

ASSET PRESERVATION PLAN

Executive Summary

This Asset Preservation Plan is intended as a guiding document for the systematic maintenance of Eastmont School District facilities, with a primary focus on facilities constructed after 1995. When used in conjunction with building specific checklists, maintenance personnel at the district-wide and individual building level can implement a coordinated facility maintenance approach for assessing, budgeting and addressing individual building maintenance needs.

This proposed plan recognizes two facets of facility maintenance: Infrastructure Maintenance and Operational Maintenance. The plan's primary focus is Infrastructure Maintenance. Where applicable, Operational Maintenance is addressed in conjunction with Infrastructure Maintenance.

Introduction

Over the course of a building's life cycle, annual Operational Maintenance cost are relatively stable while the annual cost of Infrastructure Maintenance varies widely depending on where individual systems are in their life cycle. Although Operational Maintenance is complimentary to overall building condition, it is not intended as the focus of the Asset Preservation Plan ("Plan").

The primary goal is to maintain each school facility at such a level to extend its life and to insure the optimal education process can continue to take place over the expected life of the facility.

Definitions

Infrastructure Maintenance

Infrastructure Maintenance is essentially planned maintenance focused on the fundamental systems that comprise a facility. Based on the preventative and predictive building system maintenance required to maximize the useful life of building systems (i.e. HVAC, Roof, Electrical etc.), Infrastructure maintenance also includes scheduled inspections and services; and system component repairs and replacements.

Operational Maintenance

Operational maintenance are those activities performed in response to emergent and routine maintenance needs involving the custodial, safety, event set-up, grounds, and repair requirements of a facility.

Plan Format & Organization

Per OSPI guidelines, the Plan is based on the building system categories on the OSPI Study & Survey's Building Condition Evaluation (BCE) form. The Plan defines each

“system component” of the BCE and suggests inspection, predictive, preventative, restorative and other tasks to maintain those components.

The 21 specific areas of the BCE are organized by category as follows:

Category 1 - Exterior Building Condition:

- Foundation/ Structure
- Exterior Walls
- Roof
- Windows/Doors
- Trim

Category 2 - Interior Building Condition:

- Floors
- Interior Walls
- Ceilings
- Fixed Equipment

Category 3 - Mechanical Systems Condition:

- Electrical
- Plumbing
- Heating
- Cooling
- Lighting

Category 4 - Safety/Building Code:

- Means of Exit
- Fire Control Capacity
- Fire Alarm System
- Emergency Lighting
- Fire Resistance

Category 5 - Provisions for Handicapped

ANNUAL PLAN ACTIVITIES & TASKS – ALL FACILITIES

CATEGORY 1 - EXTERIOR BUILDING

A. Foundation/ Structure

This system includes slab concrete floors, concrete stem and foundation walls, CMU foundation walls on footings, columns, pier footings, concrete beams and other foundational support structures. This system also includes soils or surfaces upon which structural members rest.

Cracks & Separations

- Check (in new buildings) that there are no cracks or separations in the walls.
- Check (in existing buildings) that the observed cracks or separations are no more than 1/8" wide.
 - *If the observed cracks or separations are wider than nominal, check the structure for causes such as settling, and make the appropriate repairs.*
- Check that vertical expansion joints in brick are uniform in width.
- Check vertical expansion for seal integrity
 - *If the vertical expansion joints show sign of failing as described, check the structure for settling or seal shrinkage, and make the appropriate repairs*

Drainage

- Check that water does not pool near the foundation after a heavy rain.
 - *Re-grade and/or add drainage system*
- Check that the grade slopes away from the foundation at least 1 inch vertical per foot horizontally for the first 5 feet all around the perimeter (may be less where paving occurs).
 - *Revise the grade with sandy clay (not sand alone) fill and/or add drainage system.*
- Check that grade positively drains away from the foundation, where paving occurs near the structure.
 - *If not, Rework paving and/or add sub-surface drainage system*
- Check that downspouts and gutters are clean and water from downspouts is directed away from the foundation or drains to a sub-surface drainage system.
 - *If downspouts or the drainage system is blocked determine the blockage location and remove blockage..*
 - *If not connected to an underground system, have above ground extensions (e.g. flexible plastic pipe or long concrete splash block) to carry the water at least eight feet away from the building before it is allowed to run onto the soil.*
- Clean catch basins, storm drain inlets, and other conveyance structures in high pollutant load areas just before the wet season.
 - *Schedule to do this annually in August or September.*
- Keep accurate records of the number of catch basins cleaned and the amount of waste collected to determine if landscaping is contributing to the blockage.

Vegetation

- Check that there is no broadleaf tree (e.g., oak, ash, maple, alder, poplar, etc.) closer to the foundation than a distance equal to the height of the tree, even if the tree is on an adjacent property. (Not applicable if the soil is known to be predominately non-expansive.)
 - *If long existing trees are closer than nominal, consider consulting an arborist. Carefully monitor the foundation in these areas.*
- Check that there is no conifer tree (e.g., pine) closer to the foundation than a distance equal to the radius of its canopy, even if the tree is on an adjacent property. (Not applicable if the soil is known to be predominately non-expansive.)
 - *If long existing trees are closer than nominal, consider consulting an arborist. Carefully monitor the foundation in these areas*
- Remove trees of any kind and large shrubs growing immediately next to the foundation.
- Check that the automatic sprinkler system (if applicable) is properly functioning.

- *Set the cycle times to purposely water trees away from the structure in an effort to establish their roots away from the foundation. Irrigations should be installed and adjusted as to not spray on buildings.*
- Remove vegetation in front of fresh air intakes.

Water Leaks

- Check that there are no leaks near the foundation, such as a faucet drip or a condensate drip from an air conditioning unit.
 - *If found, repair as needed.*

B. Exterior Walls

This system includes all types of exterior wall systems from the foundation to the roofline. Exterior wall are made of siding; wood or composite panels; stucco or stucco like materials (EIFS, DRIVIT systems); paints, sealants and stains; fired brick and CMU's; flashings and joint sealants; and other material types.

Masonry

- Check bricks, blocks and mortar for cracks and loose joints.
 - *Re-point joints and seal cracks.*
- Check for efflorescence seeping from walls.
 - *Check for areas where water might be entering into the masonry and seal any areas found. Clean efflorescence areas and reseal/recoat*
- Check the condition of caulking where the masonry meets other materials.
 - *Repair caulking if necessary*
- Vandalism
 - *Maintain a record of the anti-graffiti application if used.*
 - *Remove any graffiti as soon as possible after it occurs (one hour response time recommended).*

Siding

- Check siding for loose or missing pieces, lifting or warping, and popped nails.
 - *Re-attach where necessary.*
- Check painted surfaces for paint failure (peeling, chipping, blistering, chalking), water damage, or mildew.
 - *Thoroughly clean and prepare affected areas, and repaint with anti mildew additive if necessary.*
- Check the condition of caulking between dissimilar materials meet.
 - *Repair caulking if necessary*

Troweled on Surfacing

- Check for damaged corners or for areas that have been damaged.
 - *Thoroughly clean and prepare affected areas, and repair surface with the appropriate materials.*

- Check surfaces for material failure (blistering, chalking, panel warping or separation from structure), water damage, or mildew.
 - *Determine cause of failure and make subsurface repairs. Repair the surface with the appropriate materials..*
- Check the condition of caulking
 - *Repair caulking if necessary*

C. Roofing Systems

This system includes roofing materials, flashings and joint sealants, the roof superstructure, and the roof water drainage system.

NOTE: Repair roof leaks promptly to prevent deterioration of the building and damage to the contents. Where leaks are present, damaged materials such as drywall, ceiling tiles, insulation, and carpet shall be cleaned, repaired, and/or replaced to prevent the possibility of mold and other indoor air problems.

Inspection and Repair of Roofs

- Roofing shall be inspected biannually (spring and fall).
 - *Create a check list and establish specific dates for regular inspections*
- Inspect penetrations including, but not limited to, flue stacks, chimneys, HVAC roof curbs and duct work, gas lines, electrical conduit, and roof drains shall be checked for watertight seal.
 - *Reseal any damaged areas*
- Inspect for ponding of water on flat roof areas.
 - *Make repairs to the roof that will allow the water to run to gutters, drains, or scuppers to prevent future deterioration of roof surfaces.*
- Check gutters, drains and downspouts for debris and leaking joints.
 - *Remove debris and reseal cracked joints.*
- Perform indoor air quality inspections
 - *Log the results and compare with local or national standards.*
- Inspect for missing or damaged roof vents.
 - *Replace where needed.*
- Fall restraint systems inspected annually, and used during inspections.
 - *Install new system if none is present.*

Membrane Roofs

- Check that there are no cracks or separations in the coverings.
 - *Reseal if cracks or separations are found. Cracks, broken bubbles, separations need to be sealed immediately using manufacturers recommended sealants.*

Composition Shingle

- Check for warping.
 - *Where found, investigate location and sub-structure condition, repair as needed.*
- Check shingles for granular loss, buckling or curling, missing tabs or ridge caps.
 - *If damage is severe or extensive, replace the affected shingles.*
- Remove heavy moss build up.
 - *Remove moss by pressure washing or an approved moss killer.*

Metal

- Inspect horizontal panel seams, vertical panel seams, panel fasteners and perimeter and penetration flashings for corrosion or deterioration.
- Inspect joint sealant locations
- Inspect panel termination at the eaves, ridges and valleys to ensure closure strips are in place.
- Check for buckling or standing water at the laps of the panels.
- Check metal roofs for screws, fasteners, and panels that may have worked loose due to the expansion and contraction of the roof.
 - *Tighten screws, refasten panels and flashing and reseal where necessary per roofing manufacturers recommendations.*

D. Windows/Doors

This system includes exterior doors, frames, hardware, and windows.

- Check the condition of caulking at window openings and casings.
 - *Repair as needed.*
- Check the windows for cracked or broken glass, loose putty around the panes, holes in screens, and evidence of moisture between panes.
 - *Repair as necessary.*
- Check that window units close and seal properly.
 - *Adjust where possible or add weather stripping.*
- Check curtain wall systems for proper drainage
 - *Make repairs where needed.*
- Make sure all doors swing freely without binding.
 - *Adjust as necessary.*
- Examine all door hardware works properly.
 - *Adjust as necessary.*
- Check weather stripping and thresholds on doors for damage and tightness of fit.
 - *Repair or replace as needed.*
- Check door closers for proper operation and hydraulic fluid leaks.
 - *Replace badly leaking closers.*
 - *Adjust swing speed, back check, and latch rate annually.*

E. Trim

This system includes trim around windows and doors, fascia, corners, and where exterior materials change from one area to another.

- Examine all trim for tightness of fit, damage, or decay.
 - *Investigate cause of decay.*
 - *Repair or replace as needed.*
- Check the condition of caulking and joint sealants.
 - *Re-caulk where needed.*
- Verify all trim is securely attached.
 - *Reattach or replace as needed.*

- Check all trim for sufficient coating coverage
 - *Touch up or recoat as needed.*
- Check for signs of water intrusion through trim areas.
 - *Add flashing or caulk as necessary.*

CATEGORY 2 - INTERIOR BUILDING

A. Floors

This system includes all flooring systems, including exposed concrete slabs.

GENERAL

- Inspect for settling, warping
- Check for noise when walking on floors, squeaks and creaks
- Check for low and high spots

Slab Flooring

- Verify slab is level and free of uneven spots.
 - *Further investigate where slabs are out of level search.*
- Look for moisture seeping up through concrete slab: discoloration, blistering of the flooring, swelling and lifting of the flooring.
 - *Check for the source of the moisture and effect repairs.*
- Keep floors well sealed.
 - *Repair floor cracks, joints, and scaling, chipping or flaking*

Carpet

- Check for wear, stains, fraying, delamination, odors.
 - *Effect repairs to carpet as soon as they are discovered as this will keep them from expanding.*
- Look for color loss, rippling, pilling, soiling.
 - *Confirm carpet age and warranty specifics.*
- Check for seam separation.
 - *Make repairs promptly to prevent the spread of the damage.*

Sheet Flooring (Vinyl, Rubber, Linoleum, VCT & Vinyl Tile)

- Look for discoloration from mold and mildew and asphalt tracking.
 - *This might indicate that there is moisture penetrating from under the flooring. Make every effort to find the source to prevent the mold from spreading. Replace flooring as necessary.*
- Check for stains or scuffing.
 - *Scuffs and stains are very difficult to remove from vinyl flooring. Schedule replacement, if the damage is too extensive.*

- Verify no seam separation, buckling, cuts, gouges or indentations
 - *Make repairs soon as possible to prevent the spread of the damage. Replacement may be necessary if the damage is too extensive.*

Ceramic/ Porcelain Tile

- Inspect slip resistance of floor
 - *If wax is used over ceramic tile it is suggested that a slip resistant wax or finish be used.*
- Check for chipping, splitting, crazing, porosity, cracked grout and porous surface. Check for ceramic tile adhesive failure
 - *Clear loose pieces from affect areas and reinstall with the appropriate adhesives and re-grout. Apply silicone grout sealer to dried grout. Remove any silicone residue from tile surfaces.*

Gym Floors - Wood

- Inspect floor for cupping, warping, or shrinkage.
 - *Check for sources of moisture on a regular basis.*
 - *Remove debris from expansion voids to allow the floor to expand and contract.*
- Verify HVAC settings.
 - *Set to maintain a consistent temperature and relative humidity between 35 and 50%*
- Verify walk off mats are in place at all outside entrances.
 - *16 feet of mat is industry standard to remove most of the shoe borne soil*
- Look for scratches and other damage to surface.
 - *Provide protective floor cover for use of chairs, tables or other equipment at gym wood floors.*
- Verify floor has sufficient floor seal coats
 - *Floor should be screened and re-sealed annually and resurfaced every ten years.*

B. Interior Walls

This system includes all types of interior wall systems including painted GWB, brick or painted CMU, vinyl covered GWB, a variety of wainscoting and other interior wall surfaces.

General

- Check that door stops are in place and functioning. Look for signs of overheating around switches, receptacles, and lights. Check for signs of settling around doors.

Brick or Masonry

- Check for shear cracks, chipping or flaking paint, settling or separations, loosened or missing mortar, water penetration, bulging or out of plumb.
 - *Repoint mortar. If the wall is severely out of plumb or cracked, replacement should be explored.*

GWB and paint

- Check for shear cracks, nail or screw popping, holes, chipping or flaking paint, settling or separations, water penetration, bulging or out of plumb.

- *Repair as needed and repaint.*

GWB w/coverings

- Check for shear cracks, nail or screw popping, holes, cut or peeling materials, settling or separations, water penetration, bulging or out of plumb.
 - *Repair or replace based upon the severity of the damage.*

Wainscoting

- Check for separation from GWB, nail or screw popping, water penetration, bulging or out of plumb.
 - *Repair as needed and recoat.*

Wall rails

- Check for separation from GWB, nail or screw popping, chipping or flaking paint
 - *Repair as needed and repaint.*

C. Ceilings

This system includes open ceilings, painted GWB, acoustical tiles over GWB, and suspended ceilings.

- Periodically check for water stains, discoloration around light fixtures, soft spots, sags, and peeling paint.
 - *Investigate to determine the cause and effect repairs.*
- Periodically check suspended T-bar grids for bent or sagging sections.
 - *Repair or replace*
- Periodically check panels in suspended T-bar grids are set well in place to reduce falling during seismic event.
- Monitor escutcheons around sprinkler heads, diffusers, light fixtures and other ceiling-mounted equipment are secure and sealed.
- Check that wires or chains are attached to light fixture to prevent falling in the event of an earthquake

D. Fixed Equipment

Fixed equipment typically includes a wide variety of non-structural items such as window coverings, kitchen equipment, cabinetry, kilns, bleachers, basketball backboards, operable walls, etc.

- *Develop a list of such equipment be identified for each facility and routinely inspected for damage and proper operation, according to manufacturer recommendations.*

CATEGORY 3 - MECHANICAL SYSTEMS

A. Electrical

This system primarily includes all types of electrical power equipment and systems such as panels, transformers, conduits, switch gear, and conduit and wiring.

Inspection and Repair of Electrical Systems

- Electrical systems shall be inspected and repaired by trained personnel only.
- Main transformers, switchgear, and breaker panels shall be inspected for loose connections at breakers and main lugs,
 - *Use proper repair equipment, tools, and procedures.*
- Verify panels are correctly labeled..
- Panels shall be accessible and kept clear of materials and supplies at all times. Covers shall be in place.
 - *Mark clear floor areas in front of panel(s) with paint,*
- Lock Panel rooms to prevent unauthorized persons from having access to equipment.
 - *Mark clear floor area in front of panel(s) to keep stored materials and equipment clear of panel(s).*
- Surge and lightning protection devices should be used for all electronic equipment.
- Flammable materials must be stored away from all electrical equipment.
 - *Flammable materials shall not be stored in electrical rooms*
- Accompany fire marshal’s representative during their periodic walk-through inspections.
 - *Check that outlets are not overloaded.*
 - *Remove any non-rated, non-surge protected extension cords.*
 - *Extension cords should not be in use permanently.*
- Regularly test special electrical systems to confirm full operability.
- Regularly test data systems to confirm intended system speed and operability

B. Plumbing

This system includes plumbing systems and components such as piping and insulation, toilets, urinals, sinks, faucets, strainers, floor drains, trap primers, flush valves, circulation pumps and system control valves.

GENERAL

- Plumbing within all facilities shall be inspected periodically for leaks and proper operation.
- Areas to inspect will include, but are not limited to, piping and insulation, toilets, urinals, sinks, strainers, floor drains, trap primers, flush valves, and faucets.
- Certified personnel must inspect back flow prevention devices annually

Inspection and Repair of Plumbing

- For sensor-activation units, periodically check battery power.
 - *Develop a chart that tracks the life of the batteries and schedule replacement times.*
- Check annually for leaks or damage due to frozen pipes
 - *For piping lines with heat trace, periodically check functionality.*
- For un-insulated pipes in outdoor areas without heat trace, regularly inspect portions above ground for freeze/thaw expansion damage.
- Inspect/replace any water filters regularly.
 - *Schedule per manufacturer’s recommendations.*

Fixtures

- Check fixtures for bluish or rust colored stains.
 - *Fixture staining is an indication of piping corrosion and/or fixture failure.*
- Check for cracks or broken fixtures.
 - *Repair or replace as necessary.*

- Check under cabinets for leaks in supply lines.
 - *A sheet of newsprint paper placed in the cabinet under the pipes at the beginning of summer can help in detecting slow leaks.*
- Check for pitting of faucets, flushometers, etc.
 - *Preventative inspection and replacement scheduling can help keep fixtures in optimal condition and extend the life of the fixtures. Repair or replace as needed.*

Supply

- Check fixtures for bluish or rust colored stains.
 - *Staining is indicative of problems with the supply lines or fixtures*
- Periodically check water for lead, copper, and coli forms.
- Inspect inside of supply lines when changing fixtures.
 - *Build up is indicative of water quality problems.*
- Check that HW supply lines are insulated.
 - *This will help with energy efficiency. Add insulation where needed.*
- Listen for signs of 'water hammer'.
 - *If severe, water hammer can cause leakage long term. 'Suppression' piping can be added if necessary.*
- Check circulation pump lubrication and couplers.
 - *Schedule at least 4 times a year*
- Check backflow prevention valves.
 - *Schedule annually.*
- Check water heaters for proper temperatures, that TP valves are working properly, and that gas heaters are properly vented. Check for leaks or rust at the base of heaters.
 - *Test TP valves 3 to 4 times a year and flush tank annually.*
- Check to make sure that fixture shutoffs function properly.
 - *When opening shutoffs, open all the way and then close 1/8th of a turn to keep the valve from 'freezing up'.*
- Make sure that main water shutoffs are properly marked and documented.
 - *Mark on floor plan*

Waste

- Check P-traps, wax rings, pumps, etc. for leakage.
 - *A sheet of newsprint paper placed in the cabinet under the pipes at the beginning of summer can help in detecting slow leaks.*
- Identify and document the location of cleanouts.
 - *Mark on floor plan*
- Check exposed waste lines for sagging or lack of slope.
 - *Install strapping or bracing to insure that slopes are maintained and sags are eliminated.*

Vents

- Check roof vents annually to see that they are not plugged or broken off.
 - *Schedule on Plumbing Maintenance Chart*
- Check to see that they are not close to intake fans.
 - *Extend higher to a level that is higher than the intake.*

Sewer

- Check septic system annually or as required by local jurisdictions and document when tanks are pumped.
 - *Schedule prior to start of school each year*
- Check for signs of settling in drain fields.
 - *Check water usage for spike in flow. If newly installed, any natural compaction due to settling and should have fill added to level ground.*
- Install irrigation meters to avoid sewer charges.
 - *Separating irrigation onto its own meter will keep the water being used for irrigation from be counted in the sewer water calculations.*

Kitchens

- Check dishwasher water temperature to insure 180 degree final rinse temperature.
 - *If temperatures are not being reached, the booster may be defective.*
- Check grease traps.
 - *Initially check twice a year to confirm level of accumulation. Schedule periodic cleaning as needed.*

C. Heating

This system includes all types of heating systems, such as gas and electric boilers and furnaces, heat pumps, fan coil units, unit ventilators, pneumatic controls and DDC, etc.

GENERAL

Inspection, Cleaning, Servicing and Repair of Heating, Ventilation and Air-Conditioning Systems

- Heating, ventilation, and air-conditioning systems shall be inspected, cleaned, and serviced by properly trained personnel.
- Filters shall be replaced or cleaned per IAW manufacturer's recommendations. The type of filter product being used and the condition and location of the area being heated or cooled shall determine scheduled filter replacement. Filter placement shall assure filtration of all system air.
- Heating boiler systems are regulated by state and local laws and shall only be operated and maintained by licensed and trained personnel.

Ventilation and Exhaust

- Systems should be inspected annually to verify proper operation.
 - *Lubricate motors and bearings where applicable.*
 - *Adjust all drive belts and pulleys.*
 - *Inspect fan blades for damage.*
 - *Check units during operation for vibration and noise.*
 - *Secure all vents, grilles, and diffusers to avoid vibration noise.*
- Monitor that thermostats are being used properly.
 - *(i.e., don't allow students or teachers to turn them all the way up or down).*
- Ensure proper balancing
 - *Discourage the propping open of interior and exterior doors,*
 - *Close doors & windows during extreme temperatures (unless there is no air conditioning).*

BOILER MAINTENANCE

Water Boiler

- Visually inspect to insure all equipment is operating and safety systems are in place.
 - *Pay particular attention to high limit cut offs and water make up switches*
- Check water levels
- Check gas or oil burner flame
 - *View through the flame viewing window to insure the proper combustion is taking place.*
- Check motor condition temperatures
- Verify the bottom, surface and water column blow downs are occurring and are effective.
 - *Blowing down the boilers regularly helps prevent the buildup of residue which decreases efficiency.*
- Keep daily logs on
 - *Type and amount of fuel used*
 - *Flue gas temperatures*
 - *Makeup water volume*
- Check and clean/replace filters and strainers on a scheduled basis
- Confirm water treatment system is functioning properly
 - *Sample water weekly*
- Check relief valves for leaks
- Inspect boiler insulation

D. Cooling

This system includes all types of cooling units including chillers, cooling towers, heat pumps, fans, pneumatic controls, DDC, etc.

Cooling Towers

- Cooling tower or fluid cooler systems shall be serviced biannually (spring and fall).
- Inspect: equipment visually and repair as needed.
 - *Motors and bearings and lubricate where applicable.*
 - *Drive belts and pulleys and adjust as necessary.*
 - *Fan blades for debris and damage.*
 - *Make-up water system; adjust as necessary.*
- Clean:
 - *Tank systems to remove scale, dirt, and biological growth.*
 - *Air intake screens and sump strainers.*
 - *All spray nozzles.*
- Water treatments shall be performed by trained personnel only.
- Chemicals shall be stored away from all student occupied areas.

Chillers

- Chilled water systems shall have water, oil, and refrigeration levels checked as recommended by manufacturer.
- Inspect:
 - *Wiring, piping, valves, pumps, chiller, and piping insulation bi-annually.*
 - *Chiller case for rust and condenser tubes for scale annually.*

- *Belts and couplings.*
- Testing and calibrating chiller controls should be done annually by qualified personnel.
- Provide for draining or means of freeze protection for piping, coils, or other cooling systems that could be subject to low temperatures during periods of inclement weather.

E. Lighting

This system includes all types of lighting and lighting systems including HPS, MH, fluorescent, incandescent, CFL, emergency, etc..

Inspection, Testing, and Repair of Emergency Lighting and Exit Light Fixtures

- Group re-lamp to reduce lumen depreciation and maintenance costs.
 - *Preferred if funding is available*
- Clean fixtures at time of re-lamping, more often in dirty locations.
 - *Schedule re-lamping during summer down time so cleaning of all fixture can be done at the same time to reduce labor costs.*
- Develop a lighting maintenance policy.
 - *This could be done as part of a preliminary or investment grade energy audit.*
- Design upgrades to incorporate effective maintenance.
- Consult manufacturers as resources.
- Properly dispose of lamps.
 - *Take particular care for mercury vapor, florescent, and CFL's*

CATEGORY 4 - SAFETY/BUILDING CODE

A. Means of Exit

This system includes doors, hardware, corridors, exit lighting, etc.

Lighting

- Ensure all exit lights and backup lights are working correctly.
 - *Schedule and test quarterly*
- Confirm exits and exit access corridors are well lighted

Doors

- Verify door panic hardware and ADA automatic door openers are functional.
- Replace batteries in exit alarm.
- Ensure exit door thresholds are flat (up to 1/2")
- Verify door closures are adjusted to ADA specifications

Corridors

- Ensure all exit paths and areas of refuge are free from obstruction (furniture, trash cans, boxes, etc.) and all door swings have proper ADA clearances.

B. Fire Resistance

This system includes sprinkler systems, fire rated doors and walls, insulation, fire extinguishers, etc.

Fire Sprinkler Systems

- Fire sprinkler systems shall be inspected annually and serviced only by a licensed contractor.

Fire Extinguishers and Kitchen Hood Vent Suppression Systems

- Fire extinguishers and kitchen hood vent suppression systems shall be inspected monthly or as required by local jurisdictions and checked annually by a certified inspector.
- Extinguishers must have a current year inspection tag fastened to it and must be inspected and recharged or pressure tested, if needed, at least annually. District personnel to accompany the inspector.

C. Fire Alarm System

This system includes fire alarms systems and equipment such as annunciator panels, fire and smoke detector, water flow, alarm panels, etc.

Fire Alarms

- Fire alarms shall be tested on a monthly basis when performing fire drills within each facility and shall be inspected by a licensed contractor annually.
 - *Inspect and clean smoke and heat detectors within the building and duct work to prevent false alarms from occurring.*
- Equipment such as pull stations and alarm bells or buzzers shall be checked as well as strobe light indicators where applicable.
- Control panels shall be accessible and clear of materials and supplies but restricted to authorized personnel only.

D. Emergency Lighting

This system includes all types emergency lighting and emergency power generation including, battery packs, generators, etc.

Emergency Lighting and Exit Light Fixtures

- Emergency lighting and exit light fixtures shall be inspected and tested each month while performing fire extinguisher inspections. Inspect wiring and batteries for corrosion and leakage.

FIRE RESISTANCE

- Periodically check for breaches in fire-rated construction (walls, ceilings, etc.). Ensure fire-rated doors and windows can close properly.
 - *Schedule a time to do this on an annual basis..*
- Inspect and test overhead roll down fire doors annually for proper operation.

- *Lubricate and check to make sure fire link is still installed.*

Columns and Beams

- Check to see that wrapped wood beams and columns are not damaged to the point that would allow fire penetration.
 - *Repair as needed.*
- Check to see that sprayed on fire retardant on steel beams and columns has not been damaged or removed.
 - *Repair as needed.*

Fire Walls

- Check to insure that there are no holes in fire rated walls that would allow fire penetration.
 - *Repair as needed.*
- Check to insure that any penetrations through fire rated walls have been properly sealed.
 - *Feel to see if there is any movement of air around penetrations. Seal where needed with suitable material.*

Doors

- Check to insure that no fire rated doors have been replaced with hollow core doors.
 - *A part of annual fire inspection or check with facilities to see if areas have been modernized.*
- Check door closers to see that closing pressures are adequate to fully close doors.
 - *Same as instructions for Exterior doors.*
- Check to see that no door stops are in use to prop doors open.
 - *Remove them if found.*
- Check to insure that fire doors close automatically with the fire alarm.
 - *Check during monthly or quarterly fire drills.*
- Check to insure that fusible links are in place.
- Check for damage to perimeter smoke seals on fire rated doors.
 - *Replace if necessary.*

Mechanical

- Check duct fusible fire dampers, where feasible, to insure that there are no blockages to restrict closing.
 - *Remove blockage where found.*
- Check to insure that fans shut down when the fire alarm goes off.
 - *Check during fire drill.*
- If required by local jurisdictions flush fire sprinkler systems annually to clean lines and insure proper function in case of a fire.
 - *Be sure to notify fire department before flushing. This flushing will require the re-setting of the flow alarm valve.*
- Check to insure that there are no obstructions to sprinkler heads.
 - *Remove items that may impede the flow of water to the area covered by the head.*

Ceilings

- Check to insure that all ceiling panels are in place and do not have holes in them.
 - *Replace where necessary.*

Miscellaneous

- Insure that stage curtains are fire rated.
 - [Check for label on curtains](#)
- Check to insure that there are no combustible materials stacked within ten feet of the building and that there are no combustible materials improperly stored within the building.
 - [Remove if necessary](#)
- Insure that flammable materials are kept in fire resistant cabinets

CATEGORY 5 – PROVISIONS FOR HANDICAPPED

A. ADA Provisions

This category includes any area where ADA compliance is required.

NEW CONSTRUCTION (Constructed 1992 or later)

Under Title III of the ADA, all "**new construction**" (construction, modification or alterations) after the effective date of the ADA (approximately July 1992) must be fully compliant with the [Americans With Disabilities Act Accessibility Guidelines](#) ("ADAAG")^[1] found in the [Code of Federal Regulations](#) at 28 C.F.R., Part 36, Appendix "A."

EXISTING CONSTRUCTION (Constructed prior to 1992)

Title III also has application to "**existing facilities**". One of the definitions of "discrimination" under Title III of the ADA is a "failure to remove" architectural barriers in existing facilities. See [42 U.S.C. § 12182\(b\)\(2\)\(A\)\(iv\)](#). This means that even facilities that have not been modified or altered in any way after the ADA was passed still have obligations. The standard is whether "removing barriers" (typically defined as bringing a condition into compliance with the ADAAG) is "**readily achievable**," defined as "**easily accomplished without much difficulty or expense.**"

Systems for Disabled, Impaired, or Handicapped Persons

- All related systems or equipment shall be inspected and, where appropriate, tested on a semi-annual basis.
- Automatic doors and vertical conveyance equipment and devices shall be inspected to ensure safe operation and tested at least monthly.
- Restroom accommodations shall be inspected and maintained weekly.
- Required signage shall be maintained in good repair, ramps, walkways, and other means of egress shall be checked for damage and repaired promptly.