tool		May 18-Dec 19
3.1.3.1. Analyze, Recommend Cost Model As Cost Control	Subcommittee	May 2019
3.1.3.2. Draft Regulation Language For Cost Control Use	Subcommittee	May 2019
3.1.3.3. Review Draft Reg Language, Recommend To State Board	Commmittee	Jun 2019
3.1.3.4. Manage Regulation Development And Implementation	Dept	Dec 2019
3.1.4. Model School Analysis & Updates (Allowable Elements)		Apr-May 19
3.1.4.1. Establish Procedures For Updating The Model School	Subcommittee	Jan 2019
3.1.4.2. Implement Model School Updates W/Committee Resource	Committee	Apr 2019
3.1.4.3. Evaluate Success Of Committee-Driven Updates	Subcommittee	May 2019
3.1.4.4. Develop Statement Of Services For Consultant Update	Subcommittee	May 2019
3.1.4.5. Solicit, Award, And Manage Model School Update	Dept	Apr 2020
3.2. Cost Standards		
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
3.3.1.1. SBOE Action on Regulation	Dept	Feb 2019
3.3.2. Commissioning Agent Qualifications	Committee	2018
3.3.2.1. SBOE Action on Regulation	Dept	Feb 2019
3.3.3. System Requirements for Commissioning	Committee	2018
3.3.3.1. SBOE Action on Regulation	Dept	Feb 2019
3.4. Model School Building Systems Standards		
3.4.1. State Building Systems Standards		Mar 19- Dec 20
3.4.1.1. Complete CostFormat Outline of System Standards	Dept	Mar 2019
3.4.1.2. Review Outline Model School System Standards	Committee	Apr 2019
3.4.1.3. Develop Statement Of Services For Feasibility Analysis	Subcommittee	May 2019
3.4.1.4. Solicit, Award, Manage Feasibility & Cost/Benefit Analysis	Dept	Nov 2019
3.4.1.5. Review Feasibility Report On Comprehensive Standards	Committee	Dec 2019
3.4.1.6. Solicit, Award, Manage Final Standards Development	Dept	Jun 2020
3.4.1.7. Implement System Standards Via Regulation As Needed	Dept	Dec 2020
~~3.4.1.7.~~3.4.1.8. Coordinate with A4LE to maintain model school standards		Biennially
3.4.2. School District Building Systems	Dept	TBD
3.5. Design Ratios		
3.5.1. Climate Zones		Aug-Nov 18
3.5.1.1. Confirm Availability of BEES for use in Design Ratios	Subcommittee	Aug 2018
3.5.1.2. Compare use of BEES vs. ASHRAE; are regs needed	Subcommittee	Sep 2018

BR&GR 2018-2019 Work Items	Responsibility	Due Date
3.5.1.3. Recommend Regulation To State Board	Committee	Jun 2019
3.5.1.4. Manage Regulation Development And Implementation	Dept	Dec 2019
3.5.2. Baseline Design Ratios [(O:EW), (FPA:GSF), (V:NSF), and (V:ES)]		Sep 18-Dec 19
3.5.2.1. Prepare Statement Of Services For Energy Modeling	Subcommittee	Nov 2018
3.5.2.2. Compare Existing School Ratios And Energy Use	Subcommittee	Jan 2019
3.5.2.3. Solicit, Award, Manage Energy/Cost Analysis	Dept	Jun 2019
3.5.2.4. Manage Regulation Development And Implementation	Dept	Sep-Dec 2019
4. Prototypical Design Analysis – [(b)(4)]		
4.1. Seek Peer Consensus on Reuse of School Plans and Systems		
4.1.1. Develop and Schedule AEC Peer Workshop on Reuse	Committee	TBD
4.1.2. Update Aug 4, 2004 Committee Position Paper	Committee	TBD
4.2. Develop CIP Application Response to Reuse of School Plans/Systems		
4.2.1. Draft Criteria to Reward Reuse of School Plans/Systems	Dept	Feb 2019
Approve Criteria to Reward Reuse of School Plans/Systems	Committee	Apr 2019
4.2.2. Draft Criteria to Evaluate Reuse of School Plans/Systems	Dept	Feb 2019
Approve Criteria to Evaluate Reuse of School Plans/Systems	Committee	Apr 2019
4.2.3. Draft Criteria to Require Reuse of School Plans/Systems	Dept	Feb 2019
Draft Criteria to Require Reuse of School Plans/Systems	Committee	Apr 2019
4.3. Codify Regulations As Needed for Reuse of Plans/Systems Policy		
4.3.1. Make Recommendations to State Board on Prototypes	Committee	July 2019
4.3.2. Manage Regulation Development and Implementation	Dept	Sep 2019
5. CIP Grant Application & Ranking – [(b)(5) & (6)]		
5.1. FY21 CIP Draft Application & Instructions	Dept	Apr 2019
5.1.1. Facility Condition Survey Minimum Standards	Dept	Mar 2019
5.1.2. Reuse of School Plans (See item 4.2)		
5.1.3. Emergency Rater Scoring Matrix	Dept	TBD
5.1.4. Priority Weighting Factors Review	Dept	TBD
5.2. FY21 CIP Final Application & Instructions	Committee	Apr 2019
5.3. FY21 CIP Briefing – Issues and Clarifications	Dept	Dec 2019
6. CIP Approval Process Recommendations – [(b)(7)]		
6.1. Publication Updates		
6.1.1. Program Demand Cost Model for Alaskan Schools	Dept	Annually, ~~Apr~~May
6.1.2. Alaska School Facilities Preventive Maintenance Handbook Final	Dept	Jun 2019
Alaska School Facilities Preventive Maintenance Handbook Final	Committee	Jul 2019
6.1.3. Swimming Pool Guidelines - Initial	Dept	Dec 2018
Swimming Pool Guidelines - Final	Committee	Apr 2019
6.1.4. Handbook to Writing Educational Specifications- Initial	Dept	Feb 2019
Handbook to Writing Educational Specifications - Final	Committee	April 2019
6.1.5. Guide for School Facility Condition Surveys - Initial	Dept	~~Oct~~ Aug 2019
Guide for School Facility Condition Surveys - Final	Committee	Dec 2019
6.2. New Publications		
6.3. Regulations		
6.3.1. Cost Model as Cost Control Tool (see item 3.1.3)	Dept (w/Cmte)	
6.3.1.1. Draft Regulation	Dept (w/Cmte)	Jun 2019
6.3.1.2. SBOE Public Comment on Regulation	Dept	Sep 2019
6.3.1.3. Review Public Comments from SBOE Comment Period	Committee	Nov 2019
6.4. Baseline Design Ratios (see item 3.5.2.4)	Dept (w/Cmte)	
6.4.1.1. Draft Regulation	Dept (w/Cmte)	Sep 2019
6.4.1.2. SBOE Public Comment on Regulation	Dept	Dec 2019
6.4.1.3. Review Public Comments from SBOE Comment Period	Committee	Jan 2020
6.4.2. Reuse of School Plans and Systems (see item 4.3)	Dept (w/Cmte)	
6.4.2.1. Draft Regulation	Dept (w/Cmte)	Sep 2020
6.4.2.2. SBOE Public Comment on Regulation	Dept	Dec 2020
~~6.3.1.1.~~6.4.2.3. Review Public Comments from SBOE Comment Period	Committee	Jan 2021

BR&GR 2018-2019 Work Items	Responsibility	Due Date
7. Energy Efficiency Standards – [(b)(8)]		
7.1. ASHRAE 90.1		
7.1.1. DEED Checklist		Jan – Jun 19
7.1.1.1. Develop DEED Specific Review Checklist	Dept	Feb 2019
7.1.1.2. Review Checklist for Public Comment	Committee	Feb 2019
7.1.1.3. Review Public Comment/Finalize Checklist	Dept (w/Cmte)	Apr 2019
7.1.1.4. Add Appendix to Project Admin Handbook?	Dept	Jun 2019
7.1.2. Standards Updates		
7.1.2.1. Evaluate ASHRAE 90.1-2013 for adoption	Dept	Apr 2019
7.1.2.2. Draft Regulations, if warranted	Dept (w/Cmte)	Sep 2019
7.1.2.3. Review Public Comment from SBOE Comment Period	Committee	Jan 2020

Projected Meeting Dates

February 21, 2019 (Teleconference), 2:00p – 4:00p
April 10-11 OR 17-18, 2019 (~~TBD~~Juneau) ~~(TBD)~~, CIP Application
July 18, 2019 (Teleconference), 2:00 – 4:00p
September 5, 2019 (Teleconference), 2:00 – 4:00p
December 4, 2019 (Anchorage), Full day, CIP

Swimming Pool Guidelines for Educational Facilities

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ACKNOWLEDGEMENTS

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Originally published in 1983 by the State of Alaska, Department of Education as *Water Safety Facilities and State Financial Aid*. Published in February 1985 and in 1997 as *Swimming Pool Guidelines*.

Table of Contents

Introduction

Purpose

These guidelines have been developed to give assistance and direction to Alaska school districts in planning for school swimming pools, and to provide the department with a basis for review of applications submitted by school district for state participation in funding of pool facilities for educational purposed in Alaska. They ~~are based upon~~ direction for development of these guidelines comes from statute [AS 14.11.013(d) and 14.11.100 (h)], which provides for swimming pools as an eligible project cost in projects approved for state aid under AS 14.11.

~~This e~~Eligibility for state aid for swimming pools from statutory grant funds through **AS 14.11.011 Grant applications**, is first subject to limitations in general space eligibility established under 4 AAC 31.020. After general space eligibility is determined, the specific provisions in this guide for swimming pool facilities for school use can be applied. Eligibility for state aid for swimming pools through debt reimbursement is governed by the provisions in **AS 14.11.100 State aid for costs of school construction debt**. To the extent that state aid under AS 14.11.100 requires a recipient entity to meet space eligibility determinations under 4 AAC 31.020, those provisions will also apply to space related to swimming pool facilities for school use. If the provisions of AS 14.11.100 provide for state aid without regard to space eligibility, the specific provisions in this guide for swimming pool space eligibility will be applied, ~~Secondly, t~~This guideline ~~implements~~ identifies standards for swimming pool size based on the ~~planned~~ documented educational program and student population receiving programed instruction. Thus, these guidelines are intended to help Alaska school districts determine what portion of swimming pool space is eligible for State funding as determined by the commissioner.

Common Issues

Evaluating a school district's eligibility for swimming pools space is often challenging. Educational programs related to pool facilities varies between districts. Consensus standards are not available which index those programs to exact amounts of either pool surface or building square footage. More often than not, pool facilities house a combination of school and non-school uses. Those use arrangements must be documented and may factor into eligibility determinations. In response to statutory requirements, certain features typically found in full-service pool facilities are not eligible for state participation. An understanding of these issues, up front, will help districts prepare requests for school swimming pools, and will streamline the eligibility determination process.

Eligible Uses and Curriculum

Swimming pool facilities are expensive both to construct and to operate. State participation in these costly facilities should be guided by the essential importance of the proposed uses and curriculum. School districts have freedom to develop a set of curriculum that meets all of their local objectives—even considering community uses. However, state participation will be

targeted toward learn-to-swim programs. Specific criteria regarding eligible uses and student populations are covered in more detail in the section, *Allowable Pool Size*.

Joint-use Facilities

Understanding a pool facility's use and management by non-district entities and non-school programs is essential. In keeping with statutory requirements, the department has a responsibility to restrict the funding of recreational space. Under adopted regulation, the department must calculate and apportion costs for operations, maintenance, and capital renewal among sharing entities. In order to meet this obligation, information such as the following is needed from those with operational responsibility for the pool facility:

- Facilities that are not owned, or under the direct control of the school district must provide evidence of a joint use agreement with the owner that identifies the responsibilities of each party with respect to operations, maintenance, and capital renewal, each of which must meet the requirements of AS 14.11.011(4), over the life of the facility.
- Hours of use dedicated to the school district's instructional program are needed. If evidence of sole use for the district's K-12 program is not provided, state participation may be prorated based on the number of hours per school day in which K-12 school curriculum based education takes place in the facility, among other factors.

Ineligible Pool Elements

Statutes provide that allocations of state aid for school capital projects be restricted from single purpose recreational and sporting facilities and elements. Although this guide deals primarily determining a district's eligibility for swimming pool space, there are some necessary restrictions on certain pool features. The costs for facility features such as slides and saunas are required to be excluded prior to any calculations that use approved space to apportion eligible costs of state-aid.

Authority

Statutory Requirements

AS 14.11.013(d) provides that:

> The department shall reduce a project budget by the cost of those portions of a project design that the department determines (1) are for construction of student residential space, planetariums, hockey rinks, saunas, and other facilities for single purpose sporting or recreational uses that are not suitable for other activities; or (2) do not meet the criteria developed under AS 14.11.014(b) that are applicable to the project. This subsection does not apply to funding for swimming pools that meet criteria established by the department.

A.S. 14.11.100(h) requires the department to adopt standards on the size of swimming pools:

> "An allocation under (a)(4) or (5) of this section for school construction begun after July 1, 1982, shall be reduced by the amount of money used for the construction of residential space, hockey rinks, planetariums, saunas, and other facilities for single purpose sporting or recreational uses that are not suitable for other activities and by the money used for construction that exceeds the amount needed for construction of a facility of efficient design as determined by the department. An allocation under (a)(4) or (5) of this section may not be reduced by the amount of money used for construction of a small swimming pool, tank, or water storage facility used for water sports. However, ***an allocation shall be reduced by the difference between the amount of money used to construct a swimming pool that exceeds the standards adopted by the department and the amount of money that would have been used to construct a small swimming pool,****** tank, or water storage facility, as determined by the commissioner." [*emphasis added*]

Department of Education & Early Development Review

AS 14.07.020(a)(11) provides that the department shall: "

> review plans for construction of new public elementary and secondary schools and for additions to and major renovations of existing public elementary and secondary schools and, in accordance with regulations adopted by the department, determine and approve the extend of eligibility for state aid of a school construction or major maintenance project; for the purposes of this paragraph, "plans" include educational specifications, schematic designs and final contract documents;" . . .

Plans for a swimming pool are to be submitted to the Facilities section of the Alaska Department of Education & Early Development as part of the standard review documents required by statute and regulation. At the educational specifications stage, plans must contain, 1) a detailed description of the planned pool program with anticipated uses, and 2) detailed information about numbers of students to be involved in the various programs, and 3) the anticipated pool size, the support spaces needed and basic technical information on materials and systems desired. Subsequent submittals should provide drawings and details of the proposed swimming pool facility.

4 AAC 31.021(c)—see similar language at 4 AAC 31.060(j) for debt reimbursement—requires that:

> A grant application that includes new construction, addition of space, or replacement of space must include verification that
>
> (1) the enrollment of the attendance area will reach the design capacity of existing school facilities within two years.
>
> (2) the situation cannot be relieved by adjusting the boundaries of service area and transporting the children to nearby schools;
>
> (3) as demonstrated by commonly accepted demographic techniques resulting in population projections accepted as reasonable by the department, the proposed facility will reach and sustain design capacity within five years after the anticipated date of occupancy;

Educational specifications for the requested pool facility must include a projection of student population, in accordance with accepted methods, to a point of five years beyond the anticipated occupancy date of the facility.

4 AAC 31.060(c) provides that:

> A school facility for which state aid is sought under AS 14.11.011 or 14.11.100 may be built jointly with municipal and state offices, health clinics, community libraries, and other spaces if approved by the commissioner as to compatibility and separation of funds. The commissioner has final authority to determine the proration of space and cost in a jointly built project.

Educational specifications for the requested pool facility must include a projection of student population, in accordance with accepted methods, to a point of five years beyond the anticipated occupancy date of the facility.

For additional information on the data required for a determination of eligibility for state aid, see the section in this publication **Method for Determining Allowable Size**.

Factors in Determining Pool ~~Size~~Design

Any swimming facility ~~sponsored~~ submitted for state aid by a public school district must be designed foremost for instructional purposes. Such design allows the teaching of basic swimming strokes, general water safety, boat safety, and lifesaving. ~~Additionally, a~~

A pool design enabling the teaching and practicing of diving may be desirable, as may be a design that supports the opportunity for recreational swimming or competitive swimming, both valuable by-products of an instructional swimming program. These, and other uses should be considered in the overall facility design, however, no additional space will be assigned for these functions.

Also not to be overlooked is the possibility for the pool facility to act as a water supply for a fire suppression system. However, State funding is available only in support of the instructional program (K-12) or for a facility serving as an emergency water storage facility.

Pool ~~size~~design, therefore, will be determined by the district primarily by three factors: population, the instructional program, and any desired additional uses. The ~~the~~ total program space requirements will be a combination of these factors. These factors will also need to be balanced with the available funding—both capital and operating—for the construction, capital renewal, and ~~the~~ operations and maintenance costs for the facility.

Programs to be Offered

Pool instructional space is determined by the classes, ~~basic~~ mandatory and elective, to be offered and the student population to be served. In addition to basic swimming instruction, courses that are eligible for inclusion in an instructional program for K-12 students include the following: ~~may be included in a well-rounded program are described as follows:~~

- ~~Competitive Swimming to foster elements of teamwork, character and skills among students.~~

- Boat safety/Maritime: ~~instruction~~ Instruction for students ~~and for interested community members~~ in . ~~S~~such topics as overloading, personal flotation devices, maneuvering in rough water, high speed turning, capsizing, explosion and/or fire, and falling overboard ~~can all be discussed during water safety courses~~. ~~Many~~ While many of these instructional areas will require small boats and larger bodies of water, some of these topics can ~~also~~ be ~~demonstrated through the use of a small boat~~taught and the necessary skills developed in a pool facility. ~~Boating safety will be a part of some courses.~~ In some of this coursework, t~~T~~he ability to turn a small boat, canoe or kayak end-for-end is important. ~~P~~Ideally, pool width should be twice that of the boat length.

- Drown-proofing/Survival: Formal drown-proofing is based on a~~A~~ system of self-rescue developed at Georgia Institute of Technology, particularly aimed at those who feel they will never learn to swim a regular stroke, but want to be able to save themselves in the event of an emergency. When combined with survival elements, lessons focus on personal water safety, use of personal flotation devices (PFDs), safe rescues of others, cold water survival techniques, hypothermia and ice safety.

If the pool will be available for community use in off-school hours, additional activities to be considered in planning are:

- Diving instruction for the one-meter board.
- Synchronized swimming training: For those ~~boys and girls~~individuals who are interested in the exacting and artistic demands that this activity has to offer.
- Scuba training: Almost every region of the United States has pools offering this training to the general public.
- Water safety courses to develop and train instructors for the American Red Cross. These instructors qualify to teach lifesaving and to conduct water programs for all age groups.
- Water safety aide courses to develop and train young people in pool safety and the fundamentals of teaching swimming.
- Infant training: This is a specialized offering, given by an experienced swimming instructor. Many infants have been given an excellent start as swimmers. Such training reduces the fear associated with water and reduces the time a student needs to learn to swim.
- Adult swimming courses: These courses prove to be surprisingly poplar for their social as well as instructional benefits.
- Swim to stay fit programs for persons who want a relaxing activity which maintains body tone. Individualized activity is stressed in this program.
- Survival training for the general public: A large number of people are concerned with being able to get themselves out of difficult situations.
- Rescue squad training: Most rescue squads feel that they should be prepared to handle all emergencies. There are many areas having potential water hazards which are protected by such squads.
- General recreational swimming for the public: Family nights, mother-daughter, father-son, and other combinations can provide a source of revenue to support pool operation.
- Water ballet training: For persons of all ages who enjoy group training and the artistic results that an exacting physical activity can produce. Water ballet allows for all ranges of talent.
- Fly and bait casting: Training practice can be provided.

Conceptualizing the Swimming Facility

- After the envisioned instructional program and other uses of the pool area have been determined, the complete swimming facility should be conceptualized.
- Adequate deck space for instruction must be provided. A minimum of 12 feet is recommended for this purpose.
- A minimum of 6 feet of deck space should be allowed on all other sides of the pool for safety. As many as 2/3 of the group will be out of the water at any one time.
- Equipment, office space, locker and shower rooms must be included and designed with a functional amount of space depending on population served.
- If diving is provided, ceilings should be at least 16 feet above the highest board surface. A one-meter board and 12 foot depth is the recommended minimum for diving. Diving programs are not allotted any additional space.
- Safety is of primary concern, a secure area for chemical storage should be provided, as well as a control station and first aid area. (For additional Health-Safety information see the Center for Disease Control website; www.cdc.gov/healthywater/swimming/aquatics-professionals/index.html)
- If the district desires to utilize the pool as a water storage facility for a fire suppression system, considerations for tying into the fire alarm system, providing backup power for pumps, water distribution, specifications for piping, sprinkler heads, etc. should be referred to a mechanical engineer or fire sprinkler design company. Some room for additional equipment may be required.
- Because of safety and health concerns, several agencies have regulatory authority covering a water safety facility. In addition to applicable uniform codes for building, mechanical, electrical, fire safety, etc., Districts must adhere to DOT/PF barrier free regulations and Department of Environmental Conservation health and safety regulations, including those covering swimming pools. (18 AAC 30).

The following figures contain typical elements related to pool features that support both eligible instructional programs and pool features for other uses.

Figure 1 - Lane Dimensions and Water Depths

This figure illustrates typical minimum ~~typical recommended~~ lane dimensions and water depths for learn-to-swim ~~each~~ instructional programs ~~offering.: Beginning, Advanced Beginning and Intermediate Swimming.~~ Illustrations are generally progressive from basic to more advanced programming. Requirements for diving instruction are also illustrated.

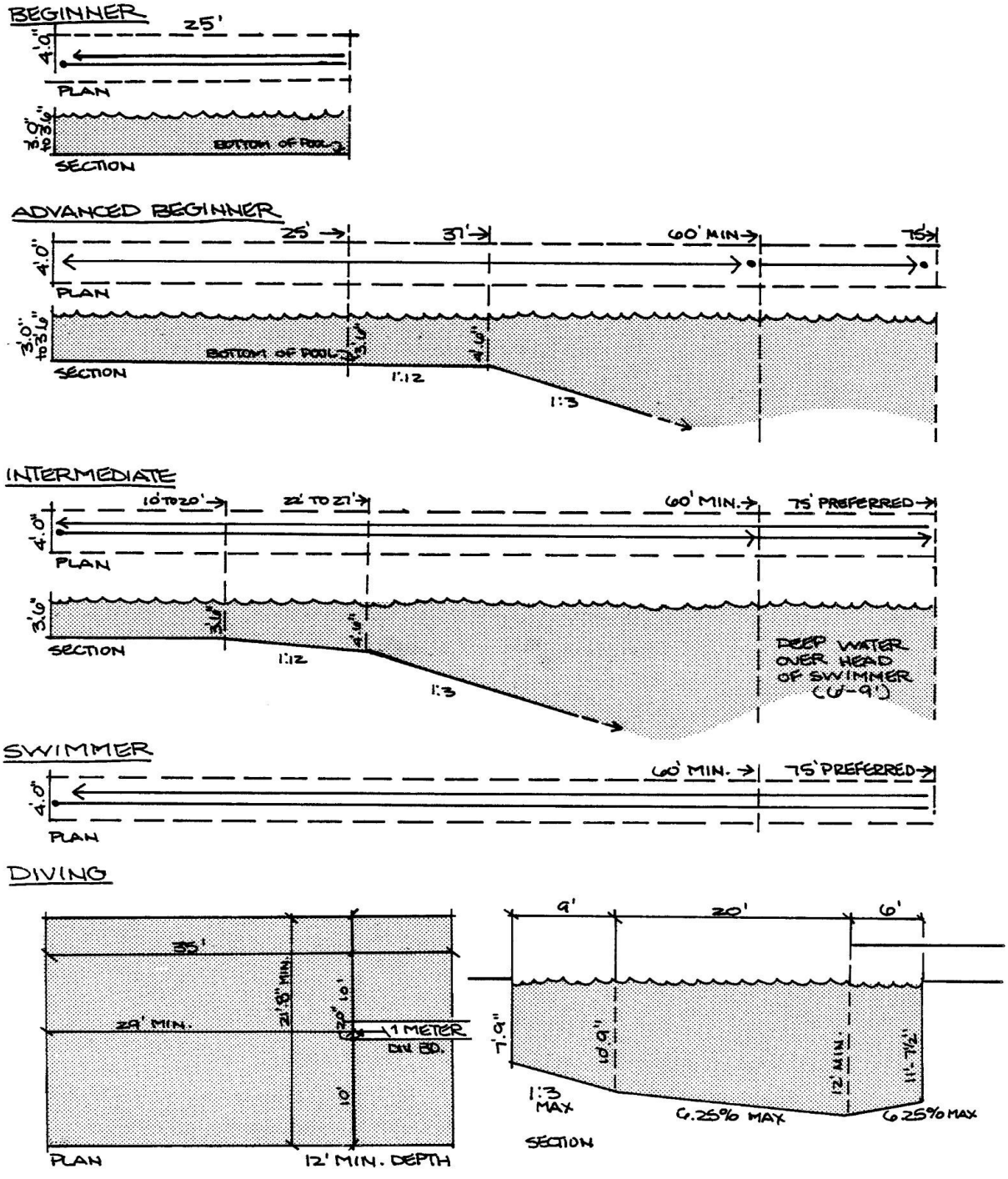


Figure 2 - Pool Layout

This figure illustrates one option for a p~~P~~ool design for combination Swimming/Diving program requirements. Others include Montreal and L-shaped layouts:

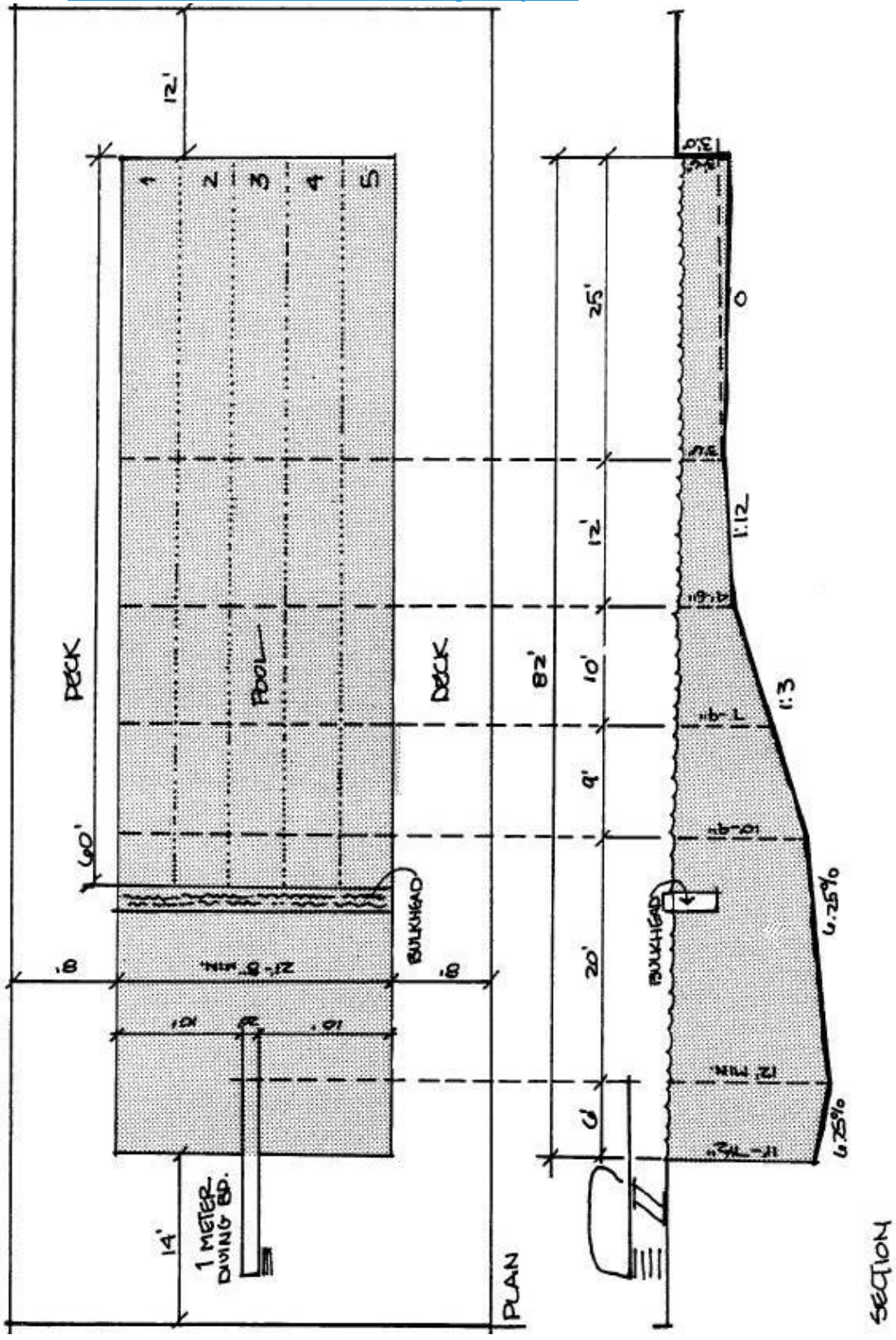
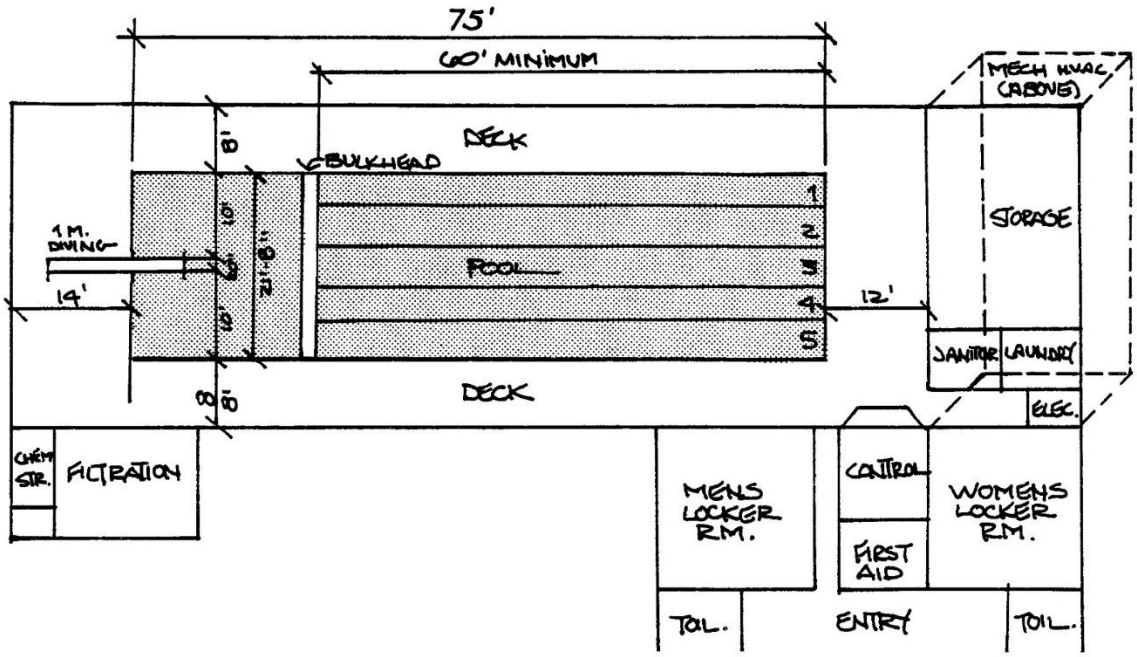


Figure 3 - Conceptual Layout



This figure ~~chart~~ shows a conceptual layout of a swimming pool facility using the eligible pool area shown in the Pool Size Table for an instructional program with between 201 -400 students.~~Instructional Pool (22' x 75') with a diving instruction area~~. For this ~~type~~ size of ~~facility~~pool, ~~approximately~~ 8,500 square feet (sf) ~~would be anticipated~~ are allowed for the total building area.

Pool	1,650 sf
Deck	2,890 sf
Control	120 sf
First Aid	100 sf
Locker Rooms	750 sf
Laundry	70 sf
Janitor	80 sf
Mechanical/HVAC @ 7%	560 sf
Filtration	280 sf
Chlorine	30 sf
Chemical Storage	60 sf
Electrical	80 sf
Structural - Deck Equipment	340 sf
Toilet	240 sf
Circulation/Entry/Exit	630 sf
Interior Walls @ 3%	230 sf
Planning Factor @ 5%	385 sf
Total Area	8,500 sf

Operations, Maintenance and Repair

A district developing a swimming facility must take into consideration the following cost factors in planning the facility and incorporating it into the district's operating budget:

1. Annual routine and preventive maintenance and repair.
2. Major maintenance and renewal.
3. Utilities
4. Possible increased costs for additional instructors/staff.
5. Community use of pool could be a source of income but will also increase maintenance, repair, and staff cost.
6. Possible increased expenses to transport students to and from the facility.
7. Increased insurance costs, however, the possibility should be explored as to the feasibility of using the pool as a water reservoir, which may reduce the cost of fire insurance.
8. Life cycle cost of the proposed facility.

Allowable Pool Size

General Philosophy

For funding programs where state-aid is dependent on space eligibility, t~~T~~he total educational square footage, including the swimming pool facility, housing the population to be served must be at or below the space allowed under 4 AAC 31.020. If space eligibility is determined, pool size may also be limited based on the number of students served in by eligible instructional programs.

For funding programs where state-aid is available without regard to space eligibility, pool size will be b~~B~~ased on an analysis of a district's instructional ~~needs~~ program and the resulting annual number of students receiving instruction in eligible programs. ~~and facility costs as discussed in the preceding chapter, a school district should select the smallest standard pool size from those listed in Chart 2 that would meet program goals and student population.~~

Eligible pool size and total building area will be selected from the Pool Size Table based on the approved number of students receiving instruction in eligible programs.

~~Assuming, however, that in addition to primary use for school instruction, the pool facility will also accommodate community use and possibly some interscholastic competitive and athletic event swimming, certain general recommendations can be made regarding pool sizes which the district may want to consider.~~

Populations Served

The district will need to analyze the following information for ~~program~~ a pool size determination. This information must also be provided to the Department of Education & Early Development:

Space Eligibility Determination

- Current district enrollment of the population to be served by the facility (K-12).
- Breakdown of enrollment by individual school and grade level.
- An enrollment projection for five years beyond the anticipated occupancy date by school and grade level.

Program Determination

A district developing an instructional plan must consider the following factors:

1. Type of ~~swimming~~ aquatics program~~,~~ (~~i.e~~e.g., ~~beginning swimming~~learn-to-swim, ~~advanced life saving~~ drown-proofing/survival, special needs student OT/PT, competition, etc.). For potential programs, see **Programs To Be Offered**, earlier this

publication, or refer to the latest published learn-to-swim guidance from the American~~and lifeguard training (see Instruction Programs and~~ Red Cross ~~recommended courses)~~. This publication does not limit district or community aquatics programs; it does designate whether participants in those programs are included in the eligible population used to calculated state-aid for school pool facilities.

2. ~~Amount of instruction for each course to meet minimum requirements (see Instructional programs and Red Cross requirements)~~Whether the instructional programs are classified as Mandatory or Elective under the definitions in this guideline.

3. ~~Maximum amount of water square footage per student for each course offered (see Chart 1).~~The following information for each instructional program:
   a Minimum hours (time) of instruction,
   b Number of students per class period,
   c Length of course, and
   d Number of class periods per day.

   This information is used to calculate the total number of students served by that program on an annual basis.

~~3. Total number of students to be served by the program and per class estimates.~~

~~4. Length of each course, i.e. half a semester or a semester. Note: courses may be separate or offered as part of physical education program.~~

~~5. Number of hours in school day.~~

~~6. Swimming instruction staffing pattern; assuming a normal school day of six hours, at least three must be mandatory swimming courses.~~

A sample Program Determination Worksheet is shown below. This type of tabular listing of programs and their elements is key to determining the number of students receiving programmed instruction per year for use in the Pool Size Table.

Program Determination Worksheet

Use the table below to document the instructional program.

Swimming Instructional Program Type	Mandatory or Elective	Minimum Hours Instruction	# of Students per Class Period	Length of Course Semester or ½ Semester	# of Class Periods per Day	Instructional Staffing	Total Students Served

Allowable Pool Size

~~Knowing what it must set aside for its basic program, the district can consider alternatives such as additional mandatory requirements, enlarging voluntary offerings, increasing usage to 6 periods per day to gain greatly expanded offerings with the same facility or, although not recommended, reducing the number of periods for which the instruction will be available.~~

~~Recommendations~~Stipulations & Conditions

- A district's documented educational program associated with swimming pool use must be a board-approved curriculum.
- A district must provide evidence of a learn-to-swim program substantially similar in instructional content to the latest published American Red Cross learn-to-swim program.
- Only learn-to-swim programs (instructional curriculum) are considered mandatory; all other instructional programs will be considered elective.
- The minimum threshold for a district to qualify for state aid for a swimming pool facility is 100 students receiving instruction in a mandatory program.
- When counting the number of students receiving programmed instruction in the course of a year, a maximum of 30 percent of that yearly total can be those in elective coursework.

Ineligible Pool Elements

The following items are not considered as elements of a school swimming pool. The cost of these items will be removed from a project prior to any allocation of state aid which is based on an eligible pool size determination:

- Recreation accessories including slides, sauna~~'~~s, ~~Jacuzzi tubs~~spas/hot tubs, whirlpools, and equipment that cannot be demonstrated to be integral to the instructional program;
- Timing systems including touch-pads, and other components;
- Non-swimming activities for the general public use;
- Locker rooms, offices, lobbies, etc. deemed in excess of those required for school district classes

Method for Determining Allowable Size

Step 1 – Document the district's instructional program and calculate the number of students served, annually, in each program.

Step 2 – Review the minimum qualification regarding number of students served by the program. If the program serves fewer than 100 students, the district is not eligible for state-aid for a pool facility.

Step 3 – For programs serving 100 or more students, calculate the annual number of students served in mandatory programs and those served in elective programs. If the number of students in elective programs is more than 30 percent of the combined total, reduce the number of eligible students to match that cap.

Allowable Pool Size

Step 4 – Using the Pool Size Table, find the corresponding bracket in column one *Students Receiving Programmed Instruction per Year* in which the districts eligible number of students receiving instruction fits. The *Maximum DEED Pool Surface Area* and *Maximum DEED Facility Square Feet* are shown ~~to~~on the right side of the table.~~The allowable size of the actual pool tank surface area is based on the district's analysis of current program needs, anticipated population and the amount of space required for the instructional program. Though a certain size may be allowable, the district may need to provide a smaller size due to anticipated operation and maintenance costs.~~

~~**Determine Size of Pool**~~

~~Review the information in the section **Factors in Determining Pool Size** and Figures 1 and 2, which illustrate pool layouts:~~

- ~~Determine the dimensions necessary to accommodate program needs based on the program determination above.~~
- ~~Select the smallest pool from Chart 2 - Summary of Standard Pool Sizes that will accommodate the combination of factors evaluated above.~~
- ~~Chart 2 shows the "Competition" pool as the largest available pool size for selection. This pool size (45' x 75') is the maximum size pool for which the Department of Education will contribute funding. If the program demands required a pool area larger than the "Competition" pool, the district should be prepared to identify additional sources of funding.~~

~~The work sheet on the following page may be used to determine appropriate size pool for a given program and student population to be served.~~

Allowable Pool Size

Pool Size Table

Use the table provided below to determine the allowable pool size based on the total number of students served by the approved instruction programs.

Students Receiving Programmed Instruction per Year	Instructional Staffing	# of Students per Class Period	~~Number~~ # of Class Periods per Day	Total Hours Instruction per Course	Allowable Pool Dimension~~s~~	Maximum DEED Pool Surface Area	Pool Facility Factor	Maximum DEED Facility SF
~~10-100~~	~~1~~	~~<10~~	~~<4~~	~~<100~~	~~15ft x 60ft~~	~~900sf~~	~~5.8~~	~~5220sf~~
100~~101~~ - 200	1	10	4	100	15ft x 75ft	1125sf	5.5	6,190sf
201 - 400	2	20	8	200	22ft x 75ft	1650sf	5.2	8,500sf
401 - 600	3	30	12	300	29ft x 75ft	2175sf	5.0	10,875sf
601 - 900	4	40	16	400	36ft x 75ft	2700sf	4.7	12,690sf
901 - 1200	5	50	20	500	43ft x 75ft	3225sf	4.5	14,510sf
1201 +	5+	50+	20+	500+	50ft x 75ft	3750sf	4.0	15,000sf

Notes:

1. Approximately 10 students per instructional staff
2. Each instructional staff can teach one level to 400 students/year
~~1.~~3. The Pool Facility Factor incorporates 6ft pool decks on three sides, 12ft deck on one long side, locker rooms, administrative office space, pool mechanical, and circulation factor

Swimming Pool Guideline Review Questions

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

- Should learn-to-swim programs be the baseline requirement for qualification of swimming pool space?
- Should there be a minimum number of students receiving approved curriculum (i.e., learn-to-swim) before any eligibility for school space is granted?
- Should the hours of use for the school program and the total hours of use of the facility be a factor for establishing a state interest?
- Should there be a list of specific programs that are approved and a corresponding list of programs that are not eligible but could be provided for in the design for use by others? (Previously competitive swimming, diving, synchronized swimming, and scuba seemed like eligible curriculum (ref. p. 4-5, 1997). This version excludes (ref. p.5-6).
- Should districts be able to establish any type of pool-focused program or curriculum and only be limited on how many students are allowed to be counted beyond mandatory learn-to-swim programs (ref. p.12-13)
- Should competitive swimming be included as an eligible instructional program if it is part of an AASA-approved program (i.e., no to swim clubs but yes to HS competition)?
- How does the department monitor requirements of AS 14.11 concerning maintenance when the management and operations of the pool is not the school district?
- Does the maintenance of non-school district managed pools figure into the districts eligibility?
- Should non-district participation be limited to entities who contribute to district budgets?