



Program Demand Cost Model for Alaskan Schools

Consultant

HMS, Inc.
4103 Minnesota Drive
Anchorage, Alaska

Editor

Sam Kito III, P.E.
Facilities Engineer
Alaska Department of Education
Juneau, Alaska

Acknowledgements

Thanks to the individuals at HMS, Inc. for their flexibility and professional advice on the 12th Edition Update Revised through the early 2012 construction season. Thanks also to the Bond Reimbursement and Grant Review Committee members who reviewed the publication in its final form and to users of previous editions for their suggestions for improvement.

Also thanks to previous DEED employees who have worked on developing and editing this document in past years.

This publication may not be reproduced for sale by individuals or entities other than the:

State of Alaska
Department of Education
Juneau, Alaska

The 12th Edition Update Revised of the Program Demand Cost Model, developed by HMS Inc., is a complete demand cost model for both new construction (or major additions) and renovation.

Prices and unit rates are based on March/April 2012 costs for materials, equipment, freight, and Title 36 labor rates. It should be noted that this is a method to develop a budget only and actual costs will vary. The Program Demand Cost Model will not be applicable for specific projects with developed design beyond concept level.

Opinions or estimates of probable construction costs used in developing the Program Demand Cost Model and escalation rate are prepared on the basis of HMS Inc.'s experience and qualifications and represent HMS Inc.'s judgment as a professional generally familiar with the industry. However, since HMS Inc. has no control over the cost of labor, materials, equipment or services furnished by others, over contractor's methods of determining prices, or over competitive bidding or market conditions, HMS Inc. cannot and does not guarantee that proposals, bids, or actual construction cost will not vary from HMS Inc.'s opinions or estimates of probable construction cost contained in this cost model study.

Acknowledgements (Continued)

Escalation has been estimated and included based on current understanding of the local construction industry and national effect on the price of commodities, such as oil and oil based products, and labor costs leveling over the next two years.

Material and equipment prices have been gathered from a number of sources that include Spenard Builders Supply, Anchorage Sand and Gravel Company, Inc., and Ace Tanks Anchorage. The Guide, Means Cost Data, and other information obtained through the practice of construction cost estimating.

Program Demand Cost Models: 1st Edition - May 1981; 2nd Edition - November 1983 (computerized in December 1984); 3rd Edition - August 1986; 4th Edition - August 1988; 5th Edition - June 1991; 6th Edition - July 1997; 7th Edition - November 1997, 8th Edition (7th Revised) - March 2000; 9th Edition - April 2001; 10th Edition - March 2005; 11th Edition – March 2007; 11th Edition Update – March 2008; 11th Edition Revised – April 2009; 12th Edition – April 2010, and 12th Edition Update – April 2011.

Table of Contents

Section	Page
Introduction	4
How to Use the Program Demand Cost Model	6
Getting Started	
Worksheet - Project Summary	
New School or Addition Projects	7
Worksheet - 1.00	
Worksheet - 2.00	
Worksheet - 3.00	
Worksheet - 4.00	
Worksheet - 5.00	
Worksheet - 6.00	
Worksheet - 7.00	
Worksheet - 8.00	
Worksheet - 9.00	
Renovation Projects	14
Worksheet - 11.00	
Worksheet - 12.00	
Worksheet - 13.00	
Worksheet - 14.00	
Worksheet - 15.00	
Worksheet - 16.00	
Completion of the Cost Model Estimate	29
Worksheet - General Summary	
Worksheet - Notes – Assumptions	
Saving and Printing	
Samples	30
Project Summary	
General Summary – New School or Addition	
General Summary – Renovation	
Notes – Assumptions	
Tables	37
Table No. 1 – Geographic Area Cost Factor	
Table No. 2a – Size Adjustment Chart	
Table No. 2b – Dollar Adjustment Factor	
Table No. 3 – Alaskan Construction Escalation Index	
Table No. 4 – DOE Instruction CIP Application, Appendix F	
Table No. 5 – Abbreviations	
Table No. 6 – Statement of Specifications	
Bibliography	48
Unit Costs Used In Development of Cost Demand Model	49

How to Use the Cost Model

The Program Demand Cost Model for Alaskan Schools (Cost Model) was originally developed for the State of Alaska, Department of Education in 1981; and has been used over the years with much success. Through the 6th Edition, it was revised periodically to keep unit costs current. The 6th and 7th Editions underwent significant modification of the Renovation module by shifting to a building systems based model to provide users a more versatile estimating tool. The 8th Edition provided detailed renovation cost data. In the 10th Edition further developed building systems and advanced low voltage electrical systems that better reflect those in use in a modern school. The 11th Edition reflects major cost changes experienced in the 2005/2006 period. The 11th Edition Update continues to reflect major cost changes and adds specific classroom technology. The 12th Edition was developed spring 2010 and updated spring 2011. This revision is to include changes in cost and labor rates that have occurred over the last twelve months.

The Cost Model is designed to address two types of construction projects: New Schools or Additions and Renovations. The renovation costs are itemized by building systems to allow the user to generate project specific renovation costs. This provides the renovation module the ability to address a wide variety of project scopes; from window replacements to complete interior tear out and remodel.

The revisions to the renovation section can generate good quality cost estimates but require that the user has an understanding of the building systems affected by the project and a rough idea of the quantity of work required to each building system. It is not as quick as summing the square footage of space to be renovated and applying a light, medium, or high renovation cost. However, properly applied it will generate a good quality, project specific cost estimate.

The Cost Model is to be used to establish a complete budget for a specific school construction project. The project construction budget can be utilized as a basis for legislative funding requests, local bond issues, or other forms of appropriation. It can be used to generate a conceptual estimate without going to the expense of producing architectural drawings or engineering reports or, as a means of assessing a consultant's estimate for its reasonableness.

It should be noted that the Cost Model is a tool to develop a construction project budget for projects with limited information or in the early stages of definition. It is not intended for projects beyond the conceptual design level or for projects where detailed estimates or contractor quotes are available.

Construction and Cost Trends

Over the last year 2011/12 the construction industry in Alaska has been working at reduced rate. The housing market is yet to pick-up so new starts on houses has been limited. The federal government has dramatically reduced spending on military projects, and the private sector has been quiet. Larger projects have been funded by the State of Alaska.

It has been observed that more bidders are after fewer projects, that will be a benefit to getting lower bids with greater competition, however, price and costs increases on materials, labor and transportation will not provide for lower bids.

Over these last twelve months, oil has maintained a high price level keeping the cost of freight high for the supply of all materials. Labor rates have maintained a steady increment but at a slower pace than over recent years.

Because of the increase in competition, it can be expected that profit margins will be lowered by the general contractors and some of the subcontractors; however, mechanical and electrical subcontractors will be kept busy so no change is expected in this sector of the industry.

Getting Started

The Cost Model is available from the Department of Education Education's web site at <http://www.eed.state.ak.us/Facilities/FacilitiesCIP.html>. The following documents are available on the site:

- [Cost Model: a spreadsheet for costing a new school or addition and renovation](#) - MS Excel 2010
- [Tables: Geographic Area Cost Factor; Size Adjustment Factor; Escalation Index; and EED, Appendix F](#) - PDF

To use the model, open the link, and save the file on your hard drive. The Cost Model workbook is composed of a series of worksheets that address different project costs. Worksheets 1.00 through 9.00 are for New Construction or Addition work and Worksheets 11.00 through 16.00 are for Renovation work.

Worksheet – Project Summary

The workbook should open to the *Project Summary* worksheet. This worksheet provides a single page summary of the project identification and the estimated project costs. Please refer to the Samples section for an example of the *Project Summary* worksheet. The cells with red text are to be used for entry of project specific information. The red text cells should be the only editable cells in the workbook. The tab key will move the cursor from editable cell to editable cell while skipping the locked cells. The cells containing estimated project costs are linked to other worksheets and no edits to these cells are required. Complete the project summary information, save the file, and proceed to the next worksheet. It is recommended that the file be saved at the completion of each worksheet.

New School or Addition Projects

Worksheet - 1.00

The next worksheet is titled 1.00. This worksheet contains square foot of floor area unit costs for various types of *Instructional Resource/Support Teaching Areas*. These space categories are similar to those in Appendix F of the CIP Application. Enter the square feet of floor area that is required in each of the space types. The *Other* space categories are available for required instructional spaces that are not specifically listed. Enter a descriptive title for the *Other* space on the worksheet by overwriting the red text cell entitled *Other*. Please provide additional information regarding the physical characteristics of the space and the basis for the estimated cost on the *Notes-Assumptions* worksheet.

Worksheet - 2.00

The next worksheet is titled 2.00. This worksheet contains square foot of floor area unit costs for various types of *General Support/Supplementary Areas*. These space categories are similar to those in Appendix F of the CIP Application. Enter the square feet of floor area that is required in each of the space types. The *Other* space categories are available for required general support spaces that are not listed. Enter a descriptive title for the *Other* space on the worksheet by overwriting the red text cell entitled *Other*. Please provide additional information regarding the physical characteristics of the space and the basis for the estimated cost on the *Notes-Assumptions* worksheet.

Worksheet - 3.00

The next worksheet is titled 3.00. This worksheet contains unit costs for some *Special Requirements* that are often included in the construction of a new school or addition. Please note that the unit costs are not based on square feet of floor area so the units entered in the red text cells must coincide with units used in pricing a particular item. Below is a brief summary of the work items included on worksheet 3.00:

3.01 Emergency Generator (Day Tank Included) – enter the number of kilowatts (KW) required by the project.

3.02 Fuel Oil Storage for Generator (Usually Placed on Site) – enter the gallon capacity of fuel of the generator’s storage tank (this tank is in addition to the day tank).

New School or Addition Projects

3.03 Fire Protection (Pump) – enter the number of pumps required to provide adequate pressure for the fire sprinkler system. Most schools in urban areas will have water supplied at an adequate pressure for the fire sprinkler system. Many rural schools will need pumps to provide adequate pressure for the fire sprinkler system, especially schools that require water storage tanks for the fire sprinkler system.

3.04 Fire Protection (Water Storage) – enter the gallon capacity of water storage tanks required to provide sufficient water to supply the fire sprinkler system. Technical assistance may be required to accurately calculate the water storage tank size requirements.

3.05 Add for Crawlspace – enter the square foot area of the crawlspace. Costs include excavation, structural floor, sprinklers and lighting.

3.06 Add for Pile Foundation – enter the square foot area of the ground floor. Costs include piles, structural floor, soffit with interstitial space, sprinklers and lighting.

3.07 Add for Thermopile Foundation – enter the square foot area of the ground floor. Costs include thermopiles, structural floor, soffit with interstitial space, sprinklers and lighting.

3.08 Demolition of Existing Building – enter complete square foot area of the facility to be demolished. Costs include demolition and landfill costs, but exclude hazardous material abatement. Note, this item is for removal of the entire building.

3.09 Abatement of Existing Building – enter complete square foot area of the facility to be abated. Costs exclude demolition included in 3.08 Demolition of Existing Building.

3.10 Other Special Requirements – enter a lump sum amount for *Other Special Requirements*. The lump sum cost should be calculated as if the work were to be performed in Anchorage. The geographic factor applied on worksheet 6.00 will convert the lump sum cost to an appropriate regional cost. Please provide additional information regarding the other work on the *Notes-Assumptions* worksheet. Technical assistance may be required to accurately calculate cost of *Other Special Requirements*.

New School or Addition Projects

Worksheet - 4.00

The next worksheet is titled 4.00. This worksheet contains some unit costs for *Sitework*, however most of the categories on this worksheet are lump sum entries. This requires the input of a dollar amount rather than a quantity and will probably require technical assistance to accurately complete. Please note that all lump sum costs should be calculated as if the work were to be performed in Anchorage. The geographic factor applied on worksheet 6.00 will convert the lump sum costs to an appropriate regional cost. Below is a brief summary of the work items included on worksheet 4.00:

4.01 Site Preparation – enter the lump sum dollar amount required to prepare the site. Work such as soil remediation, building relocation, shoring, dewatering and environmental protection is to be included in this category.

4.02 Site Earthwork – enter the lump sum dollar amount required for site earthwork. Work such as clearing, excavation, grading, leveling, dewatering and import/export of fill is to be included in this category.

4.03 Site Improvements – enter the lump sum dollar amount required for site improvements. Work such as site paving, walks, sports courts and fields, stairs, ramps, walls, decks, fences, landscaping and play equipment, etc. and installation of other site accessories is to be included in this category.

4.04 Site Structures – enter the lump sum dollar amount required for *Site Structures*. Work such as covered walkways, covered play areas and support buildings is to be included in this category.

4.05 Site Utilities – enter the lump sum dollar amount required for the installation of gas service, utilidor and storm drainage to be included in this category.

4.051 – Water Main – enter the linear foot (LF) length of the proposed water pipe.

4.052 – Sewer Main – enter the linear foot (LF) length of the proposed sewer main.

4.06 Bulk Fuel Storage – enter the gallon capacity of the new *Bulk Fuel Storage* facility. This cost is for construction of a complete new above ground fuel storage and distribution system with a storage capacity exceeding 1,000 gallons. The Cost Model unit cost for this category varies automatically based on the storage capacity. Projects that require replacement of an existing above ground bulk fuel storage system should use category 12.10 *Replace Bulk Fuel System (Above Ground)* in lieu of category 4.06. Projects that require replacement of an existing below ground bulk fuel storage system should use category 12.09 *Replace Small Fuel Oil Tank (Below Ground)* in lieu of category 4.06. Projects that require replacement of an existing below ground bulk fuel storage system with an above ground fuel storage system should use category 12.11 *Remove Below Ground Tank & Install New Above Ground Tank* in lieu of category 4.06.

New School or Addition Projects

Projects that require replacement of an existing above ground bulk fuel storage system with a below ground bulk fuel storage system should use category 12.12 *Remove Above Ground Tank & Install Below Ground Tank* in lieu of category 4.06. Category 12.13 *Soil Remediation* should be used in conjunction with categories 12.09 thru 12.12 if contaminated soil exists at existing fuel storage areas.

4.07 Site Electrical – enter the lump sum dollar amount required for *Site Electrical*. This cost includes headbolt heaters, connections to equipment including the cost for running conduit and wire. Costs associated with electrical supply and communications to the building such as electrical service and transformer should be entered in this category.

4.08 Site Lighting – enter the number of fixtures required for *Site Lighting*. Costs associated with electrical supply to the building, such as electrical service and transformer, should be entered in category 4.07 *Site Electrical*. Generally, category 4.08 *Site Lighting* is to include the cost of running conduit and wire from the facility’s panels to various electrical fixtures on the site, and the cost of furnishing and installing those fixtures.

4.09 Other – enter here estimates of additional cost for site work, both on and off site.

Worksheet - 5.00

The next worksheet is titled 5.00. This worksheet calculates the overhead and profit charges for a general contractor’s services, insurances and bond. This cost is set at a percentage of the direct construction cost. No entries are required on this worksheet.

Worksheet - 6.00

The next worksheet is titled 6.00. This worksheet calculates the additional cost for construction based on the project location. The unit costs in the Cost Model are all based on the cost of material and labor in Anchorage. Therefore, to accurately reflect construction costs in other regions of the state, a geographic factor is applied to the construction costs to adjust them to reflect the actual cost of construction in the project’s locale. This factor is intended to cover expenses such as shipping, subsistence, travel, et cetera.

The regional geographic factors can be found in *Table No. 1 Geographic Area Cost Factor*. Table No. 1 has been expanded so that now the geographic factors are listed alphabetically by school district, with some districts having multiple factors. There are two values to the right of the district name: the Index and the Percentage. Insert the appropriate percentage for the school district into the red text cell for category 6.01. The spreadsheet will automatically calculate the reduced or additional construction cost due to the geographic location of the project.

New School or Addition Projects

Worksheet - 7.00

The next worksheet is titled 7.00. This worksheet calculates the premium that a project will cost based on the *Size* of the project. Projects smaller than 25,000 square feet can anticipate paying more per square foot because some of a contractor's general requirement costs are fixed. The additional cost required due to the size of the project is calculated automatically on this worksheet. No entries are required on this worksheet.

Worksheet - 8.00

The next worksheet is titled 8.00. This worksheet calculates the necessary *Contingencies* for the project. Two contingencies are addressed: a general design contingency and an escalation contingency.

The general design contingency is to accommodate unknowns due to the conceptual level of the design. The general design contingency is fixed at 10% of the subtotal of costs calculated on worksheets 1.00 through 7.00. No entries are required to determine the general design contingency.

The escalation contingency is to account for the increase in construction costs from 2011 to the year that the project is anticipated to be constructed. The escalation rate is automatically calculated based on the anticipated construction date entry that is to be entered in the red text cell for category 8.03.

Worksheet - 9.00

The next worksheet is titled 9.00. This worksheet calculates *Project Overhead and Other Costs* that are associated with the construction of a new school or addition. This worksheet also provides the total project cost. Below is a brief summary of the costs included on worksheet 9.00:

9.01 Construction Management (By Consultant) – enter the percent of construction cost required for *Construction Management*. The amounts allowed for construction management are either 2%, 3% or 4% of the construction cost. Note that AS 14.11.020 (c) places limits on the cost of construction management furnished by a private contractor:

New School or Addition Projects

AS 14.11.020

“(c) The construction management costs of a project assumed under this section may not exceed four percent of the amount of appropriations for the facility if the amount of appropriations is \$500,000 or less. The construction management costs of a project assumed under this section may not exceed three percent of the amount of appropriations for the facility if the amount of appropriations is over \$500,000 but less than \$5,000,000. The construction management costs of a project assumed under this section may not exceed two percent of the amount of appropriations for the facility if the amount of appropriations is \$5,000,000 or more. For purposes of this subsection “construction management” means management of the project’s schedule, quality, and budget during any phase of the planning, design, and construction of the facility by a private contractor engaged by the municipality or regional educational attendance area.”

9.02 Land Purchase Costs – enter the lump sum amount for *Land Purchase Costs*. Even if the site has already been purchased it is wise to include the acquisition cost, especially if state reimbursement or funding is to be sought. Please note that 4 AAC 31.025 defines the requirements for reimbursement of site acquisition costs. Information regarding school site selection is available in the Department of Education publication, [Site Selection Criteria and Evaluation Handbook](#).

9.03 Site Investigation (Estimate) – enter the lump sum amount for *Site Investigation*. Site investigation costs include but are not limited to cost associated with selecting a site, site surveys and geotechnical investigation services.

9.04 Seismic Hazard – enter a cost provided by an Alaska seismic safety design professional to perform seismic surveys of existing facilities, make recommendations and provide a plan/specification to implement seismic improvements.

9.05 Design Services Costs – enter the percent of construction cost required for *Design Services Costs*. Design costs include but are not limited to the cost associated with the project planning (from educational specifications through design development), preparation of construction/bid documents, and overseeing the completion of the work. Typically, large projects require smaller design cost percentages. The Department of Education’s suggested range for the cost of project design is 6 – 10% of the construction cost. If costs are expected to exceed the department’s recommended percentages, please provide a detailed justification of the overage.

9.06 – Construction – enter the total of a detailed construction cost estimate if new in-lieu of renovation (if not Cost Demand Model). This amount should include *all* costs required for completion of work not estimated using the Cost Demand Model.

9.07 Equipment and Technology Costs – enter the percent of construction cost required for *Equipment Costs*. Please refer to the Department of Education publication, [Guidelines for School Equipment Purchases, 2005](#), for information regarding the definition of equipment. Budget parameters for equipment costs on a per student basis are also established in the publication. The Department of Education’s suggested range

New School or Addition Projects

for the cost of furnishings and equipment is up to 10% of the construction cost. Technology is included with equipment. If costs are expected to exceed the department's recommended percentages, please provide a detailed justification of the overage.

9.08 District Administrative Overhead – enter the percent of construction cost required for *District Administrative Overhead Costs*. Indirect costs include, but are not limited to: the school district's cost of facilitating the entire project, accounting costs, in-house construction management costs. Typically, large projects require smaller indirect cost percentages. The Department of Education's suggested range for the cost of project administration is up to 9% of the construction cost. If costs are expected to exceed the department's recommended percentages, please provide a detailed justification of the overage.

9.09 Art (Where Applicable) – enter the percent of construction cost required for *Art*. The Department of Education applies the provisions of AS 35.27.020 to establish the required percent for art in school projects. This requirement is being applied by the department to all School Construction projects and some Major Maintenance projects based on the scope of the project. The minimum requirement for rural school facilities is 1/2% of construction cost. The maximum requirement for all other school facilities is 1% of construction cost.

9.10 Project Contingency for Changes – calculates the *Project Contingency for Changes* for the entire project. The project contingency is fixed at 5% of the subtotal shown in category 8.04, so no entries are required to generate the cost. This contingency is to cover the possibility of above average design, management, or administration costs as well as construction cost overruns. The project contingency is in addition to the 10% general design contingency that was applied in worksheet 8.00.

9.11 Project Total Cost – provides the estimated *Project Total Cost* for new construction or addition work. This line also provides a total of the additional percent costs associated with the project. If these costs exceed 30% of the project construction cost, then a detailed justification of the additional costs will be required.

Worksheets 1.00 – 9.00 comprise the New School or Addition module of the Program Demand Cost Model for Alaskan Schools – 12th Edition Update. Please refer to the Samples section for examples of the *Grand Summary*, *General Summary*, and *Notes – Assumptions* worksheets.

Renovation Projects

Worksheet - 11.00

The next worksheet is titled 11.00. This worksheet is the heart of the Renovation Cost Model. Unit costs are provided by work assembly. A work assembly can be thought of as a summary of a group of tasks required to complete that item. A building system is composed of a series of work assemblies. An example of a building system would be 11.20 *Exterior Closure*. An example of a work assembly is the replacement of an exterior door. Below are the tasks that contribute to the unit cost to replace an exterior door:

- Remove interior and exterior door trim
- Remove door and door frame
- Dispose of demolition debris
- Install new door frame and hang door
- Install new door hardware
- Install new interior and exterior door trim
- Install new caulking at door opening
- Paint door, door frame, door trim

The use of work assemblies provides users with the flexibility to customize a renovation estimate to the repairs required at a specific facility. Not every conceivable building system replacement is covered here, just the most common building systems found in existing Alaskan schools. If the proposed project incorporates a special building system that is not included in worksheet 11.00, a consultant knowledgeable in the special system will be required to prepare an accurate cost estimate. Please note that hazardous material abatement is not included in worksheet 11.00 unit costs. Costs for removal of hazardous materials are covered on worksheet 12.00 and should be selected as necessary. Below is a brief summary of the unit costs included on worksheet 11.00:

11.02 Foundation and Substructure Repairs – enter the lump sum amount required for *Foundation and Substructure Repairs*. If the facility requires foundation or substructure repairs, technical assistance from a consultant with foundation repair experience will be required to accurately estimate the extent of repairs required and their cost. Please provide additional information describing the required repairs and the basis for the estimated cost on the *Notes-Assumptions* worksheet.

11.11 Superstructure Repairs – enter the lump sum amount required for *Superstructure Repairs*. If the facility requires superstructure repairs, technical assistance from a consultant with structural repair experience will be required to accurately estimate the extent of repairs required and their cost. Please provide additional information describing the required repairs and the basis for the estimated cost on the *Notes-Assumptions* worksheet.

11.12 Seismic Repairs – enter the lump sum amount required for seismic repairs. This item will require technical assistance from a seismic safety design professional who has experience to accurately estimate the extent of repair, upgrades and improvements and

Renovation Projects

the associated cost. Please provide additional information describing the required repairs and the basis for the estimated cost on the *Notes – Assumption worksheet*.

For all 11.2X, 11.3X and some other individual items, enter the square footage of the amount of the system to be replaced. Do NOT use the total square footage of the building.

11.21 Exterior Upgrades – enter the square feet of beveled siding to be replaced. This unit cost includes: removal and disposal of existing siding, installation of new Tyvek and beveled cedar siding, installation of new exterior trim and flashing, new caulking at openings, new paint to siding and trim.

11.22 Exterior Upgrades – enter the square feet of exterior siding to be repainted. This unit cost includes: removal of old caulking, installation of new caulking, preparation of surfaces, new paint to doors, trim and exterior siding.

11.23 Exterior Insulation Finish System to Existing – enter the square feet of EIFS to be installed over the existing siding. This unit cost includes: surface preparation of existing siding, installation of 1” EIFS, new sealant and flashing. Please note that the cost to remove existing siding is excluded from 11.23’s unit cost. If your project requires removal and disposal of existing siding enter the lump sum cost in category 11.29 for the demolition work. Please provide a description of extra work on the *Notes-Assumptions worksheet* and remember that all lump sum costs should be calculated as if the work were to be performed in Anchorage. The geographic factor applied on worksheet 14.00 will convert the lump sum costs to an appropriate regional cost.

11.24 Exterior Upgrades – enter the square feet of painted cement board to be installed over the existing siding. This unit cost includes: surface preparation of existing siding, installation of cement board, new exterior trim, painting of exterior, new sealant, new Tyvek, and new flashing. Please note that cost to remove existing siding is excluded from 11.24’s unit cost. If your project requires removal and disposal of existing siding enter the lump sum cost in category 11.29 for the demolition work. Please provide a description of extra work on the *Notes-Assumptions worksheet* and remember that all lump sum costs should be calculated as if the work were to be performed in Anchorage. The geographic factor applied on worksheet 14.00 will convert the lump sum costs to an appropriate regional cost.

Renovation Projects

11.25 Exterior Skin – enter the square feet of metal siding to be installed over the existing siding. This unit cost includes: furring and ½” CDX plywood, installation of kynar finish metal siding system, new sealant, new Tyvek, and new flashing. Please note that cost to remove existing siding is excluded from 11.25’s unit cost. If the project requires removal and disposal of existing siding enter the lump sum cost in category 11.29 for the demolition work. Please provide a description of extra work on the *Notes-Assumptions* worksheet and remember that all lump sum costs should be calculated as if the work were to be performed in Anchorage. The geographic factor applied on worksheet 14.00 will convert the lump sum costs to an appropriate regional cost.

11.26 Insulation – enter the square feet of insulation to be replaced in existing exterior wall. This unit cost includes: removal of GWB and insulation on exterior wall, disposal of debris, installation of new R-19 insulation, installation of new 10 mil vapor barrier, and installation of new GWB.

11.27 Exterior Closure (Replace Doors and Frames) – enter the number of door leafs to be replaced. This unit cost includes: removal of interior and exterior door trim, removal of door and frame, disposal of debris, installation of new door and frame, installation of new door hardware, new caulking, and painting of all new work.

11.28 Exterior Closure (Replace Windows) – enter the square feet of glazing to be replaced. This unit cost includes: removal of windows and blinds, disposal of windows and blinds, installation of new metal clad windows, installation of new interior and exterior trim, painting of trim, installation of new horizontal blinds.

11.29 Other Repairs – enter a lump sum amount for repairs or alteration not accounted for elsewhere. Please provide details regarding the additional cost on the *Notes-Assumptions* worksheet.

11.31 Replace Metal Roofing – enter the square feet of metal roofing to be replaced. This unit cost includes: removal and disposal of existing roofing (excluding hazardous material abatement), minor repair of approximately 20% of roof deck, replacement of approximately 20% of insulation and vapor barrier, and installation of new metal roofing.

11.32 Replace Membrane Roof – enter the square feet of flat roof membrane to be replaced. This unit cost includes: removal and disposal of existing roofing, minor repair of approximately 20% of roof deck, installation of new vapor barrier, installation of new 6” rigid insulation, installation of new flashing, and installation of new EPDM roofing.

Renovation Projects

11.41 Replace Partitions – enter the square feet of new interior partitions. The quantity of new partitions is the sum of the square feet of framed wall, not the square feet of GWB. This unit cost includes: removal and disposal of existing partitions, framing of new 2x4 and 2x6 partitions, installation of new sound batt insulation, installation of new GWB, installation of new base, installation of new wall finishes, and painting. Please note that this cost, while including a variety of common wall finishes, does not include ceramic tile. Please use category 11.47 for installation of ceramic wall tile.

11.42 Replace Door Leaf and Frames – enter the number of door leafs to be replaced (note, count 2 for double doors). This unit cost includes: removal of door and frame, disposal of debris, installation of new door and frame, installation of new door hardware, and painting of all new work.

11.43 Interior Painting – enter the square feet of walls and ceiling to be painted. This unit cost includes: removal and reinstallation of electrical device covers, painting of walls, painting of ceiling, and painting of doors.

11.44 Replace Carpeting – enter the square feet of new carpeting. This unit cost includes: removal and disposal of existing floor finish, installation of new carpet, and installation of new base.

11.45 Replace Resilient Flooring – enter the square feet of new resilient flooring (sheet vinyl and VCT). This unit cost includes: removal and disposal of existing floor finish, installation of new resilient flooring, and installation of new base.

11.46 Replace Gym Flooring – enter the square feet of new gym flooring. This unit cost includes: removal and disposal of existing floor finish, installation of new sports flooring, and installation of new base. Please note that the sports flooring is a membrane flooring and not a wood gym floor. If a wood gym floor is desired, enter the additional lump sum cost for a wood gym floor in category 11.99. Please provide details regarding the additional cost on the *Notes-Assumptions* worksheet.

11.47 Replace Ceramic Tile – enter the square feet of new ceramic tile. This unit cost includes: removal and disposal of existing tile surfaces, installation of new mosaic floor tile, and installation of new wall tile with cementitious backer.

11.48 Replace Acoustical Tile Ceiling – enter the square feet of suspended acoustic ceiling tile to be replaced. This unit cost includes: removal and reinstallation of light fixtures, removal of existing suspended acoustical ceiling system, and installation of new suspended acoustical ceiling system.

Renovation Projects

11.49 Replace Gypboard Ceiling – enter the square feet of new gypsum board ceiling. This unit cost includes: removal and reinstallation of light fixtures, removal of existing gypsum board ceiling, installation of new gypsum board ceiling, and painting of new ceiling.

11.51 Replace Toilet Partitions – enter the number of toilet partitions to be replaced. This unit cost includes: removal and disposal of existing toilet partitions, installation of new toilet partitions, and installation of new associated toilet accessories.

11.52 Replace Toilet Accessories – enter the number of toilet accessories (soap dispensers, waste receptacles, paper towel dispensers, etc.) to be replaced. This cost includes: removal and disposal of existing toilet accessories and installation of new toilet accessories.

11.53 Smart Boards Additions – This assumes one smart board per classroom. This is new technology for the classroom. Could be described as a computer driven chalkboard. The cost includes electrical connections.

11.54 Replace Sports Equipment and Lockers (Small Gym) – enter the number of lots of sports equipment and lockers to be replaced. Each lot includes the following work: removal and disposal of existing equipment, installation of 50 new lockers, installation of two new wall mount basketball goals, installation of four new floor inserts, installation of two new chinning bars, and installation of two new climbing peg boards. This is only useable for a small gym installation (for a full size gym, increase cost by x4).

11.55 Replace Tack/Chalk/Marker Boards – enter the square feet of new marker, chalk, and tack board. This unit cost includes: removal and disposal of existing boards, and installation of new boards.

11.56 Replace Base Cabinet Units – enter the linear feet of new base cabinets. This unit cost includes: removal and disposal of existing cabinets, installation of new base cabinets, and installation of new plastic laminate countertops.

11.57 Replace Wall Hung Units – enter the linear feet of new wall hung cabinets. This unit cost includes: removal and disposal of existing cabinets, and installation of new wall cabinets.

11.58 Other Repairs – enter a lump sum amount for repairs or alteration not accounted for elsewhere. Please provide details regarding the additional cost on the *Notes-Assumptions* worksheet.

Renovation Projects

11.61 New Elevator – enter number of elevators. This is installation of a two stop hydraulic elevator for access in a two story school, which would save space over the traditional ramp approach. Cost also includes electrical connections, new walls and cutting and patching.

11.62 Repairs/Replacement (Estimate) – enter a lump sum amount for repair, replacement, or addition of a conveying system. In most cases this category will address the cost of work related elevators or lifts. Technical assistance from a consultant will be required to accurately estimate the cost of this work.

11.71 Replace Plumbing (Fixtures Only) – enter the number of plumbing fixtures to be replaced. This unit cost includes: removal and disposal of existing plumbing fixture, replacement of some associated piping, repair of adjacent finishes, and installation of new plumbing fixture. This category is for replacement of plumbing fixtures only. If the entire plumbing system is to be replaced please use category 11.72.

11.72 Replace Plumbing (Entire System) – enter the square feet of building area that is to receive a new plumbing system. Typically, the entire building square footage should be inserted unless portions of the building have plumbing systems that will not be replaced. The unit cost for this category assumes that this work will occur in conjunction with a major renovation of the space and includes: removal and disposal of existing plumbing system, installation of new sanitary waste and vent piping system, installation of new domestic water piping, installation of new plumbing fixtures, and installation of a new water heater. If this work is not to occur in conjunction with a major renovation project, additional costs to protect and repair existing finishes should be added. Enter the additional lump sum cost for this work in category 11.79. Please provide details regarding the additional cost on the *Notes-Assumptions* worksheet.

11.73 Replace Heating Systems – enter the square feet of building area that is to receive a new heating system. Typically, the entire building square footage should be inserted unless portions of the building have heating systems that will not be replaced. The unit cost for this category assumes that this work will occur in conjunction with a major renovation of the space and includes: removal and disposal of existing heating system, installation of new oil fired boiler and accessories, installation of new distribution piping, installation of new radiators, and installation of a new electrical connections. If this work is not to occur in conjunction with a major renovation project, additional costs to protect and repair existing finishes should be added. Enter the additional lumpsum cost for this work in category 11.79. Please provide details regarding the additional cost on the *Notes-Assumptions* worksheet.

11.74 Replace Ventilation Systems – enter the square feet of building area that is to receive a new ventilation system. Typically, the entire building square footage should be inserted unless portions of the building have ventilation systems that will not be replaced. The unit cost for this category assumes that this work will occur in conjunction with a major renovation of the space and includes: removal and disposal of existing ventilation

Renovation Projects

system, installation of new air handling units and exhaust fans, installation of new ductwork, and installation of a new electrical connections. If this work is not to occur in conjunction with a major renovation project, additional costs to protect and repair existing finishes should be added. Enter the additional lump sum cost for this work in category 11.79. Please provide details regarding the additional cost on the *Notes-Assumptions* worksheet.

11.75 New Exhaust Fan – enter the number of new exhaust fans. This unit cost includes: demolition and disposal of finishes to provide access for new system, installation of new up to 1500 CFM (cubic foot per minute) exhaust fan, installation of new ductwork, installation of new exterior venting, repair of existing finishes, and installation of a new electrical connections. Alternative pricing by the CFM.

11.76 New Cooling Systems – enter the square feet of building area that is to receive a new cooling system. Typically, the entire building square footage should be inserted unless portions of the building will not be served by the cooling system. This unit cost includes: removal and disposal of existing cooling system, installation of new air handling units and exhaust fans, installation of new ductwork, and installation of a new electrical connections. This unit cost assumes that an adequate ventilation system is available for the distribution of cool air through out the building. If a ventilation system is not available, refer to category 11.74 *Replace Ventilation Systems*. Alternative pricing by the ton.

11.77 New Controls – enter the square feet of building area that is to receive new controls. This unit cost includes: removal and disposal of existing controls, installation of new thermostats, and installation of new DDC control system.

11.78 New Sprinkler System – enter the square feet of building area that is to be fire sprinkled. Please note that some building types may require sprinklers in attic spaces and large exterior canopy areas, so it is not uncommon for the square feet of sprinkled area to exceed the actual square feet of building area. This unit cost includes: installation of a new fire water service, demolition and replacement of ceiling finishes, and installation of a new wet pipe fire sprinkler system. Please place an adder in category 11.79 for a dry pipe sprinkler system. A consultant may be required to determine the additive cost of a dry pipe over a wet pipe sprinkler system.

11.79 Other Repair/Replacement – enter a lump sum amount for *Other Repairs/Replacement*. The lump sum cost should be calculated as if the work were to be performed in Anchorage. The geographic factor applied on worksheet 14.00 will convert the lump sum cost to an appropriate regional cost. Please provide additional information regarding the other work on the *Notes-Assumptions* worksheet.

11.81 Replace Main Supply and Distribution – enter the number of lots of main electrical supply and distribution to be replaced. Each lot includes the following work: removal and disposal of seven existing electrical panels, installation of a new 1600 amp

Renovation Projects

MDP, installation of a new 1600 amp disconnect switch, installation of two 225 amp subpanels, installation of four new 100 amp subpanels, and installation new wiring between panels. Please note that categories 11.82 and 11.83 are subsets of category 11.81. Therefore, an entry in category 11.81 will typically preclude entries into the other categories.

11.82 Replace MDP – enter the number of main distribution panels (MDP) to be replaced. This unit cost includes: removal and disposal of existing MDPs, installation of a new 1600 amp MDP, installation of a new 1600 amp disconnect switch.

11.83 New Power Panel – enter the number of new power panels to be installed. This unit cost includes: installation of a new 225-amp power panel and connection to existing power supply.

11.84 Replace Lighting Fixtures and Wiring – enter the square feet of building area to receive new lighting. This unit cost includes: removal and disposal of existing lighting and wiring, installation of new wiring, installation of new devices, and installation of a light fixtures.

11.85 Replace Lighting Fixtures Only - enter the square feet of building area to receive new lighting. This unit cost includes: removal and disposal of existing lighting and installation of a light fixtures.

11.86 Replace Power Devices – enter the square feet of building area to receive new power wiring. This unit cost includes: removal and disposal of existing power devices (outlets, etc.) and wiring, installation of new wiring, and installation of new power devices.

11.87 New Standby Power and Fuel Oil – enter the number of kilowatts (KW) for new standby power required. This unit cost is based on new above ground fuel storage tank, new tank foundation, new fuel piping to the generator, a new 150 KW generator and day tank, and a new 600 amp automatic transfer switch.

11.91 New Addressable Fire Alarm System – enter the square feet of building area to receive a new fire alarm system. Typically, the entire building square footage should be inserted unless portions of the building already have a functional fire alarm system. This unit cost includes: all work required for a complete fire alarm system.

11.92 New Computer Outlets (Rough In) – enter the square feet of building area to receive new computer outlets. Typically, the entire building square footage should be inserted unless portions of the building already have functional computer outlets and will not be receiving new outlets. This cost is included in the cost for additions and new construction and should not be duplicated here. This unit cost includes: installation of new conduit, installation of new computer wire, an allowance for cutting and patching, and installation of new data outlets.

Renovation Projects

11.93 New Telephone/Public Address/Intercom/Clock System – enter the square feet of building area to receive a new telephone/intercom/public address system (a synchronized clock system is included with the public address system). Typically, the entire building square footage should be inserted unless portions of the building already have a functional telephone/intercom/public address system and will not be receiving any new work. This unit cost includes: all work required for a complete telephone/intercom/public address system.

11.94 New Public Address (Gym and Stage) – enter the number of a new gym and stage public address systems required. This unit cost includes: all work required for a complete gym and stage public address system.

11.95 New Master Antenna Television (MATV) System – enter the square feet of building area to receive a new MATV system. Typically, the entire building square footage should be inserted unless portions of the building already have a functional MATV system and will not be receiving any new work. This unit cost includes: all work required for a complete MATV system excluding the video monitors.

11.96 New Hearing Impaired Audio System – enter the number of a hearing impaired audio systems required. This unit cost includes: all work required for a complete hearing-impaired audio system for (8) listeners only.

11.97 New Security System/CCTV – enter the square feet of building area to receive a simple new security system. Typically, the entire building square footage should be inserted unless portions of the building already have a functional security system and will not be receiving any new work. This unit cost includes: all work required for a complete security system.

11.98 Sound Field System (Audio Enhancement System) – enter number of classrooms served. New technology for the classroom. A teacher’s aid for communication.

11.99 Other Repairs/Replacement/Demolition – enter a lump sum amount for *Other Repairs/Replacement/Demolition*. The lump sum cost should be calculated as if the work were to be performed in Anchorage. The geographic factor applied on worksheet 14.00 will convert the lump sum cost to an appropriate regional cost. Please provide additional information regarding the other work on the *Notes-Assumptions* worksheet.

Renovation Projects

Worksheet - 12.00

The next worksheet is titled 12.00. This worksheet addresses the costs associated with the removal of hazardous materials. The unit costs for categories 12.01 through 12.08 are to be used in conjunction with the work assembly costs in category 11.00 when the demolition will require removal of hazardous materials. Categories 12.09 through 12.11 provide stand-alone unit costs for a complete work assembly. Below is a brief summary of the unit costs included on worksheet 12.00:

12.01 Complete Renovation (Interior) (Removal Only) – enter the square feet of building area to be completely gutted. This unit cost includes: removal of asbestos containing wall board, roofing, vinyl flooring, ceiling tiles, pipe insulation, and wall covering adhesives; removal of doors with lead paint; removal of PCBs from light fixture ballasts. Please note that categories 12.02 through 12.08 are subsets of category 12.01. If a major renovation is planned and asbestos containing materials are anticipated to be encountered during demolition, use category 12.01 and disregard categories 12.02 through 12.08.

12.02 Roof Replacement (Roof Area) (Removal Only) – enter the square feet of asbestos containing roofing to be removed. This unit cost includes: removal of asbestos containing roofing.

12.03 Exterior Upgrade (Number of Doors) (Removal Only) – enter the number of exterior doors with lead paint to be removed. This unit cost includes: removal of exterior doors with lead paint.

12.04 Replace Interiors (Removal Only) – enter the square feet of building area that is to receive new finishes. This unit cost includes: removal of asbestos containing vinyl flooring, ceiling tiles, and wall covering adhesives.

12.05 Replace Plumbing Fixtures (Removal Only) – enter the number of plumbing fixtures to be replaced. This unit cost includes: removal of asbestos containing pipe insulation from domestic water piping. Please note that it may be possible to replace plumbing fixtures without significantly disturbing existing piping.

12.06 Replace Heating and Ventilation Systems (Removal Only) – enter the square feet of building area that is to receive heating and ventilation system upgrades. This unit cost includes: removal of asbestos containing ceiling tiles and pipe insulation from radiant heat piping.

12.07 New Sprinkler System (Removal Only) – enter the square feet of building area that is to receive a new fire sprinkler system. This unit cost includes: removal of asbestos containing ceiling tiles.

Renovation Projects

12.08 Work in Connection with New Electrical Installations (Removal Only) – enter the square feet of building area that is to receive new electrical work. Typically, the entire building square footage should be inserted unless distinct portions of the building (for example, a detached wing) will not be receiving any new work. This unit cost includes: removal of asbestos containing wallboard and ceiling tiles.

12.09 Replace Small Fuel Oil Tank (Below Ground) – enter the gallon capacity of the new underground fuel tank that is to replace an existing underground fuel tank. This unit cost includes: draining of existing tank, excavation of existing tank, removal of existing piping, soils testing for contamination, disposal of existing tank, installation of new underground fuel tank and leak detection system in existing pit, installation of new piping, and backfill of existing pit. Please note that remediation of contaminated soil is excluded from this cost. Use category 12.13 for costs associated with the remediation of contaminated soil.

12.10 Replace Bulk Fuel Oil Tank (Above Ground) – enter the gallon capacity of the new aboveground fuel tank that is to replace an existing aboveground fuel tank. This unit cost includes: draining of existing tank, removal of existing piping, disposal of existing tank, installation of new aboveground fuel tank and containment system, and installation of new piping. Please note that remediation of contaminated soil is excluded from this cost. Use category 12.13 for costs associated with the remediation of contaminated soil.

12.11 Remove Below Ground Tank and Install New Above Ground Tank – enter the gallon capacity of the new above ground fuel tank that is to replace an existing below ground fuel tank. This unit cost includes: draining of existing tank, removal of existing piping, disposal of existing tank, installation of new aboveground fuel tank and containment system, and installation of new piping. Please note that remediation of contaminated soil is excluded from this cost. Use category 12.13 for costs associated with the remediation of contaminated soil.

12.12 Remove Above Ground Tank and Install New Below Ground Tank – enter the gallon capacity of the new below ground fuel tank that is to replace an existing above ground fuel tank. This unit cost includes: draining of existing tank, removal of existing piping, disposal of existing tank, installation of new aboveground fuel tank and containment system, and installation of new piping. Please note that remediation of contaminated soil is excluded from this cost. Use category 12.13 for costs associated with the remediation of contaminated soil.

Renovation Projects

12.13 Soil Remediation – enter the cubic yards of soil that requires remediation. This unit cost includes: soil testing, excavation of contaminated soils, treatment of contaminated soils, disposal of contaminated soils, and replacement of excavated soil with non-frost susceptible fill.

12.14 Other Specific Abatement – enter the lump sum.

Worksheet - 13.00

The next worksheet is titled 13.00. This worksheet calculates the overhead and profit charges for a general contractor's services, insurances and bonds. This cost is set at a percentage of the direct construction cost. The extra percentage over new construction is to allow for additional coordination efforts typical of renovation projects. No entries are required on this worksheet.

Worksheet - 14.00

The next worksheet is titled 14.00. This worksheet calculates the additional cost for construction based on the project location. The unit costs in the Cost Model are all based on the cost of material and labor in Anchorage. Therefore, to accurately reflect construction costs in other regions of the state, a geographic factor is applied to the construction costs to adjust them to reflect the actual cost of construction in the project's locale. This factor is intended to cover expenses such as shipping, subsistence, travel, et cetera.

The regional geographic factors can be found in *Table No. 1 Geographic Area Cost Factor*. Table No. 1 has been expanded so that now the geographic factors are listed alphabetically by school district, with some districts having multiple factors. There are two values to the right of the district name: the Index and the Percentage. Insert the appropriate percentage for the school district into the red text cell for category 14.01. The spreadsheet will automatically calculate the additional, or reduced in a few regions, construction cost due to the geographic location of the project.

Worksheet - 15.00

The next worksheet is titled 15.00. This worksheet calculates the premium that a project will cost based on the dollar amount of the project. Projects smaller than \$4,000,000 can anticipate paying more per square foot because some of a contractor's general requirement costs are fixed. The additional cost required due to the dollar amount of the project is calculated automatically on this worksheet. No entries are required on this worksheet.

Renovation Projects

Worksheet - 16.00

The next worksheet is titled 16.00. This worksheet calculates the contingencies for the project. Two contingencies are addressed: a general design contingency and an escalation contingency.

The general design contingency is to provide design flexibility and to account for construction unknowns. The general design contingency is fixed at 15% of the subtotal of costs calculated on worksheets 11.00 through 14.00. This is 5% more than the similar contingency on a new construction project. The extra 5% is to allow for additional unknowns typical of renovation projects. No entries are required to determine the general design contingency.

The escalation contingency is to account for the increase in construction costs for the year that the project is anticipated to start construction. The escalation rate is automatically calculated based on the anticipated construction date that is to be entered in the red text cell for category 16.03.

Worksheet - 17.00

The next worksheet is titled 17.00. This worksheet calculates *Project Overhead and Other Costs* that are associated with the construction of a new school or addition. This worksheet also provides the total project cost. Below is a brief summary of the costs included on worksheet 17.00:

17.01 Construction Management (By Consultant) – enter the percent of construction cost required for *Construction Management*. The amounts allowed for construction management are either 2%, 3% or 4% of the construction cost. Note that AS 14.11.020 (c) places limits on the cost of construction management furnished by a private contractor:

AS 14.11.020

“(c) The construction management costs of a project assumed under this section may not exceed four percent of the amount of appropriations for the facility if the amount of appropriations is \$500,000 or less. The construction management costs of a project assumed under this section may not exceed three percent of the amount of appropriations for the facility if the amount of appropriations is over \$500,000 but less than \$5,000,000. The construction management costs of a project assumed under this section may not exceed two percent of the amount of appropriations for the facility if the amount of appropriations is \$5,000,000 or more. For purposes of this subsection “construction management” means management of the project’s schedule, quality, and budget during any phase of the planning, design, and construction of the facility by a private contractor engaged by the municipality or regional educational attendance area.”

17.02 Land Purchase Costs – enter the lumpsum amount for *Land Purchase Costs*. Even if the site has already been purchased it is wise to include the acquisition cost, especially if state reimbursement or funding is to be sought. Please note that 4 AAC 31.025 defines

Renovation Projects

the requirements for reimbursement of site acquisition costs. Information regarding school site selection is available in the Department of Education publication, Site Selection Criteria and Evaluation Handbook.

17.03 Site Investigation (Estimate) – enter the lumpsum amount for *Site Investigation*. Site investigation costs include but are not limited to cost associated with selecting a site, site surveys and geotechnical investigation services.

17.04 Seismic Hazard – enter a cost provided by an Alaska seismic safety design professional to perform seismic surveys of existing facilities, make recommendations and provide a plan/specification to implement seismic improvements.

17.05 Design Services Costs – enter the percent of construction cost required for *Design Services Costs*. Design costs include but are not limited to the cost associated with the project planning (from educational specifications through design development), preparation of construction/bid documents, and overseeing the completion of the work. Typically, large projects require smaller design cost percentages. The Department of Education’s suggested range for the cost of project design is 6 – 10% of the construction cost. If costs are expected to exceed the department’s recommended percentages, please provide a detailed justification of the overage.

17.06 – Construction – enter the total of a detailed construction cost estimate if new in-lieu of renovation (if not Cost Demand Model). This amount should include *all* costs required for completion of work not estimated using the Cost Demand Model.

17.07 Equipment and Technology Costs – enter the percent of construction cost required for *Equipment Costs*. Please refer to the Department of Education publication, Guidelines for School Equipment Purchases, 2005, for information regarding the definition of equipment. Budget parameters for equipment costs on a per student basis are also established in the publication. The Department of Education’s suggested range for the cost of furnishings and equipment is up to 10% of the construction cost. Technology is included with equipment. If costs are expected to exceed the department’s recommended percentages, please provide a detailed justification of the overage.

17.08 District Administrative Overhead – enter the percent of construction cost required for *District Administrative Overhead Costs*. Indirect costs include, but are not limited to: the school district’s cost of facilitating the entire project, accounting costs, in-house construction management costs. Typically, large projects require smaller indirect cost percentages. The Department of Education’s suggested range for the cost of project administration is up to 9% of the construction cost. If costs are expected to exceed the department’s recommended percentages, please provide a detailed justification of the overage.

Renovation Projects

17.09 Art (Where Applicable) – enter the percent of construction cost required for *Art*. The Department of Education applies the provisions of AS 35.27.020 to establish the required percent for art in school projects. This requirement is being applied by the department to all School Construction projects and some Major Maintenance projects based on the scope of the project. The minimum requirement for rural school facilities is 1/2% of construction cost. The maximum requirement for all other school facilities is 1% of construction cost.

17.10 Project Contingency for Changes – calculates the *Project Contingency for Changes* for the entire project. The project contingency is fixed at 5% of the subtotal shown in category 16.04, so no entries are required to generate the cost. This contingency is to cover the possibility of above average design, management, or administration costs as well as construction cost overruns. The project contingency is in addition to the 15% general design contingency that was applied in worksheet 16.00.

17.10 Project Total Cost – provides the estimated *Project Total Cost* for new construction or addition work. This line also provides a total of the additional percent costs associated with the project. If these costs exceed 30% of the project construction cost, then a detailed justification of the additional costs will be required.

Worksheets 11.00 – 17.00 comprise the Renovation module of the Program Demand Cost Model for Alaskan Schools – 12th Edition Update. Please refer to the Samples section for an examples of the *Grand Summary*, *General Summary*, and *Notes – Assumptions* worksheets.

Completion of the Cost Model Estimate

General Summary

The *General Summary* worksheet provides a consolidated summary of all the identified project costs. Please refer to the Samples section for an example of the *General Summary* worksheet. No entries are required on this worksheet because all the cost information is pulled from the previous worksheets. This worksheet serves as the project estimate while the other worksheets serve as project estimate back up. Please note that this worksheet provides an estimate structure and unit costs that enables the manual creation of a project estimate should a computer be unavailable. Refer to the Samples section for an example of the *General Summary* worksheet.

Notes – Assumptions

The *Notes – Assumptions* worksheet provides a location for detailed information regarding assumptions made while preparing the cost estimate. Each entry on the worksheet should include the line item (category number) and estimate summary page number defining the location in the estimate where the cost assumption has been placed. Each entry should also include a detailed description of the cost assumption including the dollar value associated with the assumption. Please refer to the Samples section for an example of the *Notes – Assumptions* worksheet.

Saving & Printing

As mentioned earlier, the file should be saved as an Excel Workbook with a descriptive title for easy reference. It is recommended that the file be saved periodically through out the creation of the estimate. When the estimate is complete, all worksheets should be printed. The *Grand Summary* and *General Summary* worksheets serve as broad and detailed estimate summaries, respectively. The *Notes – Assumptions* worksheet serves as a description of assumptions that were made during the creation of the estimate. The remainder of the worksheets serve as estimate back up.

Sample Estimate

The following pages from the Cost Model Workbook, contain samples of the *Project Summary*, the *General Summary*, and the *Notes – Assumptions* worksheets. Estimates prepared for the Department of Education that utilize the Cost Model for Alaskan Schools – 12th Edition Update shall provide the *Project Summary*, the *General Summary*, and the *Notes – Assumptions* worksheets.