

Knob Noster R-VIII School District

Knob Noster, Missouri

Long Range Facility Plan / Master Plan Phase 1 - Facility Assessments

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Long Range Facility Plan / Master Plan

Phase 1 - Facility Physical Condition Analysis

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Executive Summary

Phase I – Facility Assessments & Educational Capacity Analysis **Physical Condition, Utilization, Suitability Assessment, and Educational Adequacy**

Purpose. The Knob Noster School District has four facilities in which they currently instruct approximately 1,600 students. A majority of the schools were initially constructed approximately 60 years ago, but have all been added on to throughout the years. There are two elementary schools housing K-4, a middle school housing 5-8, and a high school housing 9-12 grades. They vary in degree of maintenance, repairs, and available learning space. The 2016 Long Range Plan will provide a roadmap for improvements to existing schools as well as identify potential new educational space construction to replace and/or work in conjunction with the existing facilities.

The Long Range Plan consists of two phases. This report includes Phase I of the Long Range Plan and is the compilation of two components. The first component is the facility assessments, which evaluate the physical condition, utilization, and suitability of each building. The second component is the Educational Capacity Analysis, which helps determine the capacity of each facility for current and future student populations. With the data collected, the assessments aid in forming the Long Range Plan.

Content. Phase I facility assessment includes the inspection and evaluation of the physical condition of each facility within the district. Size of both the school site and facility, structural and mechanical features, maintainability, and safety and security are the key components of physical inspection. This phase also identifies how the current buildings were being utilized (grade configuration, enrollment, etc.) and rates its learning environment suitability.

The Phase I educational capacity analysis considers the program offered at each school as well as the size of each learning space provided to teach the program. Data in this section includes the current square footage of each learning space, the types of learning space available to support the program, and the current and future student enrollment.

Process. On August 24th, 2016, incite Design Studio met with the Board of Education to kick off the long range planning project. The purpose of the meeting was to establish the process for obtaining the facility assessment and educational capacity of each school. The first step identified was to tour each facility to evaluate the physical condition, utilization of space, and suitability of each of the four facilities in the district, as well as to obtain initial feedback from administrators.

A checklist was created to standardize the evaluation of each facility by the site assessment team, maintenance staff, and department supervisors. The facility assessment checklist rates each building on six categories based on the outline in the Guide for School Facility Appraisal by CEFPI (The Council of Educational Planners, International). Information was also taken from the Columbia Public Schools Long Range Facilities Plan and the District of Columbia Master Facilities Plan. A draft of the checklist was reviewed together by the site assessment team and district administration. With the input of the entire team, a final facility assessment checklist was created.

Facility Assessment. The checklist is comprised of evaluative criteria within the following six categories, and points are assigned to each category. The maximum total of points varies slightly between schools.

- a. **School Site**
- b. **Structural and Mechanical Features**
- c. **Plant Maintainability**
- d. **Building Safety and Security**
- e. **Educational Adequacy**
- f. **Environment for Education**

Prior to site walk-throughs, a survey created from the checklist was distributed to the Administrators of each school, District Administrators, and the district Maintenance Supervisor. Building data such as student enrollment, building square footage, and number of classrooms was also gathered. Results of the Principal's surveys, Department Supervisor's surveys, maintenance staff interviews, and building data were compiled for the use of the site assessment team prior to the walk-throughs.

The site assessment team was comprised of the buildings Administrative team, the District's and/or School's Maintenance Supervisor, two architects, and two engineers. The team visited each site to assess the facility and complete the checklist. Each facility walk-through took two to three hours to complete, with approximately fifty percent of the time visually assessing the school and the remaining time completing the check list. Facilities walk-throughs occurred on September 15th and 16th of 2016. Compilations of the facility walk-through checklists and point totals were completed and reviewed for accuracy before final distribution. Completed checklists for the schools can be found in this report.

The Table of Weights and Categories for the school facility assessment was taken from the CEFPI Guide for School Facility Appraisal. The scores were based on a percentage and follow the following breakdown:

- a. Non-Existent 0%
- b. Very Inadequate 1-29%
- c. Poor 30-40%
- d. Borderline 50-69%
- e. Satisfactory 70-89%
- f. Excellent 90-100%

Each of the site categories point total as well as the total overall point total fall into the percentage breakdown.

Educational Capacity Analysis. Educational Capacity is described as how well a school facility supports current and future educational programs. The environment created by the physical structure can either enhance or detract from the instruction. The educational capacity analysis consists of the relationship between the educational program and the physical structure.

The utilization of the facility is a microanalysis of the facility in how the space is used. It helps determine if the space is being utilized in the most appropriate and cost effective way. It also helps ensure that classrooms and technology within a building are being utilized to serve students effectively, that they are reaching the most students possible, and that district funds are being used in the most cost effective way.

For the capacity calculation, two different recommendations are taken into consideration. The class size and assigned enrollments guidelines stated in the Missouri School Improvement Program (MSIP) for primary and secondary education are defined as follows:

Grades	Minimum Standard	Desirable Standard
K-2	25	20
3-4	27	22
5-6	30	25
7-12	33	28

The CEFPI recommendations follow an academic classroom size per square foot of learning space instead of a minimum and desirable number of students per classroom. According to the CEFPI, "regardless of the age of the student, the per student square footage allowance is usually 25-30sf". The definition of instructional capacity will be a combination of the MSIP recommendations and the CEFPI analysis.

The findings of both the facility assessment and the educational capacity analysis are both included in the Phase I portion of this report.

02 District Wide Assessment Summary

Facility Assessments

This section summarizes the team's facility assessment of each school within the Knob Noster School District. There are six different factors which were evaluated during each assessment, and a point value was assigned for each evaluative criteria. Once the visual review was complete, point totals for each of the six factors were calculated. A rating was assigned for each of the six factors as well as the school as a whole.

A summary of each of the six factors is explained in more detail in the paragraphs that follow. At the conclusion of each section, a rating matrix summarizes the assessment findings. The overall facility appraisal summary is shown below, with a legend to explain the different rating factors.

Rating Matrix	Whiteman Elementary	Knob Noster Elementary	Knob Noster Middle	Knob Noster High	Score Legend
1.0 The School Site	B	B	B	B	90-100% Excellent
2.0 Structural and Mechanical	S	S	B	B	70-89% Satisfactory
3.0 Plant Maintainability	S	S	S	S	50-69% Borderline
4.0 School Building and Safety	S	S	S	S	30-49% Poor
5.0 Educational Adequacy	S	S	S	B	1-29% Very Inadequate
6.0 Environment for Education	S	S	S	B	N Non-Existent
Total	S	S	S	B	

1.0 The School Site

The school site is the first impression the community has of the facility. It is important that the site be large enough to provide both indoor and outdoor learning space, is visually appealing through landscaping and adequate storm water drainage, and has sufficient parking for both day-to-day operations as well as special events.

Summary. The School Site received some of the poorer scores compared to the other categories across all four schools. Traffic flow between buses, students and parents can be problematic at times as well as just the overall condition of the hardscaped surfaces. Site drainage issues seemed to be a theme across all four schools as well, some needing more attention than others. Poor drainage has led to ineffective ability to grow and maintain grass

in those areas. Overall, site improvements are needed throughout the district to increase the level of curb appeal as well as the functionality of the day-to-day outdoor operations.

Strengths and Weaknesses. The location of the schools (location removed from undesirable businesses, traffic, industry, and natural hazards) is pretty good for the most part. The school facilities are located on appropriately sized lots and have enough outdoor play areas and intermural spaces for day-to-day operations outside of the high school. In fact, both elementary schools outdoor play areas (both hard and soft) are excellent. The high school however has very little room for expansion and the athletic facilities are poor at best.

Another deficiency noted was in regards to the lack of proper storm drainage to keep the sites dry and free of erosion. There are some challenges with the topography; there are several areas at the schools that are flat against the building and pose water infiltration problems as well as areas that slope towards the buildings. There is also ponding water at the pickup and drop off loop at Whiteman Elementary.

Recommendations. Permanent grading and site improvements should be monitored and implemented at each of the schools to keep the sites in top condition. In particular, making sure all schools are ADA accessible is a top priority. Knob Elementary does not currently have a curb cut ramp for wheelchair access. A list should be created to identify the most critical needs in the district. This will help the district plan and budget improvements and upkeep of the school sites.

For future construction projects, the final elevation of a new school or school addition should be set so storm water does not flow towards or into the building. As a general rule, 6 to 12 inches of grade change should occur within the first 10 feet of the building, and a minimum 2% slope should be designed thereafter. Paved areas should also maintain a minimum 2% slope to avoid low spots that do not drain. Drainage swales and inlet structures should be incorporated to route offsite water away from the building and play areas, and with a slope that will not accelerate erosion. Also pay attention to the drainage on the north side of a structure, as it does not receive direct sunlight and snow, ice, and ponding water can accelerate problems.

The appropriate number and quality of parking spaces is important in making the first impression of the school welcome to visitors. The existing lots need to be adequately paved and kept in good condition. Whiteman Elementary is in need of a mill and overlay improvement, the high school has some trouble spots with the concrete in the back and various other improvements are needed throughout all four schools. Future design of new school sites should layout the parking lot with enough spaces for day-to-day operations, while providing space for overflow parking on hard play areas, grassy areas, or along the side of access roads. This type of layout will keep the overall pavement to a minimum, while providing safe driving and parking spaces during high traffic times.

The School Site matrix is provided on the following page. Refer to the legend which is shown on the first page of this section.

1.0 The School Site

	Whiteman Elementary	Knob Noster Elementary	Knob Noster Middle	Knob Noster High
Site is large enough to meet present and future educational needs 1 as defined by the state and local requirements.	S	S	S	S
Site is easily accessible and conveniently located for the present 2 and future population.	E	B	B	B
Location is removed from undesirable business, industry, traffic, and 3 natural hazards.	S	E	E	E
4 Site is well landscaped and developed .	P	B	P	B
Well equipped athletic and intramural areas are separated from 5 streets and parking areas.	S	S	B	B
6 Is the site accessible for student drop off and pick up ?	S	S	S	E
7 Site has stable, well drained soil free of erosion .	S	B	P	B
8 Site is suitable for special instructional needs , e.g. outdoor learning.	B	B	P	B
Pedestrian services include adequate sidewalks with designated 9 cross-walks, curb cuts, and correct slopes.	S	B	P	B
Sufficient on-site, solid surface parking is provided for faculty, staff, 10 and community and is in good condition.	P	S	B	E
Surface drainage keep site relatively dry , with rain water flowing to 11 storm systems.	P	B	P	P

2.0 Structural and Mechanical Features

Architectural Analysis:

Summary. The structural and mechanical features of a school affect the daily operations of the school and are those items which affect comfort level in the classroom, ease of flow throughout the building, and maintain accessibility throughout. Utilities such as water, electricity, gas, and HVAC units are evaluated here for the cost effectiveness of current operations, meeting local and state design codes, as well as the possibility of future expansion. Across all four schools, ADA is a major issue that needs to be addressed in and around the building. For the most part, the public restrooms do not meet ADA. Proper guard rails and hand rails do not always meet code and the roofs and any leaks are of major importance.

Strengths and Weaknesses. All of the schools in the district have features that do not meet current building codes and ADA guidelines. Restrooms in all of the buildings could use renovating and brought up to ADA standards, however the quantities of water closets and fixtures throughout all four schools is more than adequate so there should be space to make the necessary changes.

There are also some building "envelope" issues, specifically the window wall at the middle school. Roofs in a majority of the facilities are of major concern. There are persistent leaks causing damage throughout three of the four schools with Whiteman Elementary being in the best condition. The district received a summary of the roof conditions for the facilities. A copy of this report is included in Appendix 1.

While the HVAC units themselves are not graded in this section, these were a large positive throughout the district. Most of the rooftop units across all four schools were put in in 2006 or more recently. If maintained properly, these should be able to service the district for another 10-15+ years.

Recommendations. Overall, the four schools are what most of their grades reflect, "Satisfactory". A big deterrent to the grades are none of the schools having an automatic sprinkler system. However, this is not necessarily a recommendation to add this to all of the schools. It could prove to be cost prohibitive and there are other solutions that can help bring each school a level of adequacy.

As mentioned, it is of high priority to renovate most if not all of the public restrooms to make them ADA compliant, provide new toilet partitions and layouts that meet all current code requirements. Also mentioned above is the need for numerous roof repairs, this is one of the more pressing issues district wide and is of more immediate need.

Caulking throughout all four buildings, whether it be at masonry control joints or around openings, appear to be deteriorating to the point of needing to be redone completely. This is a minor issue compared to those listed above and is consistent with other buildings of the same age.

Engineering Analysis:

Summary. There are two types of HVAC systems being used throughout the Knob Noster school district.

The elementary school, middle school, and high school in Knob Noster utilize rooftop mounted units. These units have DX (refrigerant) cooling and natural gas heating. All of the units were installed in 2006 and appear to be well maintained, in good condition, and are relatively efficient. These units likely have approximately 10 years of useful life left before needing replacement. At the time of replacement, you may want to consider using variable volume units (to conserve fan energy) or switching to a more efficient system type such as a variable refrigerant flow (VRF) system.

The elementary school at Whiteman Air Force Base utilizes a VRF system for its HVAC. This is a great system for schools and is one of the most efficient systems for this type of building. The VRF system was installed in 2013 and should have an expected life span of 15-20 years.

The domestic hot water heaters are relatively new throughout most of the district. They are about 80% efficient. One of the water heaters at the Whiteman elementary school is 26 years old and should be replaced soon.

The district HVAC equipment is controlled by an Automated Logic direct digital control system

For the time being, most of the equipment throughout the district is in good shape. In about 8-12 years, a lot of the equipment throughout the district will likely need to be replaced.

All the electrical systems are general in good condition with the exception of the fire alarm system and the intercom systems. While these systems are a bit deficient, this is not uncommon for buildings this vintage.

Power Distribution. The schools seem to have sufficient service for their respective loads and sufficient capacity to expand. Branch circuits seem to be the main hurdle, but this could be accomplished during an upgrade or addition.

One of the most common issues were items stacked up near, on or around the gear (see photo EP2). This is a code violation and an issue with maintenance and air circulation.

Recommendations: Older gear should be inspected for damage/loose wiring. Old branch panels should be on a schedule for replacement either annually or during another building project. There are retrofit kits which can be used to replace panels in place. Additional branch panels should be installed where branch circuits are required.

Lighting. Lighting levels seemed sufficient in classrooms. Emergency lighting seemed lacking in the middle school but seemed adequate in the others. Exterior lighting is spotty and should be augmented for safety and security.

Most of the lighting inspected has been converted to T8 lamps. There were still a few incandescent fixtures and some T12 lamps. T8 fluorescent lamps are still a viable technology, but the industry is quickly going to LED lighting as a replacement technology due to its longer life and lower energy usage.

Controls: While the classrooms were dual switched, there were no occupancy sensors. Occupancy sensors have a quick payback and are one of the best ways to save money on energy costs.

Recommendations: Replace all incandescent, T12 and metal halide fixtures with LED. In addition, any fluorescent fixtures with yellow and/or broken lens in classrooms/buildings should be replaced with LED fixtures. If new ceilings are installed, recessed light fixtures should be installed where possible to reduce glare and lens damage. Add occupancy sensors to all classrooms.

Fire Alarm. Probably the biggest item electrically which is missing/deficient from the district are the fire alarm systems. There is an inadequate amount of NFPA and ADA required horn/strobes/detectors/pull stations in almost of the facilities. In addition, the buildings are not sprinkled nor do they have smoke detectors. IBC now requires voice evacuation for educational facilities in the corridors. Sound is required to be 15DB above ambient noise which would facilitate a speaker in corridors, each classroom and common work areas. In addition, strobes are required in corridors, classrooms, conference rooms and restrooms per ADA. Smoke detectors would be required everywhere as the buildings are not sprinkled. Some of the additions have corridor strobes and pull stations, but none in classrooms.

Recommendations: Fire alarm systems should be upgraded in each building to addressable systems. Devices should be installed per all applicable codes and standards.

Data/Telephone/Intercom. Many of the issues with Data/Telephone/Intercom are typical for this age of buildings. There is a significant amount of data cable lying on the ceilings which should be supported off the ceiling with J-hooks or in cable tray and bundled where possible.

Currently data racks are not secure and cabling seems a bit unorganized (see photo EP1).

The intercom system is also lacking in ability. Currently two way communication is accomplished via wall mounted phone. There is a push to call switch in the classrooms, but one phone is used to do paging.

Recommendations: In an ideal building, each communications rack should be housed in its own conditioned room in a rack/enclosure with proper clearance around the rack/enclosure. Cabling should be labeled and supported off the ceiling grids in J-hooks or cable tray. Not having proper working clearances for data racks reduces the life of the equipment and cause unnecessary outages and cost.

Intercom systems should be upgraded to allow interface between phone system and intercom system to allow overhead paging from any phone (with code).

2.0 Structural and Mechanical

Structural

Structure meets all barrier-free and ADA requirements both 1 externally and internally.	Whiteman Elementary B	Knob Noster Elementary S	Knob Noster Middle S	Knob Noster High P
2 Roofs appear sound, have positive drainage and are weather tight.	B	P	P	P
Foundations and building slabs are strong and stable with no 3 observable cracks.	B	E	S	E
Exterior and interior walls have sufficient expansion joints and are 4 free of deterioration.	B	S	B	B
Entrances and exits are located so as to permit efficient student 5 traffic flow.	E	E	S	E
6 Building "envelope" generally provided for energy conservation.	S	S	S	B
Structure is free of friable asbestos and toxic materials . Boiler wrap and floor tile (if applicable) are in good condition, free of signs of 7 wear.	P	S	S	S

Mechanical/Electrical

Adequate light sources are well maintained, properly placed and are 8 not subject to overheating.	S	S	S	S
Each teaching/learning area has adequate convenient wall outlets , 9 phone and computer cabling for technology applications .	S	B	B	B
Electrical controls are safely protected with disconnect switches 10 easily accessible.	E	E	E	E
Drinking fountains/water coolers are adequate in number and replacement, are properly maintained including provisions for the 11 disabled, and connected to a GFI.	S	B	S	B
12 Number and size of restrooms meet requirements .	S	S	S	B
13 Drainage systems are properly maintained and meet requirements.	E	E	E	S
Is the building equipped throughout with an automatic sprinkler 14 system .	N	N	N	N
15 Is the building equipped throughout with a fire alarm system .	E	E	E	E
Intercommunication systems consist of a central unit that allow dependable two-way communication between office and instructional 16 areas.	E	B	B	B
Interior and Exterior water supply is sufficient and available for 17 normal usage.	E	S	S	S
18 Efficiency of Mechanical Equipment .	E	P	P	P

3.0 Plant Maintainability

Summary. Plant maintainability refers to the ease at which the building and its infrastructure can be kept at or near its original state. Elements that fit within the plant maintainability category include the durability of materials and hardware, wall and floor coverings, and fixed equipment. The overall concern in this section is the quality of the design, construction materials, durability, and the condition of the elements currently in place. The goal is to prolong the life of the building in a cost effective manner.

Strengths and Weaknesses. In general, the facilities scored well in this category, all four schools were "Satisfactory". However, the schools are inconsistent on the use of vestibules, which would eliminate conditioned air from leaving the building. Some exterior doors have these, most of which at least have a vestibule at the main entry, but not all exterior doors throughout the four schools have vestibules. The high school entry by the gymnasium is a prime example of lacking a vestibule.

Some of the facilities are experiencing minor efflorescence that needs to be cleaned, some masonry needs tuck-pointing and new caulking which should help eliminate the problem in the future. Whiteman Elementary has doors that are rusting and the paint is "chalking", these door need to be painted.

The restroom conditions in all of the facilities were "Borderline". The condition of the fixtures, partitions, walls, and flooring was slightly to well below standards for educational facilities. Some facilities have floor mounted fixtures which are troublesome for cleaning around and many restrooms do not have automatic flush valves.

The use of VCT throughout the district is not uncommon. While it is not the most cost effective flooring to maintain it is the most common flooring material in the industry.

A summary of the assessment checklist for Plant Maintainability is shown in Table 3.0

Recommendations. Any window that is single pane non-insulated glass should be replaced with low-E insulated glazing to help increase the building "envelope" R-value. Vestibules should be added as necessary and allowable to help prevent unwanted outside air entering the building. Tuck-pointing and brick cleaning would help clean up the exterior appearance of all four schools, as well as freshening any exterior painting that may be deteriorating due to the elements.

The restrooms need updating in all of the facilities. More information can be found in Section 2.0 "Structural and Mechanical". Most of the men's restrooms across the district have floor urinals installed. While these do meet code, they are a challenging to keep clean for the maintenance staff. Discussions with the district's maintenance staff should be considered when looking to upgrade all restrooms.

3.0 Plant Maintainability

Plant Maintenance

Exterior windows, doors, & walls are in good condition and are of material and finish requirement minimum experience minimum maintenance.

2 **Floor surfaces** throughout the building require minimum care.

3 **Ceilings and walls** throughout the building, including service areas, are in good condition, easily cleaned, and resistant to stain.

4 **Built-in equipment** is designed and constructed for functionality and ease of maintenance.

5 **Finishes and hardware**, with a compatible keying system, are of durable quality.

6 **Restroom fixtures** are wall mounted and of quality finish. Toilet partitions are floor mounted, are in good condition, and constructed of quality, sturdy materials.

7 Adequate **custodial storage space** with water and drain is accessible throughout the building.

8 Adequate **electrical outlets and power**, to permit routine cleaning, are available in every area.

9 **Outdoor light fixtures, electric outlets**, equipment, and other fixtures are accessible for repair and replacement.

Energy Efficiency

10 **Light fixtures** throughout the building have been converted to a low energy bulb.

11 Main entrance and other high traffic entrances incorporate a **vestibule**.

Whiteman Elementary	Knob Noster Elementary	Knob Noster Middle	Knob Noster High
S	S	S	S
S	S	S	S
S	S	S	S
S	S	B	S
S	S	S	S
S	B	B	B
E	S	B	S
S	S	S	S
S	S	S	S
E	E	E	E
S	B	E	V

4.0 Building Safety and Security

Summary. Building safety and security evaluates the facility for the safety of students, administrators, and guests from the moment they arrive onto the property. From the CEFPI Guide for School Facility Appraisal, "Safety hazards in schools may relate to site location, building design, selection of material or poor operational practice". Security in the buildings includes secured entrances, adequate exterior lighting, and fire and security alarms.

Strengths and Weaknesses. In general, the facilities scored in the "Satisfactory" range for Safety and Security.

Some lower scores came in part from doors that are not recessed. New school designs incorporate a safer, recessed door layout. The district is fairly split in doors that are recessed versus doors that are not. In addition, when glass was placed in doors or side lights for views into the classrooms, the older schools have wire-glass. Wire-glass was at one time recognized as a safer alternative, however, advances in safety have deemed wire-glass outdated. These means are not imposing an immediate safety threat to students, and would not be cost effective to alleviate. As improvements are made to schools, updates should be considered to the type of glass. Incorporating a recessed door, however, may not prove to be a cost-effective improvement.

Typically from any point in the building an occupant, in this case a student or teacher, should have two ways to exit the building. This is a major code violation when not followed. To add to that, cutting through another classroom does not count as a second way to exit. This is called "intervening spaces" and do not count towards code acceptable egress. Two places that are in violation of this are the lower level computer lab at the middle school and the lower level music/art room at Knob Noster Elementary.

A major positive in security measures is that all facilities have a controlled entry through the main office. This type of revised layout ensures that all visitors must pass through the office and sign-in as a guest before entering the building. What could be improved at these entry points, however, are the low voltage components. There are little to no access control/card access doors across the district that can help alleviate a situation where locks to a school haven't been changed in a while and many people in town (it seems) have keys to the school. Also helpful would be relocating the existing AiPhone systems. All four schools have an AiPhone for communication from visitors but it is inside the vestibule. Ideally these are outside of the building (under an exterior canopy or building overhand to protect from the elements) to allow the initial vetting of visitors prior to gaining access to any portion of the building.

The bus loading area in between the middle school and elementary school seems to be working well from a standpoint of getting on the buses but there are some inadequacies in busing the high school students over to then change buses. As well as some traffic flow concerns with the parents picking up and dropping off. The high school traffic flow is set up nicely to keep proper traffic channels segregated as they should be.

There is an overall lack of tornado shelters at any of the four schools. There are some areas that could suffice, but nothing is designed specifically to meet these needs. Whiteman Elementary has the most invested in this area with tornado shutters on some of the windows, and Knob Noster Elementary school has a lower level that is built into the ground somewhat. Outside of those options, which aren't ideal to begin with, there is little to no tornado shelter options.

A summary of the assessment checklist for Building Safety and Security is shown in Table 4.0

Recommendations. Adding a secured vestibule at any major entry, not just the main entry, to all of the buildings would help control access to the buildings. This in addition to an access control/card reader system that could lock doors down when appropriate would be items to consider in upcoming renovations.

Bringing the fire alarm system up to current codes is something that should also be considered when facilities are renovated. As well as bring the egress issues in the lower levels of the middle school and Knob Noster Elementary School up to current codes.

It would be helpful to meet with the Executive Committee and develop a long term traffic plan for the campus.

Whiteman Elementary
Knob Noster Elementary
Knob Noster Middle
Knob Noster High

4.0 Building Safety and Security

Site Safety

Student loading areas are segregated from other vehicular traffic 1 and pedestrian walkways.

P	P	P	S
---	---	---	---

2 Walkways, both on and offsite, are available for safety of pedestrians.

S	B	B	P
---	---	---	---

Access streets have sufficient signals and signs to permit safe 3 entrance to and from exit from school area.

B	P	P	P
---	---	---	---

4 Vehicular entrances and exits permit safe traffic flow.

S	P	P	S
---	---	---	---

Exterior lighting in the parking lot and around the building provides 6 for a safe environment while not creating light pollution.

B	B	B	B
---	---	---	---

Building Safety

7 The heating unit(s) is located away from student occupied areas.

E	E	E	E
---	---	---	---

8 Multi-story buildings have at least **two stairways** for student egress.

-	S	E	B
---	---	---	---

9 Exterior doors open outward and are equipped with panic hardware.

E	S	E	E
---	---	---	---

Emergency lighting is provided throughout the building with exit 10 signs.

E	E	E	E
---	---	---	---

11 Classroom doors are recessed and open outward.

S	B	E	E
---	---	---	---

Building has an Access Control System (Card Access) and/or **method** 12 **of restricting access** during the school day.

B	B	B	B
---	---	---	---

Flooring (including ramps and stairways) is maintained in a nonslip 13 condition.

S	S	S	S
---	---	---	---

Stairs (interior & exterior) meet standards (maximum 7" rise and 11" 14 tread) and steps range in number from 3-16.

E	E	E	E
---	---	---	---

Glass is properly located and protected with safety material to prevent 15 accidental student injury.

E	E	E	B
---	---	---	---

Fixed projections in the traffic areas do not extend more than eight 16 inches from the corridor wall.

S	S	S	S
---	---	---	---

17 Traffic areas terminate at an exit or a stairway leading to an egress.

E	B	E	E
---	---	---	---

The building is designed **for controlled entry through** 18 **administration offices** with visual sightlines from office to entry.

E	E	E	B
---	---	---	---

Are **non-primary doors locked/monitored** during the school day. 19

E	E	E	P
---	---	---	---

Emergency Safety

Adequate **fire safety equipment** is properly located. 20

E	E	E	E
---	---	---	---

There are at least **two independent exits** from any point in the 21 building.

E	B	P	E
---	---	---	---

22 Fire-resistant materials are used throughout the structure.

S	S	S	S
---	---	---	---

Automatic fire **alarm system** with a distinctive sound and strobe light 23 is provided.

E	E	E	E
---	---	---	---

Does the building have a safe place for students in the event of a 24 **tornado.**

S	B	P	V
---	---	---	---

5.0 Educational Adequacy

Summary. The educational adequacy section of the facility assessment is the key component to the review; ensuring that the facility and support the needs of the educational programs of the district. This section categorizes criteria into three distinct spaces within a school facility; academic space, specialized learning space, and support space.

Strengths and Weaknesses. For the most part, all of the schools are “Satisfactory”. The high school being the lone school with a “Borderline” score. The main reason for this is the specialized learning spaces; these include art, vocal and instrumental music, library, gymnasium, technology, and special education classrooms. High schools typically need more developed, larger specialized learning spaces than another other grade level. At the current high school the band/music room is undersized and the ceiling is too low. Ideally ceilings are 18’ to 20’ tall. The art room is undersized and underequipped. There is currently only one pottery wheel, this could be due to size limitations. The media center isn’t undersized necessarily, but it does not provide for 21st Century Learning. There are little to no smaller student interaction/collaboration spaces. There is also only one, undersized gymnasium and there isn’t a performing arts center at all.

In regards to support spaces, the nurse’s offices at all four schools are incredibly undersized. Whiteman Elementary has the “nicest” nurse’s office, but it is still inadequate for a school’s needs. However, all of the schools except Knob Noster Elementary school have recently renovated administration areas. These provide for nice site lines, adequate space and storage and a welcoming environment. One recommendation would be to renovate Knob Noster Elementary administration area to match the other three schools as well as provide a facelift to create a cohesive campus feel through all four schools.

Academic learning spaces grades are a little more erratic across the schools. In large part classrooms are fair in size. There are some grades that could use more square footage per classroom but current classroom wings are not undersized enough to not be useful.

A summary of the assessment checklist for Educational Adequacy is shown in Table 5.0

Recommendations. Because Educational Adequacy is the primary focus of the Long Range Plan, specific recommendations are omitted from this section and addressed in detail in the Long Range Plan.

5.0 Educational Adequacy

	Whiteman Elementary	Knob Noster Elementary	Knob Noster Middle	Knob Noster High
Academic Learning Space				
1 Size of academic learning areas meets desirable standards.	E	S	S	B
2 Classroom space permits arrangements for small group activity.	E	S	B	B
Location of academic learning areas is near related educational				
3 activities and away from disruptive noises.	E	E	E	E
Personal space in the classroom away from group instructions allows				
4 privacy time for individual students.	S	B	V	V
5 Storage for student materials is adequate.	E	B	B	P
6 Storage for teacher materials is adequate.	E	S	S	P
Specialized Learning Space				
7 Size of specialized learning area(s) meets standards.	E	S	E	B
Design of special learning area(s) is compatible with instructional				
8 needs.	S	B	S	B
Library/Resource/Media Center provides appropriate and attractive				
9 space.	S	E	S	B
Gymnasium and outdoor facilities adequately serve physical education				
10 instruction.	S	E	S	B
11 Science program is provided sufficient space and equipment.	-	-	S	S
12 Music program is provided adequate sound-treated space.	B	B	E	B
13 Space for art is appropriate for instruction, supplies, and equipment.	E	S	E	S
Space for technology education permits use of state-of-the-art				
14 equipment.	S	S	S	S
Space for small groups and remedial instruction is provided				
15 adjacent to classrooms.	P	P	P	B
16 Storage for student and teacher material is adequate.	S	B	B	B
Support Space				
17 Teachers' lounge & work areas support teachers as professionals.	E	S	S	B
Cafeteria/Kitchen is attractive with sufficient space for seating/dining,				
18 delivery, storage, and food preparation.	E	E	S	S
Administrative offices are consistent in appearance and function				
19 with the maturity of the students served.	E	E	E	E
20 Counselor's office insures privacy and sufficient storage.	E	S	S	E
Nurse's office is near administrative offices and is equipped to meet				
21 requirements.	S	P	P	V
Suitable reception space is available for students, teachers, and				
visitors. Site lines at the main entrance and reception area allow for				
administration to monitor students, staff, and guests entering and				
22 leaving the building.	E	E	E	E
Administrative personnel are provided sufficient work space and				
23 privacy.	S	S	S	S

6.0 Environment for Education

Summary. The building environment is the overall physical and emotional affect the building has on a person. Both the interior and exterior features are considered in the building environment, as students, parents, and administration will react to the building as soon as they enter the school site. Qualities that are physically and or visually pleasing provide a positive impact to the environment. When a facility is used by students, administration, and the community for purposes outside of the required educational program, the facility's environment has proven to be affective.

Strengths and Weaknesses. The assessment evaluated the exterior and interior environments separately. For the exterior evaluation, the overall feel is that the schools are located in an appropriate place, removed from obtrusive noises. The schools were rated fair in exterior aesthetics, building materials, or landscaping. Many of the schools could use an upgrade in landscaping, but the new entry/facades at all of the schools except Knob Elementary School greatly increase the curb appeal of each respective school. The overall appearance from the exterior is satisfactory.

The interior environment assessment scores were fairly similar across the board. Color schemes in all of the schools were too eclectic and lacked positive interest. One can easily distinguish between two separate additions of one school as the color schemes do not match. There is not a cohesive in building appearance. Also, colors are not always age appropriate. High school and middle schools typically match school colors. This is done in some instances but is not consistent. There are a variety of colors in the floor patterns and on the walls. Elementary schools schemes usually involve more colors in the same family of the school colors.

As with the specialized learning spaces in category 5.0, the high school is lacking in areas where it should stand apart from its middle and elementary school counterparts. A high school typically will have a much larger commons than the other schools to promote social interaction. There is no substantial commons at the high school or areas for students to interact.

A summary of the assessment checklist for Environment for Education is shown in Table 6.0

Recommendations. Working with the Executive Committee and the Maintenance Supervisor, a specific list of deficiencies for each school should be created, along with approximate cost of repair and ranking of priority. This will assist the district in making appropriate updates to the facilities as well as addressing and planning for higher-cost maintenance and repair.

Some recommendations would include a new entry façade and administration space at Knob Noster Elementary School to "match" the other three schools and create a cohesive campus feel between all buildings. This would also include a more substantial sheltered walkway to protect students from sun, wind, rain, and snow before and after school

A very economical renovation that yields substantial dividends is a fresh paint job across all of the schools and replacing some off colored tiles. It would be recommended at both the high school and middle school to have orange and black painted stripes to be consistent across all public spaces as well as a simple VCT floor pattern with pops of like color. The elementary schools could also use updated paint and floor patterns.

Whiteman Elementary
Knob Noster Elementary
Knob Noster Middle
Knob Noster High

6.0 Environment for Education

Exterior Environment

Overall **design is aesthetically pleasing** and appropriate for the age
1 of students.

2 Site and building are **well landscaped**.

3 **Exterior noise and surrounding environment** do not disrupt learning.

4 **Entrances and walkways are sheltered** from sun and inclement
weather.

5 **Building materials** provide attractive color and texture.

5 Are the **interior functions** of the building identifiable to visitors.

Interior Environment

6 **Color schemes, building materials, and décor** provide a stimulus to
learning.

7 **Year around comfortable temperature and humidity** are provided
throughout the building

8 **Ventilating system** provides adequate quiet circulation of clean air.

9 **Lighting system** provides proper intensity, diffusion, and distribution
of illumination.

10 Are the interior **circulation routes understandable and convenient**.

11 **Communication among students** is enhanced by commons area.

12 **Traffic flow** is aided by appropriate foyers and corridors.

13 **Areas for students** to interact are suitable to the age group.

14 **Large group areas** are designed for effective management of
students.

15 **Acoustical treatment** of ceilings, walls, and floors provides effective
sound control.

16 **Window design** contributes to a pleasant environment.

17 **Furniture and equipment** provide a pleasing atmosphere.

B	B	S	B
P	S	P	B
S	B	S	E
S	P	B	B
S	S	S	S
S	S	S	S
S	S	S	S
E	S	S	S
E	E	E	E
S	S	S	S
S	S	S	B
S	B	B	B
E	S	S	B
S	S	B	B
E	S	S	B
B	B	B	B
S	S	S	S
B	B	B	B