NORTHSIDE MIDDLE SCHOOL

ARCHITECTURAL

Northside Middle School (NMS) was originally constructed in 1969. A classroom wing was added in 1974 and the wing was renovated in 1993. The gymnasium, auditorium, and additional classrooms were added in 1997. A secure vestibule was added in 2014. Total square footage for the facility is 109,889 SF. Given the age of the building, several areas do not accommodate the needs of the current curriculum and the equipment used by students. Several rooms, near the gymnasium wing, were observed having few electrical outlets available for use in plugging up laptops and other electronic devices. Staff in these rooms indicated there have been issues with having to move children around to allow them to plug in.

The clinic shares space with the copy room. There is no solid barrier between the clinic and that space. Complaints of toner odors were common. Additionally, the clinic has no sink. The exam space uses a curtain for privacy purposes.

Exterior Finishes

Exterior Cladding:

Exterior wall material is, generally, brick. Older portions of the facility have a vinyl band at the tops of the main walls. The gymnasium has a polymer stucco type finish over the entrance canopy and its columns. Brick was observed to be in good condition with minimal cracking. One crack was observed at the roof access door, at the older portion of the facility. This crack has been filled with sealant, and should be monitored for future movement.

Roof:

A roof replacement is recommended for the entire facility. At the gymnasium addition, seams, patches and sealant are failing. Ponding and soft spots in the insulation are present, and insulation appears to be loose in several areas. The taper, as installed, does not seem to consistently promote drainage to the roof drains. As a result, ponding has occurred at the perimeter of most of the gymnasium area. At the northwestern corner, ponding has compressed the insulation to the point that the membrane has separated from the board. Walk pads have begun to separate from the membrane, and wall flashings have pulled away from walls. Flashings that were installed in reglets have faired better than those secured to the wall using termination bars.

The roof membrane, at the original building, is in better condition than at the additions, but has small ponds across the surface. Roof drains are located at the perimeter, and in many locations, the taper, intended to promote movement toward the drain, is actually preventing water from reaching the drains. Based on the condition of the taper,

it is assumed a new membrane has been installed over older insulation. The entire system should be replaced, down to decking. Splash blocks have disintegrated and the aggregate has spread over the surface of the roof. Roof leader straps have detached from the walls. One leader, at the western face of the tallest roof, doesn't attach to the guttering. Gutter straps have detached in various places; guttering is bent and damaged at several of these locations. Standing water and debris were present in most gutters.

Fascia has experienced some damage and wear. It should be replaced along with the roof. Sealants at counter flashings are in poor condition.

The aluminum roofing at the walkway canopy is in good condition, but has seen some oxidation due to age.

Windows:

Windows at the newer building are aluminum storefront units with insulated glazing. At the older building, there are limited applications single glazed, steel windows that have some cracking glazing putty. These should be replaced with more energy efficient units in any facility renovation. The majority of the windows in the older structure have double pane glazing with a foam insulating layer between. This foam has disintegrated and is piled at the bottom of each lite. Replacement of all windows in the original structure is recommended as part of any renovation activities.

Exterior Doors:

Exterior doors are a mix of hollow metal and aluminum storefront systems. Main entrances were aluminum storefront with insulated glazing while secondary entrances and service points were hollow metal systems. Hollow metal doors were observed to be in good condition, but requiring general maintenance. Glazing at door lites, sidelites, and transoms was observed to be in good condition.

Interior Finishes, Fixtures & Equipment

(See assessment tabulations for interior finish conditions).

Older portions of the facility have terrazzo floors in varied conditions. Cracking was common, and some areas had seen wear and degradation of the upper layers matrix. Given the nature of the material, no need for replacement exists, but regular maintenance is recommended. Vinyl Composition Tile (VCT) was observed in office areas and is the predominant floor material in the newer addition. The office workroom and vending area have a smaller floor tile that may be an asbestos based tile. Testing should be performed to determine asbestos content, and appropriate action taken. The guidance office area has VCT that is approximately 15 years old, and is likely the newest, large expanse of floor tile in the facility. A metal transition strip is installed between the VCT and terrazzo, which staff claims is a small tripping hazard. The music

room has a stage with board wood flooring. The finish is in poor to fair condition. Spray painting has taken place, and over-spray was present on the floor. Wood nosings were loose on some of the stairs to the stage. There was no ramp to the stage. The cafeteria area has glazed quarry tile that appears to have been patched at various points with a non-matching tile.

Vinyl stair treads and base in the Gymnasium and classroom addition have suffered extreme UV damage. The stairs face a large glazed area, and large, south-facing windows in the corridors have promoted this damage. Most of the damage is in the form of cracking/crazing, discoloration, and some surface chalking. The structural integrity of the material has not been compromised, yet, but it should be monitored and replaced as required.

Interior walls were primarily painted concrete masonry units and structural glazed wall tile wainscot with painted CMU and painted wood paneling above. The structural glazed wall tile is the predominant finish in the older portions of the school while the newer portions all have the painted CMU. The CMU and wall tile are all in good condition with minor evidence of cracking. The wood paneling should be replaced with a more suitable, less combustible, material in any renovation work. There is evidence of some water infiltration and damage at the ramp in the auditorium space. This ramp is at the rear of the stage. The paint at the block is bubbling and efflorescence has come through the cracks in the paint. Paint should be scraped, source of infiltration addressed, and the walls repainted.

Toilet rooms in the original facility should be completely renovated. The gang rooms have the original stone toilet partitions, still installed, with rusting, painted steel toilet partitions installed next to them. Dispensers were installed above accessible reach ranges. Mirrors were installed above accessible heights and silvering was in poor condition. The Women's faculty toilet in the office area has one non-functional toilet. Neither the Men's or Women's restrooms in this area are accessible. 1" mosaic floor tile is present in the bathrooms in the original building. If the stone partitions are removed, the tile will have to be infilled. The toilet rooms and locker rooms at the newer addition feature CMU partitions with high-density polyethylene (HDPE) doors. Paint on the CMU walls was in fair to good condition; repainting should be performed as required. Floor tile is 2" ceramic and is in good condition. The shower rooms on the non-athletic side of the gymnasium have seen heavy oxide staining from shower valves and heads. Staining should be cleaned from the walls. Toilet rooms near the Auditorium space have stainless steel partitions that are in good condition.

Ceilings are generally suspended acoustical tile (lay-in) with gypsum wall board at bulkheads and accenting locations. Tiles were stained at many locations around the facility, including areas on lower levels. Heavy water damage has occurred in the music room around a mechanical louver. The ceilings have been lowered in some areas of the original building to accommodate newer mechanical systems. As a result of this lowering and sporadic replacement of tiles, mismatching is prevalent throughout the facility. Tiles have been lightly damaged by people sticking objects between the tiles

and the tracks in the gymnasium vestibule area. Ceiling replacement is recommended throughout.

Most interior doors are wood in hollow metal frames. Veneers were observed to be in fair to good condition. Minor damage can be sanded and refinished as required. Hollow metal frames should be repainted as required. Double doors at the cafeteria were equipped with crash bars on both leaves. These should be replaced with a non-chainable exit device.

Marker boards and tack boards are present in classrooms. Most are in fair condition with staining on most marker boards. Stained marker boards should be replaced in any future renovation. Smart boards have been placed in rooms.

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.

Casework varied throughout the facility. The classrooms have a mix of storage unit styles, ranging from wood to plastic laminate clad units. No accessible work stations were observed and most countertops were not accessible. Additional casework with power for student work should be provided in any future renovation. Additional storage for classroom use and for general school use, should be planned for any future renovation work. Lockers are provided for student storage and appear to be in good condition.

Accessibility

Building signage is compliant with older ADA standards, but is not compliant with current standards. Wall mounted features were typically installed above the reach ranges allowed by current standards. Most hardware was knob-type and is not accessible. Doors are equipped with electric operators, but these are non-functional due to security systems. Bathrooms in the older portions of the facility were not accessible. Mirrors were mounted above accessible heights, and given poor condition of the units, should be replaced and mounted a proper heights. There is no ramp to the stage area in the music room. Single drinking fountains were installed at most locations. High/low fountains should be installed to comply with accessibility standards.

Safety and Security

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

The vestibule at NMS provides visibility from the office and control over the secure entry. Door position sensors and locks are provided at all other exterior doors. Exterior doors providing access to corridors and other spaces, not accessed via the vestibule, are equipped with card readers. Sight lines and distance are reasonably long in most areas of the building, but the segmented nature of the building does limit visibility in some areas.

End of Northside Middle School Architectural Narrative

PLUMBING/FIRE PROTECTION

Plumbing Fixtures:

Water Closets: Water closets observed were floor mounted vitreous china with manual type flush valves. The water closets in the original portion of the building are from 1970 and seemed to be in poor condition. The water closets in the Auditorium addition are from 1996 and seemed to be in good condition. The flush valves are expected to have a useful life of 12 years and the water closets are expected to have a useful life of 30 years.

Urinals: Urinals observed were wall mounted vitreous china with manual type flush valves. The urinals in the original portion of the building are from 1970 and seemed to be in poor condition. The urinals in the Auditorium addition are from 1996 and seemed to be in good condition. The flush valves are expected to have a useful life of 12 years and the urinals are expected to have a useful life of 30 years.

Lavatories: Lavatories observed were wall mounted vitreous china with manual type faucets and metered type faucets. The lavatories are from 1970 in the original portion of the building and seemed to be in poor condition. The lavatories in the Auditorium addition are from 1996 and seemed to be in good condition. Lavatories are expected to have a useful life of 30 years.

Sinks: Classroom sinks observed were stainless steel with polished chrome gooseneck faucets and wrist blade handles. The sinks are from 1970 in the original portion of the building and seemed to be in poor condition. The sinks in the Auditorium addition are from 1996 and seemed to be in good condition. The sinks are expected to have a useful life of 30 years.

Electric Water Coolers: The water coolers are wall mounted, ADA compliant high/low models. The water coolers are from 1996 and seemed to be in good working condition. The water coolers are expected to have a useful life of 15 years.

Water Heaters:

For the original portion of the building, domestic hot water is made by an electric tank type water heater by Rheem. This is a 85 gallon storage unit with a 18KW heating element and was installed in 2014.

For the Auditorium addition, domestic water heating is done by a gas fired tank type water heater. This is a 76 gallon storage tank unit with 199,900 btu/hr input capacity. The domestic water heaters are expected to have a useful life of 15 years.

Piping:

Water:3” and smaller is Copper with fiberglass insulation
3” and above is ductile iron pipe
Sanitary Piping: Cast iron and PVC
Storm Piping: Cast iron
Gas Piping: Black steel

Domestic Water Entrance:

The building is served by a 3" cold water line that is assumed to be from a municipal system.

Fire Protection:

The 1996 Auditorium addition is fully sprinkled. There is a 6” fire line into the building which has a backflow preventer located outside of the building installed in 1996. The backflow preventer is expected to have a useful life of 30 years.

Recommendations:

Replace plumbing in original portion of the building. Add a sprinkler system to the original portion of the building.

End of Northside Middle School Plumbing/Fire Protection Narrative

MECHANICAL (HVAC)

Heating:

The original portion of the building, built in 1970 is heated with electric heat. The classrooms in this portion of the building are served by "Bard" type units. The classroom units are approximately 5-10 years old and are expected to have a useful life of 18 years. There are three, very old (+30 years old) rooftop units serving the multipurpose room, stage, and technology Education spaces. There are six other rooftop units serving the cafeteria, band room, media center, and admin spaces. These rooftop units are approximately 15 years old and are expected to have a useful life of 18 years.

The newer portion of the building, built in 1996 is served by two gas fired boilers which provide heat to the building through a hot water circulation system. Hot water is circulated to the additions heating coils with two base mounted pumps. Coils are located in indoor and rooftop air handling units. The boilers are 20 years old and are expected to have a useful life expectancy of 30 years. The pumps are 20 years old and are expected to have a useful life expectancy of 25 years.

Ventilation:

Ventilation is provided to the building by rooftop air handler units.

Air Conditioning:

The original portion of the building is currently cooled by a temporary air cooled chiller located on grade. The original chiller has failed and been abandoned in place. Chilled water is circulated to the room units. Several packaged DX type rooftop units provide cooling as well. Refer to heating unit info for additional rooftop unit details.

The 1996 addition is cooled by two water cooled chillers. One appears to be from 1996 and the other chiller was replaced in 2012. Condenser water is pumped to a cooling tower, which is used to reject heat from the chillers. Each chiller has an associated cooling tower, which are believed to be the same ages as the chillers. Chilled water is then pumps to cooling coils located in air handler units. The 1996 chiller is 20 years old and is expected to have a useful life of 20 years. The 1996 cooling tower is 20 years old and is expected to have a useful life of 18 years. The pumps are 20 years old and are expected to have a useful life expectancy of 25 years. The chiller and chilled water pumps seemed to be in good condition for their respective ages.

Piping:

There is chilled water, condenser water, and hot water piping, black steel, insulated. The piping is original and the condition is as expected due to its age.

Controls:

The building automation controls are digital type (DDC) are the Metasys Series, by Johnson Controls.

Recommendations:

The temporary chiller currently serving the original portion of the school should be replaced with a more permanent solution as soon as possible. It is also recommended that the rooftop units serving the original portion of the school be replaced soon.

End of Northside Middle School Mechanical Narrative

ELECTRICAL

Main Switch Gear:

Main Switchboard: The main switchboard is a 4000 Amp, 3 phase, 4 wire, 480Y/277 volt GE, service entrance rated switchboard. The existing switchboard is original to the building from 1970. A secondary service and exterior switchboard was added to feed the new addition.

Recommendation: In the event of a substantial renovation or addition, replace existing switchboard, consolidate service entrances, and expand as necessary.

Transformers:

Transformers: The majority of the transformers are original 480/277V to 208/120V. New Square D transformers were added for the new addition. All of the transformers are currently in good working condition; however, over time transformers become less energy efficient and some have exceeded their expected useful life.

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

Panelboards:

Distribution and Branch Circuit Panelboards: The majority of panelboards are original GE. Most of the panels have no space or spares available and have exceeded their expected useful life. Some newer Eaton panels were installed in 2011 and Square D panels with the 1996 addition, panels have space available.

Recommendation: If renovations and additions occur, replace the original panelboards and locate them in areas to minimize student access and to meet National Electrical Code working clearances. Expand as necessary to accommodate new or modified spaces.

Cabling:

Cabling: Most of the building wiring is original. Some new wiring in raceway has been added for the addition of receptacles. Most of the wiring is past its rated useful life and should be replaced.

Recommendation: During a renovation some new wiring may be salvageable, but because of the tedious process of identifying and preserving this wire, it is recommended that all wiring be replaced during renovations.

Conduit/Raceway:

Conduit/Raceway: Surface raceway and conduit has been used throughout the building for any new receptacles, fire alarm, and all data to classrooms. Most conduit is original to the building.

Recommendation: All surface raceway should be evaluated regularly and securely reattached to the wall if it becomes loose. All raceway would be replaced 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, various 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. Various emergency wall pack light fixtures are also utilized, many of which have exceeded their expected useful life. Lamps are likely changed as lamps burn out; however, many of the ballasts and optics have likely not been changed and have exceeded their useful life.

Recommendation: To accommodate a new addition or renovation, provide a new lighting design. Consider LED fixtures where practical.

Lighting Controls:

Lighting Controls: Lighting controls throughout the building consist of toggle switches controlling fixtures within an area, most classrooms have zoned switching. Corridor lighting is controlled through keyed switches at the ends of the halls.

Recommendation: In the event of a renovation or addition, add automatic lighting controls to each room to comply with building energy codes.

Public Address System:

Public Address System: The public address system is a Bogen Multicom 2000 system with speakers located throughout the school. Each classroom has a PA speaker and a push-to-talk button. Teachers and staff use the Cisco phone system to call in to the PA for most communications and announcements.

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 fiber 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.

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 system contains two headends, an original Radionics fire control panel and a Simplex 4020 that was added with the 1996 addition. Both headends are still operational and are tied together so that they can actuate each other. The current system devices consist of limited area manual pull stations, smoke detectors, and horn/strobe alarms.

Recommendation: If renovations and additions are pursued, expand existing fire alarm system with audible and visual notification devices throughout the school and in classrooms. Reconfigure the existing system as necessary for renovations.

Generator:

Generator: No generator is installed to serve the overall school building. Emergency lighting is provided by emergency battery units in the corridors, large rooms, and at exits. The new addition has a Generac Generator and Olympian transfer switch that are current technology. The generator feeds emergency egress lighting and optional standby for the addition.

Recommendation: For any renovations or addition, a new generator should be considered, sized to provide power for life safety features and other equipment that the school would like to operate for the full school building.

Site Lighting:

Site Lighting: The site lighting consists of pole mounted lights for parking areas, wall packs around the building, and canopy lighting at exterior doors. The fixtures appear to be original to the building. Lamps are likely changed as lamps burn out; however, many of the ballasts and optics have likely not been changed and have exceeded their expected useful life. The site appears to be well covered with fixtures.

Recommendation: To accommodate a new addition or renovations, replace existing lighting fixtures around exit doors and areas of egress. Connect these lights to an emergency circuit. Provide new general site lighting to maximize energy efficiency and minimize light contamination on neighboring properties and to the sky.

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. Students are provided laptops.

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 Middle 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 small 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 major issues with drop off with no significant backup down the access road.

Afternoon: Cars enter from the north access road, proceed through the drop off loop and exit. Staff indicates issues with pick up with significant backup down the access road.

Recommendation: Utilize bus drop off area at canopy to increase the length of stacking area. Stagger dismissal so that buses load and leave before car riders are dismissed to avoid conflicts.

Parking: 105 striped parking spaces are provided with 4 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. There is no parking very near to the main entrance, so visitors often park in the bus loop or drop off lane.

Service: Service area on the north side of the building is shared with the faculty parking area and is very tight. Maneuvering is difficult for delivery vehicles.

Recommendation: Provide faculty parking elsewhere to allow for more maneuvering in the service area.

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

Separation: Service area shared with faculty parking is an issue due to the size of the maneuvering area. The bus loop entrance and parent loop exit are in conflict although staff indicates no significant issues. Parents and visitors utilizing the bus loop for parking is an issue.

Recommendation: Expand faculty parking lot into the grass area adjacent to the bus loop. Provide longer parent drop off loop within parking lot and additional faculty / visitor spaces closer to the main entrance.

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 parent loop and 2 spaces at the faculty parking area designated as ADA parking with 1 designated as van accessible.

Signage: Some signage is leaning, installed too low, or not code compliant.

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.

Access to all areas: Although there is ADA accessibility signage to the football / softball field, there is no ADA parking available.

Recommendation: Provide small paved parking pad with appropriate striping and signage at the football field.

Parking Areas, Driveways, and Sidewalks

Asphalt Pavement: Poor condition, alligator cracking throughout.

Recommendation: Repair areas with alligator cracking (subgrade deficiencies) mill and overlay the parking lot area.

Asphalt Walks: Fair condition. Some cracking but still useful.

Concrete Pavement: Fair condition. Some cracking but still useful.

Concrete Walks: Fair condition. Some cracking and spalling but still useful.

Recommendation: Replace sections as necessary when cracking and deterioration become hazardous.

Stairs, Ramps, and Railings: Older stairs to the football field are aged but still in fair condition. Newer stairs at front are in good condition. Wooden steps at dumpster are deteriorated. Curb ramps only. There is an insufficient quantity of curb ramps at pedestrian crossings. Paint on railings to football field is chipped and peeling.

Recommendation: Sand, prime, and paint railings. Provide curb ramps at all crosswalks.

Concrete Curb and Gutter: Aged but functional.

Guardrail, Parking Bumpers, and Miscellaneous: Guardrail at faculty lot on north side of school is rusted.

Recommendation: Monitor guardrail and replace when rust causes structural issues.

Fire Lane: Paint on curbs and asphalt is faded. There is an insufficient quantity of fire lane signs.

Recommendation: Re-paint curbs and asphalt at fire lanes. Provide additional signs as necessary.

Utilities

Fire Lines and Hydrants: Fair fire hydrant coverage with satisfactory spacing. One hydrant located at service area and one hydrant located at high school gym. No paved fire lane around building, but fire truck access present.

Recommendation: Consider planning for adding a hydrant for fire protection coverage. A fire department connection and fire department valve should be provided as well; however, this would be contingent on upgrading to county public water service.

Domestic Water System: Middle school portion of building serviced by internal wet well centrally located in the building. Wet well system is old, but in fair condition and functional. Staff indicated no pressure or water discoloration issues.

Recommendation: The water inside the building should be tested to see if the quality is acceptable.

Sewer System: Sanitary sewer system in fair condition and functional, with useful life remaining. Observations indicate that the concrete manholes contain proper invert shaping and pipes flow well, although many manholes need to be flushed and cleaned.

Recommendation: Flush system to prevent clogging.

Natural Gas System: Gas meter is located at the rear of the building at the end of the faculty parking lot. Bollards protecting meter from traffic are small and bent. The meter is in fair condition, but shows signs of rust and deterioration.

Recommendation: Replace bollards in front of gas meter with six inch diameter bollards.

Electric: Electric service provided to site via overhead poles and brought underground to transformer located in the middle of the faculty parking lot. Bollards protecting transformer are in poor shape, bent and rusting. Electric service provided to the adjoining gym enters the site via overhead poles and is brought underground to transformer located inside fenced mechanical service area.

Recommendation: Replace bollards around transformer in parking lot.

Site Lighting: Lighting for the middle school parking areas and bus loop are sufficient for safety and security. Good coverage at front of school. No site lights in rear faculty parking lot or play fields.

Grading and Drainage

Storm Water System: Roof drains to downspouts are piped underground, except for canopy at building entrance. Runoff from downspouts deteriorating concrete sidewalk. All storm water is piped to detention pond located to the south west of the middle school. All storm water inlets, manholes and pipes are in good condition, but filled with trash and debris.

Recommendation: Inlets, manholes and underground piping system should be flushed and pipe outlets should be cleaned out and inspected for sediment, trash and debris.

Detention / Retention Ponds: Forebay and detention pond, shared with the high 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.

Recommendation: Perform general maintenance more frequently.

Slopes, Ponding, and other Drainage Issues: There appears to be no ponding issues at the middle school site, but minor sediment accumulation present in drop inlets. Drainage channel at the rear of the school has caused significant erosion in gravel access path and sediment at inlet.

Recommendation: Clean out drop inlets free of sediment. Provide rip rap along edge of concrete channel and gravel path to dissipate energy of concentrated runoff and prevent erosion.

Site Features

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

Recommendation: 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 good condition.

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 fair condition. Age is showing.

Recommendation: Monitor condition to replace flag poles in future.

Site Furnishings: Limited furnishings. Wood picnic tables and front benches in fair condition.

Recommendation: Monitor wood furniture for condition and replacement.

Physical Education

Practice / PE Fields: There is a multipurpose field north of the school. The infield is in poor condition. The outfield is shared use for PE activities and football. Outfield turf is in fair condition due to extensive use.

Recommendation: Turf will require monitoring to ensure adequate quality due to extensive use.

Athletics

Track and Field Events: Refer to NSHS assessment.

Competition Softball Field: Refer to NSHS assessment.

Competition Baseball Field: Refer to NSHS assessment.

Competition Football Field: Refer to NSHS assessment.

Competition Soccer Field: Refer to NSHS assessment.

End of Northside Middle School Civil Narrative

OWPR
ARCHITECTS AND ENGINEERS

Notes

Project Name: RCPS Facilities Assessment	**Comm. #: 1637**

Subject: Northside Middle School	**Total Pages:**
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General:

Original building 1969. Classroom wing addition in 1974, portion of which was renovated in 1993. Gymnasium, Auditorium, and Classroom addition in 1997.
Roofs are reaching the end of their warranty periods. I would expect to see failures in the near future based on conditions observed on roof. Anticipate more leaks, especially at new addition.
All door signage complies with 2004 ADA, but not 2010.
Knob hardware present throughout facility.
Exterior windows in the older portion of the building have a double glazed translucent panel. In most, the foam insulation in the lite has degraded/crumbled and fallen to the bottom of the lite. Shades have been pulled over these in most instances.
Lockers appear to be in good condition.
SATC ceilings in corridors have been lowered at some locations.
Bathroom mirrors at older section of school in poor condition. Most are mounted above accessible ranges.
Many exterior doors do not have appropriate weather stripping.
Some of the drinking fountains in older section are porcelain, recessed units. No accessible station.
Bubblers are present on some classroom sinks.

Office:

VCT is in OK condition. Glazed Structural tile at base. Painted CMU walls. SATC ceiling. T&G paneling above aluminum storefront windows into hallway. Anodizing at door of storefront is heavily worn. All finishes in OK (but not good) condition.

Work Room:

8" floor tile??? Casework is all 36" high. Knob hardware.

Guidance Office:

Has had leaks onto ceiling. There is a kitchen and Restroom above it. Terrazzo and VCT. Glazed structural wall tile and painted CMU. VCT is about 15-ish years old. Has metal transition strip between terrazzo and VCT that staff claims is a tripping hazard.
3 of the offices in the guidance area claim they get gas smells in the spaces when mowers are being refueled.

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Notes

Maintenance Room:
Office exterior wall has some seepage staining. Spots on SATC from water with streaks extending down walls from ceiling. VCT and Painted GWB in the office are fair to ok condition.

Records hallway:
Terrazzo good. SATC cracks and spots. Wall cabinets are fairly old.

Corridors:
Terrazzo with glazed structural wall tile and painted block. SATC, Lauan infill above lockers.

Nurse:
SATC has water spots. HM door frames with wood doors. Lauan infill above HM frames. Glazed block walls. Some cracking in the terrazzo.
The clinic has no sink. The exam room has a curtain, and no real privacy.
The space is shared with the copy room, with no complete physical separation between the two uses.

Men's restroom (beside office):
1" mosaic floor tile, good condition. Glazed structural wall tile. Painted steel partitions with rusting finish. Older stone toilet partitions were left in place and metal partitions were installed abutting them. Dispensers are mounted above allowable ranges, per ADA.

Offices in Principal's area:
VCT, SATC, Painted block.

Admin corridor:
Minor cracking of terrazzo. Other finishes typical of building.

Men's faculty bathroom:
Typical finishes. Stone partition. Not accessible. 1" mosaic tile.

Vending (women's faculty toilet vestibule):
8"??? VCT

Women's faculty toilet:
Typical finishes. Stone partition. Not accessible. One of the fixtures doesn't work.

"A" Corridor:
Terrazzo near A5 has some surface damage (pitting) and some larger cracks.
Corridor outside room A11 has cracks in terrazzo.

A5 Classroom:
SATC has one damaged tile from leak. One crack in terrazzo. Marker board is stained.
Glazed structural wall tile base, painted CMU walls.

A7 Classroom:
Typical classroom finishes. Stains on markerboard.

A11 Classroom:
Typical classroom finishes.

A4:
SATC stains. Typical finishes.

A3 and E1:
Typical finishes. Stains on markerboard.

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Notes

E2:

Typical finishes. Stains on marker board. Kalwall? Exterior windows have insulation piled at bottom of lite.

"E" Corridors:

Hallway has non-accessible drinking fountains that protrude, more than allowed, into the space. SATC in corridor is in fair condition. SATC on upper floor is older than the tile on the lower floor.

Cafeteria:

Crack in corner where two walls abut (outside of teacher lunch space/silent lunch).
Crack and paint damage between Glazed structural wall tile and painted CMU at window jamb.
Stone window stools.
Double doors have crash bars on both doors.
Crack in terrazzo just outside of doors to corridor.

Kitchen:

Quarry tiles have been patched with non-matching tile.
SATC in storage area has water stains.

"F" Corridor:

Bathroom same as others.

"F" Corridor Men's Staff restroom:

GWB ceiling with Water Damage. Typical materials, otherwise.

Music Room:

Heavy water damage at SATC near diffuser in middle of room.
Elevated stage in room, does not appear to be accessible. There is a door to the corridor which has stairs in the corridor. This set of stairs has no handrail. Stage has board wood flooring. Finish in fair condition. Has had spray paint over spray near stairs.
Stair tread nosings are loose on some treads.

Stairway:

Glazed structural wall tile wainscot with painted block above. Steel guards with aluminum caps. Aluminum handrails. Terrazzo treads with abrasive strips. All in decent condition. One crack extending from top tread through Glazed wall tile.

New addition Roof:

Seams, patches, and sealant failing. Ponding and soft spots in insulation are present.
Several areas have loose insulation. Taper patterns don't make sense in terms of promoting drainage. Ponding has occurred in several of these locations.
Laps not tight in some locations.
One corner has experienced heavy ponding. Membrane has separated from insulation below. Insulation is soft.
Debris present in corners. Vegetation growing.
Debris present at roof drains. Has been there a while.
Some walk pads have separated from membrane.
Surface applied counter flashing has pulled away from wall. Sealants at the top of the flashing have failed. Other flashings that were tucked in a reglet have held up better and have serviceable life remaining.

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Notes

Original building Roof:

60 mil Membrane is in better condition than at the new addition, but small ponding spots are present over most of the roof. It appears the membrane was replaced when the addition was done, but (maybe?) the insulation was not replaced.
Larger ponding occurs near some of the roof drains.
Some drains are located at the extreme perimeter of the roof. At several of the drains, water must pool before it can enter the drain due to taper build-up.
Splash blocks have disintegrated.
Gutter joints are terribly executed. Corners were done with a miter and filled with sealant. These joints have separated.
Leader straps have come loose in some locations.
One leader does not actually attach to gutter. It sits below and slightly off center of gutter connection.
Gutter straps have detached in places. Gutter is bent and damaged in several of these locations.
Standing water and debris present in gutters.
Fascia heavily dented/damaged at one inside corner at roof height transition.
Sealants at counter flashing in poor condition.
Exterior windows, visible from roof top, are single pane, exterior glazed. Glazing putty is lightly cracked in most locations, but appears to be stable.
Aluminum walkway canopy appears to be in good, but aged, condition.
Cracks, in brick wall where roof access door is located, have been filled with sealant. The cracks run from head of access door to the building corner.

New Gym Stair and Atrium:

Stair is located in large glazed atrium. Vinyl treads and other vinyl materials have suffered significant UV degradation. Color loss and crazing.
Stains on SATC. Some damaged tiles from items being hung from ceiling.

Gymnasium:

Streaking from water leaks on wall in corner of gym.
Exposed metal deck. Splotchy paint on larger piping running overhead.

Boys locker room:

Office, missing trim pieces at sprinkler head penetration through SATC.
Lockers in good condition.
Benches in good condition.
Floor is sealed concrete. No issues. Walls painted block.
Single EWC in space, marked as accessible.
Shower has 2” floor tile. In decent condition.
Several of the shower control valves have staining from leaking water. Tiles below these mixing valves are heavily stained with a rust and copper oxide mix.
Bar is present for an adjustable shower head, but no head is present.

Bathrooms on athletic locker room side:

Paint missing at various locations on CMU.
2” floor tile. CMU partitions separating fixtures with HDPE doors.
Soap dispensers have been replaced leaving spots in paint and unfilled holes in CMU.

Single EWC in alcove in corridor.
VCT in corridor ok condition.
SATC, several tiles are cracked. Many are bowing/Sagging.
VCT near gym entry from girls side has been patched. Tiles don't quite match, one damage tile still in place.

Auditorium:

Ramp at back of stage: Bubbling paint on block above the ramp. Looks like a moisture issue.
Hi-Lo EWC outside of Auditorium.
Concessions has a 40" high counter.

Men's Bathroom near Auditorium:

SS partitions. 2" floor tile. Painted CMU. Evidence of a leak above entry door. Staining on light lens.

Corridors from gymnasium area:

Vinyl base in view of windows has UV degradation.
VCT is splotchy. Not sure if dirt, staining, or dripping of cleaning chemicals. Some separation of joints of tile.

"C" wing of older building:

Older SATC.
VCT in decent condition.

C14:

Markerboards are stained. There are very few outlets in the room. The teacher has issues with kids being able to use laptops.

C11:

Missing some of the wall base. Broken base in some locations.
Has casework with sinks, but no accessible station.

Casework:

Rooms have a mix of casework styles. Some rooms have PLAM base cabinets and counter tops and wood wall cabinets above. Seems to be no logical reason for the combination.

Northside Middle 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	4	Life	47	Life	
CMU walls	5	Life	47	Life	
Wood trim	4	15	47	0	
Interior doors	4	20	47	0	
Interior doors at Addition	5	20	19	1	
Exterior doors	4	50	19	31	
Door hardware	2	7	19	0	
Electronic door hardware	2	5	19	0	
Terrazzo	4	50	47	3	
Asbestos floor tile	1	12	47	0	
Vinyl floor tile	5	12	19	0	
Ceramic/Porcelain floor tile	5	50	19	31	
Quarry floor tile	4	50	19	31	
Wood gym floor	5	10	19	0	
Other wood floors	4	10	47	0	
Exterior windows at Original Building	2	30	47	0	
Exterior windows at Addition	5	30	19	11	
Interior windows	4	30	47	0	
Roof (Including flashings, coping, etc.)	3	20	19	1	
Suspended acoustical tile ceilings (lay-in)	3	25	30	0	
Suspended acoustical tile ceilings (lay-in) at Addition	4	25	19	6	
Plaster/GWB ceilings	5	30	19	11	
Ceiling/exposed structure finish (paint)	2	5	19	0	
Interior wall finishes (paint)	2	5	19	0	
Marker boards or chalk boards	5	N/A	19		
Tack boards	5	N/A	19		
Projection screens	5	N/A	19		
Casework	4	N/A	19		
Window treatments	5	N/A	19		
Toilet partitions	4	20	19	1	
Toilet accessories	4	N/A	19		
Interior railings	4	30	19	11	
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 Middle 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					
Boilers (1996)	5	30 years	20 years	10 years	
Chiller (Temporary)	5	20 years			Should be replaced with a permanent solution.
Chiller (2012)	5	20 years	4 years	16 years	
Chiller (1996)	2	20 years	20 years	0 years	
Cooling tower	2	18 years	20 years	0 years	
Mechanical piping		30 years	15 years	15 years	
Refrigerant piping		30 years	15 years	15 years	
Duct		30 years	15 years	15 years	
Outdoor air units	N/A				
Terminal units	N/a				
Bard units	5	18 years	5-10 years	8-13 years	
Package units (old)	1	18 years	30 + years	0 years	
Package units	5	18 years	15 years	3 years	
Controls	5	20 years	15 years	5 years	
Exhaust fans	5	25 years	15 years	10 years	
Plumbing					
Plumbing fixtures and controls (1970)	2	30 years	46 years	0 years	
Plumbing fixtures and controls (1996)	5	30 years	20 years	10 years	
Floor drains	5	30 years	20 years	10 years	
Water heaters	5	15 years	2 years	13 years	
Pumps	5	15 years	2 years	13 years	
Potable water piping & valves	5	30 years	20 years	10 years	
Sprinkler system	5	30 years	20 years	10 years	
Back-flow preventer	5	30 years	20 years	10 years	
Service line & meter (size appropriate)	5	30 years	20 years	10 years	
Wall and yard hydrants	2	15 years	20 years	0 years	
Eye wash stations	2	20 years	20 years	0 years	
Emergency showers	2	20 years	20 years	0 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 Middle 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	46	-6	2	
Main switch gear - 1996 Addition	40	20	20	5	
Transformers	30	46	-16	2	
Transformers - 1996 Addition	30	20	10	5	
Panelboards	30	46	-16	2	
Panelboards - 1996 Square D	30	20	10	5	
Panelboards - 2011 Eaton	30	5	25	5	
Cabling	40	46	-6	2	
Conduit/raceway	40	46	-6	2	
Light fixtures	20	46	-26	2	
Light fixtures - 1996 Addition	20	20	0	2	
Lighting controls	30	46	-16	2	
Public address system	30	46	-16	2	
Security system	10	2	8	5	
Camera system	10	5	5	5	
Data system	15	5	10	5	
Fire alarm system - Control panel	30	20	10	5	
Fire alarm system - Devices	30	46	-16	2	
Site lighting	20	46	-26	2	
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 Middle 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	15 years	Unknown	0 years	
Asphalt walks	4	20 years	19 years	1 years	
Concrete pavement	4	30 years	47 years	0 years	
Concrete walks	4/5	30 years	19-47 years	0-11 years	
Stairs	2/4/5	30 years	19-47 years	0-11 years	
Ramps	3	30 years	19-47 years	0-11 years	
Railings	4/5	15 years	19-47 years	0 years	
Concrete curb and gutter	4	30 years	19-47 years	0-11 years	
Concrete / Brick Pavers	N/A	N/A	N/A	N/A	
Guardrail, Parking Bumpers, Misc.	4	Varies	19-47 years	5-10 years	
Fire lane	4	Varies by Material	Unknown	0 years	
Fire lines and hydrants	4	40 years	Unknown	10 years	
Domestic Water system	4	40 years	47 years	0 years	
Sewer system	4	40 years	47 years	0 years	
Natural Gas system	4	40 years	19+ years	10 years	
Electrical System	4	25 years	Unknown	5-10 years	
Exterior Lighting	5	25 years	19+ years	10 years	
Storm water system	4	40 years	19+ years	5-10 years	
Detention / Retention ponds	4	Life	19+ years	10-15 years	
Stormwater Management BMP's	N/A	Varies by BMP	N/A	N/A	
Surface drainage and grading	4	N/A	N/A	N/A	
Vegetative landsaping	5	Life	19-47 years	Varies	
Lawns	5	Life	19-47 years	Life	
Fencing and gates	5	20 years	19+ years	10+ years	
Signage	4	10 years	Unknown	1+ years	
Flagpoles	5	50 years	47 years	3+ years	
Site furnishings	5	15 years	Unknown	5+ years	
Awnings / Canopies	N/A	N/A	N/A	N/A	
Site retaining walls	N/A	N/A	N/A	N/A	
Accessory structures	5	50 years	Unknown	5+	
Play / PE fields	4	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 Middle 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)	N/A	N/A	N/A	N/A	Refer to NSHS assessment.
Lighting	N/A	N/A	N/A	N/A	
Bleachers / Stadium	N/A	N/A	N/A	N/A	
Accessory structures	N/A	N/A	N/A	N/A	
Competition Fields (Track)	N/A	N/A	N/A	N/A	Refer to NSHS assessment.
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)	N/A	N/A	N/A	N/A	Refer to NSHS assessment.
Lighting	N/A	N/A	N/A	N/A	
Bleachers / Stadium	N/A	N/A	N/A	N/A	
Accessory structures	N/A	N/A	N/A	N/A	
Competition fields (Baseball)	N/A	N/A	N/A	N/A	Refer to NSHS assessment.
Lighting	N/A	N/A	N/A	N/A	
Bleachers / Stadium	N/A	N/A	N/A	N/A	
Accessory structures	N/A	N/A	N/A	N/A	
Competition fields (Football)	N/A	N/A	N/A	N/A	Refer to NSHS assessment.
Lighting	N/A	N/A	N/A	N/A	
Bleachers / Stadium	N/A	N/A	N/A	N/A	
Accessory structures	N/A	N/A	N/A	N/A	
Competition fields (Soccer)	N/A	N/A	N/A	N/A	Refer to NSHS assessment.
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 Middle School**
Client Name Roanoke County Schools

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Quantity	Description	Unit	Cost / unit	Total w/ OH&P
	ARCHITECTURAL			
103,229	Remove Existing Roof	SF	$2.25	$278,718.30
103,229	Single-ply EPDM Roof membrane	SF	$7.00	$867,123.60
2,907	Pre-finish aluminum coping and fascia	LF	$26.00	$90,698.40
275	New Interior Signage-adhesive back/ braille. ADA compliant	EA	$42.00	$13,860.00
102,900	New acoustical suspended ceiling system	SF	$4.00	$493,920.00
150	New Interior Door Hardware	EA	$800.00	$144,000.00
4	Upgrade existing common area restrooms to comply with ADA	EA	$35,000.00	$168,000.00
320	Replace Vinyl Base	LF	$2.50	$960.00
352	Replace Vinyl Stair treads	LF	$22.00	$9,292.80
200	Remove Vinyl Asbestos Floor Tile	SF	$4.00	$960.00
200	Vinyl Composition Tile	SF	$2.50	$600.00
2,167	Exterior Windows at Original Building	SF	$45.00	$117,018.00
	CIVIL			
5	ADA signage	EA	$500.00	$3,000.00
6	Directional signage	EA	$1,500.00	$10,800.00
10,000	Asphalt pavement (faculty parking)	SF	$3.00	$36,000.00
1,000	Asphalt pavement (football)	SF	$3.00	$3,600.00
130,000	Mill and overlay asphalt pavement	SF	$1.00	$156,000.00
4	Concrete curb ramps	EA	$1,000.00	$4,800.00
700	Repaint curbs and fire lanes	LF	$0.10	$84.00
12	Install bollards	EA	$650.00	$9,360.00
2	Provide outlet protection	EA	$200.00	$480.00
1	8" Sprinkler System	LS	$30,000.00	$36,000.00
	MECHANICAL / PLUMBING			
1	New 210 ton Chiller	EA	$250,000.00	$250,000.00
82,000	Replace Plumbing in originial portion of Bldg.	SF	$10.00	$820,000.00
82,000	Add Sprinkler System to original portion of building	SF	$3.00	$246,000.00
3	Replace Packaged RTU's	EA	$50,000.00	$150,000.00
1	Replace Cooling Tower	EA	$100,000.00	$100,000.00
	ELECTRICAL			
1	New 210 ton Chiller	EA	$20,000.00	$20,000.00
82,000	Ceiling Modifications	SF	$1.00	$82,000.00
4	Renovate Bathrooms	EA	$2,000.00	$8,000.00
82,000	Electrical Distribution	SF	$9.00	$738,000.00
82,000	PA System	SF	$1.25	$102,500.00
82,000	Fire Alarm System	SF	$1.25	$102,500.00
	TOTAL Budgetary Cost			**$5,064,275**