



Arlington Public Schools School Cost & Risk Analysis



MORE Seats for
Students

5/20/14

Outline

- Cost Definitions
- Cost Variables
- Risk Management
- Key Takeaways
- Next Steps



Cost Definitions

- **Funding Available**
- **Approved Budget**
- **Construction Cost**
- **Escalation**
- **Total Project Cost**
- **Final Cost**

Funding Available

Available funding sources for Major Capital projects include:

- **Bond sales authorized by voters in referendum every two years for Major Construction and Minor Capital/Major Maintenance (MC/MM)**
- **Capital reserves**
- **Joint APS/Arlington County fund for community amenities**

School Board may approve increases in Funding Available as project scope develops during design.

Approved Budget

- **School Board approves budget for a Major Capital project upon award of contract for construction.**
- **Approved Budgets include **Contingencies** for additional costs that always arise during construction.**
- **School Board may increase Approved Budget if contingencies are exceeded.**

Construction Cost

1. Estimated Construction Cost:

May change during design to align project scope and Funding Available for construction

2. Bid Cost:

Lowest responsive bid for construction from pre-qualified general contractor, included in Approved Budget

3. Final Construction Cost:

Actual cost to APS including all changes made during construction

Escalation

Estimated increase in cost from date of estimate through mid-point of construction.

- Long term average in DC Metro region is 2.5 to 3.0% per year.
- Short term annual increases vary much more with regional and national economy.

Appropriate escalation is included in all APS cost estimates.

Total Project Cost

Construction Cost plus all other costs incurred in completing Major Capital projects, including:

Architecture/Engineering Fees • Construction Management Fees • Legal Fees • Permit Fees • Contingencies • IT Infrastructure & Equipment • Other Equipment • Furniture & Furnishings • Testing & Inspections • Incidental Costs • Real Property Acquisition

For APS projects Total Project Cost varies between 20% and 25% of Construction Cost since real property is not normally acquired.

Final Cost

Final Construction Cost

+

**Final total of all other costs
incurred to complete project**

Cost Variables

- Location
- Capacity Calculations
- Actual Capacity
- Educational Specifications
- Community Expectations
- Sustainable Design
- Additions/Renovations
- Balancing Variables



Location Factors

Climate:

Layout • Indoor/Outdoor Circulation • HVAC Systems
Building Enclosure

Site Context:

Urban • Suburban • Rural • Remote • Available
Utilities • Offsite Improvements • High-Rise/Low-Rise
Structured Parking

Labor Market:

Union • Non-Union • Availability

Location Cost Index

Baseline*			*RS Means 2013 Average of 30 major US cities		
Philadelphia	PA	113.7	Winchester	VA	91.6
Washington	DC	97.3	Norfolk	VA	87.0
Baltimore	MD	93.0	Richmond	VA	86.9
Arlington	VA	93.9	Charlottesville	VA	85.6
Alexandria	VA	93.8	Farmville	VA	78.9
Fairfax	VA	93.0	Grundy	VA	78.8

Capacity Calculations

Results vary according to methodology and policy on class size, e.g.:

Washington-Lee High School

Maximum Class Size

Per Arlington SB policy	25.4
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Per Virginia DOE	36.0
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School Capacity/Total Students

Per 5/7 model	1,600	Approved by School Board when designed
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Per 6/7 model	1,908	Subsequently approved by School Board
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Per recent study	2,200	Completed by MK Think
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Per Virginia DOE	2,300	Approximately
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Actual Capacity

- **Neighborhood school classes are generally below maximum class size.**
- **Choice school classes are generally close to or at maximum class size.**
- **Special programs vary by school, year and need.**
- **Maximum number of students in a regular program may be higher than in a special program requiring same floor area.**

Educational Specifications

Specify requirements for:

Room Size • Types of Rooms • Number of Rooms • IT infrastructure & Equipment • Other Equipment • Furniture & Furnishings • Outdoor Learning Spaces • Playgrounds • Athletic Fields & Amenities

Educational Specifications vary widely by school district according to school board policy and community expectations.

Community Expectations

Vary greatly and impact cost directly, usually in proportion to dollars spent per student by division:

Indoor Swimming Pools • Expanded Indoor Athletic Facilities • Expanded Outdoor Athletic Facilities
Synthetic Turf Fields • Stadiums • Concession Stands
• Community-Sized Auditoriums/Theaters • Studio Theaters • Parking Structures • Enhanced Landscaping • Offsite Improvements • Sustainability

The Arlington community spends more per student and demands more of its school facilities than most other Virginia communities.

Sustainable Design

- **Sustainability is now carefully integrated with overall design to achieve high performance learning environments.**
- **Certain features may be added to improve energy performance, e.g. geothermal at Wakefield, solar at New Elementary School.**
- **LEED Gold should not add cost provided sustainability is a fundamental prerequisite from the outset.**
- **LEED Platinum is likely to add cost.**

Additions/Renovations

Generally cost more per seat added than all new construction, due to:

Improvements/Updates to Existing Facility
Construction in Multiple Phases • Temporary Installations Needed to Operate School during Construction • Unanticipated Existing Conditions • Community Engagement Process

Additions/Renovations benefit more students per dollar spent than all new construction.

Balancing Variables

Three basic variables: number of students, gross area of building, Final Construction Cost

Three basic metrics

- **SF/student**: gross square feet per student
- **\$/student**: cost per student
- **\$/SF**: cost per gross square foot

Consider all three metrics when comparing facilities

Risk Management



What Are We Worried About?

Cost

- **Exceeding Funding Available before construction**
- **Exceeding Budget during construction**

Schedule

- **Failing to meet construction deadlines**

Communications

- **Failing to meet community expectations**

Mitigating Risks

- **Prior to adopting CIP**
- **During design**
- **During construction**
- **Balancing risk with contingencies**

Yorktown High School



5/20/14

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Key Takeaways

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- Comparing School Construction Costs
 - Construction Costs in Arlington

Comparing School Construction Costs

Many variables challenge comparisons between Arlington and other school divisions:

Funding Available/Approved Budget

Construction Cost/Total Project Cost

Bid Cost/Final Cost • Cost Index/Location

Date Completed • Site Context

Methodology used for Occupancy Calculations

Educational Specifications

Community Expectations

Construction Costs in Arlington

Costs are generally higher than elsewhere in Virginia:

**Metro DC Location • Urban Sites
Instructional Programs & Support
Special Needs Programs
Lower Class Sizes • Sustainability Goals
High Performance Learning Environments
Community Expectations**

Next Steps

- 2014 CIP

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Students

2014 Capital Improvement Plan

- **Use multiple metrics for comparing costs with other divisions**
- **Plan for flexibility of program/capacity**
- **Recognize impact of fully-developed, urban environment on costs**
- **Manage risk appropriately**
- **Manage community expectations**

Thank You



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