NORTHSIDE HIGH SCHOOL

ARCHITECTURAL

Northside High School (NSHS) was originally built in 1960. The building has since been renovated in 2009. As a result of the renovations, a reasonably wide range of materials, finish levels, and conditions exist throughout the facility. Each portion of the building loosely complies with the accessibility requirements of the time in which the work was performed; however, some spaces do not comply with current standards. The building is fully equipped with a fire suppression system. Total facility square footage is 163,880 SF.

Exterior Finishes

Exterior Cladding:

Generally, exterior wall material is brick with precast concrete. Brick was observed to be in good condition with some areas needing repointing of joints. Pre-finished metal flashings and drip edges occur at wall/roof intersections and are in, generally, good condition. Joints at these flashings and drip edges have suffered some degradation. Sealant should be replaced as required.

The 2009 Renovation section of the building has standing seam metal barrel vaulted roof with aluminum clad columns and aluminum frame storefront entrance. The side walls above the existing roof line appear to be Exterior Insulation Finish System (EIFS) wall panels.

Joints in windows and window sills should be monitored and resealed as sealant failure occurs.

Roof:

Areas of the building were re-roofed during the building renovations. In general, maintenance activities should be increased on the roof. Several roof drains were observed with debris blocking passage of water; debris should be removed from the roof; in one instance, debris had been removed from a drain and piled on the roof.

The roof is a white thermoplastic polyolefin (TPO) single ply membrane. The roof condition appeared to be, generally, good, with laps and splices in good condition. While the roofs are reasonably new, they should be consistently monitored for issues related to ponding and debris build up.

Limited portions of the roof were covered in standing seam metal. This portion is the renovated main entrance that has a two story barrel vaulted structure. The metal roofing at this location is in good condition, but should be monitored.

Sealants at fascia panels on the roof and at roof edges should be regularly monitored and replaced as needed. Several joints have experienced sealant degradation and cracking and should be resealed.

Skylights were observed to be in good condition. Sealants should be monitored for stability and replaced as required.

Windows:

Windows at the exterior of the building are generally aluminum storefront systems with insulated glazing. Operable windows occur at many locations around the building. Condition of sealants and glazing should be monitored. Sealant that is cracked or failing in any other way should be replaced. All glazing units were observed to be in good condition with no signs of seal failure.

Exterior Doors:

Exterior doors are a mix of storefront and hollow metal systems. At main entry points, storefront systems are employed, each being of the age of their respective renovations. Doors near the Gymnasium entrance are older, but in good condition. New doors at the administration addition are in good condition. Hollow metal doors are present at the remainder of the exterior locations. Some of these doors are installed in frames that have both side lites and transoms. Glazing condition and door condition at all hollow metal doors should be monitored. Rusting doors and frames should be replaced as required. Glazing can be replaced to improve overall energy efficiency of the system.

Doors at the mechanical room entrance have infill panels in the frames. These panels have paint bubbling and peeling issues, revealing a suspect asbestos panel behind. Panels should be tested and either removed or properly encapsulated if suspect material is confirmed.

All exterior doors providing classroom, hallway, or other public area access are equipped with card readers and included in the security/monitoring system. Doors to mechanical areas and storage were not observed with these systems. At these locations, control is established solely through keys.

Interior Finishes, Fixtures & Equipment

(See assessment tabulations for interior finish conditions).

Terrazzo and Vinyl Composition Tile are the predominant floor finishes at NSHS. Other floor finishes include limited applications of poured flooring in kitchen and parquet wood at the Gymnasium. Parquet flooring in need of repairs and/or replacement.

Interior wall finishes are generally painted concrete block and glazed ceramic wall tile. Office areas and built out areas have gypsum wall board partitions. Window treatments are typically vinyl roller shades. Gymnasium walls are painted block throughout.

Ceilings are generally suspended acoustical tile (lay-in) with some gypsum wall board ceilings. Exposed, painted decking is present in the gymnasium area. Water damage is present in some of the suspended acoustic tile ceilings, other older tiles have begun to sag and deteriorate. New suspended acoustical tile ceilings are recommended as part of any renovations. Ceiling tile at the newer additions has serviceable life remaining.

Most interior doors are wood and are original to their respective construction periods. Some doors exhibit wear and do not have accessible door hardware (older portions of the facility). All non-accessible, interior door hardware would be replaced during a substantial renovation. Some door frames would be replaced to achieve accessibility, or because of reconfigured spaces. Other door frames may be salvaged, patched, and painted. Corridor doors in older sections of the building have solid wood transoms over the doors. In the event smoke control or any sort of rating is required at these doors, they should be evaluated and replaced as required to achieve any required rating.

Marker boards and tack boards are present in classrooms. Most are in fair to good condition. Some would be replaced during renovations. Smart boards have been placed in rooms.

Casework (cabinets) condition varies across the facility. Painted casework, generally, needs to have new finishes applied. Some fixed wooden casework may need to be refinished (older portions of the facility). Most casework is not accessible. Lockers are in good condition in most locations, and should be painted as required.

Toilet Room materials and conditions all vary by construction and renovation date. Typical toilet room has poured flooring, ceramic tile wainscot with painted concrete walls. The ceiling is painted gypsum wallboard. The doors are wood doors with hollow metal frames. Newer toilet rooms from previous renovations meet handicap accessibility and toilet rooms from original building construction will need to be upgraded to meet current handicap accessibility.

Loose furnishings are a mixture of tables and desks of varying ages. The flexibility required of 21st Century classrooms is enabled by flexible, movable furnishings. All furniture and equipment should be replaced during a substantial renovation to provide a uniform appearance, enhance student comfort, and to provide flexibility. Furnishings, fixtures, and equipment design should occur in tandem with building design to achieve proper coordination between building utilities and furniture types and locations. This includes library shelving and furnishings.

Kitchen (food service) equipment is a mixture of equipment original to the building and equipment purchased as the building aged. To ensure maximum efficiency in terms of function and energy, new food service equipment should be provided during a

substantial renovation. Significant energy savings can be achieved through more efficient kitchen hoods with energy recovery capabilities, and other equipment. The kitchen should be enlarged and rearranged to increase efficiency of function and serving capacity.

General school storage is scattered throughout the building and consumes spaces intended for other functions. As part of future renovation plans, general school storage should be planned in several strategic areas serving administration, faculty, and staff. Metal shelving units would be provided in dedicated general storage rooms.

Accessibility

At several exterior doors, there are steps up, or down, into the building, which are not accessible. While these no longer serve as entrances due to security concerns, they should provide an accessible route for egress. Routes to paved play areas, play fields, and play equipment are not all accessible. As part of any substantial renovation all elements of the site and building entrances would be renovated to be accessible. Accessible play areas would be required as part of any substantial renovation and addition project.

Within the building, most areas are accessible, but others are not, simply because of their age. Some restrooms are not accessible to the latest ADA standard, as the most recent renovation was performed under a previous version. Accessible urinals were not present in some Men's rooms. Minor changes may need to be incorporated into any future renovations. Casework should be added which incorporates accessible work stations and storage units; most casework provided only a single, 36" high countertop. Signage, throughout the facility, does not comply with the most recent ADA standard. Accessibility throughout the building would be achieved during any substantial renovation.

Safety and Security

This section addresses passive security measures, such as how entrances function, visibility within the building, etc.

Recent renovation work undertaken by RCPS in 2014 involved the installation of secure entry vestibules at all schools. The vestibule at NSHS provides visibility from the office and control over the main entry. Door position sensors and locks are provided at all other exterior doors. Entry at these points is limited to staff members with appropriate keys/cards. Due to the nature of the renovations to the school, the building is reasonably compartmentalized. Sight lines and distance are reasonably long in most areas of the building.

End of Northside High School Architectural Narrative

PLUMBING/FIRE PROTECTION

Plumbing Fixtures:

Water Closets: Most water closets observed were floor mounted vitreous china with manual type flush valves. The exception was one gang toilet located on the northwest corner of the first floor where there were wall mounted water closets with manual flush valves. There were several water closets that were ADA compliant. The condition of the water closets ranged from good to excellent.

Urinals: Urinals observed were wall mounted vitreous china with manual type flush valves. There were several ADA compliant urinals observed. The condition of the urinals and flush ranged from good to excellent.

Lavatories: Lavatories observed were wall mounted vitreous china or enamel cast iron with manual type faucets. There were several lavatories that appeared to be ADA compliant. Most lavatories observed did have hot water supply, but no ASSE 1970 mixing valves that are required by today's codes. The condition of lavatories ranged from good to excellent.

Sinks: Sinks observed were stainless steel with kitchen type faucets with swing spouts. The condition of the sinks ranged from good to excellent.

Showers: Showers are supplied with tempered water by a master mixing valve. Showers are individual wall showers within stainless steel enclosures. Controls for shower valves are single handle with severe service shower heads. Condition of showers seemed to be good.

Laboratory Fixtures: Sinks observed in the laboratory areas were chemical resistant type to match countertops, or stainless steel. Supply faucets and gas fittings on laboratory sinks appear to be in good working order. Emergency solenoid shut off switches are located within the classrooms as required.

Emergency Fixtures: Emergency showers and eyewash observed appeared to be ADA compliant. It was not determined if they were supplied with tepid water. The condition of the emergency fixtures was good.

Electric Water Coolers: There were several different styles of water coolers noted within building. There were several ADA compliant high/low models. The condition of the water coolers ranged from good to excellent.

Water Heaters:

Domestic water is heated by gas-fired storage tank type water heaters. System one consists of three A.O. Smith model BTH400A100 water heaters that are approximately seven years old. System two consists of one Rheem/Rhudd model G-100-80 that is

approximately three years old. Both systems have recirculation systems with in-line pumps assumed to be the same ages.

Piping:

Water: Copper
Sanitary Piping: Cast iron / PVC
Storm Piping: Cast iron / PVC
Gas Piping: Black steel
Sprinkler Piping: Black steel

Pipe Insulation:

Hot water, cold water, hot water return and horizontal storm drain piping is insulated with fiberglass insulation.

Water Entrance:

The building is served by a 3" cold water line that is assumed to be from a municipal system. There is a RPZ type backflow preventer observed on the incoming service line. The water service has duplex type booster pumps, 5 HP that are assumed to be seven years old.

Kitchen:

The Kitchen is up to date with indirect waste connections through floor sinks. The grease interceptor is the large type located outside the building with manhole access (assume 1000 gallon concrete type). All kitchen equipment is electric with no gas-fired equipment.

Sprinklers:

The building is fully sprinkled. The incoming sprinkler service is 6". Incoming sprinkler has an Ames double check backflow preventer. Sprinkler system has a 15 HP inline centrifugal fire pump. Riser consists of four wet system risers and one dry system riser.

Recommendations:

This school appears to be in good condition as far as plumbing issues go. No immediate repair or replacement needs were detected.

End of Northside High School Plumbing/Fire Protection Narrative

MECHANICAL (HVAC)

Heating:

There is a cast iron gas-fired boiler that provides heat to the building through a hot water circulation system. Hot water is circulated to the building's heating coils with two base mounted pumps. Coils are in air handler units, rooftop units, and water source heat pumps. The boiler was installed in 2005. The two pumps were installed in 2008. The boiler is 11 years old and the pumps are 8 years old. The boiler has 19 years remaining in its useful life expectancy of 30 years. The pumps have 17 years remaining in their useful life expectancy of 25 years. The air handler units, heat pumps, and rooftop units were installed in 2008 and are 8 years old with a useful life expectancy of 18-20 years.

Ventilation:

Ventilation is provided to the building by rooftop air handling units and louvered penthouse ventilators that provide fresh outside air. The kitchen and dishwasher have dedicated exhaust fans on the roof.

Air Conditioning:

There is a scroll compressor chiller that was installed in 1994. The chiller provides cooling to the building through a chilled water circulation system. Chilled water is circulated to the building's cooling coils with three base mounted pumps. It is assumed that the chilled water pumps were installed in 1994. The chiller and chilled water pumps are 22 years old. The chiller has a useful life expectancy of 20 years and the pumps have a useful life expectancy of 25 years. The building is also cooled by air cooled DX rooftop units. These units are approximately 8 years old and have a useful life expectancy of 20 years.

Piping:

There is hot water, chilled water, and condenser piping, black steel, insulated.

Controls:

The building's automation controls are the digital type (DDC).

Recommendations:

The chiller has passed its useful life expectancy. It will need to be replaced.

End of Northside High School Mechanical Narrative

ELECTRICAL

Main Switch Gear:

Main Switchboard: The main switchboard is a 2500 Amp, 3 phase, 4 wire, 480Y/277 volt Eaton, service entrance rated switchboard. The existing switchboard is new to the building with the 2009 major addition/renovation and has space and spares available.

Recommendation: In the event of a substantial renovation or addition, existing switchboard can be reused and expanded as necessary.

Transformers:

Transformers: All of the building transformers were added/replaced during the 2009 renovation and convert from 480/277V to 208/120V. All of the transformers are currently in good working condition; however, over time transformers become less energy efficient.

Recommendation: If renovations and additions are pursued, maintain the existing transformers, if possible.

Panelboards:

Distribution and Branch Circuit Panelboards: Most of the panels are newer Eaton panels that were added or replaced with the 2009 renovation. The panels have space and spares available. Some older sections of the building have Square D panelboards flush mounted in the corridors that are from a renovation in 1994.

Recommendation: If renovations and additions occur, reuse the existing panelboards and space available. Expand as necessary to accommodate new or modified spaces and locate any new panels in areas to minimize student access and to meet National Electrical Code working clearances.

Cabling:

Cabling: All of the building wiring is new to the 2009 renovation. All visible wiring appears to be in conduit. Raceway was used within older classrooms for new receptacle wiring.

Recommendation: If renovations and additions occur, inspect and reuse existing wiring as appropriate.

Conduit/Raceway:

Conduit/Raceway: All new conduit and raceway was used for the 2009 renovation. Classrooms in older sections of the building have had original outlets capped off and are now provided power and data through surface raceway.

Recommendation: All surface raceway should be evaluated regularly and securely reattached to the wall if it becomes loose. All raceway would be reused if the building were renovated. Conduit would be salvaged where practical.

Light Fixtures:

Light Fixtures: The light fixtures consist of primarily 2x4 flat lens fixtures with T8 lamps, 1x4 fixtures with T8 lamps, fluorescent can lighting, and some decorative fluorescent pendants. The T8 lamps are current technology, and meet the current needs of the school. The majority of the fixtures are new to the 2009 renovation. Can lights mounted in the ceiling surrounding corridor skylights were not installed properly and appear to be dislodged.

Recommendation: To accommodate a new addition or renovation, provide a new lighting design and reuse existing fixtures. Consider LED fixtures where practical. Can light fixtures surrounding corridor skylights should be reinstalled and mounted properly to prevent any electrical hazard.

Lighting Controls:

Lighting Controls: Lighting controls throughout the building consist of toggle switches controlling fixtures within an area, most classrooms have zoned switching. Classrooms have occupancy motion sensors for efficient operation. Corridor lighting is controlled through switch bank in the front office.

Recommendation: In the event of a renovation or addition, reuse existing lighting controls.

Public Address System:

Public Address System: The public address system is currently a Valcom headend system with speakers located throughout the school and in each classroom. Teachers and staff use the newer Cisco phone system tied into the PA for communications and announcements rather than the Valcom system.

Recommendation: The PA system is current technology. In the event of a renovation or addition, the system could be reused and expanded as necessary.

Security System:

Security System: Security system consists of electronic locks and motion sensors at exterior doors, keypads, and AI phone/Lobbyguard system at entrance. The current system meets the needs of the school and utilizes current technology.

Recommendation: Upgrade, expand, and reconfigure zones of the system as necessary if renovations and additions are pursued.

Camera System:

Camera System: A building wide IP based camera system is installed. It is current technology that meets the current needs of the school.

Recommendation: In renovations and additions, provide additional cameras and Digital video recorders as required for additional areas with desired coverage.

Data System:

Data System: The Data system consists of newer Category 6 and 5e cable. The building is equipped with wireless internet through Cisco access points throughout. Teacher and student computers are provided with access to a local area network. All data cabling is run through raceway within classrooms.

Recommendation: The current system meets the needs of the building and switches and patch panels could be reused in any renovation or new construction

Fire Alarm System:

Fire Alarm System: The fire alarm is a Simplex system that was added during the 2009 renovations. The current system consists of limited area manual pull stations, smoke detectors, and horn/strobe alarms throughout. There is also a fire pump which is being fed from a secondary service entrance and through the backup generator.

Recommendation: If renovations and additions are pursued, retain, expand and reconfigure the existing system as necessary for renovations.

Generator:

Generator: The generator is a Kohler Power Systems, model 230 diesel generator that was added during the 2009 renovation. The generator is current technology and appears to have been serviced regularly. The generator feeds emergency egress lighting and the fire pump. No duel fuel source was identified.

Recommendation: Reuse the existing generator and transfer switches. Reconfigure circuits as necessary for renovations. The generator may need to be replaced, or an additional generator added if additions require more capacity than is currently available.

Site Lighting:

Site Lighting: The site lighting consists of pole mounted lights for parking areas, wall packs around the building, and wall sconce lighting at exterior doors. The fixtures appear to be new to the 2009 renovation and the site is well covered.

Recommendation: To accommodate renovations, maintain existing lighting fixtures around exit doors or lighting areas of egress. For any new addition, provide new general site lighting to maximize energy efficiency and minimize light contamination on neighboring properties and to the sky, connect any new lights to an emergency circuit.

Classroom Media (TV, Projector, ETC):

Classroom Media: Classroom media typically consists of an Activeboard with attached projector, a teacher computer, printer, and a wall mounted phone. Laptops are provided to the students as well.

Recommendation: Periodic upgrade of equipment will maintain a strong inventory of new equipment and keep students aware of current technology.

Phone System:

Phone System: The phone system consists of a new Cisco IP phone system. Phones are provided in all offices and classrooms as required to access outside lines. Push-to-talk buttons with the PA system are included in all classrooms, but the phone system is used for communication with the front office. The system is operational and meets the current needs of the school.

Recommendation: It is possible to retain and expand the existing phone system through additions and renovations.

End of Northside High School Electrical Narrative

CIVIL

Traffic Circulation

Buses: Buses are housed at a bus parking / fueling area on site and are shared with the middle and high schools. There is a bus loop in between the two schools and bus drop off lanes on either side of the bus loop parking area.

Morning: Buses enter the site from the south and stack up along the sidewalk at the west side of the school to drop off students. Buses then proceed around to the front entrance of the middle school to drop off students. After dropping all students, the buses proceed to the bus parking area between the two schools.

Afternoon: Buses park in the designated bus parking areas between the two schools. At dismissal, both middle school and high school students load onto buses at the same time. Buses exit the site via the north or south entrance roads depending upon if they are turning right or left onto Peters Creek Road.

Cars: Cars utilize a well sized loop on the east side of the school for drop off / pick up.

Morning: Cars enter from the north access road, proceed through the drop off loop and exit. Staff indicates no issues with drop off with very little backup down the access road.

Afternoon: Same situation as morning drop off. Staff indicates no significant backups occur and no conflicts with middle school pick up traffic.

Parking: 599 striped parking spaces are provided with 39 designated ADA spaces. Day to day parking is adequate for faculty / staff / visitors. Parking quantities meet Roanoke County requirements and State recommendations. Event parking is adequate with the bus loop used as overflow parking.

Service: The service area on the west side of the school has adequate maneuvering area for all deliveries.

Fire Access: Fire apparatus have adequate access around the building.

Separation: Although access roads are shared, there is adequate separation of vehicles.

Adjacent Roadways: There are two access roads entering the site. The north access leads to a traffic light at Peters Creek Road. Left turning buses utilize this access. The south access leads to Peters Creek Road, but does not have a traffic light. Right turning buses utilize this access.

Pedestrian: Generally there are not many pedestrians who access the school. There are no sidewalks adjacent to the school.

ADA Accessibility

Parking: There are 2 spaces at the west corner of the building, 11 spaces at the main entrance to the football stadium, 1 space at the main entrance, 4 spaces in the faculty parking lot on the east side of the building, 9 spaces at the gym addition (attached to the middle school), 5 spaces at the softball / baseball entrance, and 7 spaces at the visitor side of the football stadium. Spaces at the football stadium do not have appropriate aisles, spaces at the softball / baseball entrance are not sized appropriately.

Recommendation: Assess and restripe ADA parking to meet code with regard to size, aisle location, and width.

Signage: Signage is missing in some areas, van accessibility is incorrectly labeled or missing in some spaces, and some is installed too low for visibility.

Recommendation: Assess and replace all ADA signage with to meet code with regard to location, height, van accessibility, and fine listed.

Ramps: Curb ramps are appropriately located and in good condition. Other ramps located in courtyard and on north side of school are in good condition and meet code.

Access to all areas: There is ADA access to all areas and activities on site. One section of the asphalt path to the baseball field has a steep section which may not meet code.

Parking Areas, Driveways, and Sidewalks

Asphalt Pavement: Paving at bus lot and access drive outside bus lot is poor with severe alligator cracking. Older section of the student lot is near or reached its useful life.

Recommendation: Repave older section of student parking area. Repair and repave bus lot. Repair and repave access drive outside bus lot.

Asphalt Walks: Mostly good condition with some minor cracking.

Concrete Pavement: Concrete pad at bus fueling area is in poor condition with severe cracks.

Recommendation: Replace concrete paving at bus fueling area.

Concrete Walks: Mostly good condition with some minor cracking.

Stairs, Ramps, and Railings: Railing at the stairs to the student lot is damaged. Painted railings are peeling and chipping.

Recommendation: Repair damaged railing. Sand, prime, and paint older railings.

Concrete Curb and Gutter: Good condition.

Concrete / Brick Pavers: Good condition.

Guardrail, Parking Bumpers, and Miscellaneous: Guardrail at stadium parking area is beginning to rust.

Fire Lane: Curbs are painted well, signs are in good condition.

Utilities

Fire Lines and Hydrants: Excellent fire hydrant coverage and spacing with multiple fire hydrants located around the building. No paved fire lane around building, but fire truck access around three of four sides. Two stand-alone fire department connections are on each end of the school and a post indicator valve. One fire department connection is hidden in a bush.

Recommendation: Trim bushes to expose access to fire department connection.

Domestic Water System: The water system is in good condition. Staff indicated no pressure or water discoloration issues. Water is provided via public water to water meter located underground in secure vault at service area.

Sewer System: Observations indicate concrete manholes in fair condition and pipes are flowing well with proper invert shaping. Despite the age of the sewer system, staff indicated no issues concerning back-ups or flow.

Natural Gas System: Gas meter located outside mechanical service area, inside of curb, but still damageable by traffic. Meter appears to have been damaged previously. The meter is in good condition and shows no signs of deterioration.

Recommendation: Install a bollard just outside of curb in pavement to protect gas meter from future damage.

Electric: Electric service provided via overhead poles to power pole in parking lot outside of mechanical service area. Service goes underground from power pole to transformer located inside mechanical service area and well protected. Generator also located in service area and well protected. Meter and electrical cabinets mounted on wall inside service area and protected from vehicular traffic.

Site Lighting: Site lighting for the high school parking lots and sidewalks is sufficient for safety and security. There are lights at the football stadium, but no lights at the baseball or softball fields.

Grading and Drainage

Storm Water System: Roof drains and downspouts are piped underground in to the storm water network. Half of the site runoff carried to sediment forebay and detention pond shared with middle school and half carried to bioretention ponds along the school entrance road. All storm water inlets and structures are in good condition, but are clogged with sediment, trash and debris.

Detention / Retention Ponds: Forebay and detention pond, shared with the middle school, is in fair shape and protected from trespassers with chain link fence. Area is overgrown, but functional. No issues with spillway or inflow and outflow devices. Bioretention pond at the front of the high school is in good condition, but contains lots of trash. Runoff sheet flows from the student parking lot through concrete flumes and into the bioretention area. The bioretention area is protected from trespassers with a chain link fence.

Recommendation: Clean bioretention pond of trash and litter. Remove all trash and litter from parking lot to prevent runoff from carrying it to the bioretention pond. Provide trash cans on site for students and faculty to dispose of trash and litter.

Stormwater Management BMPs: Trash and litter are scattered about the entire high school site. Runoff carries the trash and litter to the detention and bioretention ponds. The detention pond at the rear of the school is pretreated with a sediment forebay. The bioretention pond has no pretreatment measure and obtains trash and litter through stormwater runoff.

Recommendation: Install trash grates for inlets to the bioretention ponds or alter chain link fence fabric to act as a trash grate for the concrete flumes.

Slopes, Ponding, and other Drainage Issues: There appears to be no ponding issues, but minor erosion at the front and rear of the school is present. Concentrated runoff from the parking lots and daylighted pipes has scoured channels and has caused erosion.

Recommendation: Provide rip rap in these areas to dissipate energy of concentrated runoff and prevent erosion.

Site Features

Vegetative Landscaping: Vegetation, including trees and shrubs, are healthy. General maintenance needed.

Recommendation: Remove shrubs currently blocking FDC on west of building. Planter garden at student entrance requires maintenance. Continue general maintenance of pruning and mulching.

Lawns: Generally in good condition.

Recommendation: In future, any areas requiring repair and seeding should utilize fencing and erosion control mat until grass is established.

Fencing and Gates: Limited site fencing. CLF is generally in poor condition.

Recommendation: Perimeter fence at transportation yard requires replacement. CLF at gas pumps at transportation is in fair condition. Perimeter fence at southwest property line is in poor condition and should be planned for replacement.

Signage: ADA signage is not code compliant. No directional signage provided. Posts are aging and leaning due to lack of foundations.

Recommendation: Repair or replace damaged or leaning signs. Future signs should utilize 2"x2" square posts in sleeves with concrete foundations. Provide directional signage.

Flagpoles: Poles are in good condition.

Site Furnishings: Limited furnishings. Excellent condition.

Play Education

PE Fields: One area with fair turf available between MS/HS campus. High School campus has two old fields that are no longer in use on south end of property. Both fields are in poor condition.

Recommendation: High School fields are outside of current school fencing. Recommend to leave dormant with limited maintenance.

Athletics

Tennis Courts: Courts are asphalt and are in poor condition. Asphalt has significant cracks and is not safe for athletic competition. Evidence of ponding water was prevalent. Surface finish has reached its life span.

Lighting: Poles and fixtures appear to be in fair condition. System was not tested for competition level lighting.

Bleachers / Stadium: No spectator facilities were observed.

Accessory Structures: No accessory structures were observed. Fencing and court equipment were in fair condition.

Recommendation: Replace courts and fencing.

Track and Field Events: Track asphalt and markings are in good condition. Jump tracks and sand pits are in poor condition. High jump area is asphalt and in good condition. Throw event areas are in fair condition and do not have accompanying fencing.

Lighting: Refer to Competition Football Field.

Bleachers / Stadium: Refer to Competition Football Field.

Accessory Structures: Refer to Competition Football Field.

Recommendation: Track was repaved within last 10 years. Monitor for signs of failure and refresh markings as needed. Rebuild jump pit and provide cover to protect it during out of season. Fencing for throw events, while desirable, is not necessary.

Competition Softball Field: Field is part of Roanoke County Parks and Recreation softball complex. Outfield turf is in good condition. Infield condition is in good condition. Fencing in good condition. Scoreboard in good condition. Foul poles are limited to painted PVC piping.

Lighting: N/A

Bleachers / Stadium: Aluminum bleachers are in good condition. ADA access is provided to bleachers.

Accessory Structures: Pressbox/Concessions/Restroom facility of CMU construction provided. Condition is good. Team benches in good condition. Batting cage is in fair condition.

Recommendation: Work with Roanoke County Parks and Recreation to provide permanent foul poles.

Competition Baseball Field: Infield conditions are poor. Outfield turf is in good condition. Drainage appears to be good. Fencing in good condition. Scoreboard appears to be in good condition.

Lighting: N/A

Bleachers / Stadium: Aluminum bleachers are in good condition. ADA access is provided to bleachers.

Accessory Structures: Concessions/Restroom facility of CMU construction at softball field utilized. Pressbox and small storage building are in fair condition. Dugouts in fair condition. Batting cages in good condition.

Recommendation: Infield requires repair including pitching mound and the transition between the infield and outfield. Provide general maintenance to accessory buildings such as dugouts and press box to extend longevity.

Competition Football Field: The field is well maintained and in excellent condition. Drainage appears to be adequate. Fencing is in fair condition. Other field equipment is in good condition. Practice field is in excellent condition, although cut slope to field is eroding.

Lighting: Poles and fixtures appear to be in good condition. System was not tested.

Bleachers / Stadium: Home side bleachers are concrete and are in good condition. Visitor stands are aluminum and in good condition.

Accessory Structures: Scoreboard/clocks are in excellent condition. Press box is in excellent condition. Concessions/Bathroom building is in excellent condition. Ticket booths are in fair condition.

Recommendation: Plan for replacement of fencing and ticket booths. Provide vegetation and erosion protection to prevent further erosion of cut slope at practice field.

Competition Soccer Field: Refer to Competition Football Field.

Lighting: Refer to Competition Football Field.

Bleachers / Stadium: Refer to Competition Football Field.

Accessory Structures: Refer to Competition Football Field.

Recommendation: Refer to Competition Football Field.

End of Northside High School Civil Narrative

OWPR
ARCHITECTS AND ENGINEERS

Notes

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Copies To:	**Report Prepared By: JFH**

General:

The Facility was constructed in 1960 and renovated in 2009. The building is brick and precast with a new aluminum and glass entrance. The existing building has a flat Thermoplastic Polyolefin (TPO) roof membrane and the new entrance addition has a barrel vault standing seam metal roof. The existing building is fully sprinkled and air conditioned facility. The existing building does experience lack of air conditioning or minimal amount of air conditioning in certain areas. The new Entrance does provide Security and meets the building accessibility requirements.

Entry Vestibule:

Terrazzo Flooring
Vaulted Exposed Structure
Walls are Brick Veneer and Alum Storefront.
The existing Main Entrance Vestibule meets security and accessibility requirements.

Main Office:

The flooring is carpeted.
The walls are Gypsum Wallboard.
The ceiling is SATC.
The Doors are Wood with Aluminum Frames.
Door Hardware is lever handles with locks and meets accessibility requirements.

Corridor:

The flooring is terrazzo.
The walls are glazed tile wainscot (Top of Wainscot is 6'-8") and CMU block above.
The ceiling is SATC.

Mechanical Room:

Concrete floors
CMU Walls, Exposed
Concrete Ceiling
HM doors and frame

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Notes

Stairs:
- Terrazzo treads with slip resistance strips,
- Tubular handrails
- Glazed Tile Wainscot Wall and CMU Walls above
- Suspended Acoustic Tile Ceiling (SATC)
- (Concern from staff at the bottom of the stairs near the Gymnasium: Lights shut off automatic at 4 pm causing an Emergency and Safety Concern)

Lower Level Weight Room:
- Rubber Tile Flooring
- CMU and GWB Walls
- SATC Ceiling
- (Complaint from staff is no AC or inconsistent AC)

Lower Level Locker Room:
- Carpeted Flooring
- CMU and GWB Walls
- SATC Ceiling
- Room consist of 2 urinals, 2 Water Closets (Flush Valve)
- 4 Showers
- Accessible Water Closet and Accessible Shower (no sink)
- (Complaint from staff is no AC or Inconsistent AC)

Main Level:
- Terrazzo Flooring, Glazed Tile and CMU Walls, SATC
- Double glazed thermal break Aluminum Windows with painted wood stools.

Gymnasium:
- Parquet flooring in need of repair. (Existing flooring is coming up in areas)
- Exposed Structure Ceiling, Painted CMU Walls (need new paint)

Aux Gymnasium:
- Parquet Flooring in need of repair. (Existing flooring is coming up in areas)
- Exposed Structure Ceiling, Painted CMU Walls (need new paint)

Boys Toilet at Aux Gym:
- HC accessible flush valve Water Closet with 2 lavatories (no mirror over lavatories)
- Mirror is located near door
- Poured Flooring, Ceramic Tile Wainscot, CMU walls above
- Gypsum Wallboard (GWB) Ceiling
- Wood Doors with Hollow Metal Frames

Typical Classroom:
- Vinyl Composition Tile (VCT)
- Suspended Acoustic Tile Ceiling (SATC)
- Concrete Masonry Unit (CMU) Walls

Boys Toilet Room:
- 3 Urinals plus 1 missing
- 4 Floor MTD Flush Valve Water Closets
- 5 Wall Mounted Lavatories (Mirror located at Door)

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Notes

Room E118:
- Loud Mechanical Equipment Sound

Kitchen:
- Poured Flooring
- Vinyl wall covering
- 24x24 Moisture Resist. Suspended Acoustic Tile Ceiling
- (Leak Stains on the Ceiling Tiles)

Cafeteria:
- Ceramic Tile Walls
- GWB Accent Bulkhead
- 24x24 SATC
- Interior Aluminum Storefront (No Tempered Glass Label shown on glass)
- Exterior Aluminum Storefront (Tempered Glass Label is shown)

Teachers Lounge:
- VCT flooring
- Painted GWB Walls
- 24x24 SATC Ceiling
- Plastic Laminate Countertop and Casework with Stainless Steel Sink

Media Center:
- Appears to be a part of the New Addition and New Entrance
- Exposed Ceiling Structure and SATC
- GWB Walls Aluminum Storefront (Walls have Acoustical Panels up high)
- Carpeted Flooring
- Wood Doors with HM Frames and updated hardware

Science Lab:
- VCT Flooring
- CMU Walls
- 24x24 SATC
- Floor Receptacle located under Emergency Eyewash and Shower
- Prep Room Door should Stay Locked at all times (lock not working)
- Gas Main Valve is shut off because of Leak (smell of gas)
- Sinks not working properly (Drain leak)
- Sanitizer not working
- Floor Receptacle Cover plates need replacing (inadequate power supply for the room)

Electrical Room:
- Being used as a place to store away chairs (not acceptable by building code)

Roof:
- The flat roof is covered with a fairly recent Thermoplastic Polyolefin (TPO) membrane.
- The new Entrance addition is a barrel vault standing seam metal roofing with snow guards.
- The flat roof has roof drains with gravel stop edging for emergency overflow.
- (Roof is in very good shape)

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Notes

Auditorium:

Carpet Runners and Exposed Concrete flooring
CMU and Ceramic Tile Walls with Acoustic Sound Panels
Ceiling is GWB Clouds and Exposed Structure painted black

Guidance:

Insulated Aluminum Storefront
GWB Walls
Carpeting Flooring
GWB Ceiling and 24x24 SATC

Conclusion:

The facility is in very good shape and meets many handicap accessible requirements, however the existing room signage need to be updated per code due to the locations of signage. The code requires the signage to at the lever side of the door and (18" min) distance from the door which would require signage to be installed on side lights where side lights occur. The bottom of lower case shall be 48" min above finish floor and the bottom of the top character of signage shall be 60 min above finish floor.

The air conditioning needs to be looked at and rebalanced in most cases. The lower level receives minimal air flow.

The Janitorial Staff had no idea where the roof access was located. The General Staff and Janitorial Staff did not where the Fire Alarm Control Panel was located.

The Gymnasiums does need floor repairs or new wood floors. The existing CMU walls will need painting.

The existing building will require some maintenance but overall the facility is in good shape.

Northside High School Architectural Condition Assessment

Reference Building Owners and Managers Association International (BOMA)

Preventative Maintenance Guidebook

System/Components	Condition Category	Expected Useful Life	Current Age	Expected Life Remaining	Notes
Architectural					
Brick	5	Life	7 yrs to 56 yrs	Life	Renovated in 2009
Precast Concrete	5	35 years	7 yrs to 56 yrs	28 years	Renovated in 2009
CMU walls	5	Life	7 yrs to 56 yrs	Life	
Exposed Concrete Ceiling	5	Life	7 yrs to 56 yrs	Life	
Wood trim	4	15 years	7 years	8 years	
Interior doors	3	20 year	7 yrs to 56 yrs	0 years	
Exterior doors	3	50 years	7 yrs to 56 yrs	0 years	
Door hardware	2	7 years	7 years	0 years	Provide new ADA code compliant hardware
Electronic door hardware, Security Entrance	5	5 years	2 years	3 years	Entrance Security was provided in 2014
Carpet	2	5 years	7 years	0 years	Carept to be replaced throughout
Terrazzo	3	50 years	7 yrs to 56 yrs	6 years	
Vinyl floor tile	4	12 years	7 years	5 years	
Ceramic/Porcelain floor tile	3	12 years	7 years	5 years	
Wood gym floor	3	10 years	7 years	3 years	Patch, repair and refinish
Other wood floors	3	10 years	7 years	3 years	Patch, repair and refinish
Exposed concrete floors	5	50 years	7 yrs to 56 yrs	6 years	
Curtain Wall, Storefront	5	50 years	7 yrs to 56 yrs	43 years	
Exterior windows	4	30 years	7 yrs to 56 yrs	N/A	Aluminum Windows
Interior windows	4	30 years	7 yrs to 56 yrs	N/A	Hm windows
Roof (Including flashings, coping, etc.)	5	20 years	7 years	13 years	
Suspended acoustical tile ceilings (lay-in)	4	25 years	7 years	18 years	
Plaster/GWB ceilings	5	30 years	7 years	23 years	
Sound control panels (wall and ceiling)	5	N/A	N/A	N/A	
Ceiling/exposed structure finish (paint)	3	5 years	7 years	0 years	Paint exposed structure
Interior wall finishes (paint)	3	5 years	7 years	0 years	Paint interior wall finish
Marker boards, chalk boards, tack boards, projection screens	5	N/A	7 yrs to 56 yrs	N/A	
Casework	4	N/A	7 yrs to 56 yrs	N/A	Plastic Laminte Casework and Countertop
Window treatments	4	N/A	7 years	N/A	
Toilet partitions	4	20 years	7 years	13 years	Solid Plastic Partitions
Toilet accessories	5	N/A	7 years	N/A	
Exterior Railing and Interior railings	4	30 years	7 years	23 years	
School sign	5	25 years	7 years	18 years	Signage meets ADA Code Compliant
Sprinkler/No Sprinkler	5	N/A	7 years	N/A	Bldg meets ADA Code Compliant
ADA Code Compliant					
Condition Categories					
1 Immediate replacement required, life saftey concern					
2 System has reached it's useful life					
3 Major repair or modifications required, useful life remaining					
4 Minor repair required					
5 General maintenance required					

Northside High School Mechanical Plumbing Condition Assessment

Reference Building Owners and Managers Association International (BOMA)

Preventative Maintenance Guidebook

System/Components	Condition Category	Expected Useful Life	Current Age	Expected Life Remaining	Notes
Mechanical					
Boiler	5	30 years	11 years	19 years	
Chiller	2	20 years	22 years	0 years	
Mechanical piping	5	30 years	8 years	22 years	
Refrigerant piping	5	30 years	8 years	22 years	
Duct	5	30 years	8 years	22 years	
Outdoor air units	N/A				
Terminal units	5	20 years	8 years	12 years	
Package units	5	18 years	8 years	10 years	
Controls	5	20 years	8 years	12 years	
Exhaust fans	5	25 years	8 years	17 years	
Plumbing					
Plumbing fixtures and controls	5	30 years	7 years	23 years	
Floor drains	2	30 years	56 years	0 years	
Water heaters	5	15 years	7 years	8 years	
Pumps	4	15 years	7 years	8 years	
Potable water piping & valves	5	30 years	7 years	23 years	
Sprinkler system	5	30 years	7 years	23 years	
Back-flow preventer	5	30 years	7 years	23 years	
Service line & meter (size appropriate)	5	30 years	7 years	23 years	
Wall and yard hydrants	5	15 years	7 years	8 years	
Eye wash stations	5	20 years	7 years	13 years	
Emergency showers	5	20 years	7 years	13 years	
Condition Categories					
1 Immediate replacement required, life saftey concern					
2 System has reached it's useful life					
3 Major repair or modifications required, useful life remaining					
4 Minor repair required					
5 General maintenance required					

Northside High School Electrical Condition Assessment

Reference Building Owners and Managers Association International (BOMA)
Preventative Maintenance Guidebook

System/Components	Average Useful Life	Current Age	Expected Life Remaining	Condition Category	Notes
Electrical					
Main switch gear	40	8	32	5	
Transformers	30	8	22	5	
Panelboards - Existing Corridors	30	22	8	5	
Panelboards	30	8	22	5	
Cabling	40	8	32	5	
Conduit/raceway	40	8	32	5	
Light fixtures	20	8	12	5	
Lighting controls	30	8	22	5	
Public address system	30	8	22	5	
Security system	10	2	8	5	
Camera system	10	5	5	5	
Data system	15	5	10	5	
Fire alarm system	30	8	22	5	
Generator	20	8	12	5	
Site lighting	20	8	12	5	
Classroom media systems (TV, projector, etc.)	10	5	5	5	
Phone system	10	5	5	5	

Condition Categories

1 Immediate replacement required, life safety concern
2 System has reached it's useful life
3 Major repair or modifications required, useful life remaining
4 Minor repair required
5 General maintenance required

Northside High School Civil Condition Assessment

Reference Building Owners and Managers Association International (BOMA)

Preventative Maintenance Guidebook

System/Components	Condition Category	Expected Useful Life	Current Age	Expected Life Remaining	Notes
Civil					
Asphalt pavement	2/5	15 years	7+ years	0-8 years	
Asphalt walks	4	20 years	7+ years	13 years	
Concrete pavement	2/5	30 years	7+ years	0-23 years	
Concrete walks	4	30 years	7+ years	23 years	
Stairs	5	30 years	7+ years	23 years	
Ramps	5	30 years	7 years	23 years	
Railings	4/5	15 years	7 years	8 years	
Concrete curb and gutter	5	30 years	7+ years	23 years	
Concrete / Brick Pavers	5	30 years	7 years	23 years	
Guardrail, Parking Bumpers, Misc.	4/5	Varies	Unknown	10 years	
Fire lane	5	Varies by Material	7 years	10 years	
Fire lines and hydrants	4	40 years	7 years	33 years	
Domestic Water system	5	40 years	7 years	33 years	
Sewer system	4	40 years	56 years	0 years	
Natural Gas system	4	40 years	7 years	33 years	
Electrical System	5	25 years	7 years	33 years	
Exterior Lighting	5	25 years	7+ years	0-33 years	
Storm water system	4	40 years	7 years	33 years	
Detention / Retention ponds	4	Life	19+ years	10-15 years	
Stormwater Management BMP's	4	Varies by BMP	7 years	13 years	
Surface drainage and grading	4	N/A	N/A	N/A	
Vegetative landsaping	4	Life	9+ years	Varies	
Lawns	5	Life	9+ years	Life	
Fencing and gates	3	20 years	Unknown	0 years	
Signage	4	10 years	9+ years	1 years	
Flagpoles	5	50 years	9 years	41 years	
Site furnishings	5	15 years	Unknown	10+ years	
Awnings / Canopies	N/A	N/A	N/A	N/A	
Site retaining walls	N/A	N/A	N/A	N/A	
Accessory structures	N/A	N/A	N/A	N/A	
Play / PE fields	3	Life	Unknown	Life	
Condition Categories					
1 Immediate replacement required, life saftey concern					
2 System has reached it's useful life					
3 Major repair or modifications required, useful life remaining					
4 Minor repair required					
5 General maintenance required					

Northside High School Civil Condition Assessment

Reference Building Owners and Managers Association International (BOMA)

Preventative Maintenance Guidebook

System/Components	Condition Category	Expected Useful Life	Current Age	Expected Life Remaining	Notes
Civil					
Competition fields (Tennis)	3	10 years	Unknown	0 years	
Lighting	5	25 years	Unknown	5+ years	
Bleachers / Stadium	N/A	N/A	N/A	N/A	
Accessory structures	N/A	N/A	N/A	N/A	
Competition Fields (Track)	5	10 years	6 years	4 years	
Lighting	N/A	N/A	N/A	N/A	
Bleachers	N/A	N/A	N/A	N/A	
Accessory structures	N/A	N/A	N/A	N/A	
Competition fields (Softball)	5	25 years	Unknown	Life	
Lighting	N/A	N/A	N/A	N/A	
Bleachers / Stadium	5	25 years	Unknown	11+ years	
Accessory structures	5	50 years	Unknown	30+ years	
Competition fields (Baseball)	4	25 years	Unknown	Life	
Lighting	N/A	N/A	N/A	N/A	
Bleachers / Stadium	5	25 years	Unknown	Life	
Accessory structures	4	50 years	Unknown	10+ years	
Competition fields (Football)	5	25 years	Unknown	Life	
Lighting	5	25 years	Unknown	15+ years	
Bleachers / Stadium	5	25 years	Unknown	15+ years	
Accessory structures	5	50 years	Unknown	20+ years	
Competition fields (Soccer)	N/A	N/A	N/A	N/A	
Condition Categories					
1 Immediate replacement required, life saftey concern					
2 System has reached it's useful life					
3 Major repair or modifications required, useful life remaining					
4 Minor repair required					
5 General maintenance required					

Budgetary Cost Estimate

Estimate Date 12/7/2016
Facility Name **Northside High School**
Client Name Roanoke County Schools

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Quantity	Description	Unit	Cost / unit	Total w/ OH&P
	ARCHITECTURAL			
150	New interior signage-adhesive back /braille	EA	$42.00	$7,560.00
	ADA compliant			
12	Replace existing Hollow metal exterior doors	EA	$1,500.00	$21,600.00
15,000	Replace acoustical suspended ceiling system	SF	$5.50	$99,000.00
8,968	Refinish main gym floor	SF	$4.50	$48,427.20
6,353	Refinish aux gym floor	SF	$4.50	$34,306.20
20,484	Carpet	SF	$4.00	$98,323.20
150	Door Hardware	EA	$1,000.00	$180,000.00
	CIVIL			
1,000	Pavement restriping	LF	$0.20	$240.00
39	ADA signage	EA	$500.00	$23,400.00
8	Directional signage	EA	$1,500.00	$14,400.00
100,000	Mill and overlay asphalt pavement	SF	$1.00	$120,000.00
300	Replace concrete pavement	SF	$7.00	$2,520.00
1	Install bollards	EA	$650.00	$780.00
2	Provide trash grate	EA	$100.00	$240.00
2	Provide outlet protection	EA	$200.00	$480.00
1	Demo shrubs at FDC	LS	$1,000.00	$1,200.00
760	10' Chain link fence with 3 strand barbed wire	LF	$50.00	$45,600.00
1	Replace tennis courts (inc. fence & equip)	LS	$80,000.00	$96,000.00
	MECHANICAL / PLUMBING			
1	Replace 60 ton Chiller	EA	$75,000.00	$75,000.00
	ELECTRICAL			
1	Replace 60 ton Chiller	EA	$20,000.00	$20,000.00
	TOTAL Budgetary Cost			**$889,077**