BLADEN COUNTY SCHOOLS
INVESTIGATION INTO CONSOLIDATION

presented to
Bladen County Board of Education
and
Bladen County Schools Superintendent

prepared by
School Planning Section
NC Department of Public Instruction

August 1, 2016
BLADEX COUNTY SCHOOLS
INVESTIGATION INTO CONSOLIDATION

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A note about organization of this report: the “Synopsis” provides a one-page discussion of major points regarding each school (and one page of photographs); additional detail is available in the Appendix, and is organized under Architectural, Mechanical, and Electrical topics.
BLADEN COUNTY SCHOOLS
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Introduction

At the request of Dr. Robert Taylor, Superintendent, and Dr. Robert Heavenridge, Support Services Coordinator, a team of architects and engineers from the School Planning Section of the North Carolina Department of Public Instruction visited all Bladen County primary and middle schools to evaluate the facilities in regard to potential consolidation. The members of the team are

Johnny Clark, Mechanical Engineer
Jonathan Jones, Electrical Engineer
Nathan Maune, Architect
Ken Phelps, Architect / Lead School Planning Consultant

The site visits were accomplished on May 17 and 19, 2016.

Prior to the site visit, various documents were provided by the district staff to the School Planning team for review and study. These included the following:

Bladen County Schools: Consolidation Data Review / November 2015
Bladen County Schools: School Consolidation Proposal / September 14, 2015
Facility Evaluation Report: Bladen County Schools / October 3, 2005

In addition, selected data from the Facility Needs Survey of 2016 were printed for information. The team also reviewed the “School Closing Procedure” (February 2008) and “Cost and Feasibility of Renovating or Replacing an Old School Building,” published by School Planning and available on the section website.

Several of the district and school staff personnel accompanied the School Planning team and provided extremely valuable insight. They included Dr. Taylor and Dr. Heavenridge, David Lesane, Barry Holder, and Tony Wilson. Their knowledge and expertise are much appreciated.
Executive Summary

The stated purpose of the site visit was to evaluate the various primary and middle schools in the county to determine how consolidation could best be accomplished, to the fiscal benefit of the district and to the educational support of the students. Various scenarios developed by the district were evaluated (see Table 1) although the School Planning team retained the option of suggesting any other scenario which might become apparent during the evaluation.

Table 1. Commonalities of Proposals

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All middle and primary schools were visited during the two-day observation; the sequence of travel was determined mainly by geographic convenience. The district high schools were not visited, because all consolidation plans involved only the K-8 grades.

School consolidation, especially because it involves the closing of a school or schools, is a serious matter and involves a number of factors. Several of these issues are beyond the scope of an evaluation by School Planning, and are not addressed in this report. For example, the distance of bus travel, bus routes, and student demographics and density in various areas of the county have been thoroughly studied by district staff as part of their evaluation of the various consolidation scenarios. School Planning personnel did not address this factor. Likewise, the DPI team did not consider the very important impact of teacher, staff, and administrator reassignment (including retirement and/or termination), nor did we attempt to assign a dollar-amount to savings of operating expenses, since this is beyond our knowledge and expertise.
This report focuses primarily on the condition of school facilities relative to remaining in service or accepting additional enrollment, and on the need for repairs, reconditioning, and/or modernization of the facility in order to meet applicable standards of health, safety, and educational support. Given the dates of construction of schools in this county, all will have shortcomings regarding handicap accessibility of toilet facilities, for example. The degree to which this is corrected will depend on the scope of other work (if any) to be planned for a school. Our observations were ‘ground level’ only; we did not observe or evaluate roof conditions, which may have significant impact on the cost of keeping any given facility in operation.

Therefore, we caution district administrators and citizens not to expect that an increase of enrollment at any school will be cost-free, even if “room is available.” There are significant instances of deferred maintenance and programmatic needs at every school, and these should be resolved as soon as funding allows. In a similar manner, the ‘closing’ of a school does not imply an immediate and complete cessation of all expenditures for that campus. Unless the property is sold or transferred immediately, there will still be costs for utilities (such as minimum security lighting, sufficient heat to prevent freezing, etc.), liability insurance, site protection (perhaps fencing, or closing of access points), and other needs. However, these expenditures will be minimal when compared with the costs of keeping the school in operation.

Within that context, we respectfully present the following...

**Recommendation for Consolidation.**

Our proposal is, in essence, to combine District Proposal #2 and the Proposal dated 9/14:

- Close Plain View Primary; transfer students to Elizabethtown, Bladenboro, Bladen Lakes, and Dublin
- Close B T Washington Elementary; transfer students to East Arcadia and Bladenboro

And

- Close either Clarkton School of Discovery or Tar Heel Middle School; transfer students to the other district middle schools.

The selection of students to be transferred to each campus is determined by many factors, not the least of which is the number and size of available classrooms and other facilities. We recognize that the District must educate all students within the existing facilities. However, we encourage administrators to make every effort possible to limit the number of students assigned to a given classroom, to be consistent with the NC Public Schools Facility Guidelines.

The School Planning Section is grateful for the opportunity to visit Bladen County Schools, and to make these recommendations.
BLADEN COUNTY SCHOOLS
INVESTIGATION INTO CONSOLIDATION

Synopsis of Findings

Over a period of two days, May 17 and 19, 2016, architects and engineers of the School Planning Section of the North Carolina Department of Public Instruction visited all Bladen County primary and middle schools, with observations and recommendations as noted in alphabetical order below.

PRIMARY SCHOOLS

BLADEN LAKES PRIMARY SCHOOL  (visited on 5/19/2016)

Overall Evaluation

This facility had an Average Daily Membership (ADM) of 269 in 2014-15. The Facility Needs Survey of 2015-16 calculated a capacity of 376 students, not including pre-Kindergarten. The school appears well-maintained. Some portions do not meet current accessibility codes, especially toilets. Some areas may require modification to meet current educational program requirements. The facility is underutilized, but additional capacity is limited by small classrooms. Recalculating capacity to account for sub-standard classrooms results in a capacity of 354 students including pre-Kindergarten.

Observations

Positive Considerations
- Good site circulation
- Good-sized rooms for pre-Kindergarten and for Kindergarten.
- Electrical panels have adequate capacity for new loads
- Generator provides back-up power; school serves as an emergency shelter

Negative Considerations
- Elem play area is remote from classrooms
- Classrooms in Building 1 and Building 3 are smaller than standard
- There is no gym; “multi-purpose” room (3,154 s.f.) is primarily cafeteria. “PE” is held in a mobile unit (806 s.f.) three days per week
- Kitchen is small (below ‘Guidelines’)
- Fresh air supply system has been closed off – outside air must be supplied to all occupied spaces for continued operation as a school
- Electrical outlets in the kitchen do not meet GFI protection requirements (not required at the time of construction)

Conclusion

Per the North Carolina State Building Code, fresh air must be supplied to all occupied spaces. If this shortcoming is resolved, there is no reason not to continue to use this school; additional enrollment can be accommodated, within reason.
Bladen Lakes Primary School (5/19)

Exterior

Exterior

Classroom

Classroom

Cafeteria

Media Center
Overall Evaluation

The 2014-15 ADM is reported as 395. The facility appears well-maintained. Some portions do not meet current accessibility standards (especially toilets), and some spaces may benefit from modifications to meet current educational programs. The capacity calculated in the 2015-16 Facility Needs Survey was 567, not including pre-Kindergarten. The capacity was recalculated for this report, and computed 419 students including pre-Kindergarten, after reducing class size due to sub-standard classrooms, or 481 students without that reduction. The actual enrollment is somewhat less than theoretical capacity, but the assignment of additional students is limited by the sub-standard size of all classrooms.

Observations

Positive Considerations
- Outdoor play areas are adequate
- Site circulation is adequate
- The cafeteria is especially attractive, having an exposed wood roof deck and frame

Negative Considerations
- All general classrooms are smaller than standard
- Kitchen is small (but dining space is larger than standard)
- There is no gym or multi-purpose room (other than the cafeteria)
- No dedicated source of make-up air is supplied to the kitchen exhaust hood
- Fresh air supplied to the building air handling units is not actively controlled
- The electrical service to the older part of the building is a code violation—having more than six service disconnects (must be corrected if/when additional circuits are needed)
- No emergency lighting in older wing
- Electrical outlets in kitchen and outlets within six feet of a sink do not have GFI protection (not required at time of construction)

Conclusion

The mechanical and electrical issues noted above should be corrected. In addition, the district should verify the shut-off of electrical equipment under the kitchen exhaust hood upon activation of the fire suppression system, and verify proper emergency light and exit sign coverage throughout. With increased enrollment, it would be good to accommodate art and music programs in permanent facilities. Additional student assignment should be no more than 25-50.
Bladenboro Primary School (5/17)

Exterior

Exterior

Classroom

PE Classroom

Cafeteria

Media Center
Overall Evaluation

This facility has a current enrollment of +/- 200 students. Its calculated capacity is 378, or 310 if reduced capacities in smaller classrooms are considered. The facility appears to be well-maintained, given its age. Some locations do not meet current accessibility standards (especially toilets), and some spaces may be in need of significant renovation to meet current educational standards.

Observations

Positive Considerations
- Vehicular circulation is good, but curb-side drop off is limited
- Cafeteria is adequate but kitchen is small
- New roof on cafeteria, approx. 3-4 yrs. ago
- New roof this year on the rest of Building 3 and on Building 1

Negative Considerations
- All classrooms (except Kindergarten, building 6) are too small for current criteria
- There are no facilities for the arts
- The kitchen exhaust hood has no dedicated source of make-up air
- Some areas of the school have no supply of outside air.
- Many classrooms are served by packaged wall-mounted heat pumps which are noisy. (Staff reports cutting off the systems in order to be heard.)
- The two electrical services are ‘at capacity’ and may not be able to accept additional load. There are limited spares and spaces in existing branch panelboards.
- The building does not have emergency lights and some areas need exit signs
- Electrical outlets in kitchen and outlets within six feet of a sink do not have GFI protection (not required at time of construction)
- Although the kitchen hood has the required fire suppression system, it does not shunt-trip electrical appliances upon activation (verify)

Conclusion

This school should not remain in use without significant improvements to the mechanical systems. Of note: this school is among the lowest in utility costs ($155.40/ADM) compared to the district average ($211.17/ADM) in 2014-15, possibly (?) because the systems are turned ‘off’ or do not provide the comfort and health levels of other schools. In addition, electrical concerns (emergency lights, exit signs, activation of kitchen fire suppression system) must be resolved if this school remains open.
DUBLIN PRIMARY SCHOOL

Overall Evaluation

This facility had an ADM in 2014-15 of 261 students; enrollment at the time of the site visit was reported as 322. (This school serves a significant migrant population.) Its capacity was calculated as 272 if sub-standard classroom size is considered, or 319 otherwise. The school appears well maintained. Some locations do not meet current accessibility standards, and some spaces may be in need of renovation to meet current educational standards.

Observations

Positive Considerations
- The Cafeteria / Multipurpose Room is appropriately sized, although the kitchen is quite small
- The Gymnasium is also very nice, and has a stage
- Outdoor play areas are adequate, and located in close proximity to classrooms
- The building electrical system has spare capacity

Negative Considerations
- Only three Kindergarten classrooms and two First Grade classrooms meet current standards for room size
- Vehicular circulation, parking, and curb-side drop-off are poor, and should be corrected
- The lack of fresh air in some areas is a major concern, as is the lack of dedicated make-up air at the kitchen exhaust hood
- Wall-mounted packaged heat pumps are noisy, and staff reports having to cut off the equipment in order to be heard
- Additional exit fixtures and emergency lighting are needed in various areas
- A fire suppression system is needed at the kitchen exhaust hood; it should shunt-trip electrical appliances upon activation
- Electrical outlets in kitchen and outlets within six feet of a sink do not have GFI protection (not required at time of construction)

Conclusion

The district’s proposals for consolidation envision an addition of +/- 200 students, which the existing facilities will not be able to accommodate. Core facilities are generally good (except for the kitchen, which should be expanded), but classrooms are limited in size. Vehicular circulation and parking should be improved. Significant upgrades to the HVAC systems are necessary to supply fresh air to all occupied spaces, and to replace equipment that creates sound levels which are detrimental to learning. Exit and emergency lights should be added as required by code, as should the kitchen fire suppression system.
Dublin Primary School (5/17)

Classroom

Classroom

Classroom

Cafeteria

Gymnasium

Media Center
Overall Evaluation

This K-8 facility had an ADM in 2014-15 of 126 students; there is potential for significant transient enrollment by migrant children. The capacity reported in the 2015-16 Facility Needs Survey was 362. Capacity (recalculated for this report) is 397 students because of sub-standard classroom size, or 439 students if classroom size is not considered. Therefore, there is significant excess capacity in both classrooms and core facilities. The school appears well maintained overall. Some areas do not meet current accessibility standards, and some spaces may need renovation to meet current educational standards – especially middle school science and the arts.

Observations

Positive Considerations
- Cafeteria is appropriately sized, but kitchen is much too small
- Media Center is only slightly undersized, but is adequate for current enrollment
- Gymnasium is adequate but there are no locker rooms or other support spaces typically included in a middle school program
- Play area for elementary school is adequate
- Vehicular circulation, parking, and drop-off facilities are adequate
- Fire alarm system is adequate and can be easily expanded if needed

Negative Considerations
- Thirteen existing classrooms are undersized; seven meet current size criteria
- Roof insulation in the gym is damaged and falling in places
- There are no exterior athletic facilities for middle school, but space is available
- There are several different types of HVAC systems; the areas served by split system heat pumps do not have a source of outside air
- Wall-mounted packaged heat pumps are noisy, and staff reports having to cut off the equipment in order to be heard
- The electrical service is at capacity and only limited spares are available
- Science labs do not meet Safety Checklist
- Some classrooms have only 2 electrical outlets
- Additional exit fixtures and emergency lighting are needed in various areas
- Electrical outlets in kitchen and outlets within six feet of a sink do not have GFI protection (not required at time of construction)

Conclusion

There is capacity in the building for additional enrollment. However, improvements are needed in the kitchen and the science labs, and for middle school athletics. Upgrades to the HVAC systems are necessary to supply fresh air to all occupied spaces, and to replace noisy equipment. Exit and emergency lighting should be added where required by code.
East Arcadia School (5/19)

Exterior

Media Center

Classroom

Classroom

Cafeteria

Gymnasium
ELIZABETHTOWN PRIMARY SCHOOL

(visited 5/17/2016)

Overall Evaluation

This PK-4 facility had an ADM in 2014-15 of 472 students. The capacity reported in the 2015-16 Facility Needs Survey was 637, but this may have been overstated. Based on a reduction of class size due to sub-standard room sizes, the recalculated capacity is approximately 542, or without such deduction the capacity is approximately 599, both calculations including pre-Kindergarten classrooms. The school appears well-maintained overall. Some areas do not meet current accessibility standards, and some spaces may need renovation to meet current educational standards.

Observations

Positive Considerations
- Cafeteria and Media Center are large
- Outdoor play area is adequate
- Vehicular circulation is adequate; parking and drop-off facilities are adequate
- Building electrical services are generally good and have adequate spares and spaces
- Many classrooms have 4 to 5 electrical outlets which appear to be adequate

Negative Considerations
- Twenty existing classrooms are undersized; fourteen meet current size standards
- There is no large-group activity space except the cafeteria
- Kitchen is significantly undersized
- Older electrical panels do not have capacity to add breakers; some classrooms have only 2 or 3 outlets and extension cords were in use.
- Some classrooms have window-mounted AC units, which are loud and are detrimental to learning
- Fresh air supplied to mechanical units is not actively controlled and probably not properly balanced, thus reducing indoor air quality
- Much of the duct system is constructed of fiberglass ductboard
- Additional fire alarm devices, exit lights, and emergency lights are needed in various areas
- There does not appear to be adequate data and WIFI provisions in older portions of the building
- Electrical outlets in kitchen and outlets within six feet of a sink do not have GFI protection (not required at time of construction)

Conclusion

There is moderate excess capacity for additional enrollment. However, enlargement is needed in the kitchen, and upgrades are necessary to ensure an adequate supply of fresh air, and to provide required fire alarms, exit signs, and emergency lighting. (See Appendix for additional discussion of deficiencies and recommended priorities of correction.)
Elizabethtown Primary School (5/17)

Exterior

Exterior

Media Center

Media Center

Classroom

Classroom
Overall Evaluation

This PK-4 facility had an ADM in 2014-15 of 184 students; at the time of the site visit, school administrators gave the enrollment as 190-200 students. The capacity reported in the 2015-16 Facility Needs Survey was 248 students. However, this may have been overstated, as one classroom has been converted to administrative use. Based on a reduction of class size due to sub-standard room sizes, the recalculated capacity is approximately 169, or without such reduction the capacity is approximately 216 students. Five mobile or modular classrooms are in use on the site, but are not included in capacity calculations.

Observations

Positive Considerations
- Dining area is adequate for enrollment
- Media center is adequate, although support spaces are significantly undersized
- Outdoor play areas are adequate
- Vehicular circulation, parking, and drop-off areas are adequate; however, parking near the school entrance is limited
- The fire alarm system is adequate and easily expanded as needed

Negative Considerations
- All classrooms are undersized, relative to current standards
- Kitchen and auxiliary areas are significantly undersized
- There is no large-group activity space except the cafeteria (a modular unit is used for “PE”)
- There are several types of HVAC systems in use; fresh air is available only to areas served by packaged equipment. All other areas do not have a mechanical means for supplying fresh air
- Wall-mounted packaged heat pumps and split-system heat pumps with in-room fan coil units are noisy, and staff reports having to cut off the equipment in order to be heard
- Generally, there are only 2-3 electrical outlets in classrooms, and extension cords are in use
- Electrical outlets in kitchen and outlets within six feet of a sink do not have GFI protection (not required at time of construction)
- Additional exit lights and emergency lights are needed in various areas
- Disconnects are not provided within sight of all kitchen equipment

Conclusion

It is difficult to justify keeping this facility in operation for only 180-200 students, especially in light of the deficits listed above.
MIDDLE SCHOOLS

BLADENBORO MIDDLE SCHOOL

(visited 5/17/2016)

Overall Evaluation

The original structure was built in 1925, with ten additions and renovations occurring in the 1940’s through 1989. It served as a high school until converted to middle school usage in 2002-03, with no significant modification or modernization since that conversion. ADM in 2014-15 was 352. Actual enrollment at the time of the visit was reported as 390 students. Capacity calculated in the 2015-16 Facility Needs Survey was 635. However, most of the classrooms are undersized, compared with current standards. Also, some buildings are noted by staff as “unused for years” or “about to be demolished.” Recalculating the capacity with reduction for sub-standard room sizes, and not including unused building, yields a capacity of 495 students.

Observations

Positive Considerations
- Generally, in good condition
- Cafeteria is adequate
- Auditorium is adequate; new seats; access to stage via a lift
- Appropriate for current CTE programs
- Fresh air is available to the air handling units but may need to be properly balanced to supply the required volume

Negative Considerations
- Some existing classrooms are small
- Kitchen / Serving line slightly small
- No auditorium lobby or auxiliary spaces
- Original “high school” spaces not modified
- Twenty-seven years since last renovation
- Science labs do not comply with published Safety Standards
- Some existing electrical panels do not have adequate capacity for new loads
- Additional emergency lighting and exit signs are needed in several areas
- Generally, there are only 2-3 electrical outlets in classrooms, and extension cords are in use
- Electrical outlets in kitchen and outlets within six feet of a sink do not have GFI protection (not required at time of construction)
- Disconnects are not provided within sight of all kitchen equipment

Conclusion

Recommended for continuing use. Some of the original “high school” areas should be renovated, repurposed, or locked-off from access by middle school students. A few accessibility issues (ramps, uneven sidewalks, etc.) should be resolved. The following deficiencies should be resolved: meet safety standards in science labs; install fire alarms, emergency lights, and exit signs where not existent; verify that activation of fire suppression system at the kitchen exhaust hood will shut-off the electrical appliances. This facility can accommodate additional enrollment.
Bladenboro Middle School (5/17)

Exterior

Auditorium

Classroom

Cafeteria

Gymnasium

Media Center
Overall Evaluation

This facility was constructed in 1930, with eight additions in 1938 through 1987. It was originally a high school, but converted to 6-8\textsuperscript{th} grade in 2002-03. The 2014-15 ADM was 279. At the time of the site visit, enrollment was reported as 229 students. The 2015-16 Facility Needs Survey calculated capacity as 469, with all buildings reported in “Fair” condition. The majority of the classrooms are undersized, compared to current standards. Capacity was recalculated for this report, yielding a capacity of 476 based on a reduced class size due to sub-standard rooms. The school appears well-maintained overall. Some areas do not meet current accessibility standards, and some spaces may need renovation to meet current educational standards.

Observations

Positive Considerations
- Cafeteria is adequate
- Outdoor play areas are adequate
- Special-purpose vocational facilities and support by trade and industry groups are positive factors
- The mechanical system in generally in satisfactory working order, is quiet, and can meet the requirements of the school
- Fire alarm system is adequate and can be expanded if needed

Negative Considerations
- Kitchen / Serving is undersized
- Vehicular circulation, parking, and drop-off areas are inadequate
- The original auditorium has been converted to the Media Center; the room remains in dual use, having a stage at the rear wall; support spaces are remote and minimal
- Science rooms are only partially compliant with Safety Requirements
- Sanitary waste piping is leaking between the building and the city waste system
- Fresh air supplied to the air handling units is not actively controlled and likely not properly balanced to supply the required volume
- There is no source of make-up air at the kitchen exhaust hood
- Kitchen hood does not have the required fire suppression system, which should also shunt-trip electrical appliances when activated
- Steam traps are generally stuck open, wasting a significant amount of energy
- The campus has six different electrical services, which could be a hazard; some are older and in need of replacement (fused switch). A label should be provided at each service identifying number of services and location of every other service
- Some classrooms have only 2-3 electrical outlets
- Additional emergency lighting is needed; exit signs should be checked for adequate visibility
- Electrical outlets in kitchen and outlets within six feet of a sink, and in locker rooms, do not have GFI protection (not required at time of construction)

**Conclusion**

This facility has excess capacity; however, significant improvements in the electrical system, as highlighted above, are needed if the school remains in use. [See Appendix for detailed comments and recommended priorities of corrections.] It is difficult to justify keeping both this school (with 279 ADM) and Tar Heel (with 322 ADM) in service. The recommendation of this report is to close one or the other. The age and condition of some buildings and the “added-on” configuration of the campus may be problematic. There is a genuinely useful and successful program for AIG students here, and we support the continuation of the program, whether at this campus or some other.
Overall Evaluation

This facility was constructed in 1971 as a high school, with additions in 1972, 1977, and 1984. It was converted to 5-8th grades in 2002-03. The 2014-15 ADM was 392. At the time of the site visit, enrollment was reported as 460-470 students. The 2015-16 Facility Needs Survey calculated capacity as 732, with all buildings reported in “Fair” condition. Some of the classrooms are undersized, compared to current standards. Capacity was recalculated for this report, yielding a capacity of 715 based on reduced class size due to sub-standard rooms. The school appears well-maintained overall. Some areas do not meet current accessibility standards, and some spaces may need renovation to meet current educational standards.

Observations

Positive Considerations
- Cafeteria and Kitchen are adequate; four serving cycles are used for current enrollment but even increased enrollment could be accommodated in 3 or 4 cycles
- Media center is adequate, even for increased enrollment
- Gymnasium is adequate, but may not meet current accessibility standards
- Outdoor play area is adequate
- Vehicular circulation, parking, and drop-off are very good
- The mechanical system in generally in satisfactory working order, is quiet, and can meet the requirements of the school. However, the 2014-15 utility costs were the highest in the district ($401.98/ADM), primarily due to electricity usage.

Negative Considerations
- Egress from some interior classrooms and resource rooms may be problematic, even if strictly code compliant
- Science rooms are only partially compliant with Safety Requirements
- Fresh air supplied to the air handling units is not actively controlled and likely not properly balanced to supply the required volume
- The woodworking shop (IF returned to use) has no dust collection system
- Hazardous equipment in the shops (IF returned to use) needs emergency power-off switch
- Generally, conditions of lighting fixtures are fair to poor; many fixtures are damaged or are missing lamps; exterior fixtures are not suitable for damp locations
- There is no UL listed fire alarm; staff states that a new addressable system will be installed during the summer
- Additional emergency lighting and exit lights are needed
- Electrical outlets in kitchen and outlets within six feet of a sink, and in locker rooms, do not have GFI protection (not required at time of construction)

Conclusion

The facility has excess capacity and could support increased enrollment. Adverse comments -- generally electrical and mechanical -- should be resolved. See Appendix for additional discussion of deficiencies and recommended priorities for correction.
Overall Evaluation

This facility was constructed in 1925, with additions between 1943 and 1987, and currently serves 5th through 8th grades. The 2014-15 ADM was 322, which is also the currently reported enrollment. The capacity calculated in the 2015-16 Facility Needs Survey was 584; however, capacity recalculated for this report was 624. The newer buildings are reported as “Good” condition, but older structures are noted as “Fair” or “Poor” condition. The school appears to be well-maintained overall. Some areas do not meet current accessibility standards, and some spaces may need renovation to meet current educational standards.

Observations

Positive Considerations
- Cafeteria and Media Center are appropriately sized for middle school
- Gymnasium is adequate
- Outdoor play area is adequate
- Vehicular circulation and parking are adequate, but could be improved by reconfiguration
- Electrical panels have adequate spares and spaces throughout the building
- Emergency lights and exit lights are in good condition throughout the building

Negative Considerations
- Kitchen and serving areas are undersized; the cafeteria has a low ceiling and no windows
- Most of the classrooms do not meet current size requirements.
- Space for drop-off is inadequate
- Science rooms are only partially compliant with Safety Requirements
- Acid waste from science rooms is drained into the sanitary waste system without treatment; correct this as soon as possible
- Fresh air supplied to the air handling units is not actively controlled and likely not properly balanced to supply the required volume
- Unit ventilators (in some spaces) are loud and may impact hearing
- The kitchen exhaust hood should have dedicated make-up air in lieu of unconditioned air by infiltration
- Steam traps are generally stuck open, wasting a significant amount of energy
- Some classrooms have only 2-3 electrical outlets
- Electrical outlets in kitchen and outlets within six feet of a sink do not have GFI protection (not required at time of construction)
- Exposed light bulbs in shower fixtures are a shock hazard: correct as soon as possible
- The dimensions of the kitchen exhaust hood do not seem to match the layout of equipment below; verify if activation of the fire
suppression system will shut-off electrical appliances

**Conclusion**

This facility has excess capacity; however, significant improvements in the mechanical system, as highlighted above, are needed if the school remains in use. [See Appendix for detailed comments and recommended priorities of corrections.] It is difficult to justify keeping both this school (with 322 ADM) and Clarkton (with 279 ADM) in service. The recommendation of this report is to close one or the other. The situation here – with the media center inserted above the cafeteria within the original gymnasium – should be strongly considered as a negative factor regarding the continued use of Tar Heel.
Although there is excess capacity in many of the district’s schools, as evidenced by unused classrooms, the theoretical capacity of a given school will be limited by the sub-standard size of many existing classrooms. That is to say, if current educational programming calls for a 950 square foot middle school classroom for 26 students (for example), then an existing classroom of 750 s.f. should have a class size of 21 students. \[750/950 \times 26 = 20.52\]

However, the realistic capacity (utilization) may be more. If a principal has 26 seventh grade students to teach, and there is an allotment for one teacher, the principal will assign those students and that teacher to an available classroom, regardless of its size. We attempt to make our recommendations realistic, but also mindful of the limitations of small existing classrooms.

First, we considered the current state of facilities and extent of repairs and renovations needed for each primary and middle school in the district, as well as its current enrollment. We identified many schools which have older buildings which are in need of repair, have relatively small enrollment, and/or are somewhat remote, and/or have alternative schools relatively close-by. Primarily based on facility evaluation, we recommend...

- **Close Plain View Primary.** Its relatively small enrollment can be distributed among nearby primary schools. District Proposal 2 contemplated transfer of all students to Dublin Primary; however, the calculated theoretical capacity or the maximum existing capacity of Dublin is not adequate without significant building additions. Therefore, some students would be reassigned to Elizabethtown and Bladen Lakes, and a few to Bladenboro Primary Schools.

- **Close Booker T Washington Primary.** Again, a school of small enrollment but with extensive facility needs. Its students could be reassigned to East Arcadia, with possibly a few to Bladenboro and Elizabethtown Primary Schools.

We contemplated the closing of both Clarkton School of Discovery and Tar Heel Middle School, but determined that the capacity of the remaining Middle Schools could not absorb the necessary transfer. [The other two middle schools plus East Arcadia could probably absorb the populations of both Clarkton and Tar Heel, but it would be ‘tight’.] Therefore, we recommend...

- **Close EITHER Clarkton School of Discovery OR Tar Heel Middle School.** Both are in need of significant modernization. [Clarkton appears to require more electrical modifications; Tar Heel appears to require more mechanical modifications.] The decision may evolve into an evaluation of bus travel and student density. If Clarkton is closed, we recommend the continuation and relocation of the AIG program.

Then, we made some preliminary estimates of the number of students that might be assigned from the closed school, to other nearby existing schools (see Table 2, following). This is ‘preliminary’ because the final decision will depend greatly on bus routes and staff reassignments – topics with which we are not involved. It appears that no single school will be able to absorb the entire enrollment of a closed school, so district lines must be redrawn to ‘split’ students among several schools.
Table 2  
DPI Proposal for Consolidation of Bladen County Schools

<table>
<thead>
<tr>
<th>Action</th>
<th>School</th>
<th>Grade</th>
<th>Exist ADM</th>
<th>*Calc ADM</th>
<th>Proposed Grade</th>
<th>Prop ADM</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Close</td>
<td>Plain View Primary</td>
<td>Pre-k - 5</td>
<td>184</td>
<td>169</td>
<td>n/a</td>
<td>0</td>
<td>322 actual attendance, migrant population</td>
</tr>
<tr>
<td>Assign</td>
<td>Elizabethtown Prim</td>
<td>Pre-k - 5</td>
<td>472</td>
<td>542</td>
<td>Pre-k - 5</td>
<td>545</td>
<td>Cap 599 w/o reduction</td>
</tr>
<tr>
<td>Assign</td>
<td>Bladenboro Prim</td>
<td>Pre-k - 4</td>
<td>395</td>
<td>419</td>
<td>Pre-k - 4</td>
<td>416</td>
<td>Cap 481 w/o reduction</td>
</tr>
<tr>
<td>Assign</td>
<td>Bladen Lakes Prim</td>
<td>pre-k - 4</td>
<td>269</td>
<td>354</td>
<td>pre-k - 4</td>
<td>350</td>
<td></td>
</tr>
<tr>
<td>Assign</td>
<td>Dublin Primary</td>
<td>Pre-k - 5</td>
<td>261</td>
<td>272</td>
<td>Pre-k - 5</td>
<td>270</td>
<td>Cap 319 w/o reduction</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Close</td>
<td>B T Washington</td>
<td>Pre-k - 5</td>
<td>200</td>
<td>310</td>
<td>n/a</td>
<td>0</td>
<td>Cap 378 w/o reduction</td>
</tr>
<tr>
<td>Assign</td>
<td>Bladenboro Prim</td>
<td>Pre-k - 4</td>
<td>above</td>
<td>419</td>
<td>Pre-k - 4</td>
<td>above</td>
<td>Cap 481 w/o reduction</td>
</tr>
<tr>
<td>Assign</td>
<td>East Arcadia</td>
<td>Pre-k - 8</td>
<td>126</td>
<td>397</td>
<td>Pre-k - 8</td>
<td>326</td>
<td>Cal 439 w/o reduction</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>??? Actual attendance, migrant population</td>
</tr>
<tr>
<td>Close</td>
<td>Clarkton Sch of Disc</td>
<td>6 - 8</td>
<td>279</td>
<td>476</td>
<td>n/a</td>
<td>0</td>
<td>(Project Challenge move to Elizabethtown Mid Sch)</td>
</tr>
<tr>
<td>Assign</td>
<td>Elizabethtown Mid</td>
<td>5 - 8</td>
<td>392</td>
<td>715</td>
<td>5 - 8</td>
<td>579</td>
<td></td>
</tr>
<tr>
<td>Assign</td>
<td>Bladenboro Mid</td>
<td>5 - 8</td>
<td>352</td>
<td>495</td>
<td>5 - 8</td>
<td>444</td>
<td></td>
</tr>
<tr>
<td>???</td>
<td>Tar Heel Middle</td>
<td>5 - 8</td>
<td>322</td>
<td>624</td>
<td>5 - 8</td>
<td>322</td>
<td></td>
</tr>
</tbody>
</table>

Check sum 3252 3252 (Balanced)

ALTERNATIVE MIDDLE SCHOOL CONSOLIDATION

| Close    | Tar Heel Middle         | 5 - 8  | 322       | 624       | 5 - 8          | 0        |                                    |
| Assign   | Elizabethtown Mid       | 5 - 8  | 392       | 715       | 5 - 8          | 579      |                                    |
| Assign   | Bladenboro Mid          | 5 - 8  | 352       | 495       | 5 - 8          | 444      |                                    |
| Assign   | Clarkton Sch of Disc    | 6 - 8  | 279       | 476       | 6 - 8          | 322      |                                    |

Check sum 1345 1345

* Capacity recalculated based on sub-standard classroom size
Conclusion

In closing, we recognize that this is not only a complex technical issue but also a political, sociological, and psychological question which must be addressed on various levels and with many differing stakeholders. Our goal of course is to do what is best for the educational achievement of all students and to maximize the economy of fiscal resources. We are able to contribute, however, only in the technical realm of building utilization. We sincerely hope that this report will assist the district administrators to arrive at the most beneficial decision, after considering myriad important factors, of which this data is but one part.
## BLADEN COUNTY SCHOOLS
### INVESTIGATION INTO CONSOLIDATION

#### Appendix

### Detailed Observations of each School

<table>
<thead>
<tr>
<th>School</th>
<th>Architectural</th>
<th>Plumbing / Mechanical</th>
<th>Electrical</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Primary Schools</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bladen Lakes Primary School</td>
<td>45</td>
<td>67</td>
<td>91</td>
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<tr>
<td>Bladenboro Primary School</td>
<td>47</td>
<td>69</td>
<td>92</td>
</tr>
<tr>
<td>Booker T. Washington Primary School</td>
<td>49</td>
<td>71</td>
<td>93</td>
</tr>
<tr>
<td>Dublin Primary School</td>
<td>51</td>
<td>73</td>
<td>94</td>
</tr>
<tr>
<td>East Arcadia School</td>
<td>53</td>
<td>75</td>
<td>95</td>
</tr>
<tr>
<td>Elizabethtown Primary School</td>
<td>55</td>
<td>77</td>
<td>96</td>
</tr>
<tr>
<td>Plain View Primary School</td>
<td>57</td>
<td>79</td>
<td>98</td>
</tr>
<tr>
<td><strong>Middle Schools</strong></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Bladenboro Middle School</td>
<td>59</td>
<td>81</td>
<td>99</td>
</tr>
<tr>
<td>Clarkton School of Discovery</td>
<td>61</td>
<td>83</td>
<td>101</td>
</tr>
<tr>
<td>Elizabethtown Middle School</td>
<td>63</td>
<td>85</td>
<td>103</td>
</tr>
<tr>
<td>Tar Heel Middle School</td>
<td>65</td>
<td>87</td>
<td>105</td>
</tr>
</tbody>
</table>

***

Utility Costs at each school  

Projected ADM
Bladen Lakes Primary School is located on a 20-acre site on State Road 1509 in Elizabethtown, north of the center of the county, and currently serves pre-kindergarten through fourth grade students. The school was originally constructed in 1977 (29,352 s.f.), with a later classroom addition completed in 1996 (3,237 s.f., having two pre-K classrooms). Several modular classrooms have been added to the site during the school’s existence. The facility totals 32,589 square feet of permanent construction (not including modular classrooms), and has a calculated capacity of 318 students based on the number of K-4 classrooms, plus two pre-Kindergarten classrooms (assumed 18 students each), for a total of 354*.

Enrollment is 269 students per 2014-15 data.

ARCHITECTURAL

General. This school facility presents a wide range of existing conditions. The entire school appears well-maintained, however, some older portions do not meet current accessibility codes. Some areas of the facility may require modification to meet current elementary school educational program requirements.

Classrooms (1977 and 1996). There are wide variations in the condition and in the size of classrooms, as listed below:

Building 1 – twelve classrooms ranging from 785 s.f. to 795 s.f. with adjacent toilets
Building 2 – two classrooms of 1,170 s.f. each with adjacent toilets
Building 3 – computer lab of 729 s.f.; classroom of 852 s.f.; three resource rooms of 280 s.f., 424 s.f., and 532 s.f. (designated as “classroom” on the floor plan, but too small)
Building 4 – two classrooms (pre-K) of 1301 s.f. each with adjacent toilets.

Guidelines**: Elementary School classrooms: 1,200 s.f. for Kindergarten; 1,000 s.f. for Grades 1-3; 950 s.f. for Grade 4. Visual Art classroom of 1,200 s.f. and arts Projects classroom of 1,200 s.f. Therefore, all classrooms except Building 2 and Building 4 do not meet size guidelines.

Food Service (1977). The cafeteria is approximately 3,154 square feet. Seating is provided for 180 at tables. The current and proposed student body could be accommodated in two shifts. There is one serving line of 214 SF located adjacent to the kitchen. The kitchen is 802 SF (not including auxiliary areas such as cooler, freezer, dish wash, staff spaces, etc.).

Guidelines: Dining space: 1,811 s.f.; kitchen: 1,518 s.f.; one serving line of 400 s.f. (in addition to the kitchen area), for three serving cycles. Therefore, the existing kitchen may be theoretically undersized, by a factor of 50%.

Media Center (1977). The reading room is approximately 2,611 square feet, plus A/V room (327 s.f.), book storage (195 s.f.), periodicals (99 s.f.), and office (153 s.f.).

* Capacities and other data were extracted from the 2015-16 Facility Needs Survey, modified to account for sub-standard classroom sizes.

** Comparisons made to “Guidelines” refer to Facility Guidelines published by School Planning Section of DPI, for an elementary school of 388 students.
Guidelines: Reading room: 2,438 s.f. plus 1,500 s.f. for support spaces. Therefore, the media center is approximately adequate for current and proposed enrollment.

Physical Education. There is no multi-purpose gym at this school. The cafeteria serves as the only large-group activity space. One of the modular classrooms (848 s.f.) is designated for “PE” three days per week.

Guidelines: Multi-purpose Gym: 3,600 s.f., plus stage (600 s.f.), plus 450 s.f. for office, storage, and miscellaneous service functions.

Other Facilities. There are several self-contained structures in varying states of utilization and condition, as listed below (848 s.f. each). There is no covered or protected circulation to these buildings.

Building 5: P.E., three days per week
Building 6: E.S.L., three days per week
Building 7: Music, three days per week
Building 8: AIG, one day per week
Building 9: Empty
Building 10: Art, five days per week
Buildings 11-15: (small) Miscellaneous functions such as pump house, sewer pump, and storage.

Administration Suite. School administration office areas are located in Building 2 (1977) and includes offices, conference rooms, toilets, teachers’ work room, and similar functions.

Guidelines: The recommended administrative suite for a school of this enrollment would be significantly larger than the existing facility.

Site. The site includes adequate outdoor play areas for an elementary school program, although the play structures are somewhat remotely situated at approximately 200 feet from the nearest classroom building entrance. The pre-kindergarten classrooms have adequate fenced play areas near the pre-k classrooms. Vehicular circulation is good, with separate entrance drives and parking areas for bus traffic and car traffic. Carpool circulation and curb-side drop-off is well organized. There is covered (but not enclosed) circulation among Buildings 1-4.

Overall Evaluation. The building is underutilized, but additional capacity is not as great as contemplated under some of the consolidation proposals, due to the sub-standard size of most of the classrooms, and due to the lack of ‘permanent’ spaces for art, music, and physical education. If these shortcomings could be resolved, an enrollment of 400-425 would be reasonable.
Bladenboro Primary School is located on a 26-acre site at 312 Old Whiteville Road in Bladenboro, in the southwest part of the county, and currently serves pre-kindergarten through fourth grade students. The school was originally constructed in 1958, with additions completed in 1984 and 1991. Four modular classrooms have been added to the site during the school’s existence. The facility totals 67,279 square feet of permanent construction (not including modular classrooms), and has a calculated capacity of 419 students (based on reduced capacity in smaller classrooms) or 481 students without accounting for reduced capacity. Current enrollment is 410-425 students*.

ARCHITECTURAL

General. This school facility presents a wide range of existing conditions. The entire school appears well-maintained. However, some older portions do not meet current accessibility codes. Some areas of the facility may require modification to meet current elementary school educational program requirements.

Classrooms (1958, 1984, and 1991). In spite of the long history of the school, classroom size and condition are fairly consistent throughout the facility, ranging from 847 to 978 square feet.

Guidelines**: Elementary School classrooms: 950-1,200 SF. Also, an art classroom (with storage) of 1,000-1,400 SF, and a music classroom (with storage) of 850-1,000 SF are indicated by the educational program. Therefore, few of the classrooms meet size guidelines.

Food Service (1958). The cafeteria is approximately 3,701 square feet. Seating is provided for 240 at tables. Staff personnel state that 2 lunch shifts are currently served, grouped by grade level, and that lunch utilization is typically 365-375 meals in total. There is one serving line located within the kitchen space. The kitchen is small at 660 SF (not including auxiliary areas – cooler, freezer, staff spaces, etc.), but appears adequately-sized for the number of meals currently being served.

Guidelines: Dining space: 2,511 SF; kitchen: 1518 SF including all auxiliary areas; one serving line: 400 SF (in addition to the kitchen area), three serving cycles. Therefore, the kitchen and serving areas are significantly undersized.

Media Center (1991). The reading room is approximately 2,915 square feet, plus workroom (480 SF), storage (258 SF), and office (within the workroom).

Guidelines: Reading room: 2,690 SF plus 1,800 SF for support spaces. Therefore, the media center appears adequate for current and proposed enrollment.

* Capacities and other data were extracted from the 2015-16 Facility Needs Survey, modified to account for sub-standard classroom sizes.
** Comparisons made to “Guidelines” refer to Facility Guidelines published by School Planning Section of DPI, for an elementary school of 538 students [425 + 113, the maximum proposed transfer].
Physical Education. There is no multi-purpose gym at this school. Students currently take PE instruction in one of the modular classrooms on the site.

Guidelines: Multi-purpose Gym: 3,600 SF, plus additional square footage for office, storage, stage, and toilet areas.

Other Facilities. There are several self-contained structures in varying states of utilization and condition, (801 to 804 s.f.) as follows:

Buildings 6, 7, 8, and 9 (construction dates unknown) are modular classroom structures. Two of these are currently in use – one as a music classroom (when a music teacher becomes available next year), and another as a PE classroom. Two are empty and unused.

Administration Suite. School administration offices are located in areas of the original building (1958) and adjacent areas of the newest addition (1991). These areas include offices, conference rooms, health room, teachers’ work room, and similar functions.

Site. The site includes adequate outdoor play areas for an elementary school program, although the play structures are somewhat remotely situated at approximately 225 feet from the nearest classroom building entrance. The pre-kindergarten classrooms have adequate fenced play areas near the pre-k classrooms. Vehicular circulation is good, with separate entrance drives and parking areas for bus traffic and car traffic. Carpool circulation and curb-side drop-off is adequate.

Overall Evaluation. The building is underutilized, but additional capacity is not as great as contemplated under some of the consolidation proposals, due to the sub-standard size of most of the classrooms. The lack of a dedicated permanent indoor space for physical education is a significant factor. However, the cafeteria could continue to serve that purpose, requiring set-up and take-down of dining furniture as necessary. An increase of 40-60 students seems reasonable.
Booker T. Washington Primary School is located on a 15-acre site at 66 Booker T. Washington Road in Clarkton, in the southwest part of the county, and currently serves pre-kindergarten through fifth grade students. The school was originally constructed in 1947, with additions completed in 1957, 1972, and 1995. Four modular classrooms have been added to the site during the school’s existence. The facility totals 39,328 square feet of permanent construction (not including modular classrooms), and has a calculated capacity of 285 students (based on reduced capacity in smaller classrooms) or 354 students without accounting for reduced capacity, both including pre-Kindergarten*. Current enrollment is 197-202 students.

ARCHITECTURAL

General. This school facility presents a wide range of existing conditions. The older portions were listed as “Poor” condition in the 2015-16 Facility Needs Survey. The interior appears well-maintained; however, some older portions do not meet current accessibility codes. Some areas of the facility may require modification to meet current elementary school educational program requirements. Exterior maintenance (roof, masonry walls and windows) has been lacking for some time, but the roof on the cafeteria was replaced approximately 3-4 years ago, and a new roof has been installed over the remainder of Building 3 and on Building 1 this year.


Guidelines**: Elementary School classrooms: 950-1,200 SF. Also, an art classroom (with storage) of 1,000-1,400 s.f. is indicated by the educational program.

Food Service (1957). The cafeteria is approximately 1,964 square feet. Seating is provided for 162 at tables. Staff personnel state that 2 lunch shifts are currently served, grouped by grade level. There is one serving line located within the kitchen space. The kitchen is small at 868 SF (not including auxiliary areas – cooler, freezer, staff spaces, etc.), but appears to be adequately-sized for the number of meals being served.

Guidelines: Dining space: 1,820 s.f.; kitchen: 1518 s.f.; one serving line: 400 s.f. (in addition to the kitchen area), with three serving cycles. Therefore, the kitchen and serving areas are theoretically undersized by approximately 50%.

Media Center (1957). The reading room is approximately 2,128 square feet, plus workroom (218 SF), equipment (182 SF), and office (88 SF).

---

* Capacities and other data were extracted from the 2015-16 Facility Needs Survey, modified to account for sub-standard classroom sizes.

** Comparisons made to “Guidelines” refer to Facility Guidelines published by School Planning Section of DPI, for an elementary school of 310 students with growth to 390 students. This serves to calculate the appropriate size of core facilities for a theoretical enrollment unreduced because of sub-standard classroom size.
Guidelines: Reading room: 2,340 s.f. plus 1,500 s.f. for support spaces. Therefore, the media center is slightly undersized, but appears adequate for the current enrollment.

Physical Education (date unknown). The main gymnasium space is approximately 5,402 square feet. There are various support spaces totaling approximately 885 square feet. This building appears to be the oldest structure on campus. Past renovations lowered the ceiling height to 12’, and removed the basketball goals from the play court. Many aspects of this facility do not meet accessibility and code requirements, including the existing bleacher seating.

Guidelines: Multi-purpose Gym: 3,600 SF, plus additional square footage for office, storage, stage, and toilet areas.

Other Facilities. There are several self-contained structures in varying states of utilization and condition, as follows:

Building 5 (date unknown) is a modular classroom structure (600 SF). This structure is not currently in use.

Building 7 (date unknown) is a storage/utility building (64 SF).

Building 8 (date unknown) is a storage/utility building (97 SF).

Administration Suite. School administration offices are located in areas of the 1972 addition. These areas include offices, conference rooms, health room, teachers’ work room, and similar functions.

Site. The site includes adequate outdoor play areas for an elementary school program, although the play structures are somewhat remotely situated at approximately 200 feet from the nearest classroom building entrance. The pre-kindergarten classrooms have adequate fenced play areas near the pre-k classrooms. Vehicular circulation is good, with separate entrance drives and parking areas for bus traffic and car traffic. Carpool circulation and curb-side drop-off is limited. Site access for emergency responders should be reviewed. There is one modular classroom on the site (modular classrooms are not used in capacity calculations) and there are two small, self-contained structures as noted above.

Overall Evaluation. Due to the age of much of this facility, closing the school should be considered. Of the four proposals studied by the LEA, three included such action; the other proposal (which addressed only middle schools) did not contemplate a change in enrollment here.
Dublin Primary School is located on a 16-acre site at 7048 Albert Street in Dublin, in the west-central part of the county, and currently serves pre-kindergarten through fourth grade students. The school was originally constructed in 1951, with additions completed in 1958, 1979, and 1997. There is one modular classroom on the site. The facility totals 48,295 square feet of permanent construction (not including modular classrooms), and has a capacity of 294 students* not including pre-Kindergarten. Recalculation with a reduction due to sub-standard room size yielded a capacity of 272; without the reduction, the capacity was calculated at 319, both numbers including pre-Kindergarten. Enrollment in 2014-15 was 261 students; attendance reported at the time of the site visit was 322. Approximately one-third of the student population is classified as ESL – many from migrant families.

ARCHITECTURAL

General. This school facility presents a wide range of existing conditions. The entire school appears well-maintained, however, some older portions do not meet current accessibility codes. Some areas of the facility may require modification to meet current elementary school educational program requirements.

Classrooms (1951, 1958, 1979, and 1997). Only five existing classrooms meet or exceed current standards for room size. Twenty-one others range in size from 713 s.f. to 854 s.f.

Guidelines**: Elementary School classrooms: 950-1,200 s.f. Also, an art classroom (with storage) of 1,000-1,400 s.f. is indicated by the educational program.

Food Service (1951). The cafeteria is approximately 2,540 square feet. Seating is provided for 228 at tables, which can accommodate the student population in two cycles if desired. There is one serving line located within the kitchen space. The kitchen is very small at 588 SF (not including auxiliary areas – cooler, freezer, staff spaces, etc.), and is significantly undersized for an elementary school.

Guidelines: Dining space: 2,333 s.f., allowing for three serving cycles; kitchen: 1518 s.f.; one serving line: 400 s.f. (in addition to the kitchen area). Therefore, the kitchen and serving areas are significantly undersized.

Media Center (1979). The reading room is approximately 2,516 square feet, plus workroom (254 s.f.), equipment (192 s.f.), and office (122 s.f.).

Guidelines: Reading room: 2,500 s.f. plus 1,800 s.f. for support spaces. Therefore, the media center support spaces are slightly undersized, but appear adequate for the current enrollment.

* Capacities and other data were extracted from the 2015-16 Facility Needs Survey.

** Comparisons made to “Guidelines” refer to Facility Guidelines published by School Planning Section of DPI, for an elementary school of 300 students with growth to 500 students. Consolidation proposals contemplate adding 199 to 203 students at this campus (see “Overall Evaluation”).
Physical Education (1997). The main gymnasium space is approximately 6,969 square feet. There are various support spaces totaling approximately 1,899 square feet. These spaces include a stage area (823 s.f.) a small music room, dressing room, toilets, and storage spaces. This facility is in good condition, and is well-suited to an elementary school program.

Guidelines: Multi-purpose Gym: 3,600 s.f., plus additional square footage for office, storage, stage, and toilet areas.

Other Physical Education (date unknown). This structure is remotely located on the site: wood frame, not currently in use, and of dubious condition. It contains a rectangular activity room of 1,134 s.f. with adjacent storage and toilets.

Other Facilities. As noted above, the school was constructed in 1951, with three later additions. There are several self-contained structures in varying states of utilization and condition, as follows:

Building 6 (date unknown) is a storage room (53 SF).
Building 7 (date unknown) is a modular classroom structure not currently used (715 SF).
Building 8 (date unknown) is a storage room (86 SF).
Building 9 (date unknown) is a storage room (97 SF).

Administration Suite. School administration offices are located in areas of the original building (1951). These areas include offices, conference rooms, health room, teachers’ work room, and similar functions.

Site. The site includes adequate outdoor play areas for an elementary school program, located in close proximity to the classroom buildings. The pre-kindergarten classrooms have adequate fenced play areas near the pre-k classrooms. Vehicular circulation is poor, with much of the parking areas fronting directly on public streets. The parking lots are under-sized and crowded, with inadequate separation between buses, cars, and pedestrians. The school fronts on a busy five-lane street. Modifications to carpool circulation and curb-side drop-off should be considered to improve function and safety.

Overall Evaluation. The age of several buildings and sizes of most classrooms raise concerns. Of the four proposals studied by the LEA, three included increasing the enrollment by approximately 200 students; the other proposal (which addressed only middle schools) did not contemplate a change in enrollment here. This increase is not supported by existing teaching spaces, although core facilities (with the exception of the kitchen, which should be expanded) can support increased enrollment. If the geographic location of this site is a positive factor in the consolidation plan, some building addition and site reconfiguration would be appropriate.
East Arcadia School is located on a 22-acre site at 21451 NC Highway 87 East in Riegelwood, in the southeast corner of the county, and currently serves Kindergarten through eighth grade students. The school was originally constructed in 1956, with additions completed in 1959, 1976, 1987 and 1989. There are no modular classrooms on the site. The facility totals 46,855 square feet of permanent construction, and has a calculated capacity of 362 students*. FY 2014-15 enrollment is 126 students. This location has a potential for transient enrollment by migrant children.

ARCHITECTURAL

General. This facility presents a wide range of existing conditions. In the 2015-16 Facility Needs Survey, the 1989 building (gymnasium) was listed as “good” but all other buildings were listed as “poor” condition. The entire school appears well-maintained, however. Some older portions do not meet current accessibility codes, and some areas of the facility may require modification to meet current educational program requirements, especially for middle school.

Classrooms (1956, 1959, and 1976). In spite of the long history of the school, classroom size and condition is fairly consistent throughout the facility, ranging from 746 to 873 square feet, plus two Kindergarten rooms of 1,281 and 1,361 s.f.

Guidelines**: Elementary School classrooms: 950-1,200 s.f. Also, an art classroom (with storage) of 1,000-1,400 s.f. is indicated by the educational program.

Middle School classrooms: 850 s.f. Science Classrooms: 1,100 s.f. Also, an art classroom (with storage) of 1,000-1,400 s.f., and a music classroom (with storage) of 1,500 s.f. are indicated by the educational program, as well as an Exploratory (vocational) Lab at 1,400 s.f.

Food Service (1956). The cafeteria is approximately 1,703 square feet. Seating is provided for 120 at tables. Two lunch shifts can easily accommodate the current enrollment. There are two serving lines located within the kitchen space. The kitchen is very small at 682 SF (not including auxiliary areas – cooler, freezer, staff spaces, etc.), and is significantly undersized for a K-8 school.

Guidelines: Dining space: 1,867 s.f.; kitchen: 1518 SF; one serving line: 400 SF (in addition to the kitchen area), three serving cycles. Therefore, the kitchen and serving areas are significantly undersized.

Media Center (1976). The reading room is approximately 2,041 square feet, plus workroom (201 s.f.).

Guidelines: Reading room: 2,400 s.f. plus 1,500 SF for support spaces. Therefore, the media center and support spaces are slightly undersized, but appear adequate for the current enrollment.

* Capacities and other data were extracted from the 2015-16 Facility Needs Survey.

** Comparisons made to “Guidelines” refer to Facility Guidelines published by School Planning Section of DPI, for a school of 400 student capacity (167 elementary and 233 middle school students).
Physical Education (1989). The main gymnasium space is approximately 7,700 square feet. There are a storage room (375 s.f.) and toilet rooms (400 s.f.), but no locker rooms or other support spaces typically part of a middle school program. This pre-engineered structure has exposed roof insulation which is interrupted and falling in places, and should be secured and/or covered. Bleacher seating provides approximately 250 seats. This one facility serves all grades, but at the enrollment levels presently contemplated, it is sufficient.

Guidelines: Elementary multi-purpose Gym: 3,600 SF, plus additional square footage for office, storage, stage, and toilet areas.

Middle School Gymnasium including lockers: 6,500 SF, plus additional square footage for office, storage, and toilet areas.

Other Facilities. There is one self-contained structure on site:

Building 4 (date unknown) is a storage room (96 s.f.).

Administration Suite. School administration offices are located in areas of the original building (1956). These areas include offices, conference rooms, health room, teachers' work room, and similar functions.

Site. The site includes adequate outdoor play areas for an elementary school program, located in close proximity to the classroom buildings. Athletic facilities for a typical middle school facility are not present on this site, however, sufficient acreage does exist to provide athletic playfields, etc. Vehicular circulation is adequate, with separate parking areas for buses and cars. Carpool circulation and curb-side drop-off is adequate.

Overall Evaluation. Thirteen of the 20 teaching stations are undersized relative to current standards. The most striking deficit is in the science facility; renovations to provide increased space and a separate preparation room should be considered. There is capacity for additional enrollment. Site facilities should be increased to provide for middle school requirements.
Elizabethtown Primary School is located on a 16-acre site at 301 Mercer Brown Road in Elizabethtown, in the central part of the county, and currently serves pre-kindergarten through fourth grade students. The school was originally constructed in 1958, with additions completed in 1982, 1985, and 1991. Three modular classrooms have been added to the site during the school’s existence; they are not included in capacity calculations. The facility totals 68,479 square feet of permanent construction (not including modular classrooms), and has a calculated capacity of 637 students* not including pre-Kindergarten. However, upon checking the floor plans, it was determined that this may have been overstated. Based on the reduction of class size due to sub-standard room sizes, the capacity is approximately 542; without the reduction for room size, the capacity is approximately 599; both calculations are including pre-Kindergarten classrooms. The enrollment in 2014-15 is 472 students.

ARCHITECTURAL

General. This school facility presents a wide range of existing conditions. The original building (1958) was rated “Fair” in the 2015-16 Facility Needs Survey; other buildings were rated “Good.” The entire school appears well-maintained. However, some older portions do not meet current accessibility codes, and some areas of the facility may require modification to meet current elementary school educational program requirements.

Classrooms (1958, 1982, 1985, and 1991). Primarily due to the long history of the school, classroom size for grades 1-4 varies substantially throughout the facility, ranging from 784 to 968 square feet. Rooms of 600 s.f. or less were not counted as classrooms or as teaching stations, except two rooms which were designated by the district as small-group self-contained rooms for exceptional children. There are five pre-Kindergarten classrooms ranging from 913 to 994 square feet, and five Kindergarten classrooms ranging from 1,098 to 1,259 s.f. The dedicated art classroom is 1,484 square feet. Music instruction is currently in a ‘general’ classroom of 853 s.f.

Guidelines**: Elementary School classrooms: 950-1,200 SF. Also, an art classroom (with storage) of 1,000-1,400 SF, and a music classroom (with storage) of 850-1,000 SF are indicated by the educational program. Exceptional children / self-contained classrooms are normally programmed at 1,200 s.f. each; this school has four rooms designated for EC, at 597 s.f., 602 s.f., 784 s.f., and 994 s.f.

Food Service (1958). The cafeteria is approximately 3,589 square feet. Seating is provided for 364 at tables. The student body can be easily accommodated in two 2 lunch shifts, although three is the norm. There is one serving line located within the kitchen space. The kitchen is small at 820 SF (not including auxiliary areas – cooler, freezer, staff spaces, etc.), and is significantly undersized for the number of meals being served.

* Capacities and other data were extracted from the 2015-16 Facility Needs Survey.

** Comparisons made to “Guidelines” refer to Facility Guidelines published by School Planning Section of DPI, for an elementary school of 500 student capacity.
Guidelines: Dining space: 2,333 s.f.; kitchen: 1518 s.f.; one serving line: 400 SF (in addition to the kitchen area), three serving cycles. Therefore, the kitchen and serving areas are significantly undersized. However, since the cafeteria serves as the only large activity, it would be problematic to relocate the serving line into the cafeteria to increase space in the kitchen.

Media Center (1991). The reading room is approximately 3,474 square feet, plus other spaces (conference room, resource rooms, support) totaling approximately 1,322 square feet. Note: adjacent rooms designated on the plan as ‘classrooms’ are not considered as such in this report, due to their size (345 s.f. and 400 s.f.).

Guidelines: Reading room: 2,500 SF plus 1,800 SF for support spaces. Therefore, the media center is a good size, and appears to meet the needs of the current enrollment.

Physical Education (1958). The multi-purpose space is approximately 3,589 square feet, and is used primarily for cafeteria functions. There is no dedicated gym or PE space.

Guidelines: Multi-purpose Gym: 3,600 s.f., plus additional square footage for office, storage, stage, and toilet areas.

Other Facilities. There are several self-contained structures in varying states of utilization and condition, as follows:

Building 5 (date unknown) is a modular classroom structure (565 SF).
Building 6 (date unknown) is a modular classroom structure (804 SF).
Building 7 (date unknown) is a modular classroom structure (640 SF).
Buildings 8, 9, and 10 (dates unknown) are storage/utility buildings (96 SF each).

Administration Suite. School administration offices are located in areas of the original building (1958). These areas include offices, conference rooms, health room, teachers’ work room, and similar functions. The Guidance office is currently using a ‘general’ classroom (853 s.f.) in the adjacent 1991 building.

Site. The site includes adequate outdoor play areas for an elementary school program. The pre-kindergarten classrooms have adequate fenced play areas near the classrooms. Vehicular circulation is good, with separate entrance drives and parking areas for bus traffic and car traffic. Carpool circulation and curb-side drop-off is adequate.

Overall Evaluation. This campus has the highest current enrollment of any elementary or middle school in the district. Classrooms of sub-standard size will limit the theoretical capacity, but calculations indicate that additional students can be accommodated. Two limiting factors are the size of the kitchen and serving line, and the lack of an indoor physical education space other than the cafeteria.
Plain View Primary School is located on a 9-acre site at 1963 Chicken Foot Road in Tar Heel, in the northwest edge of the county, and currently serves pre-kindergarten through fourth grade students. The school was originally constructed in 1951, with additions completed in 1956, 1975, and 1977. In the Facility Needs Survey of 2015-16, all buildings were listed in ‘Fair’ condition. Five modular classrooms have been added to the site during the school’s existence. The facility totals 22,032 square feet of permanent construction (not including modular classrooms), and has a calculated capacity of 248 students*. ADM in 2014-15 was 184 students; school administrators gave the enrollment as 190-200.

ARCHITECTURAL

General. All classrooms (except Kindergarten, 1977) are in the 1951-56 building. Average class size was stated as twenty. The entire school appears well-maintained. However, some older portions do not meet current accessibility codes, and some areas of the facility may require modification to meet current elementary school educational program requirements.

Classrooms (1951 and 1956). Classroom sizes range from 752 to 761 square feet. One original classroom has been converted into Principal’s office and computer room. There is no space in the permanent building dedicated to art, music, or physical education.

Guidelines**: Elementary School classrooms: 950-1,200 SF. Also, an art / project room, 1,200 s.f. is indicated by the educational program.

Food Service (1951). The cafeteria is approximately 2,109 square feet. Seating is provided for 138 at tables. There is one serving line located within the kitchen space. The kitchen is very small at 699 SF (not including auxiliary areas – cooler, freezer, staff spaces, etc.), and is undersized for an elementary school program.

Guidelines: Dining space: 1,800 s.f.; kitchen: 1261 s.f.; one serving line: 400 SF (in addition to the kitchen area), two serving cycles. Therefore, the kitchen and serving areas are significantly undersized.

Media Center (1975). The reading room is approximately 1,594 square feet, plus an office (149 s.f.).

Guidelines: Reading room: 1,600 s.f. plus 1,500 s.f. for support spaces. Therefore, the media center’s support spaces are significantly undersized, but the center appears adequate for the current enrollment.

Physical Education. There is no multi-purpose gym at this school.

Guidelines: Multi-purpose Gym: 3,600 s.f., plus additional square footage for office, storage, stage, and toilet areas.

* Capacities and other data were extracted from the 2015-16 Facility Needs Survey.

** Comparisons made to “Guidelines” refer to Facility Guidelines published by School Planning Section of DPI, for an elementary school of 250 student capacity.
Other Facilities. There are several self-contained structures in varying states of utilization and condition, as follows:

Building 3 (date unknown) is a modular classroom structure (640 s.f.) used for PE.
Building 4 (date unknown) is a modular classroom structure (640 s.f.) used for EC.
Building 6 (date unknown) is a water tank and storage building (227 s.f.).
Building 7 (1980) contains a sewer pump house (77 s.f.).
Building 8 (date unknown) is a modular classroom structure (600 s.f.) used for teacher meetings and as a nurse’s office.
Building 9 (date unknown) is a storage/utility building (64 s.f.).
Building 10 (date unknown) is a modular classroom structure (789 s.f.) used for Guidance.
Building 11 (date unknown) is a modular classroom structure (789 s.f.). It is used for music two and one-half days per week, and for ESL classes two days per week.

Administration Suite. School administration offices are located in the original building (1951). This area is very small, and contains only a main reception room and the principal’s office. The original coal storage room has been renovated into a lounge, after the heating system was converted to oil. Some additional administrative support functions are located in temporary structures—see above.

Site. The site includes adequate outdoor play areas for an elementary school program. The pre-kindergarten classrooms have adequate fenced play areas near the pre-k classrooms. Vehicular circulation is good, with separate entrance drives and parking areas for bus traffic and car traffic. Carpool circulation and curb-side drop-off is adequate, however, parking near the school entrance is limited.

Overall Evaluation. The majority (75%) of the area of this facility is sixty to sixty-five years old, and has not been renovated except for minor interior partitions to subdivide a classroom. It is difficult to justify keeping this facility in operation for only 180-200 students. Interestingly, the facility had the second-lowest annual cost of utilities in the district ($127.99 / ADM in 2014-15, compared to the district average of $211.17 / ADM) for electricity, gas, and oil.
Bladenboro Middle School is located on a fourteen-acre site on Highway 242/410 in Bladenboro, in the southwest corner of the county, and currently serves sixth through eighth grade. The school was constructed in 1925, with additions and renovations occurring in 1946 through 1989. The school was converted from high school to middle school in 2002-03. The facility totals 99,196 square feet. The ADM in 2014-15 was 352; current enrollment is approximately 390 students. Capacity calculated in the 2015-16 Facility Needs Survey was 635*. However, recalculated capacity based on sub-standard size of classrooms yields a capacity of 495 students. Some observations and comments are as follows:

ARCHITECTURAL

General: This school facility presents a wide range of existing conditions. The entire school appears well-maintained, however, some older portions do not meet current accessibility codes. Some areas of the facility may require modification to meet current middle school educational program requirements.

Classrooms (various years of construction). Given the long history of this school, it is not surprising that there are wide variations in the condition and in the size of classrooms, which range from 700 to 1400 square feet.

Guidelines**: Middle School classrooms: 950 sq. ft.; Science rooms: 1100 sq. ft. Also, an art classroom (with storage) of 1,200 sq. ft., and a music classroom (with storage) of 1,500 sq. ft. are indicated by the educational program, as well as two Exploratory (vocational) Labs at 1,400 sq. ft. each.

Core Facilities

Food Service (1989). The cafeteria is approximately 2,649 square feet. Staff personnel state that four shifts are currently served, according to grade level, and that lunch utilization is typically 250 to 280 meals. There is one serving line, within the kitchen which is approximately 1,028 square feet, plus auxiliary areas (cooler, freezer, staff spaces, etc.).

Guidelines: Dining space 2,275 square feet; kitchen 1,518 square feet, one serving line (400 sq. ft. in addition to kitchen area), three cycles. Therefore, the kitchen may be slightly undersized but not excessively so.

Media Center (1974). The reading room is approximately 4,012 square feet, plus workroom (328 sq. ft.), storage (139 sq. ft.) and office (73 sq. ft.).

Guidelines: Reading room 2,438 sq. ft. plus 1,800 sq. ft. for support spaces. Therefore, the media center is adequate for current and proposed enrollment.

Auditorium (1925). The seating area is approximately 3,174 sq. ft.; new seats for approximately 200

* Capacities and other data were extracted from the 2015-16 Facility Needs Survey.
**Comparisons made to “Guidelines” refer to Facility Guidelines published by School Planning Section of DPI.
persons have been recently installed. The stage is approximately 1,073 sq. ft. and there are no auxiliary
spaces such as dressing rooms, scenery construction, and prop storage. There is no lobby; the seating
area opens directly into an alcove on the main corridor. There is a lift for handicapped access to the
stage, and a ramp outside a side entry.

Guidelines: Seating area 1,755 sq. ft. for 195 people; 2,500 sq. ft. for Stage / dressing / storage;
and 1,000 sq. ft. for lobby. Therefore, the seating area is very nice but the support spaces are
not adequate.

Physical Education. The gymnasium (1951) is 7,200 square feet with 144 seats. The gym lobby (1987) is
1,029 square feet with a concession stand and two small rest rooms. An attached building (1976) of
5,610 square feet adjacent to the athletic fields contains locker rooms, showers, a weight room
(currently a vacant “classroom”), and related functions.

Guidelines: Gymnasium including lockers 6,500 sq. ft., plus 1 health/PE classroom of 750 sq. ft.

Other facilities. As noted above, all buildings were constructed while the campus was a high school.
There are several self-contained structures in varying states of utilization and condition, as follows:

Building 3 (1977) contains a welding shop (2,484 sq. ft.), and auto mechanics shop
(2,484 sq. ft.) and two classrooms of 758 sq. ft. each. It has been “unused for years,” according
to staff.

Building 4 (1948) contains an agriculture shop of 1661 sq. ft., a welding shop of 354 sq.
ft., and a classroom of 879 sq. ft. It may soon be demolished, according to staff.

Building 5 (1946) includes a home economics classroom or 1317 sq. ft. and three other
‘classrooms’ of 248 sq. ft., 388 sq. ft., and 241 sq. ft. It may soon be demolished, according to
staff.

Building 6 (date not given) includes a weight room of 1,109 sq. ft. and an ‘ROTC
classroom’ of 1,112 sq. ft. which is currently used by the football team.

The administration suite is in a relatively new building (1989) and includes offices, guidance, health
room, teachers’ work room and lounge, and similar functions.

Site. The site includes adequate outdoor play field areas for a middle school program. Vehicular
circulation is adequate, although site access for emergency responders should be reviewed. There are
no modular classrooms on the site (modular classrooms are not use in capacity calculations) although
there are several small, self-contained structures as noted above.

Overall Evaluation. This campus can easily accommodate additional enrollment as contemplated in the
various consolidation scenarios; however, the school has been converted from high school to middle
school usage without extensive modifications, so some appropriate renovations should be considered to
provide for middle school programs. Generally, ADA access and travel barriers (uneven walkways,
thresholds, etc.) should be addressed. Concerns raised in the engineering sections should likewise be
resolved.
Clarkton School of Discovery is located on a 14-acre site at 10000 North College Street in Clarkton, in the southwest part of the county, and currently serves sixth through eighth grade students. The original building was constructed in 1930, with additions completed in 1938, 1951, 1955, 1958, 1976, 1977, 1979, and 1987. Formerly a high school, Clarkton was converted to a middle school in 2002-03. There are no modular classrooms on the site. The facility totals 85,539 square feet of permanent construction, and has a calculated capacity of 469 students*. All buildings were reported in ‘Fair’ condition. 2014-15 ADM was 279 students. Current enrollment is reported as 229 students.

ARCHITECTURAL

General. This school facility presents a wide range of existing conditions. The entire school appears well-maintained, however, some older portions do not meet current accessibility codes. Some areas of the facility may require modification to meet current middle school educational program requirements.

Classrooms (1930, 1951, 1955, 1976, 1977, 1979, and 1987). With the long construction history of the school, classroom size and condition vary widely throughout the facility, with most classrooms significantly undersized. General classroom sizes range from 672 to 823 square feet. (Rooms of +/- 600 s.f. or less are not considered classrooms for the purpose of this report.) Science Rooms, Art Room, and Vocation Labs are of adequate size, but fall short of program standards in some areas.

Guidelines**: Middle School classrooms: 950 s.f. Science Classrooms: 1,100 SF. Also, an art classroom (with storage) of 1,000-1,400 SF, and a music classroom (with storage) of 1,500 SF are indicated by the educational program, as well as an Exploratory (vocational) Lab of 1,400 s.f.

Food Service (1987). The cafeteria is approximately 2,998 square feet. Seating is provided for 192 at tables. The current student body can be easily accommodated in only two cycles. There is one serving line located at the side wall of the cafeteria. The kitchen is small at 991 SF (not including auxiliary areas such as cooler, freezer, staff spaces, etc.), but is adequately-sized for the number of meals being served.

Guidelines: Dining space: 1,800 s.f.; kitchen: 1,261 s.f.; one serving line: 400 s.f. (in addition to the kitchen area), two serving cycles. Therefore, the kitchen and serving areas are undersized.

Media Center (1938). The original auditorium (1938) of approximately 5,583 square feet has been converted into a reading room. The room continues to serve as auditorium space (having a state of 1,084 s.f.), thereby reducing functionality of the media center. An upstairs workroom and downstairs storage rooms are remote, and make observation and control a challenge for staff.

Guidelines: Reading room: 1,600 SF plus 1,500 SF for support spaces. Therefore, the media center is adequately sized, but is compromised by its configuration and dual use.

Physical Education (1958). The main gymnasium space is approximately 7,146 square feet. There are

* Capacities and other data were extracted from the 2015-16 Facility Needs Survey.

**Comparisons made to “Guidelines” refer to Facility Guidelines published by School Planning Section of DPI, for a Middle School of 280 students.
various support spaces totaling approximately 1,450 square feet. Many aspects of this facility do not meet accessibility and code requirements, including locker room and toilet facilities.

Guidelines: Gymnasium including lockers: 6,500 SF, plus additional square footage for office, storage, and toilet areas.

Other Facilities. There are several self-contained structures in varying states of utilization and condition, as follows:

Building 7 (date unknown) is a storage building (420 SF).
Building 11 (date unknown) is a football field press box (134 SF).
Building 12 (1980) is a concession and restroom building (577 SF).
Building 13 (date unknown) is a storage/utility building (70 SF).
Building 14 (date unknown) is a storage/utility building (70 SF).
Building 15 (date unknown) is a storage/utility building (70 SF).
Building 16 (date unknown) is a storage/utility building (70 SF).

Administration Suite. School administration offices are located in areas of the 1951 building. These areas include offices, teachers’ work room, and similar functions. The space for administrative functions is significantly undersized, and lacks components such as a conference room, student health room, guidance areas, etc.

Site. The site includes adequate outdoor play areas for a middle school program. Vehicular circulation is minimal, and parking is insufficient. Although separate entrance drives and parking areas for bus traffic and car traffic are provided, the space for carpool circulation and curb-side drop-off is inadequate. Site access for emergency responders should be reviewed. There are no modular classrooms on the site (modular classrooms are not used in capacity calculations) although there are several small, self-contained structures as noted above.

Overall Evaluation. The age of some buildings and the size of general classrooms are disadvantages, but other special-purpose vocational facilities and support by trade and industry groups are positive factors. The ‘added-on’ configuration of the campus, and repurposing of spaces (i.e., from auditorium to media center) are problematic.
Elizabethtown Middle School is located on a 49-acre site at 1496 Highway 701 South in Elizabethtown, in the central part of the county, and currently serves fifth through eighth grade students. The school was originally constructed in 1971, with additions completed in 1972, 1977, and 1984. All buildings were reported in ‘Fair’ condition. There is one modular classroom on the site. The facility totals 132,519 square feet of permanent construction, and has a calculated capacity of 732 students*. ADM in 2014-15 was 392 students. Current enrollment was reported as 430 students.

ARCHITECTURAL

General. This middle school facility was originally built in 1971 as a high school. The entire school appears well-maintained, however, many areas do not meet current accessibility codes. Some areas of the facility may require modification to meet current middle school educational program requirements. In particular, toilet room facilities, science labs, and egress/circulation areas should be addressed in the next renovation.

Classrooms (1971, 1972, 1977, and 1984). Classroom size and condition vary throughout the facility, with most classrooms appropriately sized for middle school instruction. Classroom sizes generally range from 684 to 1326 square feet. (Rooms of +/- 600 s.f. or less are not considered classrooms for the purpose of this report.) Science Rooms, Art Room, and Vocation Labs are of adequate size, but may not meet program standards in some conditions. There are several small interior (windowless) classrooms that are accessed through other spaces, which may not comply with building code egress requirements.

Guidelines**: Middle School classrooms: 950 s.f.; Science Classrooms: 1,100 s.f. Also, an art classroom (with storage) of 1,000-1,400 s.f., and a music classroom (with storage) of 1,500 s.f. are indicated by the educational program, as well as four Exploratory (vocational) Labs at 1,000 to 1,400 s.f. each.

Food Service (1971). The cafeteria is approximately 3,422 square feet. Seating is provided for 192 at tables. Staff personnel state that 4 lunch shifts are currently served, one shift per grade level, in the sequence 6-7-8-5. There are two serving lines located within the kitchen space. The kitchen is large at 1,412 SF (not including auxiliary areas – cooler, freezer, staff spaces, etc.), and is adequately-sized for the number of meals being served.

Guidelines: Dining space: 3,033 s.f.; kitchen: 1,938 s.f.; two serving lines: 620 s.f. (in addition to the kitchen area), for three serving cycles. Therefore, the kitchen and serving areas are well-suited to the needs of a modern middle school.

Media Center (1971). The reading room is approximately 3,714 square feet. Support spaces include a workroom (333 s.f.), conference room (258 s.f.), office (112 s.f.), and equipment storage (76 s.f.).

* Capacities and other data were extracted from the 2015-16 Facility Needs Survey.
**Comparisons made to “Guidelines” refer to Facility Guidelines published by School Planning Section of DPI, for a Middle School of 430 students with planned growth (core capacity) to 650 students.
media center is centrally located on the main level of the school. It does not have exterior windows or controlled after-hours access.

**Guidelines:** Reading room: 3,250 s.f. plus 1,800 s.f. for support spaces. Therefore, the media center is well-suited to the space requirements for a middle school program.

**Physical Education (1977).** The main gymnasium space is approximately 8,532 square feet. There are various support spaces totaling approximately 1,100 square feet. Many aspects of this facility do not meet accessibility and code requirements, including locker room and toilet facilities. Two adjacent classrooms (625 SF each) serve the gymnasium. The gym provides bleacher seating for 2,000 people.

**Guidelines:** Gymnasium including lockers: 8,500 s.f., plus additional square footage for office, storage, and toilet areas. A health/PE classroom of 750 s.f. is also required.

**Other Facilities.** There are several self-contained structures in varying states of utilization and condition, as follows:

- Building 5 (1972) is an athletic fieldhouse/locker room building (4,740 SF).
- Building 6 (1972) is a concession/toilet room building (560 SF).
- Building 7 (1963) is a modular classroom building (600 SF).
- Building 8, 9, and 10 (dates unknown) are storage/utility buildings (70 SF each).
- Building 11 (date unknown) is a baseball concession/pressbox building (480 SF).
- Building 12 (date unknown) is a football bleacher/pressbox structure (1,650 SF).
- Building 16, 17, 18, and 19 (dates unknown) are baseball dugout structures (280 SF).

**Administration Suite.** School administration offices are located in the 1971 main building. These areas include offices, teachers’ work room, reception, storage, conference room, and similar functions. The space for administrative functions is well-organized, and is well-suited to serving the needs of a middle school program.

**Site.** The site includes adequate outdoor play areas for a middle school program. Vehicular circulation is good, and parking is sufficient. Separate entrance drives and parking areas for bus traffic and car traffic are provided, and the space for carpool circulation and curb-side drop-off is very good. There is one modular classroom on the site (modular classrooms are not used in capacity calculations) although there are several small, self-contained structures as noted above.

**Overall Evaluation.** The buildings and the site can accommodate current enrollment and any contemplated additional enrollment. It might be significant to note that 2014-15 utility costs at this campus ($401.98/ADM) were the highest in the district—almost twice the average cost of $211.17/ADM.
Tar Heel Middle School is located on a 25-acre site at 14888 NC Highway 87 West in Tar Heel, in the northwest part of the county, and currently serves fifth through eighth grade students. The school was originally constructed in 1925, with classroom additions completed in 1943 and 1977, and a gym was added in 1958. Additional facilities were constructed in 1943, 1976, and 1987. There are no modular classrooms on the site. The facility totals 78,352 square feet of permanent construction, and has a calculated capacity of 584 students*. ADM in 2014-15 was 322. Current enrollment is reported as 322 students.

ARCHITECTURAL

General. This school facility presents a wide range of existing conditions. The entire school appears well-maintained, however, some older portions do not meet current accessibility codes. The oldest buildings on campus were listed in ‘Poor’ condition in the 2015-16 Facility Needs Survey; the buildings of the ‘70s and ‘80s were listed as ‘Good,’ and the others were listed as ‘Fair’ condition. Some areas of the facility would require significant modification to meet current middle school educational program requirements.

Classrooms (1925, 1943, 1976, 1977, and 1987). In spite of the long construction history of the school, classroom size and condition are fairly consistent throughout the facility. All general classrooms are undersized, ranging from 707 to 836 square feet. (Rooms of +/- 600 s.f. or less are not considered classrooms for the purpose of this report.) Special purpose rooms—science rooms, music room, and vocation labs—are of adequate size, but fall short of program standards in many regards.

Guidelines**: Middle School classrooms: 950 s.f.; Science Classrooms: 1,100 s.f. Also, an art classroom (with storage) of 1,000-1,400 s.f., and a music classroom (with storage) of 1,500 s.f. are indicated by the educational program, as well as an Exploratory (vocational) Lab at 1,400 s.f.

Food Service (1943). The cafeteria is located on the lower level of what was the original gymnasium for the school which has been subdivided with later floor construction, creating two levels within the old building. The cafeteria is approximately 2,975 square feet. Seating is provided for 144 at tables. The current enrollment can be accommodated in three cycles. There is one serving line located within the kitchen space. The kitchen is small at 820 SF (not including auxiliary areas – cooler, freezer, staff spaces, etc.), but is adequately sized for the number of meals being served.

Guidelines: Dining space: 1,800 s.f.; kitchen: 1,261 s.f.; one serving line: 400 s.f. (in addition to the kitchen area), three serving cycles. Therefore, the kitchen and serving areas are undersized relative to guidelines.

Media Center (1943). The media center is located on the upper level of what was the original gymnasium for the school, which has been subdivided with later floor construction, creating two levels

* Capacities and other data were extracted from the 2015-16 Facility Needs Survey.

**Comparisons made to “Guidelines” refer to Facility Guidelines published by School Planning Section of DPI, for a Middle School of 350 students.
within the old building. The reading room is approximately 3,563 square feet. Additional support spaces of approximately 1,168 square feet include a workroom, office, storage rooms, and a small conference room.

Guidelines: Reading room: 2,100 s.f. plus 1,500 s.f. for support spaces. Therefore, the media center is well-suited to the space requirements for a middle school program.

Physical Education (1958). The main gymnasium space is approximately 6,956 square feet. There are various support spaces totaling approximately 1,787 square feet. Many aspects of this facility do not meet accessibility and code requirements, including locker room and toilet facilities.

Guidelines: Gymnasium including lockers: 6,500 s.f. plus additional square footage for office, storage, and toilet areas. A health/PE classroom is not programmed for this enrollment.

Other Facilities. There are several self-contained structures in varying states of utilization and condition, as follows:

Building 8 (date unknown) is a single classroom building (583 SF).
Building 9 (date unknown) is a storage/utility building (199 SF).
Building 10 (1972) contains an ROTC classroom and a weight room (2,148 SF).
Building 11 (1986) is a band room building (3,000 SF).
Building 12 (1961) is a single ‘classroom’ building (640 SF).
Building 13 (date unknown) contains an auto mechanics shop and support areas (2,447 SF).
Building 14 (1975) is an athletic fieldhouse/concession building (2,000 SF).
Building 15 (date unknown) is an athletic press box structure (256 SF).
Building 16 (date unknown) is a concession/toilet room building (400 SF).
Building 17 (date unknown) is a sewer pump house building (97 SF).

Administration Suite. School administration offices are located in the original 1925 building. These areas include offices, teachers’ work room, conference room, reception, and similar functions. The space for administrative functions is undersized for a modern middle school program, but appears to function well. Consideration of future renovation should include this area.

Site. The site includes adequate outdoor play areas for a middle school program. Vehicular circulation and parking areas are adequate, but could be re-configured for improved function. Although separate entrance drives and parking areas for bus traffic and car traffic are provided, the space for carpool circulation and curb-side drop-off is inadequate. There are no modular classrooms on the site (modular classrooms are not used in capacity calculations) although there are several small, self-contained structures as noted above.

Overall Evaluation. Due to small classrooms, no increase in enrollment is contemplated. Vehicle circulation is also problematic. Utility costs ($196.76/ADM) were close to the district average.
Bladen Lakes Primary School

Plumbing systems

- Domestic water is supplied to the school from the county water system.
- Sanitary sewer is disposed of through an on-site drain field system.
- Domestic hot water is generated for the kitchen by an oil fired water heater.
- Domestic hot water is generated for general building use by electric water heaters.
- The building does not have a fire protection sprinkler system.
- The original faucets and flush valves have generally been changed out with water saving faucets.

Plumbing system assessment

- The existing plumbing fixtures are old and show their age but are performing adequately.
- Some of the water saving faucets and flush valves have been replaced with non-water saving faucets and flush valves.

Mechanical systems

- The building is heated and cooled using multiple split system air to air direct expansion, constant volume, air handling units with hot water coils for heating. Conditioned air is distributed to each space through a concealed duct system. Generally one air handling unit serves two classrooms.
- Hot water is generated by an oil fired boiler, and pumped through a two pipe system to hot water coils located in the air handling units.
- Control of the heating and cooling system is performed primarily by a direct digital control system that communicates with the county central system.
- Outside air is ducted to each air handling unit but has been closed off.

Mechanical system assessment

- Fresh air is available to the air handling units, but has been closed off, thus resulting in a reduced level of indoor air quality.
- Classrooms are not provided with individual space temperature control.
Comments:

The outside air system has been closed off. Per the requirements of the NC State Building Code, fresh air must be supplied to all occupied spaces, to continue operation of this school.

The HVAC system in this facility is considered to be quite and has no impact on the ability for the students to hear the teaching staff.

In respect to the mechanical system, as it compares to other schools in the county, and as long as the outside air issue is resolved, there is no reason not to continue to use this school.
**Bladenboro Primary School**

PLUMBING AND MECHANICAL REPORT

*Plumbing systems*

- Domestic water is supplied to the school from the city water system.
- Sanitary sewer is disposed of through the city waste treatment system.
- Domestic hot water is generated for the kitchen and general building use by electric water heaters.
- The building does not have a fire protection sprinkler system.
- The original faucets and flush valves have generally been changed out with water saving faucets.

*Plumbing system assessment*

- Many of the sinks have significant staining. According to Bladen County staff, this is a result of problems with the city water supply that has been resolved. No other problems with the primary domestic plumbing system were witnessed and the surveyor was not informed of any by Bladen County staff.
- The existing plumbing fixtures are old and show their age but are performing adequately.
- Some of the water saving faucets and flush valves have been replaced with non-water saving faucets and flush valves.

*Mechanical systems*

- Most areas of the building are heated and cooled using multiple split system air to air direct expansion, constant volume, air handling units with hot water coils for heating. Some areas use packaged roof top direct expansion units for cooling, and heating is provided by space mounted convectors. Conditioned air is distributed to each space through a concealed duct system. Generally, one air handling unit serves two classrooms. In some areas, each unit serves four classrooms.
- Hot water is generated by a natural gas fired boiler, and pumped through a two pipe system to hot water coils located in the air handling units and space mounted convectors.
- Control of the heating and cooling system is performed primarily by a direct digital control system that communicates with the county central system.
- The kitchen has an exhaust hood but no dedicated source of make-up air is supplied. Makeup is from fresh air supplied though other forced air systems and largely from infiltration.

- Outside air is ducted to each air handling unit.

**Mechanical system assessment**

- Fresh air is available to the air handling units but not actively controlled and likely not properly balanced to supply the code required volume, thus resulting in a reduced level of indoor air quality.

- Classrooms are not provided with individual space temperature control.

- The kitchen should be provided with a dedicated make-up air unit to prevent such a high level of infiltration entering the building unconditioned.

**Comments:**

The mechanical system is in satisfactory working order and appears to be well maintained.

There is some concern that the proper amount of outside air is not being supplied to all spaces. This should be verified and corrected as necessary.

The HVAC system in this facility is considered to be quite and has no impact on the ability for the students to hear the teaching staff.

In respect to the mechanical system, as it compares to other schools in the county, there is no reason not to continue to use this school.
**Booker T. Washington Elementary School**

**PLUMBING SYSTEMS**

- Domestic water is supplied to the school from the city water system.
- Sanitary sewer is disposed of through the city waste treatment system.
- Domestic hot water is generated for the kitchen by a Propane fired water heater.
- Domestic hot water is generated for general building use by electric water heaters.
- The building does not have a fire protection sprinkler system.
- The original faucets and flush valves have generally been changed out with water saving faucets.

**PLUMBING SYSTEM ASSESSMENT**

- The existing plumbing fixtures are old and show their age but are performing adequately.
- Some of the water saving faucets and flush valves have been replaced with non-water saving faucets and flush valves.

**MECHANICAL SYSTEMS**

- Classrooms for this school are heated and cooled by either packaged wall mounted heat pumps or split system heat pumps. The administration area is heated and cooled by a packaged roof mounted heat pump and the cafeteria is cooled by a split type DX system. The entire facility has hot water convectors that can be used for heating as well as the heat pump systems. In some areas, such as the cafeteria, the hot water heating system is the only source of heat. The gymnasium is heated and cooled by a package DX system with natural gas heat. This unit is mounted on the ground.

- Hot water is generated by a natural gas fired boiler, and pumped through a two pipe system to space mounted convectors and unit heaters.

- Control of the heating and cooling system is performed primarily by a direct digital control system that communicates with the county central system.

- The kitchen has an exhaust hood but no dedicated source of make-up air is supplied. Makeup is from fresh air supplied though other forced air systems and largely from infiltration.

- Outside air is only available through the package units. Areas served by spilt systems do not have a source of outside air.
MECHANICAL SYSTEM ASSESSMENT

- Fresh air is only available to areas served by the packaged equipment. All other areas do not have a mechanical means for supplying fresh air, thus resulting in a reduced level of indoor air quality.

- A large number of classrooms are heated and cooled by wall mounted packaged heat pumps which are noisy and according to Bladen County staff are often cut off to reduce the noise level in the classroom.

- Not all classrooms are provided with individual space temperature control.

- The kitchen should be provided with a dedicated make-up air unit to prevent such a high level of infiltration entering the building unconditioned.

Comments:

Fresh air is of a major concern. Many spaces have none and those served with packaged equipment have the capability but are not likely receiving a sufficient supply.

The HVAC system in this facility is considered to be loud in many spaces and is considered to have a very significant impact on the ability for the students to hear the teaching staff.

In respect to the mechanical system, as it compares to other schools in the county, this school should not be used without significant upgrades to the HVAC systems to supply fresh air to all occupied spaces and replace systems that create levels of sound that are detrimental to learning.
**Dublin Primary School**

**PLUMBING SYSTEMS**

- Domestic water is supplied to the school from the city water system.
- Sanitary sewer is disposed of through the city waste treatment system.
- Domestic hot water is generated for the kitchen by a natural gas fired water heater.
- Domestic hot water is generated for general building use by electric water heaters.
- The building does not have a fire protection sprinkler system.
- The original faucets and flush valves have generally been changed out with water saving faucets.

**PLUMBING SYSTEM ASSESSMENT**

- The existing plumbing fixtures are old and show their age but are performing adequately.
- Some of the water saving faucets and flush valves have been replaced with non-water saving faucets and flush valves.

**MECHANICAL SYSTEMS**

- The school is heated and cooled by either packaged wall mounted heat pumps, ductless units mounted on interior walls or split system DX air handling units with steam coils. The administration area is heated and cooled by a packaged roof mounted heat pump and the cafeteria is cooled by a split type DX system. The gymnasium is heated and cooled by a DX system with steam heat.
- Steam is generated by a natural gas fired boiler, and distributed to coils at the air handling units serving the gym and one classroom wing.
- Control of the heating and cooling system is performed primarily by a direct digital control system that communicates with the county central system.
- The kitchen has an exhaust hood but no dedicated source of make-up air is supplied. Makeup is from fresh air supplied though other forced air systems and largely from infiltration.
- Outside air is only available through the wall mounted package units. Areas served by split systems do not have a source of outside air.
MECHANICAL SYSTEM ASSESSMENT

- Fresh air is only available to areas served by the packaged equipment. All other areas do not have a mechanical means for supplying fresh air, thus resulting in a reduced level of indoor air quality.

- A large number of classrooms are heated and cooled by wall mounted packaged heat pumps which are noisy and according to Bladen County staff are often cut off to reduce the noise level in the classroom.

- Not all classrooms are provided with individual space temperature control.

- The kitchen should be provided with a dedicated make-up air unit to prevent such a high level of infiltration entering the building unconditioned.

Comments:

Fresh air is of a major concern. Many spaces have none and those served with packaged equipment have the capability but are not likely receiving a sufficient supply.

The HVAC system in this facility is considered to be loud in many spaces and is considered to have a very significant impact on the ability for the students to hear the teaching staff.

In respect to the mechanical system, as it compares to other schools in the county, this school should not be used without significant upgrades to the HVAC systems to supply fresh air to all occupied spaces and replace systems that create levels of sound that are detrimental to learning.
East Arcadia School

PLUMBING SYSTEMS

- Domestic water is supplied to the school from the county water system.
- Sanitary sewer is disposed of through an on-site filter bed system.
- Domestic hot water is generated for the kitchen and general building use by electric water heaters.
- The building does not have a fire protection sprinkler system.
- The original faucets and flush valves have generally been changed out with water saving faucets.

PLUMBING SYSTEM ASSESSMENT

- The existing plumbing fixtures are old and show their age but are performing adequately.
- Some of the water saving faucets and flush valves have been replaced with non-water saving faucets and flush valves.

MECHANICAL SYSTEMS

- Classrooms for this school are heated and cooled by either packaged wall mounted heat pumps or split system heat pumps. The cafeteria is heated and cooled by packaged wall mounted heat pumps. The media center is heated and cooled by a roof mounted packaged heat pump and the gym is heated and cooled by ground mounted package units with DX cooling and propane heat. There is a hot water heating system using convectors throughout the school but only used in the Kindergarten wing and the Media center.
- Hot water is generated by an oil fired boiler, and pumped through a two pipe system to space mounted convectors and unit heaters.
- Control of the heating and cooling system is performed primarily by a direct digital control system that communicates with the county central system.
- Outside air is only available through the package units. Areas served by spilt systems do not have a source of outside air.
**MECHANICAL SYSTEM ASSESSMENT**

- Fresh air is available only to areas served by the packaged equipment. All other areas do not have a mechanical means for supplying fresh air, thus resulting in a reduced level of indoor air quality.

- A large number of classrooms are heated and cooled by wall mounted packaged heat pumps or split system heat pumps with space mounted fan coils which are noisy and according to Bladen County staff are often, at the request of the teacher, cut off to reduce the noise level in the classroom.

Comments:

Fresh air is of a major concern. Many spaces have none and those served with packaged equipment have the capability but are not likely receiving a sufficient supply.

The HVAC system in this facility is considered to be loud in many spaces and is considered to have a very significant impact on the ability for the students to hear the teaching staff.

In respect to the mechanical system, as it compares to other schools in the county, this school should not be used without significant upgrades to the HVAC systems to supply fresh air to all occupied spaces and replace systems that create levels of sound that are detrimental to learning.
**Elizabethtown Primary School**

**PLUMBING SYSTEMS**

- Domestic water is supplied to the school from the city water system.
- Sanitary sewer is disposed of through the city waste treatment system.
- Domestic hot water is generated for the kitchen and general building use by electric water heaters.
- The building does not have a fire protection sprinkler system.
- The original faucets and flush valves have generally been changed out with water saving faucets.

**PLUMBING SYSTEM ASSESSMENT**

- The existing plumbing fixtures are old and show their age but are performing adequately.
- Some of the water saving faucets and flush valves have been replaced with non-water saving faucets and flush valves.

**MECHANICAL SYSTEMS**

- Some classroom wings are cooled with window mounted units and heated with space mounted hot water convectors. Other classroom wings are heated and cooled using multiple split system air to air direct expansion, constant volume, air handling units with hot water coils for heating.
- Hot water is generated by an oil fired boiler, and pumped through a two pipe system to hot water coils located in the air handling units and space mounted convectors.
- Control of the heating and cooling system is performed primarily by a direct digital control system that communicates with the county central system.
- Outside air is ducted to each air handling unit.
- The primary duct system where rooms are served by air handling units is fiberglass ductboard.
MECHANICAL SYSTEM ASSESSMENT

- Fresh air is available to the air handling units and window units but not actively controlled and likely not properly balanced to supply the code required volume, thus resulting in a reduced level of indoor air quality.

- All classrooms are not provided with individual space temperature control.

Comments:

Mechanical systems consisting of window units should be replaced with more effective systems with quitter operating characteristics.

Where feasible, duct work constructed using ductboard should be replaced.

Per the requirements of the NC State Building Code, fresh air must be supplied to all occupied spaces.

Some parts of the facility are served by HVAC systems (window units) that are considered to be loud and to have a very significant impact on the ability for the students to hear the teaching staff.

In respect to the mechanical system, as it compares to other schools in the county, this school should be upgraded to supply fresh air to all occupied spaces and replace systems that create levels of sound that are detrimental to learning.
Plain View Primary School

PLUMBING SYSTEMS

- Domestic water is supplied to the school from the county water system.
- Sanitary sewer is disposed of through an on-site septic tank and fill system.
- Domestic hot water is generated for the kitchen and general building use by electric water heaters.
- The building does not have a fire protection sprinkler system.
- The original faucets and flush valves have generally been changed out with water saving faucets.

PLUMBING SYSTEM ASSESSMENT

- The existing plumbing fixtures are old and show their age but are performing adequately.
- Some of the water saving faucets and flush valves have been replaced with non-water saving faucets and flush valves.

MECHANICAL SYSTEMS

- Most classrooms for this school are heated and cooled by either packaged wall mounted heat pumps or split system heat pumps. One classroom wing is conditioned by rooftop heat pumps. The cafeteria is heated and cooled by packaged wall mounted heat pumps. The media center is heated and cooled by a roof mounted packaged heat pump.
- Steam is generated by an oil fired boiler, and distributed to radiators throughout the facility.
- Control of the heating and cooling system is performed primarily by a direct digital control system that communicates with the county central system.
- Outside air is only available through the package units. Areas served by spilt systems do not have a source of outside air.
**MECHANICAL SYSTEM ASSESSMENT**

- Fresh air is only available to areas served by the packaged equipment. All other areas do not have a mechanical means for supplying fresh air, thus resulting in a reduced level of indoor air quality.

- A large number of classrooms are heated and cooled by wall mounted packaged heat pumps or split system heat pumps with space mounted fan coils which are noisy and according to Bladen County staff are often, at the request of the teacher, cut off to reduce the noise level in the classroom.

**Comments:**

Fresh air is of a major concern. Some spaces have none and those served with packaged equipment have the capability but are not likely receiving a sufficient supply.

The HVAC system in this facility is considered to be loud in many spaces and is considered to have a very significant impact on the ability for the students to hear the teaching staff.

In respect to the mechanical system, as it compares to other schools in the county, this school should not be used without significant upgrades to the HVAC systems to supply fresh air to all occupied spaces and replace systems that create levels of sound that are detrimental to learning.
Bladenboro Middle School

PLUMBING SYSTEMS

- Domestic water is supplied to the school from the city water system.
- Sanitary sewer is disposed of through the city waste treatment system.
- Domestic hot water is generated for the kitchen by a natural gas fired water heater.
- Domestic hot water is generated for general building use by electric water heaters.
- The building does not have a fire protection sprinkler system.
- The original faucets and flush valves have generally been changed out with water saving faucets.
- Science rooms and prep rooms are only in partial compliance with the NC Board of Education Science Safety Requirements. The stainless steel sinks that are used in some places are not in compliance and it was reported by county staff that there is no water shutoff.

PLUMBING SYSTEM ASSESSMENT

- The existing plumbing fixtures are old and show their age but are performing adequately.
- Some of the water saving faucets and flush valves have been replaced with non-water saving faucets and flush valves.
- Science rooms and prep rooms are not in compliance with the safety requirements and must be brought into compliance per General Statute.

MECHANICAL SYSTEMS

- The building is heated and cooled using multiple constant volume air handling units with chilled water coils for cooling and hot water coils for heating. Conditioned air is distributed to each space through a concealed duct system. Generally one air handling unit serves two classrooms.
- Chilled water is generated by an air cooled chiller, and pumped through a two pipe (dedicated chilled water loop) system to chilled water coils in the air handling units.
- Hot water for the primary school facility is generated by a gas fired boiler, and pumped through a two pipe (dedicated hot water loop) system to hot water coils located in the air handling units. Steam for the gym is generated by a natural gas fired boiler, and distributed to unit heaters.
- Control of the heating and cooling system is performed primarily by a direct digital control system that communicates with the county central system.
Outside air is ducted to each air handling unit.

**MECHANICAL SYSTEM ASSESSMENT**

- Fresh air is available to the air handling units, but is likely not properly balanced to supply the required volume.
- Classrooms are not provided with individual space temperature control.
- Condensate piping serving the steam system is in need of replacement.

**Comments:**

The Science and Prep rooms must be brought into compliance with the Science Safety Requirements.

The mechanical system is in satisfactory working order and appears to be well maintained. It also appears to have the ability to meet the temperature requirements expected in a school.

The HVAC system in this facility is considered to be quite and has no impact on the ability for the students to hear the teaching staff.

In respect to the mechanical system, as it compares to other schools in the county, there is no reason not to continue to use this school.
Clarkton School of Discovery

PLUMBING SYSTEMS

- Domestic water is supplied to the school from the city water system.
- Sanitary sewer is disposed of through the city waste treatment system.
- Domestic hot water is generated for the kitchen by a natural gas fired water heater.
- Domestic hot water is generated for general building use by electric water heaters.
- The building does not have a fire protection sprinkler system.
- The original faucets and flush valves have generally been changed out with water saving faucets.
- Science rooms and prep rooms are only in partial compliance with the NC Board of Education Science Safety Requirements. The stainless steel sinks that are used in some places are not in compliance and it was reported by county staff that there is no water shutoff.

PLUMBING SYSTEM ASSESSMENT

- The existing plumbing fixtures are old and show their age but are performing adequately.
- Some of the water saving faucets and flush valves have been replaced with non-water saving faucets and flush valves.
- Science rooms and prep rooms are not in compliance with the safety requirements and must be brought into compliance per General Statute.
- Acid waste from the science and prep rooms is drained into the sanitary waste system without being treated/diluted. This must be corrected as soon as possible.
- The sanitary waste system is leaking between the building and connection to the city waste system and should be repaired as soon as possible.

MECHANICAL SYSTEMS

- Most areas of the building are heated and cooled using multiple split system air to air direct expansion, constant volume air handling units with hot water coils for heating. Some areas use packaged roof top direct expansion units for cooling and heating is provided by space mounted steam radiators. Conditioned air is distributed to each space through a concealed duct system.
Generally, one air handling unit serves two classrooms. The gym is ventilated with propeller vent fans and heated with steam unit heaters.

- Hot water is generated by three natural gas fired steam boiler. Water is pumped through a steam to hot water heat exchanger and pumped through a two pipe system to hot water coils located in the air handling units and space mounted convectors. Areas with steam heat have steam distributed to the space mounted radiators and unit heaters.

- Control of the heating and cooling system is performed primarily by a direct digital control system that communicates with the county central system.

- The kitchen has an exhaust hood but no dedicated source of make-up air is supplied. Makeup is from fresh air supplied though other forced air systems and largely from infiltration.

- Outside air is ducted to each air handling unit.

**MECHANICAL SYSTEM ASSESSMENT**

- Fresh air is available to the air handling units but not actively controlled and likely not properly balanced to supply the code required volume, thus resulting in a reduced level of indoor air quality.

- Classrooms are not provided with individual space temperature control.

- The kitchen should be provided with a dedicated make-up air unit to prevent such a high level of infiltration entering the building unconditioned.

- Steam traps are mostly stuck open, wasting a significant amount of energy.

Comments:

The Science and Prep rooms must be brought into compliance with the Science Safety Requirements.

The mechanical system is in satisfactory working order and appears to be well maintained. It appears to have the ability to meet the temperature requirements expected in a school.

There is some concern that the proper amount of outside air is not being supplied to all spaces. This should be verified and corrected as necessary.

The HVAC system in this facility is considered to be quite and has no impact on the ability for the students to hear the teaching staff.

In respect to the mechanical system, as it compares to other schools in the county, there is no reason not to continue to use this school.
Elizabethtown Middle School

PLUMBING SYSTEMS

- Domestic water is supplied to the school from the city water system.
- Sanitary sewer is disposed of through the city waste treatment system.
- Domestic hot water is generated for the kitchen and general building use by electric water heaters.
- The building does not have a fire protection sprinkler system.
- The original faucets and flush valves have generally been changed out with water saving faucets.
- Science rooms and prep rooms are only in partial compliance with the NC Board of Education Science Safety Requirements. The stainless steel sinks that are used in some places are not in compliance and it was reported by county staff that there is no water shutoff.

PLUMBING SYSTEM ASSESSMENT

- The existing plumbing fixtures are old and show their age but are performing adequately.
- Some of the water saving faucets and flush valves have been replaced with non-water saving faucets and flush valves.
- Science rooms and prep rooms are not in compliance with the safety requirements and must be brought into compliance per General Statute.

MECHANICAL SYSTEMS

- Most areas of the building are heated and cooled using multiple packaged roof top air to air direct expansion, constant volume units with hot water coils for heating. Conditioned air is distributed to each space through a concealed duct system. Generally one roof top unit serves two classrooms. The gym is cooled by four constant volume air handling units with one hot/chilled water coil in each unit. Hot water and chilled water for the gym are supplied by a boiler and chiller, with water pumped through a two pipe system to the air handling unit coils.
- Hot water is generated by an oil fired boiler. Water is pumped through a dedicated (except for the gym) two pipe system to hot water coils located in the air handling units and space mounted convectors.
- Chilled water is generated for the gym by an air cooled chiller. Water is pumped through the two pipe hot water/chilled water system to the coils in the air handling units.
- Control of the heating and cooling system is performed primarily by a direct digital control system, using pneumatic operators, that communicates with the county central system. Change over for the two pipe hot/chilled water system in the gym is manual.

- Outside air is ducted to each air handling unit.

- The vocational (wood working) shop does not have a dust collection system to prevent hazardous conditions created by air-born dust and debris collected on the floor.

**MECHANICAL SYSTEM ASSESSMENT**

- Fresh air is available to the air handling units but not actively controlled and likely not properly balanced to supply the code required volume, thus resulting in a reduced level of indoor air quality.

- Classrooms are not provided with individual space temperature control.

- A dust collection system should be installed in the vocational shop, if the shop is to be used.

Comments:

The Science and Prep rooms must be brought into compliance with the Science Safety Requirements.

The mechanical system is in satisfactory working order and appears to be well maintained. It appears to have the ability to meet the temperature requirements expected in a school.

There is some concern that the proper amount of outside air is not being supplied to all spaces. This should be verified and corrected as necessary.

The HVAC system in this facility is considered to be quite and has no impact on the ability for the students to hear the teaching staff.

In respect to the mechanical system, as it compares to other schools in the county, there is no reason not to continue to use this school.
Tar Heel Middle School

PLUMBING SYSTEMS

- Domestic water is supplied to the school from the city water system.
- Sanitary sewer is disposed of through an on-site drainage field.
- Domestic hot water is generated for the kitchen by a natural gas fired water heater.
- Domestic hot water is generated for general building use by electric water heaters.
- The building does not have a fire protection sprinkler system.
- The original faucets and flush valves have generally been changed out with water saving faucets.
- Science rooms and prep rooms are only in partial compliance with the NC Board of Education Science Safety Requirements.

PLUMBING SYSTEM ASSESSMENT

- The existing plumbing fixtures are old and show their age but are performing adequately.
- Some of the water saving faucets and flush valves have been replaced with non-water saving faucets and flush valves.
- Science rooms and prep rooms are not in compliance with the safety requirements and must be brought into compliance per General Statute.
- Acid waste from the science and prep rooms is drained into the sanitary waste system without being treated/diluted. This must be corrected as soon as possible.

MECHANICAL SYSTEMS

- Some classrooms are heated and cooled using split system heat pumps where the indoor unit is mounted in the classroom. Other classroom areas use packaged roof top heat pumps. Where roof top units are used, conditioned air is distributed to each space through a concealed duct system. The gym is ventilated with propeller vent fans and heated with steam unit heaters.
- Hot water is generated by two natural gas fired steam boiler. Steam is distributed to space mounted radiators and unit heaters.
- Control of the heating and cooling system is performed primarily by a direct digital control system that communicates with the county central system.
Outside air is ducted to each air handling unit.

**MECHANICAL SYSTEM ASSESSMENT**

- Fresh air is available to the air handling units but not actively controlled and likely not properly balanced to supply the code required volume, thus resulting in a reduced level of indoor air quality.

- Classrooms are not provided with individual space temperature control.

- The kitchen should be provided with a dedicated make-up air unit to prevent such a high level of infiltration entering the building unconditioned.

- Steam traps are mostly stuck open, wasting a significant amount of energy.

Comments:

The Science and Prep rooms must be brought into compliance with the Science Safety Requirements. Fresh air is of a major concern. Some spaces have none and those served with packaged equipment have the capability but are not likely receiving a sufficient supply.

The HVAC system, where unit ventilators are installed, are considered to be loud and is considered to have a very significant impact on the ability for the students to hear the teaching staff.

In respect to the mechanical system, as it compares to other schools in the county, this school should not be used without significant upgrades to the HVAC systems to supply fresh air to all occupied spaces and replace systems that create levels of sound that are detrimental to learning.
General

Electrical systems

In this section electrical systems will refer to building wiring, electrical equipment, lighting, telephone/data, communication, fire alarm and security systems.

This review consists only of a visual inspection of electrical systems and did not include any review of interiors of panels, equipment, junction boxes, and above ceiling and inaccessible areas. The purpose of this review is only for a general overview of systems and how they would affect schools that may receive additional students.

A point of emphasis in reviewing electrical systems to determine if a school is suitable for additional students is the life safety components of the school. If a school does not have adequate egress or exit lighting or a suitable fire alarm system, the addition of students may make a potentially unsafe condition worse and expose the risk to more students. Other components affecting student safety (electrical in Science labs, shops, adequate lighting etc...) were also considered. It was noted that none of the schools had exit discharge lighting (normal and emergency) which was not required at the time of construction of any of the schools in the system. This might best be dealt with during major renovations to the building or significant changes to lighting systems.

Another point of emphasis is the ability of the electrical systems to absorb the additional students. Can the service accept new load? Are there adequate spares and spaces in panels throughout the building? Are there sufficient outlets in the classrooms? Are there systems that are missing or would require upgrade in areas intended for new students?

Due to the large use of battery backed up fluorescents and since many of the emergency fixtures are more than 5 years old, it would be useful shut down power to the lighting in each school building to verify adequate coverage of emergency lights. It would be good to consider provision of emergency lights in locker rooms, group toilets, and spaces requiring more than one exit if they currently do not exist.

Based on a discussion with the owner, it is expected that the public address systems throughout the school system are intended to be upgraded in the near future that will provide announcements (emergency) throughout all areas of the building. Comments associated with intercom/public address systems are not provided specifically to each school unless a specific point of emphasis was deemed necessary.

It is assumed based on review of the schools and discussion with the school systems information technology department that each school has adequate data outlets (category five cables or better) and that WIFI is run throughout all of the schools in the system. Comments associated with tel/data are not provided specifically to each school unless a specific point of emphasis was deemed necessary.
For security it was noted that each school has a panic alarm system as required by general statute. Most of the schools appeared to have motion detection systems and electronic access on some doors. Many of the elementary schools were noted to have electronic visitor entry systems. Comments associated with security systems are not provided specifically to each school unless a specific point of emphasis was deemed necessary.
**Bladen Lakes Primary**

**ELECTRICAL SYSTEMS**

- Generally all lighting is fluorescent. The condition of the fixtures is good.

- The building service is a 208Y/120V, 2000A, Square D Pow R Line switchboard with adequate capacity for new loads. The panels in the building appear to be in good condition and have adequate capacity for new loads.

- The building is served by an EST Quickstart which is an addressable fire alarm panel that dials out. Building coverage includes manual pull stations and smoke detectors in corridors. Audio/Visual coverage appears to be up to current code. This system can be easily expanded as necessary for any necessary modifications.

- Emergency and exit lighting is provided through a 60kW Power tech generator. The generator also provides backup power for certain loads in the school since it serves as an emergency shelter.

- There is generally between 3–4 power outlets in a typical classroom which should be adequate unless significant loads are added to the building. There appears to be smartboards in the classrooms. There is not GFI protection for 120V outlets in the kitchen and outlets within 6’ of a sink in many areas which was not required at the time of construction.

**ELECTRICAL RECOMMENDATIONS**

High priority - The following items should be considered if additional students are to be added to the schools.

Lower Priority – These items can be corrected when funds become available or only if a specific condition necessitates change.

- Provide GFI protection for outlets not up to current code.
- Provide exit discharge lighting.
**Bladenboro Primary School**

**ELECTRICAL SYSTEMS**

- Generally, all lighting is fluorescent. The condition of the fixtures is good.

- The building has two services. Service one of two is 240/120V, 1200A, three phase, high leg delta which serves the older part of the building. This service has more than six service disconnects which is a code violation. Service two of two is a 480Y/277V, 400A, service which serves the new area of the campus. Most of the panels in the building are in good condition. However, many of the panels in the older wing do not have much room for additional circuits which becomes more of an issue since the service is not expandable without correcting the code violation.

- The building is served by a Notifier NFS2 3030 which is a new addressable fire alarm panel that dials out. Building coverage includes manual pull stations and smoke detectors in corridors. Audio/Visual coverage appears to be up to current code. This system can be easily expanded as necessary for any necessary modifications.

- Emergency and exit light fixtures appear to be in good condition in the new portion of the building although there are some areas that may need additional exit signs. There is no emergency lighting in the older wing of the building.

- There is generally between 3-5 power outlets in a typical classroom which should be adequate unless significant loads are added to the building. There is not GFI protection for 120V outlets in the kitchen and outlets within 6’ of a sink in many areas, which was not required at the time of construction.

- The kitchen has a required dry chemical system for the hood and based on discussion with maintenance should shunt trip electrical items under the hood. This should be verified.

**ELECTRICAL RECOMMENDATIONS**

High priority - The following items should be considered if additional students are to be added to the schools.

- Correct electrical code violation for existing 240/120V high leg delta service.
- Verify proper emergency light and exit sign coverage throughout the building and fix any non-compliant conditions.
- Verify if electrical equipment under the hood is properly shut-off upon activation of hood dry chemical system and correct as necessary.

Lower Priority – These items can be corrected when funds become available or only if a specific condition necessitates change.

- Provide GFI protection for outlets not up to current code.
- Provide exit discharge lighting.
- Provide additional outlets in classrooms as required by new program and update panels to allow for additional space or capacity as necessary.
Booker T. Washington Primary School

**ELECTRICAL SYSTEMS**

- Generally all lighting is fluorescent. The condition of the fixtures is fair. Some of the fixtures are missing lenses, some have yellowing lenses, and the lighting in some corridors is low. The canopies do not have lighting.

- The building has two services. Service one of two is a 240/120V, 1200A (assumed) high leg delta service gutter with six disconnects. No additional panels can be added to this service. Service two of two is a 240/120V, 400A, Square D lline high leg delta. This service is small and may not be able to accept additional load. Many of the panels are old and had limited spares.

- The building is served by an EST Quickstart which is an addressable fire alarm panel that dials out. Building coverage includes manual pull stations and smoke detectors in corridors. Audio/Visual coverage appears to be up to current code. This system can be easily expanded as necessary for any necessary modifications.

- The building does not have emergency lights and there are some areas that need exit signs.

- There is generally about 2-3 power outlets in a typical classroom. There is not GFI protection for 120V outlets in the kitchen and outlets within 6’ of a sink in many areas, which was not required at the time of construction.

- The kitchen has a required dry chemical system for the hood and based on discussion with maintenance does not shunt trip electrical items under the hood.

**ELECTRICAL RECOMMENDATIONS**

High priority - The following items should be considered if additional students are to be added to the schools.

- Provide proper emergency light and exit sign coverage throughout the building and fix any non-compliant conditions.
- Make sure that electrical equipment under the hood is properly shut-off upon activation of hood dry chemical system and correct as necessary.
- Consider upgrade of one of the building services to allow for additional loads. Add new panels to this service to provide circuits for new loads.

Lower Priority – These items can be corrected when funds become available or only if a specific condition necessitates change.

- Provide GFI protection for outlets not compliant with current code.
- Provide exit discharge lighting.
- Provide additional outlets in classrooms as required by new program and update panels to allow for additional space or capacity as necessary.
- Consider replacement/repair of light fixtures in the building. Consider provision of canopy lighting.
Dublin Primary School

ELECTRICAL SYSTEMS

- Generally all lighting is fluorescent. The condition of the fixtures is good.

- The building Service is 240/120V, 2000A, 3 phase high leg Delta GE AV Line Switchboard and has spare capacity. The general condition of the panels is good and spares are available in most areas of the building.

- The building is served by a Notifier NFS2 3030 which is a new addressable fire alarm panel that dials out. Building coverage includes manual pull stations and smoke detectors in corridors. Audio/Visual coverage appears to be up to current code. This system can be easily expanded as necessary for any necessary modifications.

- There are emergency and exit light fixtures throughout the new wing. There are some areas in the new wing where additional exit fixtures may be necessary. There is no emergency and exit lighting in the older wing.

- There is generally between 4-5 power outlets in a typical classroom which should be adequate unless significant loads are added to the building. There is not GFI protection for 120V outlets in the kitchen and outlets within 6’ of a sink in many areas, which was not required at the time of construction

- The kitchen does not have a dry chemical system for the hood and does not shunt trip electrical equipment under the hood in upon activation of the dry chemical system.

ELECTRICAL RECOMMENDATIONS

High priority - The following items should be considered if additional students are to be added to the schools.

- Verify proper emergency light and exit sign coverage throughout the new wing of the building and fix any non-compliant conditions.
- Provide emergency lighting in the older wing of the building.
- Provide a dry chemical system to serve equipment under the hood. Activation of the system should shunt trip electrical equipment under the hood and cause an alarm on the fire alarm system.

Lower Priority – These items can be corrected when funds become available or only a specific condition necessitates change.

- Provide GFI protection for outlets not up to current code.
- Provide exit discharge lighting.
East Arcadia School

**ELECTRICAL SYSTEMS**

- Generally all lighting is fluorescent. The condition of the fixtures is good.

- The building has a 208Y/120V, 1200A Square D line service. There is no room in the service for new breakers. Many of the panels are old and have limited spares. It was noted that there are some issues with breakers tripping.

- The building is served by an EST Quickstart which is an addressable fire alarm panel that dials out. Building coverage includes manual pull stations and smoke detectors in corridors. Audio/Visual coverage appears to be up to current code. This system can be easily expanded as necessary for any necessary modifications.

- Emergency and exit light fixtures appear to be in good condition in some portions of the building. There is one wing that does not have emergency lights. There are some areas that may need additional exit signs.

- There are some areas that have adequate outlets however it was noted that in one wing there are only 2 outlets per classroom. It was also noted that some classrooms do not have smartboards. There is not GFI protection for 120V outlets in the kitchen, outlets within 6’ of a sink in many areas, and outlets in locker rooms which was not required at the time of construction.

- The Science labs in the facility do not meet NCDPI’s Science safety checklist. For electrical all outlets in science labs and prep rooms should be GFI protected and there should be a single shut-off switch that disconnects all utilities in the space (gas, water and electric).

**ELECTRICAL RECOMMENDATIONS**

High priority - The following items should be considered if additional students are to be added to the schools.

- Provide proper emergency light and exit sign coverage throughout the building and fix any non-compliant conditions.
- Correct any items not in compliance with Science safety check list.

Lower Priority – These items can be corrected when funds become available or only if a specific condition necessitates change.

- Provide GFI protection for outlets not up to current code.
- Provide exit discharge lighting.
- Provide additional outlets in classrooms as required by new program and update panels to allow for additional space or capacity as necessary.
**Elizabethtown Primary School**

**ELECTRICAL SYSTEMS**

- Generally all lighting is fluorescent. The condition of the fixtures is good throughout the building. The canopy areas do not appear to have adequate lighting.

- The building has three services. Service one of three is a 240/120V high leg delta service. Service two of three is a 480Y/277v, 600A Westinghouse Pow R line Panelboard. This is the newest service. Service three of three is a 240/120V, 400A Square D, iLine, high leg delta service. Most of the panels in are in good condition and have adequate spares/spaces. In some areas of the building there are some older panels that do not have adequate spares and would be more costly to add additional breakers. However as long as the demand is okay there is room in each service to add additional panels.

- The building is served by a Notifier NFS2 3030 which is a new addressable fire alarm panel that dials out. Building coverage includes manual pull stations and smoke detectors in corridors. Audio/Visual coverage appears to be up to current code. This system can be easily expanded as necessary for any necessary modifications.

- Emergency and exit light fixtures are fair. It was stated that most emergency lighting was battery backed up fluorescent so it was difficult to determine if the emergency lighting was adequate. There were definitely some areas where additional exit signs were needed. There was no emergency lighting in group toilets.

- There were a different number of outlets in classrooms, which varied from building to building. Many of the areas had 4-5 outlets and it seemed to be adequate. In other areas there were only 2 or 3 outlets and extension cords were noted to be used, identifying a need for more outlets. These areas were more likely to be in areas where panels did not have adequate spares. There is not GFI protection for 120V outlets in the kitchen and outlets within 6’ of a sink in many areas, which was not required at the time of construction.

- Unlike most of the schools in the system there does not appear to be adequate data and WIFI in the older portions of this building

- The kitchen has a required dry chemical system for the hood and based on discussion with maintenance should shunt trip electrical items under the hood. This should be verified.

- The Science labs in the facility do not meet NCDPI’s Science safety checklist. For electrical all outlets in science labs and prep rooms should be GFI protected and there should be a single shut-off switch that disconnects all utilities in the space (gas, water and electric).
ELECTRICAL RECOMMENDATIONS

High priority - The following items should be considered if additional students are to be added to the schools.

- Provide code compliant fire alarm coverage to all areas of the building used for students.
- Verify proper emergency light and exit sign coverage throughout the building and fix any non-compliant conditions.
- Verify if electrical equipment under the hood is properly shut-off upon activation of hood dry chemical system and correct as necessary.
- Correct any items not in compliance with Science safety check list.

Lower Priority – These items can be corrected when funds become available or only if a specific condition necessitates change.

- Provide GFI protection for outlets not up to current code.
- Provide exit discharge lighting.
- Provide additional outlets in classrooms as required by new program and update panels to allow for additional space or capacity as necessary.
- Consider upgrade of lighting in older areas of the building to match quality of other areas of the building if used for new students.
- If older classrooms are to be used for students data, WIFI and smartboards and associated power outlets may need to be provided.
- Consider provision of smoke detection of areas not used for students.
Plain View Primary School

ELECTRICAL SYSTEMS

- Generally all lighting is fluorescent. The condition of the fixtures is good.
- The building has two services. Service one of two is 480Y/277V, 225A, three phase, Square D line. Service 2 of 2 is 240/120V, 400A, high leg delta, Square D QO Load Center. There may be problems finding spares/spaces in panelboards in some areas.
- The building is served by a Notifier EST2 which is a new addressable fire alarm panel that dials out. Building coverage includes manual pull stations and smoke detectors in corridors. Audio/Visual coverage appears to be up to current code. This system can be easily expanded as necessary for any necessary modifications.
- The building does not have adequate emergency lighting. Exit lighting also does not cover every area of the building. Media Center needs exit signs.
- There are generally only 2-3 power outlets in a typical classroom. It was also noted that use of extension cords in some classrooms and some also did not have smartboards. There is not GFI protection for 120V outlets in the kitchen and outlets within 6’ of a sink in many areas, which was not required at the time of construction
- The kitchen has a required dry chemical system for the hood and based on discussion with maintenance should shunt trip electrical items under the hood. This should be verified. It was also noted that disconnects were not provided within sight of all kitchen equipment.

ELECTRICAL RECOMMENDATIONS

High priority - The following items should be considered if additional students are to be added to the schools.
- Verify proper emergency light and exit sign coverage throughout the building and fix any non-compliant conditions.
- Verify if electrical equipment under the hood is properly shut-off upon activation of hood dry chemical system and correct as necessary.

Lower Priority – These items can be corrected when funds become available or only if a specific condition necessitates change.
- Provide GFI protection for outlets not compliant with current code.
- Provide exit discharge lighting.
- Provide additional outlets in classrooms as required by new program and update panels to allow for additional space or capacity as necessary.
**Bladenboro Middle School**

**ELECTRICAL SYSTEMS**

- Generally all lighting is fluorescent. The condition of the fixtures is good in the newer part of the building. The condition and lighting levels of the fixtures in the older part of the building are marginal.

- The building has three services. The primary service which serves most of the building is a 3000A, 480Y/277V, three phase Square D Power style switchboard which has space for new breakers and should have room for additional capacity. One of the remaining services serves the AG Shop and the other service serves the Home EC building. It was stated that neither the AG shop nor the Home EC building are currently or planned in the future to be used for students and they were not included in this review. Most of the panels in the building are in good condition and appear to have adequate space or spares for additional load.

- The newer part of the building is served by a EST Quick Start which is an addressable fire alarm panel that dials out. Coverage in the newer part of the building includes manual pull stations and smoke detectors in corridors. Audio/Visual coverage in the new building appears to be up to current code. The older part of the building that may potentially be used for students is not currently hooked up to the new addressable system and does not have adequate fire alarm.

- Emergency and exit light fixtures appear to be in good condition in the new portion of the building although there are some areas that may need additional emergency lights or exit signs. The older portion of the building needs emergency lighting and exit signs.

- There is generally between 6-8 power outlets and a smart board in a typical classroom in the newer portion of the building. The older part of the building has about 2-3 outlets and no smart board. There is not GFI protection for 120V outlets in the kitchen, outlets within 6’ of a sink in many areas, and outlets in locker rooms which was not required at the time of construction.

- Unlike most of the schools in the system there does not appear to be adequate data and WIFI in the older portions of this building.

- The kitchen has a required dry chemical system for the hood and based on discussion with maintenance should shunt trip electrical items under the hood. This should be verified.

- The Science labs in the facility does not meet NCDPI’s Science safety checklist. Standards for electrical require that all outlets in science labs and prep rooms should be GFI protected and there should be a single shut-off switch that disconnects all utilities in the space (gas, water and electric).
ELECTRICAL RECOMMENDATIONS

High priority - The following items should be considered if additional students are to be added to the schools.

- Provide code compliant fire alarm coverage to all areas of the building used for students.
- Verify proper emergency light and exit sign coverage throughout the building and fix any non-compliant conditions.
- Correct any items not in compliance with Science safety check list.

Lower Priority – These items can be corrected when funds become available or only if a specific condition necessitates change.

- Provide GFI protection for outlets not up to current code.
- Provide exit discharge lighting.
- Provide additional outlets in classrooms as required by new program and update panels to allow for additional space or capacity as necessary.
- Consider upgrade of lighting in older areas of the building to match quality of other areas of the building if used for new students.
- If older classrooms are to be used for students, data, WIFI, smartboards, and associated power outlets may need to be provided.
- Consider provision of smoke detection of areas not used for students.
Clarkton School of Discovery

ELECTRICAL SYSTEMS

- Generally all lighting is fluorescent. The condition of the fixtures is mostly good. Many of the gym fixtures are damaged.

- The building has six services. Service 1 of 6 is a 240/120V, 1200A, high leg delta; Service 2 of 6 is a 240/120V, 400A, high leg delta Square D I Line; Service 3 of 6 is a 240/120V, 400A, high leg delta Westinghouse FDP fused switch; Service 4 of 6 is a 480Y/277V, 3000A, Square D Pow R Line Switchboard. Service 5 of 6 is a 240/120V, high leg which we did not review which serves the art room. Service 6 of 6 serves the dance building which was currently not in use and we did not review. Some the services are older and in need of replacement (fused switch). The large number of services could serve as a hazard.

- The building is served by a Notifier NFS2 3030 which is a new addressable fire alarm panel that dials out. Building coverage includes manual pull stations and smoke detectors in corridors. Audio/Visual coverage appears to be up to current code. This system can be easily expanded as necessary for any necessary modifications.

- The building does not have sufficient emergency lighting throughout the building. Nuclear Exit signs are used and based on the age may not be illuminated enough to provide proper egress direction during a fire.

- Depending on which portion of the building is viewed, there are either as much as 7-8 outlets in a classroom or as low as 2-3 outlets. There is not GFI protection for 120V outlets in the kitchen, outlets with 6’ of a sink in many areas, and outlets in locker rooms, which was not required at the time of construction.

- The kitchen does not have the required dry chemical system for the hood and does not shunt trip electrical equipment under the hood.

- The Science labs in the facility does not meet NCDPI’s Science safety checklist. For electrical all outlets in science labs and prep rooms should be GFI protected and there should be a single shut-off switch that disconnects all utilities in the space (gas, water and electric).

ELECTRICAL RECOMMENDATIONS

High priority - The following items should be considered if additional students are to be added to the schools.

- Provide proper emergency light throughout the building. Verify if existing exit signs have adequate light level and replace if they don’t.
- Provide hood dry chemical system Electrical equipment under hood should shut off upon activation of hood dry chemical system.
- Correct any items not in compliance with Science safety check list.
- Provide a label at every service identifying number of service and the location of every other service. NEC 230.2 (E).

Lower Priority – These items can be corrected when funds become available or only a specific condition necessitates change.
- Provide GFI protection for outlets not up to current code.
- Provide exit discharge lighting.
- Provide better protection for gymnasium fixtures.
- Consolidate electrical services. Consider eliminating the oldest services.
- Provide additional outlets in classrooms as required by new program and update panels to allow for additional space or capacity as necessary.
- Consider provision of smoke detection of areas not used by students.
Elizabethtown Middle School

ELECTRICAL SYSTEMS

- Generally all lighting is fluorescent. The condition of the fixtures is fair to poor. A lot of the gym fixtures are damaged. Many of the fixtures have dirty, yellowing or damaged lenses. Many of the lamps are out. The corridor lighting coverage appears low. There are fixtures on the exterior that were modified and are not suitable for a damp location.

- The building has two services; The primary service is a 480Y/277V, 2000A Square D Pow R Line Switchboard. This feeds everything except a small classroom addition. In some areas there may not be sufficient space or spares in existing panels to add new loads.

- The building does not have a UL listed Fire alarm panel. The current fire alarm coverage is via the intercom system. Coverage is limited and is not compliant with code. The owner stated that a new addressable system is to be installed in this building in the summer. It was noted that the elevator in the building does not appear to have recall which may have not been required at the time of installation.

- The building does not have sufficient emergency and exit lighting throughout the building.

- There are approximately 4-5 outlets in most classrooms. There is not GFI protection for 120V outlets in the kitchen, outlets with 6’ of a sink in many areas, and outlets in locker rooms, which was not required at the time of construction.

- The kitchen has a required dry chemical system for the hood and based on discussion with maintenance should shunt trip electrical items under the hood. This should be verified.

- The Science labs in the facility do not meet NCDPI’s Science safety checklist. Standards for electrical require that all outlets in science labs and prep rooms should be GFI protected and there should be a single shut-off switch that disconnects all utilities in the space (gas, water and electric).

- There is a shop with hazardous equipment (saws, drill presses, etc...) that does not have an emergency power off switch. This is recommended in NCDPI’s Facility guidelines as a safety measure for students. It was stated that the equipment is only used by the teacher for demonstration purposes.

ELECTRICAL RECOMMENDATIONS

High priority - The following items should be considered if additional students are to be added to the schools.

- Provide proper emergency and exit lighting throughout the building.
- Provide a UL listed fire alarm system up to current standards.
- Correct any items not in compliance with Science safety check list.

Lower Priority – These items can be corrected when funds become available or only if a specific condition necessitates change.
- Provide GFI protection for outlets not up to current code.
- Provide exit discharge lighting.
- Provide better protection for gymnasium fixtures.
- Provide emergency power off switch for hazardous equipment in shop.
- Consider provision of elevator recall function when upgrading fire alarm system.
Tar Heel Middle School

ELECTRICAL SYSTEMS

- Generally all lighting is fluorescent. The condition of the fixtures is good. There are some lights fixtures with exposed bulbs located in the showers in the locker room which is a shock hazard. It was stated that the showers are not used.

- The building has a 480Y/277V, dual 1600A, Square D Pow R Line switchboard with lots of spare capacity. There appears to be adequate spares and spaces in panels throughout the building.

- The building is served by a Notifier NFS2 640 which is a new addressable fire alarm panel that dials out. Building coverage includes manual pull stations and smoke detectors in corridors. Audio/Visual coverage appears to be up to current code. This system can be easily expanded as necessary for any necessary modifications.

- Emergency and exit light fixtures appear to be in good condition throughout the building.

- There is generally between 2-3 power outlets in a typical classroom. It was noted that there is not smartboards in all of the classrooms. There is not GFI protection for 120V outlets in the kitchen and outlets with 6’ of a sink in many areas, which was not required at the time of construction.

- The kitchen has a dry chemical system for the hood but it does not seem to match the footprint of the equipment. It was unclear if electrical equipment under the hood shut off upon activation of hood dry chemical system.

- The Science labs in the facility do not meet NCDPI’s Science safety checklist. Standards for electrical require that all outlets in science labs and prep rooms should be GFI protected and there should be a single shut-off switch that disconnects all utilities in the space (gas, water and electric).

ELECTRICAL RECOMMENDATIONS

High priority - The following items should be considered if additional students are to be added to the schools.

- Provide enclosed fixtures to eliminate the shock hazard in the shower.
- Verify if electrical equipment under the hood is properly shut-off upon activation of hood dry chemical system and correct as necessary.
- Correct any items not in compliance with Science safety check list.

Lower Priority – These items can be corrected when funds become available or only if a specific condition necessitates change.

- Provide GFI protection for outlets not up to current code.
- Provide exit discharge lighting.
- Provide additional outlets in classrooms as required by new program.
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<th>$ Oil</th>
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To find the growth projections for any given county, fill in the LEA # in the YELLOW area highlighted below! Total IC = 999

Bladen County Schools

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