

PRELIMINARY ARCHITECTURAL REPORT

for
Rural Development

Jonesborough PK-8 School

Prepared by



Introduction

The Town of Jonesborough is the oldest town in Tennessee and the second largest incorporated community in Washington County, behind only Johnson City. Jonesborough is part of the Washington County School district and accounts for roughly 10% of the resident population served by that district. Johnson City maintains its own City School District and is not included in the residents or students served by the County system. Washington County serves over 9,000 students at 16 schools throughout the county.

Fitting into the school system's plan, The Town of Jonesborough desires to provide a school facility adequate to the needs of the currently enrolled students and offer the ability to continue to offer a high-quality education to future residents.

A new K-8 school facility and associated parking accommodations are required due to the current and projected enrollment focused on the Town of Jonesborough. This report includes the information needed to outline the necessity for a new school located within the Town of Jonesborough's boundaries and a strategy to implement the project.

Need for Facility

An analysis of the County enrollment figures for K-8 facilities released for the 2018/19 school year, reveals patterns in enrollment that will affect the future strategies of the county school system. Overall, enrollment in the County has only experienced minor fluctuations in recent years- from 8439 students in 2016/17 to 8357 students for 2017/18 and was recently reported to have increased to over 8,500 students for this year.

Despite the minor increase, the shifting population patterns within the County itself that show additional demand has focused on the County schools closest to Jonesborough while demand for outlying facilities has fallen off. The current PK-12 facilities are shown on the Washington County School Facility Distribution Map by grade range and enrollment trend. Special use facilities, such as Asbury Optional High and the University School were not included in this analysis. Facilities shown in black have seen little change or increases in enrollment over the last 4 years; enrollment drops less than 10% are shown in yellow; decreases from 10% to 20% are in orange; and schools that lost more than 20% are in red. The two facilities that are shown as "(x)" were recently closed and were combined to create the new Boones Creek Elementary School (PK-8) for the 2019-

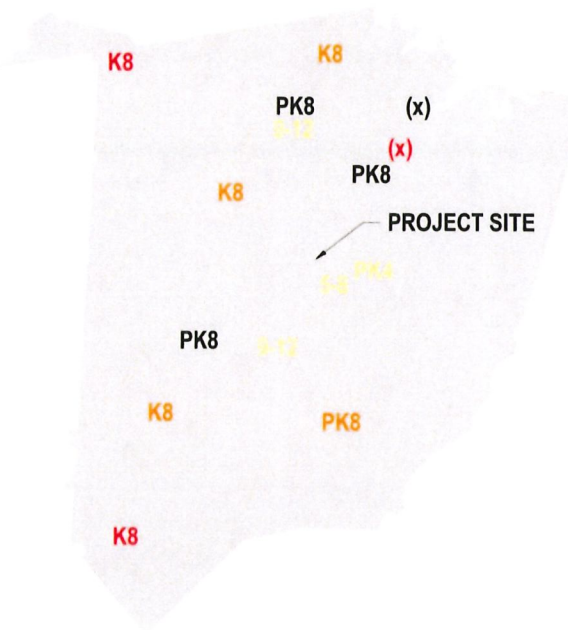
2020 school year. This facility, along with Grandview Elementary (PK-8, up 11%) and Ridge View Elementary (PK-8, up 18%) are the three newest additions to the school system and are also the only primary schools with steady or increased enrollment rates.

The first clear trend is a preference toward new school facilities over aging building infrastructure. Preference for new facilities is not a surprising factor. The second trend shows that of the remaining schools, one can see that as school locations move further from the center of the county, demand for enrollment capacity diminishes. Among the aging schools approaching the need for replacement, only Jonesborough Elementary School and Jonesborough Middle School have maintained steady enrollment over the last 4 years. Although

cause and effect cannot be determined from these numbers alone, these trends suggest new capacity should be focused toward the geographical center of the County. Essentially, the capacity is available, but it is in the wrong location.

According to the school and District Report Cards, the existing Jonesborough Elementary building is over capacity at 533 students (508 actual capacity). Jonesborough Middle School has 388 students (500 capacity) for a combined enrollment of 921 PK-8 between the two buildings. The inefficiencies here are difficult to correct without significant investment. Despite the additional classrooms available at Jonesborough Middle School, the physical distance between the two buildings does not allow for any kind of addition that could connect the two buildings thereby allowing for flexibility in classroom assignments. Further enlargement to the elementary school building is then required to continue meeting class size requirements, which does not address the space overages at the Middle School. The capital investment needed to correct these buildings begins to approach the cost of new construction, so a replacement strategy instead of a series of renovation and repair projects makes more sense for long-term planning. Further discussion is included under "Project Alternatives".

Since these two schools are facing both demand and infrastructure challenges, they are the next logical target for investment and this project is consistent with the conclusions of the School Board's 2013 Facilities Master Plan.

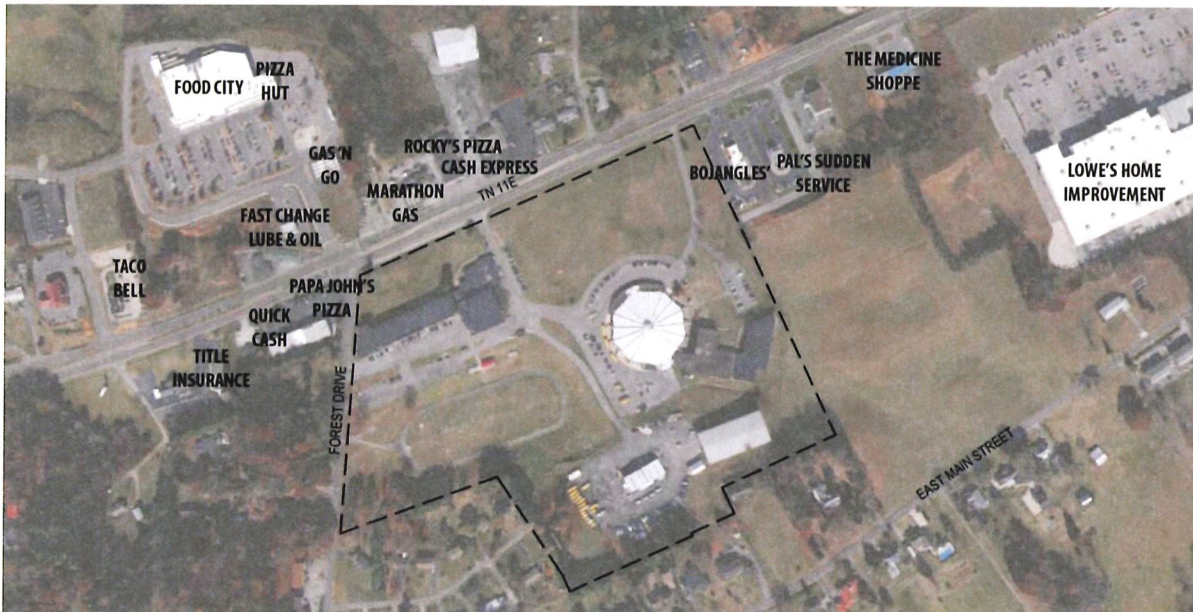


Washington County School Facility Distribution Map

Existing Facility

Jonesborough Elementary is a round-plan school built around the 1971. Internally, the circular layout of the original Jonesborough Elementary School is not conducive to effective teaching methods or modern classroom layouts. Originally designed as a large open space, the round pod has since been subdivided into classrooms by improvised partitions. Most classroom partitions are less than 8'-0" high and allow noise and distractions from one teaching area into the next. Many teaching spaces are truncated pie wedges, with two angled walls and a curved outer wall. The exterior design has also left all the classroom spaces without any windows or access to natural light. Jonesborough Middle school is a traditional building configuration from mid-twentieth century. Its standard classroom configuration has avoided the systemic problems in the elementary school. The building fares better but still requires significant maintenance and renovation to remain viable. These issues could be handled in an alternate proposal- refer to Project Alternate #1- but the existing location remains problematic.

Aging buildings and deferred maintenance have meant the school district has had to chase escalating repair costs. Jonesborough Elementary School's buildings are nearing effective end-of-life, necessitating significant investment to continue operation. More recent additions are in better condition but comprise less than 50% of the facility. The conical roof shape is inherently not conducive to reroof operations without considerable extra expense. The kitchen equipment has degraded and now requires complete replacement. Even if the county could overcome these challenges through renovation or addition, the site itself remains problematic.



15 High traffic businesses identified within proximity of the existing schools

Jonesborough Elementary School and Jonesborough Middle School share a site with the municipal bus barn just northeast of historic downtown Jonesborough, on the corner of US 11-E and Forest Drive. 11-E is a 4-lane divided boulevard as it passes the property, which creates difficulty turning into the site. The only traffic light is at the Forest Drive intersection, which does alleviate some congestion for faculty and staff. Even so, during pick up times, car stacking spills over onto the deceleration lane on 11-E. The properties adjacent to the site have been developed since the original school opened and 11-E has become a significant commercial corridor between Johnson City and Jonesborough. Non-school related traffic has increased dramatically since development occurred and has become a safety concern for students needing to cross the highway. The proximity to the Highway also means the school zone slows traffic on 11-E during bussing periods which creates traffic issues and further compounding safety concerns.

The extent of suburban commercial development immediately adjacent to the site has created a site-constrained facility. All adjacent property has been developed and lots directly to the west and east both have buildings close to the property lines, so purchasing more property for additional facilities or buffer is not possible. Although there is room for another building expansion, space is lacking for parking, or adequate outdoor spaces for recreation and athletics. The existing site does not have much space available for any quality outdoor facilities or programs. The single existing recess and PE area is shared by both schools and occupies the middle of the site. Most of the remaining available open area is directly adjacent to State Route 11-E and is not a safe option for recess or athletic activities. Major site reconfiguration is needed to ensure growth potential.

Proposed Facility

This proposal relocates the school off the main commercial corridor and will develop a new educational and athletic facility at an easily accessible location where traffic can be more easily controlled. The current school property could either be sold to infill the commercial district or the Middle School could be converted for use by the County for other purposes.

A facility designed for 1100 students in a 147,000 sf building is proposed to accommodate the enrollment trends, alleviate site constraints, and provide a path forward for the district. For this capacity, the anticipated school will need approximately 53 standard classrooms to meet the State average class size requirement. In addition, specialized classrooms such as labs, art rooms, music rooms, collaboration spaces, and the normal complement of associated supporting spaces are required: cafeteria, media center, gymnasium, etc. Classrooms will be designed for the state-required ranges for average and maximum class sizes. This project will primarily function as a school consolidation and replacement project with an eye to expansion rather than an immediate significant increase in classrooms. The building is expected to be a similar size and capacity to the new 2019 Boone's Creek School. That building replaced two smaller schools with a combined capacity of 726 and increased the student capacity in the north part of the district by 374. This project will increase the overall local capacity by a modest 92 students but will enable

the school to assign classrooms as required over a larger unified facility and allow multiple avenues and places to expand in the future. By realigning the available spaces within school facility with the actual needs of the local students, the district will be better prepared to handle additional population increases within Jonesborough and the County.

The building configuration will take advantage of the topography by incorporating a lower level where slope allows, which maximizes the building density and minimizes the need for any site retaining walls. The gradient of the site- particularly on the west side of the parcel by North Cherokee road- is amenable to providing approximately a 15' floor-to-floor grade change while providing opportunities for outdoor play areas, classrooms, and other educational amenities. Large-volume spaces such as the cafeteria and gymnasium could be located on this lower level with upper level circulation able to overlook the spaces.

The site will also accommodate a significant athletics facility, including baseball, softball, football, soccer, and a track. These amenities will be primarily for educational use by the students for student Athletic and PE programs, but will also be available to Town and County residents. Possible additional amenities include bio-retention ponds for natural filtration with educational signage, raised beds for an instructional garden, potential rainwater capture, and a barn & paddock for an animal husbandry program, all linked by paved walking trails eventually connected to the existing Jonesborough trail system to the south.

The facility will be looking to the future by designing to the most recent energy codes and provide educational opportunities for students in stewardship, agriculture, and husbandry. The structure will build in sustainability features as they make sense to the project.

1. **Project Duration:** Design Period: 9-12 months; Construction Period: 12-18 months. Current progress allows the project to target an August 2022 opening.
2. **Service Area:** Site located away from the busy commercial center and adjacent to existing and future neighborhoods and subdivisions. Unique location is still close to the historic downtown without the current traffic concerns. Any development nearby will be residential. The student body is expected to be comprised primarily of Jonesborough residents with some additional students from outside the town boundaries.
3. **ADA Accessibility:** This project is required to adhere to the 2010 ADA Accessibility Guidelines. The site was selected based on its ability to accommodate a 2-story building and associated parking with access on each level. ADA access between levels is handled via elevator.
4. **Regulatory:** The State of Tennessee does have guidelines for classroom buildings under its jurisdiction. The State does maintain classroom size requirements for primary and secondary educational facilities under Rule 0520-01-03-.03. The required class sizes are:

<u>Grade Level</u>	<u>Avg. Class Size</u>	<u>Max. Class Size</u>
Pre K	15	20
K-3	20	25
4-6	25	30
7-12	30	35
Career/ Tech. Ed.	20	25

All educational projects in Tennessee are reviewed for conformity to adopted building codes and NFPA 101 by the Fire Marshal's Office in Tennessee Department of Commerce & Insurance. Field inspections and Certificates of Occupancy are provided by the same office.

Building Sites

Approximately 40 to 50 acres are needed to house the 147,000 sf building and associated support infrastructure. The site should be close to Jonesborough, but not directly on any main highways.

All available sites within Jonesborough have hilly or rolling terrain and variable soil conditions are common throughout the region. As such, the number of available parcels of an appropriate acreage within Jonesborough's boundaries is limited. Four sites were ultimately selected for serious consideration, each of which is located within or adjacent to existing Town limits. Each site occupies existing farmland within a small valley on available parcels at each location that exceed the required size. Each lot is buffered from US 11E but has multiple access points.

The Town negotiated terms for each property and they were scored and evaluated based on surface conditions including rock outcroppings,

Site Location Map



accessibility to utilities including gas, topography and the ability to build the school on “cut” and not “fill”, accessibility from major arterial routes, neighborhood impact, the location within the Jonesborough School District, and the willingness of the owner to sell. The 48 acres the Town has under option scored well above any of the other properties. The available site options are shown below on the site location map.

1. **Project Site- Lynn Property:** The preferred site is nearly rectangular and bounded by North Cherokee Road to the west and Thompson Meadow Lane to the south. It extends the length of Thompson Meadow Lane to the east, approximately 1880 ft. The existing lot would be partitioned by a line parallel to Thompson Meadow Lane approximately at the intersection of Skyline Drive and North Cherokee Road to create the 48 acres. This option is the least densely developed, with roughly a dozen rural homes directly adjacent to the land. Slightly further out, a large subdivision begins just down Skyline drive to the west and a smaller neighborhood is under construction to the south. At its most extreme, there is approximately a 60 ft grade change from the highest point on the site to the lowest, sloping from the northwest to the southeast. The average slope on the site is approximately 12.5%. The west half of the site contains a relatively low-sloped area large enough for the main building and most of the adjacent parking. This property is most conducive to placing a building in an accessible location.
2. **Alternate 1- Mitchell Property:** This site is directly west of downtown Jonesborough, between Persimmon Ridge Road and Route 11E. Its location is particularly attractive, given its proximity to the historic town center and its outlying homes. There is also a suburban neighborhood just south of the site accessible from Persimmon Ridge Road. Several boundary variations were considered for this site, ranging from 35 to 45 acres. Only the south half of the property could be developed for the school due to increasing topographical variation toward the north, ultimately bounding at the ridgeline. The developable area is too small to fit all the elements needed for this project. This site does include a gently hilly area of several acres directly adjacent to Persimmon Ridge Road but is otherwise steeply sloping up to the ridge, making site circulation difficult and requiring extensive terracing. Each of the schemes on this property indicated retaining walls would be necessary to the overall detriment of the project.
3. **Alternate 2- Ledbetter Property:** This parcel is an L-shaped lot tucked behind the intersection of TN 81 (W. College Street) and Ben Gamble Road, excluding two roughly rectangular lots directly on the corner. It is a rural site surrounded by existing low-density homes and multiple suburban residential neighborhoods to the east and west just across W. College Street. A school located on this site would make an appropriate addition to this area. There is about an 80 ft drop (at about 11.9%) from the southeast boundary on Ben Gamble to the middle of the site, which is the natural drainage location. This topography splits the site roughly in half, and then rises at a similar grade to the opposite boundary. Since the drainage area is roughly in the center of the lot, placing a building here would be difficult

without potential water problems or creating access issues. With no relatively flat area, placing a facility would also be difficult without extensive retaining walls.

4. **Alternate 3- Shell Property:** Extending from Persimmon Ridge Road down to Shell Road, this property is the largest of the 4 at 80 acres. There would be plenty of room with manageable terrain on the southern half. It technically lies just outside the Jonesborough school district, which causes difficulty for all students to reach within reasonable time to and from school. Due to road size and traffic patterns, the main access would have to be from Persimmon Ridge Road, which necessitates a climb over a nearly 90ft high ridge. For these two reasons, this site is considered unfavorable compared to the others.

Compared to the others available, the topography of the Lynn Property is most conducive to placing a large building while pocketing a lower level, associated parking, and the athletic fields. There is plenty of space for providing access to the other listed amenities. The relatively shallow slope of the existing contours means this parcel could be developed without need for extensive retaining walls, further minimizing the required investment. Its location provides convenient access while maintaining a buffer from commercial traffic.

Integrated Project Delivery Method

This project is a unique partnership between the Town of Jonesborough and Washington County along with the Washington County School Board. Since three governmental agencies will be reviewing and commenting on the plans, competing demands on the available budget are anticipated to include numerous features in the new facility. Despite these competing interests, a fixed project cost is part of the Town-County Lease agreement and a sound method is required to ensure delivery on-budget for all components of the project including land, building, legal, design, and site work. The Town cannot increase the cost of the total project without receiving the authority to do so from a tedious process through the Washington County Commission. Therefore, the project must be completed within the funding available and it is critical that the design process results in a guaranteed maximum price. The construction management process is the soundest way to get the building needed ultimately designed for a guaranteed price that is within the project budget.

In order to implement these goals, the project team proposes to hire a Construction Manager-CM-GC-At-Risk. The CM-GC will contract to build the school building and related facilities but with a guaranteed maximum price, selected through Free and Open Competition qualification-based process from a pool of pre-qualified firms. This group of potential CMAR contractors has not yet been created and will be generated using the criteria below.

This project will also employ a Construction Management-Advisor (CM-A) under contract with the Town who will act as an owner's expert-advocate throughout the construction process. The CM-A will initially bolster the design process by undertaking on-going cost

projections on individual work tasks, value engineering the design as it is developed maximizing the cost/benefit of the various components of the construction, and providing on-going inspection and management services throughout the project construction. This advisor is not eligible for consideration as CM-GC-At-Risk.

This multi-layered method of project delivery has precedent in Washington County, as it was successfully used in the last major school construction contract awarded by the district.

CM-GC-at-Risk Selection

A Request for Qualifications (RFQ) will be publicly advertised and sent to a minimum of five (5) construction management firms who demonstrate capabilities of successfully completing similar projects for consideration to build the school. Criteria used to select the CMAR to build the school and facilities will include the following:

- Ten (10) year operational experience.
- Provide minimum three (3) references that indicate the following:
 - Number of projects of similar size and complexity that have been undertaken by the candidate.
 - Record of projects successfully completed on time, on budget, and to the owner's satisfaction.
- Whether the candidate employs a workforce sufficient to undertake the project and move it forward in a timely manner and complete in time.
- Ability to provide a qualified full-time project manager and full-time site supervision.
- Pre-qualified subcontractors.
- Ability to work with the Architect and Construction Advisor to reach a mutually acceptable guaranteed maximum price with no change orders or additional costs based on errors or omissions.
- The certification that the contractor will comply with all Federal, State and local requirements that becomes effective upon execution of the contract.
- Ability to properly provide the performance bond with 100% surety and insurance.

A rating system will be established including the criteria above that will be used by a Contractor Evaluation Committee that will be made up at least by the Architect (ex-officio), the owner's representative, the Construction Management Advisor, and one knowledgeable and established local contractor/developer or design professional from the community who is not directly involved in the project. An example of the established

contractor evaluation method and rating system are attached. The rating system, make-up of the Contractor Evaluation Committee along with the AIA Construction Manager as Constructor Contract (document A133-2009), and the list of contractors to be sent a RFQ notification (and the justification for their selection) will be sent to Rural Development for approval prior to the Request For Qualifications being advertised. Upon receiving RD approval, the RFQ will be publicized and the Contractor Evaluation Committee will review the submittals received and rate them. The Committee will then make a recommendation to the Town for its consideration and possible action on the contractor best suited for the project. The documentation related to the results of the evaluation process used, and any subsequent action taken by the Town will then be sent to Rural Development for review.

The CM-GC-AR selection process will be initiated at the 50% Construction Documents milestone, when there is enough design detail for accurate cost projections that allow submitting CM-GC's confidence that a guaranteed maximum price for construction is feasible within the total project funds available.

The selected CM-GC-AR will work closely with the Architect and Construction Advisor to further integrate the project as outlined above for cost and efficiency to determine a final guaranteed maximum price for the entire construction project. When there is consensus on final cost by all parties, the Construction Manager as Constructor Contract will be executed and sent to Rural Development for Approval to Award.

Construction Management Advisor

In order to ensure that there is on-going review and oversight throughout the entire design process, it is essential to the Jonesborough School Project that the following takes place early in the beginning with design development. To that end, third-party review and estimating often takes place. This scope will be performed by a Construction Management Advisor (CM-A) who will remain involved through the duration of the project.

During design the CM-A will aide the project team through these services:

- Review work task costs during design and determine how they fit within the master budget for the project. Provide value engineering options to achieve maximum benefit for the best cost.
- Review constructability of design elements and systems and explore more cost-effective alternatives to achieve the desired goals.
- Assist in design coordination for quality control, applicable code compliance, as documents are prepared.

- Assist in ensuring the RFQ package includes enough design detail for the CM-GC-AR candidates to respond with confirmation that they can construct the project for a guaranteed maximum price.
- Consult with the Architect and Owner to select the CM-GC-AR to undertake the construction through a construction management - contractor agreement.

After CM-GC-AR selection, the CM-A will continue to provide estimating and value engineering analysis services through completion of the documents. Once work begins on-site, the CMA will also:

- Observe work performed for conformity to plans, specifications, and applicable codes.
- Assist with inspections, facilitate communication and meetings between parties.
- Review pay requests and percentages of work performed by the Construction Contractor are accurate and justified, and ensuring the work performed is meeting the quality and time schedule expected with the project.
- Closely monitor schedule and costs during construction as well as evaluating substitution requests not necessarily impacting aesthetic design.

The use of a Construction Management Advisor is the best way to apply an independent and objective voice into the design process that carries construction experience of similar projects. It is also an effective way to explore alternative construction techniques and materials to achieve design goals in the most cost-effective manner. This effort is much more beneficial and successful if it is applied during design, and not as a desperation application after bids way over budget have already been received.

While there is a cost for this service, it is not paid until a guaranteed maximum price within budget has been received. The CM-Advisor pays for itself with a successful project within the funds available. The Construction Management Advisor will be selected by the Owner based on years of experience in managing large construction projects, knowledge of up-to-date construction techniques, the ability to work with other contractors in a manner that results in high quality work and cooperation, ability to work in a close partnership with the Architect and the Owner, and the capability of maintaining complete independence financially from the Architect and the CM-GC-AR.

The CM-A and CM-A's staff will average a daily presence on the job site during construction providing on-going consultation with the CM-GC-AR, and assisting with inspections, and the scheduling of necessary inspections for the structural, electrical, mechanical and civil engineers along with the Architect and State Fire Marshall. The need for a full-time inspector is greatly reduced by the selection process that results in a highly qualified and experienced general contractor and pre-qualified sub-contractors. The CM-GC-AR's participation in the finalizing the construction design documents will ensure the

general contractor is totally aware of design and performance expectations. The CM-A's on-going presence beyond the periodic inspections by the Architect's Contract Administrator will ensure the project is executed as designed and with the quality expected.

Cost Estimate

The total project costs are expected to be \$32,750,000, which is the funding obligation by the County through the Lease Agreement. The agreement stipulates that the project amount cannot exceed the original approved amount without approval of the Town, County Commission, and the School board, which essentially locks in the above amount. Legal fees are projected at \$300,000 based on the costs already incurred in creating numerous documents associated with the lease to the County and partnership authorization with the Washington County School Board. The legal fees also include a projected cost of Bond Counsel to prepare documents near the end of the project.

Budget Information

COST CLASSIFICATION	TOTAL COST (\$)
Administrative and Legal	300,000.00
Land, Structures, Rights-of-Way	2,200,000.00
Relocation	0.00
Architect/ Engineering	1,400,000.00
Misc. Design Fees	0.00
Project Inspection Fees	280,000.00
Site Work	2,663,000.00
Demolition and Removal	10,000.00
Construction	23,900,000.00
Equipment	600,000.00
Miscellaneous (Athletic Fields)	827,000.00
SUBTOTAL	32,180,000.00
Contingency	570,000.00
Project Income	0.00
Federal Funding	100%
TOTAL PROJECT COSTS	\$32,750,000.00

Architectural fees include standard consultant engineering expenses, civil design fees, and an inspection component. Those fees are capped at 5% of construction costs, which equals \$1,400,000.

Interest for interim financing during construction is being projected by Raymond James. The only equipment included in the project is equipment associated with the kitchen in the new school. The estimated cost of the kitchen equipment is \$600,000 which is based on the equipment recently purchased for the Boones Creek K-8 School which opened in the fall of 2019.

Contingencies are budgeted at \$570,000. While there is a need for a contingency set-aside, the fact is that there will be a guaranteed maximum price for the construction and value engineering throughout the process and there will be an expectation of no change orders and cost increases. The amount of reserve funding needed for the project as a result of the construction management process should be much less than normal. The contractor and architect will work out all of the construction details and costs in advance of the guaranteed maximum price. There should be no major surprises.

There is a Construction Management – Advisor and that cost will be 1% of the construction cost, or \$280,000 which is documented in the project budget under Project inspection fees.

The total cost of construction is based on \$28,000,000. This cost includes site work at \$2,663,000, demolition at \$10,000, equipment at \$600,000, athletic facilities at \$827,000 and building and grounds at \$23,900,000.

Annual Operating Budget

The proposed finance plan for the new school is funding through a USDA Rural Development Community Facilities Direct Loan to the Town of Jonesborough. The loan will be a General Obligation of the Town of Jonesborough that is further evidenced by a General Obligation lease with Washington County. The school building and associated outside facilities including parking areas, athletic facilities, open space and park areas will be leased to the County with the lease payment amount based on the debt service on the construction of the capital improvements.

The Washington County School System operates the public school system in the County as required by state law. The building and maintenance repair will be funded through an operation and maintenance allocation provided to Washington County School System through the County budget. This funding is from the Operating Fund of the County School System, and not the Washington County Capital Improvement Fund that will be used to make the lease payments.

This proposed new school will replace two existing schools for which the school district is already funding operations. Overall, cost savings are expected from slightly reduced staffing requirements of a single building and lower energy costs from operating a modern structure. These operations are memorialized in the lease agreement between the Town of Jonesborough and Washington County, which further directs the County and School System to maintain the facility in accordance with the requirements of state law for school buildings. The Town of Jonesborough will not have direct input on the day-to-day operating expenses of the school other than what is required in the lease agreement.