SCHOOL CONSTRUCTION AND FACILITIES RESOURCE MANUAL

Foreword

The School Construction and Facility Resource Manual, or the Resource Manual, is updated and published by the Utah State Board of Education (USBE) by authority of Utah Code 53A-20-104.5 and Administrative Rule R277-471 with updates on an ongoing basis. The Resource Manual shall include (Utah Code 53A-20-104.5): current legal requirements, information on educational facility construction and inspections, and guidelines adopted by the USBE in accordance with Section 53A-20-110.

The Resource Manual applies to new construction, alteration, relocation, enlargement, replacement, repair, use and occupancy, location, maintenance, remodels, renovations, removal and demolition of every educational facility or any appurtenances connected or attached to facilities consistent with the International Code Council (ICC) collection of manuals, NFPA, ANSI A117.1, and the Americans with Disabilities Act (ADA). The ICC codes establish the minimum requirements to safeguard the public health, safety, and general welfare of educational facility occupants.

The Resource Manual contains the following information: current information on the planning, programming, design, construction, and inspection of educational facilities, properly certified building inspectors, filing construction inspection summary reports and the final inspection certification with the LEA Building Officer, the roles and relationships between an LEA and the Jurisdiction having Authority (JHAs) as related to the construction and inspection of educational facilities, documentation of educational facilities inspections, and processes to verify that inspections by qualified inspectors occur in each LEA.

The Resource Manual was originally developed by a group of individuals representing local jurisdictions, local education agencies (LEAs), Design Professionals (DPs) and the Utah State Board of Education in the late 1990s. Major topics include: facilities long-range planning, the role and responsibilities of the LEA Building Official, educational facility site selection, pupil transportation, geologic hazards, environmental impacts, coordination with Jurisdictions having Authority, plan and programming development with respect to education specifications, selection of DPs selection of Contractors, plan reviews, value engineering and life-cycle costing, energy conservation, Fire Marshal and health department review, the construction procurement process, the construction inspection process, maintenance and operations of educational facilities after construction, safety and emergency management of educational facilities, and overall health, safety and welfare for educational facility occupants

The Resource Manual should be considered a living document, as the following updates and changes occur federal, state, and local laws, codes, rules, and guidelines, and established best practices. The School Construction and Facility Resource Manual is required to be reviewed and updated every three years.

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Utah State Office of Education
250 East 500 South
P.O. Box 144200
Salt Lake City, UT 84114-4200

Dr. [~~Sydnee Dickson]~~ Molly Hart
State Superintendent of Public Instruction

Scott Jones
Deputy Superintendent

Samuel Urie
School Finance Director

Dean Dykstra
School Construction Inspection Specialist

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Section 1 – Educational Facilities Planning, Programming, Pre-Design, Design and Construction.

1. Educational Facility Planning

Educational facilities are Local Education Agencies (LEA) facility resources designed to facilitate, promote, and support educational programing and adequacy. Local School Boards and LEAs administrative staff shall clearly articulate the educational requirements needed to be qualified, quantified, and clearly and concisely defined before short and long-range program educational facility design and construction scope is defined.

LEAs short and long-term planning for new educational facilities must navigate the LEAs and community's complex aspirations and goals. A partial list of these would include scope, scheduling, financing, budgeting for life-cycle costing, safety and security, energy conservation, facilities as a community resource, technology, modernizing facility infrastructure, extending the useful life of existing facilities, designing for vandalism, flexibility for adaptation of future needs, sustainability, ADA compliance, educational adequacy, and functional and cost-effective operations and maintenance (O&M).

The Importance of Planning

It is important that prudent planning results in effective programming. Well-designed, functional educational facilities are an essential element of an effective educational program. Educational facilities designed with life-cycle cost-benefit analysis are essential to a cost-effective long-term facilities functionality and operations. Over a fifty-year period, initial design and construction costs can be as little as 5-10% of the long-term life cycle costs of a facility. These long-term cradle-to-grave costs would include financing, initial construction costs, energy consumption, O&M, rehabilitation, additions and renovations, facility retirement, demolition and inflation which will affect all these costs. Financial applications such as Net Present Value (NPV) and Life-Cycle Cost analysis tools are useful to make informed decisions with respect to educational facilities capital

investments. There are NPV and Life-Cycle tools maintained within the Practical Tools and Resources Repository (PTRR).

Planning facility programming for individual educational facilities can be difficult, cumbersome, and time-consuming activities that will provide many challenges for the Design Professional (DP) and LEA administrative staff. Successful facility program planning ensures that a long-range master plan will meet both the short and long-term educational facility's needs. The responsibility of the planning process resides with the LEAs School Boards, LEA Building Official, school administration, facility managers, DPs, and the Community Advisory Committee (CAC).

Long-Range Planning

A long-range planning process should provide a comprehensive plan for the orderly replacement of buildings and the addition of new educational facilities to accommodate enrollment growth, decline, and aging infrastructure. An LEAs near term educational facility capital improvement analysis should be tailored to the long-term capital outlay plan. The facilities capital improvement plan should encompass at a minimum five years of the LEAs comprehensive capital outlay plan and 50 years for a long-term educational facility plan. The educational facility plan should include capital renewal projects, current utilization of educational facilities, projected school enrollments, facility support of O&M, site improvements, energy conservation, and staffing. The Utah State Board of Education (USBE) recommends programming input inclusive of LEA administration, LEA Boards, facility staff, educators, CAC, and DPs to develop rightsizing of school facilities and associated spaces.

Planning Philosophy

Planning documentation will include a vision and mission statement that delineates USBEs, LEAs, and community's aspirations and educational goals. This will create a sound basis and practical philosophy for responsible cost-effective opportunities to support educational adequacy.

Community Aspirations and Goals

An LEAs educational facilities plan should take into consideration a multitude of contexts such as regional and local traditions, socioeconomic conditions, projections for changes in enrollment with respect to future demographic trends in terms of both the near and long-term, and the ability to finance, staff, and maintain new educational facilities. Needs assessments, right-sizing data, and other analysis tools are resources for consideration. Regional and community master plans as well as planning and zoning requirements are an invaluable resource and basis for understanding the Jurisdiction having Authority (JHA) and communities' expectations. Coordination with the JHAs, local public health departments, Utah Department of Public Safety, USBE School Safety and Security Requirements, the State Fire Marshal, State Department of Environmental Quality (DEQ), Utah Department of Transportation (UDOT), and the federal Environmental Protection Agency (EPA) are invaluable for the initial facility planning process.

Education Goals

Community aspirations will reflect their expectations for subject matter, higher educational preparation, and other vocation educational professional career pathways. In addition to the basic Core Curriculum required by USBE and the LEA school Boards. Consideration shall be given to coordination with the CAC about their concerns, considerations, and expectations for the education of students and to qualify their suggestions for specific subject matter. It is useful to understand the CACs expectations regarding educational experimentation, innovation, traditionalism, and other anticipated disciplines. Educational standards data may assist in staffing and financial considerations in LEA facility planning, programming, design, construction, staffing, and O&M of the educational facility.

Long-Term Economy

A long-range plan should consider long-term economy in capital outlay and O&M. This allows for space maximization and utilization, minimizing future costs of O&M, transportation, supervision, and administration overhead. Facilities with high O&M costs per student are recommended to be scheduled for renovation or

replacement. Undersized facilities respective to educational adequacy and specified educational outcomes shall be considered for renovation, rehabilitation, or retirement.

Flexibility

A long-range plan shall consider foreseen and potential estimated unforeseen issues to the ability an LEA can accurately predict them. The educational facilities plan shall be tailored and designed to allow for potential alternatives and contingencies for future LEA Boards while maintaining flexibility for planning and programming.

Enrollments

Educational facility enrollment and enrollment projections are important components of both short-term and long-range facility planning. Student enrollment growth and decline occurs within a predictable cyclical range. Utilizing historical trends, demographic and economic data, state, local and private agencies data may assist LEA planning teams in making accurate enrollment projections.

Survey of Existing School Facilities

A thorough knowledge of existing educational facility infrastructure is important for effective planning. Educational facilities should conduct Facilities Condition Assessments (FAC) for their educational adequacy, physical condition, life-cycle cost projections, energy conservation, potential emergency centers and temporary housing, and planning for their orderly replacement or retirement.

Educational Adequacy

A short list of items for consideration for educational facilities to maintain educational adequacy for future use are size of facilities, required specialized spaces, adequate educational objectives, facility capacity for potential future growth and educational facility flexibility.

Educational Facility Right-Sizing

A right-sizing process is recommended by USBE that entails:

Developing an instructive narrative utilizing best practices for facility programming

FCAs for an LEAs use respective to required spaces for educational facilities locally within the state

Local, regional, and national data regarding educational facility spaces comparable to LEAs within Utah

Educational Facility Right-Sizing Practices

A functional and flexible educational facility will include an accurate determination of the quantity and sizing of spaces that adequately provide functional support for educational programs and education facility activities and functionality. Utilization of programming standards is a foundation for successful educational facilities.

Some programming goals for consideration are:

Value: Designing the right quantities and volumes of space at an appropriate cost

Flexibility: Space utilization and its ability to allow for future design flexibility

Identification: Determining all program activity requirements

Consensus: Agreement of stakeholders with respect to space requirements and the final design

Recommended right sizing programming framework

The LEA shall establish a stakeholder committee to assist the DP team to plan, develop, and design programmed spaces. This shall take into consideration the inclusion of appropriate and impacted stakeholders. Some stakeholders to consider by LEA adminsitration are curriculum and program directors, facility administration, maintenance staff, educators, students, and the CAC.

LEAs shall conduct stakeholder consensus meetings to develop programing and educational adequacy for their respective project inputs. Consideration should be given for designated use of spaces, developing area matrices to identify individual spaces, delineating total usable facility areas for both gross and net spaces from stakeholder consensus data, reviewing final space determinations and understanding the dedicated area quantities with all stakeholders. The narrative shall clearly articulate how the established programmed areas will provide the required educational programs and outcomes for educational adequacy established by USBE and the LEA.

Net Areas: An individual building area, such as a classroom, kitchen, auditorium office.

Gross Area: The total building square footage area, including programmed net area and the following areas which are not designed at the programming phase:

Storage rooms
Toilet rooms/restrooms
Circulation (corridors, stairways, and elevators)
MEP, custodial, and data rooms
Structural components

The Facility Right-Sizing process is considered a guideline. It is recommended that LEAs and DPs conduct this exercise as part of their planning, programming, and design process. A right sizing form can be found within the PTRR. This document is not required for submission to USBE as a Pre-Construction submittal but should be utilized as a planning tool and resource to be maintained within the LEAs educational facility project files.

Temporary Educational Facilities

LEAs peak enrollment periods can be predicted with a high degree of accuracy and are a basis of understanding the future potential for increasing, stagnate or declining enrollments. An LEAs growth may be so rapid that permanent construction may not be able to keep pace with an educational facility's needs. This may warrant utilization of portable classrooms before peak enrollment is achieved while new educational facilities are planned, programmed, designed, constructed, and occupied.

Orderly Replacement of Educational Facilities

Long-range planning should provide for the orderly replacement of all educational facilities over the lifecycle of a facility, which is approximately 50 years. General obligation bonding, capital property tax levies, or use of capital outlay reserve funds are methods that may be utilized by LEAs to allocate and finance funding resources. Charter LEAs may utilize funding methods such as lease or lease-purchase agreements, use of a not-for-profit designation to secure bonds for facility purchase, or other long-term private or public financing.

Fiscal Projections

A long-range capital renewal program shall be developed with respect to the financial capacity of an LEA to fund its educational facilities. It should be responsible, realistic, and practical for community approval and should not compromise educational adequacy.

For LEAs to accurately forecast their capital outlay for financial funding it is necessary to qualify project assessed valuations, bonding capacity, reserve fund availability, debt service as well as estimated state LEA aid. These components, combined with the Utah legislative statutes and USBE administrative rules will provide a sound basis for financial modeling projections with respect to an LEAs ability to make accurate fiscal projections regarding their proposed educational facility projects.

LEA Community Advisory Committees (CAC)

The formation of a CAC to assist in long-range planning may be helpful to create a business case for an effective educational facility. The CAC should include educational facility students' parents, local organizational leaders as well as other impacted stakeholders. The CAC parameters shall be clearly and concisely defined. The CACs recommendations will assist LEA Boards and LEA administration in arriving at consensus for formulating and approving long-range education plans.

Priority of Educational Facility Projects

An LEA five-year Comprehensive Capital Outlay Plan should allow for a near term orderly prioritization of identified facility additions, renovations, and new construction. The LEA Board and administration shall establish facility priority criteria. Four features of this method are:

Facilities Condition Assessments and Indices

Inclusion of all additions, remodeling, and new construction

Time sequence and scheduling proposed for completion of all projects

Estimated budgeting, financing and prioritization of projects

As new educational facility opportunities evolve within an LEA, the priority of facility planning, programming, design, and construction, will likely require reevaluation. Evaluation for updating priority criteria, as well as the specific facility priority rankings, shall be completed at appropriate LEA administrative levels and at relevant time intervals.

Commencement of Planning, Programming, Design and Construction

When an LEA is ready to commence the planning and programming documentation for the design and construction process, a comprehensive checklist is a useful tool to ensure that the process is phased, sequential and comprehensive. The checklist should contain, but be not limited to, the following resources and considerations:

Design Professional
General Contractor and Sub-Contractors
Facilities Condition Assessments
Financing and procurement
Site selection, surveying, and geotechnical data
Schematic Design, Design Development, Construction Documents
Bidding and Construction Administration
Plan reviews at all design phases
Scoping, scheduling, budgeting, and safety
Local JHA and Fire Marshal reviews
Closeout Procedures, Record Drawings and Warranties

Operations and Maintenance of Educational Facilities

An O&M program shall be incorporated for each educational facility to include staffing, scheduled preventative maintenance, custodial requirements, short-term maintenance upgrades, and compliance with fire, life safety and health codes.

2. Educational Facility Site Selection

An LEA educational facility is an integral and inseparable part of a neighborhood and community. A functionally located and developed educational facility site will be both an institutional, aesthetic, and community asset. The selection and development of an appropriate educational facility site should consider the LEAs area demographics and population projections for potential enrollment growth or decline. An LEA shall consider the immediate community impacts to the JHA, local health department, UDOT, and local utility providers. Considerations for geologic hazards, a Level One Environmental Impact Statement, EPA, DEQ, and the Utah Geological Survey (UGS) shall be considered. The intent of this section is to allow for a comprehensive perspective of the ideal selection of educational facility sites in the context of current and future LEA facility programs and community needs.

Long-Term Planning

As the population of the state of Utah continues to evolve, an LEAs requirement for educational services and facilities will need to adapt to this ever-changing context. There are LEAs in Utah that are experiencing increasing growth, some that have stagnated and have no growth, while others are experiencing declines in their enrollment. Several LEAs have both declining and growing populations with respect to specific schools due to the changing demographics within an LEAs boundary. A few items that potentially may occur in areas of a high growth rate are:

- The competition for acquisition of undeveloped land increases
- Financing for new service facilities may cause an increase in capital outlay, bonding, property tax rates and capacity for debt service for LEAs
- The initial costs to open and operate new schools, staffing, and O&M budgeting

These items are important considerations for long-term planning that will involve the LEA, JHA, utility and transportation planners.

An LEAs Board, Building Official, and administration are responsible for the selection of educational facility sites and their anticipated needs. When an educational facility is proposed for construction, considerations should include researching economic

indicators such as population trends, commercial development data, residential and commercial construction data and current construction permitting data. LEAs may purchase land as an investment to protect against future land value increases, whether that land is utilized for an educational facility or not.

Accurate projected enrollment estimates shall be taken into consideration of the projected enrollment of students within the LEAs jurisdiction. Some sources of data that may be utilized for enrollment projections are:

USBE enrollment data
Utility surveys with population projections of service supply needs
Regional JHA short term and long-range plans and demographic projections
Utah's Association of Realtors surveys
Local redevelopment and urban renewal agencies projections
Residential and commercial development volume and timing
Utah Community Development Agency

Size and Location

Land values are an essential component for financial consideration by LEAs. The quantity and quality of land required for an LEA educational facility site will vary according to the specific LEAs needs respective to demographics of students, types of educational facilities required, and the additional multiple use facilities of the site for community use. The size of an educational facility site is dependent on many factors such as the shape and size of the parcel, site contours, general suitability of the site for the educational facility, environmental impacts, and availability of land proximate to the educational facility site. Inadequate site sizing may be a factor in the obsolescence of educational facilities.

The USBE guidelines for site sizing of various grade levels recommendations are:

K-6 facility	- approximately 10 - 15acres
Middle school	- approximately 10 - 20 acres
Junior high school	- approximately 10 - 30 acres
Senior high school	- approximately 30 - 50 acres
Combined 7-12 high school	- approximately 35- 50 acres

Site and Surroundings

JHA planning and zoning maps and aerial photographs may be utilized to gain a better understanding of the relationships of the educational facility site and the adjacent community. An LEA shall consider investing in a Level One Environmental Impact Statement. This will provide the design team a comprehensive understanding of potential hazardous material contamination regarding previous land uses.

Community Use

JHA planning and zoning officials shall be consulted to review an LEAs recommendation for educational facility site locations that will be complimentary to the JHAs land use, planning and zoning ordinances, and as an enhancement to community recreation services. An educational facility site that is developed in cooperation with community officials will be an asset for the local communities' needs for multiple uses.

Health and Safety

A potential educational facility site shall be located where safe, secure, and healthy environments exist for the building occupants and community. Best practices will avoid proposed sites subject to sources of odors, fugitive dust, and other types of water, air, and sound pollution. The water supply shall be of adequate volume, pressure, and sanitary quality that comply with the requirements of the state Safe Drinking Water Act and Administrative Rules. JHA water and sewage connections shall be of sufficient capacity for the educational facility requirements. When on-site water supplies or sewage disposal systems are utilized, health and environmental codes and regulations shall be adhered to. Plans and specifications for water supply shall meet state safe drinking water standards and be submitted to and approved by DEQ prior to construction. All newly installed or modified existing on-site sewage disposal systems are required to submit engineered plans to the JHA and Health Department for review and approval prior to construction. Non-potable water supply systems utilized for irrigation or other on site purposes shall be operated in a storage and utility system separate and distinct from the potable water system. These shall be maintained in compliance with Section 19-4-112 of the Utah Code and Administrative Rule 392-200, "Design, Construction, Operation, Sanitation, and Safety of Schools," which contain regulations and rules for educational

facility site selection, design, construction, O&M, and for the health, safety and security of educational facilities.

Education facility sites are an integral part of the instructional program. Sizes for athletic areas shall be utilized for planning and space allocation when selecting a new educational facility site. Natural and biological science courses may benefit from the exterior site environment. Programs such as science, technology, engineering, and math may potentially utilize the site as teaching and learning opportunities. Sites may be suitable for construction of amphitheaters and other community purposes. The arts may utilize the natural topography as an outdoor classroom or studio. Educational facilities may require onsite drivers' education courses, and this will be consideration for the programming of the facility.

LEA Building Officials and administration should be aware that some outdoor sites may be an attractive nuisance and hence a potential liability. State Risk Management notes that injuries regularly occur to people who have gained unauthorized access to educational facility sites. Security of the premises by appropriate fencing and camera monitoring is advised.

General Hazards

Hazardous conditions in the vicinity of educational facility sites shall be avoided. Dangerous physical hazards exist in many forms including junkyards, ponds, sewage plants, canals, railroads, freeways, electric or natural gas substations, airfields, fire stations, certain commercial structures, taverns, sexually oriented businesses, mills, factories, and other industrial areas. These may potentially be an undesirable nuisance or create circumstances that will negatively impact the safety and security of staff, students, and the community. Dangerous highway conditions such as high traffic density, vehicle speed, oversized vehicles, visibility impediments of pedestrians by vehicles, topography, limited access to roadways and high pedestrian traffic are important design considerations.

Geologic Hazards and Soils Reports

Soils reports are site specific. UGS performs educational facility site geologic hazards reviews. During initial site selection UGS will perform a preliminary site screening evaluation prior to design that shall occur before final site selection to identify geologic hazards and evaluate whether a site is suitable for construction. UGS can provide a Summary Report of Geologic Hazards that will identify the potential for earthquake movement, surface faulting, tectonic subsidence, liquefaction, slope failures, earthquake-induced flooding, landslides, debris flows, collapsible, expansive, or erodible soils, non-engineered fill, shallow ground water, flood potential of local streams, alluvial fans, lakes, canal or dam failures and radon gas. Another resource would be the JHA natural hazard area overlay zoning maps. An initial field inspection of the proposed site is helpful to understand the current state of the proposed site and required remediation improvements required for the proposed facility. UGS is required by the Utah legislature to impose a fee that will cover the costs associated with a geologic hazard's summary report.

Results of the UGS preliminary screening are submitted to LEA Building Official and DP who shall utilize this data to evaluate general site suitability to ensure that geologic hazards are adequately investigated and addressed. The DP and LEA Building Official shall ensure that all new construction projects and sites have had a comprehensive site-specific hazards study completed prior to project planning, programming, scoping, scheduling, and financing. The geologic consultant's report shall address all hazards including any previously unrecognized geologic or environmental hazards.

If UGS services are solicited, it should occur early in the planning and pre-design phases so geologic hazard data are available to the DP, LEA Building Official, and facility managers for all sites being considered for an educational facility. This process ensures that geologic hazards are addressed early and incorporated into the site plan and final educational facility design.

Environmental Impact Statement

When potential construction sites are brownfield sites, they shall implement a Level One Environmental Impact report. It shall be provided to the DP and LEA Building Official prior to the design phase. This report will provide the DP and LEA Building Official with

comprehensive information regarding prior uses and other potential environmental exposures.

Stormwater Pollution Prevention Plan (SWPPP)

Stormwater runoff from construction sites may cause significant erosion impacts as well as potential harm to lakes, reservoirs, and tributaries. Construction activities that disturb one or more acres of land are required to implement the National Pollutant Discharge Elimination System General Permit (NPDES) for all construction activities. LEAs shall obtain discharge authorization under the State's appropriate Utah Pollutant Discharge Elimination System construction general permit and utilize the permit and guidance provided to assist in developing the Stormwater Pollution Prevention Plan (SWPPP). The JHA will issue the requisite SWPPP permits.

A SWPPP is required for construction to account for and prevent stormwater runoff pollution. A SWPPP is required for any construction site greater than one acre. A SWPPP prescribes the construction site contractors activities that prevent stormwater contamination, control sedimentation and erosion, and comply with the requirements of the Clean Water Act. The EPA Phase II Best Management Practices Specifications for Construction Sites is a useful aid that provides standard installation instructions and appropriate procedures regarding erosion and sediment control practices.

Student Transportation Safety Considerations in Educational Facility Planning for Site Selection

When LEA educational facility sites are being selected, consideration shall be given to the safety of the students requiring school bus transportation and those who are impacted by the traffic movements and traffic flow related to them. School buses shall utilize Right-of-Ways (ROW) proximate to the LEA. High density traffic flow near LEA access and egress points shall be avoided or minimized. Proper site selection and facility planning for improved educational facility transportation is paramount. Design Professionals and LEA Building Officials shall consider the following:

Separate and adequate space for school bus loading zones.
Clearly marked and controlled pedestrian pathways proximate to school bus zones.
Traffic flow and parking patterns separate from the school bus boarding zone.
Separate loading and unloading areas with ADA compliance.
Schedules for access and egress locations with bus stops clearly marked that are free of hazardous conditions and do not require the backing of buses.
Separate delivery routes that minimize potential conflicts with facility and public vehicle routing.

LEAs are required to coordinate the siting of new educational facilities with the JHA and UDOT to avoid and mitigate existing and potential traffic hazards and to maximize student, staff, and community safety. See USBE Administrative Rule R277-471 Oversight of School Inspections, Utah Code sections 10-9a-305 Municipal Land Use and Development, 17-27a-305 County Land Use and Development, and 53A-20-104 School Construction for design regulations.

Identifying and Avoiding Safety Hazards

Student transportation, delivery vehicle and public vehicle traffic considerations shall be included in the planning and design of new LEA educational facilities to ensure safety hazards are mitigated. Consideration shall be given to the ROWs school buses and other public traffic access and egress to the educational facility as well as the traffic patterns within parking lots to minimize the possibility of pedestrian-vehicle conflicts.

Sites that result in high density traffic near educational facility access and egress locations shall be avoided. These include sites near freeway on-and off-ramps, areas of heavy commercial traffic, and ROWs where there are high levels of commuter traffic. Traffic control devices shall be provided to assist school traffic entering the adjacent traffic flow. These devices shall be reviewed and installed in conjunction with and approval of the requisite JHA.

To accommodate school buses that are eight feet wide and forty feet long, roadways leading onto the school site from the public ROWs shall have an appropriate turn radius that meets UDOT standards and specifications. Islands and medians may be utilized to minimize the width of driveway entrances and exits and assist in controlling traffic and directional flow through parking lots. Proposed driveway access and egress locations shall

be approved by the JHA. Design locations of access and egress roads shall not require buses to back onto facility premises or onto ROWs. Roadways utilized by educational facility school buses shall be physically separated from those utilized by students, staff, and visitors. All educational facility school bus traffic on educational facility property shall be considered as a one-way traffic flow, preferably with the service door side of the bus adjacent to loading and unloading zones.

Vehicle delivery traffic patterns should not navigate through school play areas or pedestrian pathways leading to play areas. Roadways should not completely encircle the educational facility. Areas where students will cross roadways for outside activities shall be free from vehicular traffic or minimized.

The pavement for facility roadways utilized by facility buses shall meet design specifications for their respective vehicular axle weights. Pavement design specifications are available through UDOT. Curbing and suitable drainage shall be provided on all interior facility roads and parking lots utilized by facility buses and other vehicles. Curbing shall comply with UDOT standards and specifications. Facility roadways and loading areas shall be designed to allow for emergency vehicle access and egress to the educational facility as required by the State Fire Marshal and JHA.

Educational facility roadways shall be designed to eliminate sight obstructions. These include but are not limited to the elimination of blind corners and grade changes that could obstruct line-of-sight conditions. Landscaping shall not obstruct a motorist's view of intersecting roadways or pedestrian pathways consistent with UDOT requirements and specifications and JHA ordinances.

Road grades of facility roadways shall be limited to not more than two percent grades at entrances and exits and not more than five percent elsewhere. Whenever possible school bus loading and unloading areas should be located on the facility premises and not on public ROWs.

In planning bus loading and unloading areas, consideration shall be given to the following:

Total number of students, staff, and visitors
Quantity of students to be transported to and from facilities via school buses
Quantity of buses providing transportation
Busing transportation schedules
Extracurricular activities requiring the utilization of school buses

It is desirable to separate the school bus loading and unloading zones from areas utilized by students, staff, public or commercial vehicles. Vehicular traffic to parking areas shall not pass through the loading areas utilized by buses or across the pedestrian pathways used by students and staff entering the facility.

Diagonal parking of school buses is a useful arrangement and the safest for access and egress locations within parking areas. Bumper-to-bumper positioning is acceptable allowing for the safety of students. School bus parking shall not require a school bus to back up when moving into or away from a loading or unloading zone.

Whenever possible a separate discharge and pickup location shall be established for students being transported by their parents via private vehicles. These areas shall be separated from the school bus access and egress locations. Unsafe pedestrian-vehicle conditions may be created by parents haphazardly discharging or picking up students in front of or adjacent to educational facilities. This is particularly true during periods with high traffic volumes and inclement weather. School bus loading zones shall be located so that students walking to the educational facility will not cross in front of parked school buses or private vehicles.

When students requiring ADA accommodations are being transported by school buses, consideration shall be given to a separate loading and unloading areas specifically designed for this demographic and shall meet ADA requirements.

When school buses are parked on educational facility grounds during school hours, care shall be taken such that school buses are located and oriented to not direct undue glare into facility classrooms or onto adjacent properties.

Coordination with Utah Department of Transportation

It is important that traffic patterns adjacent to an educational facility be compatible with both the JHA, UDOT public ROWs, and the adjacent neighborhood. Elementary and middle school vehicular traffic will be substantially different than a high school. School bus movements within a neighborhood shall be taken into design consideration. JHA planning staff shall be consulted of the location of the proposed school and vehicular entrances and egress onto public ROWs.

Donated Educational Facility Sites

LEAs may be inclined to utilize donated land for educational facility sites. Donated land may have a potential for unforeseen safety hazards. Some examples of these would be locations proximate to highways with high traffic density, site specific topography, soil contamination, limited space for off-street egress zones. The cost of eliminating or mitigating student transportation hazards, mitigating site safety hazards or site geological hazards may potentially financially impact an LEA rather than a more adequate site.

Site Selection Timing

It should be recognized that sites which new educational facilities are to be constructed on are often selected prior to contracting with a DP. LEA Boards, administration, and JHA planning authorities shall be apprised of the potential dangers and issues inherent in the selection of a new educational facility site without adequate consideration for transportation safety or other site-specific safety hazards.

Site Acquisition and Development

Initial costs for land acquisition shall be considered in conjunction with estimated development costs for the site as a realistic representation of the actual costs of the proposed site. Development costs of a site are related to the topography of the land, vehicular access, the nature of the subsoil conditions, and need for utility extensions. The cost of development will be impacted by the extensive need of the required civil engineering needed to accommodate the educational facility.

Land values vary dependent on regional and local economies. Land value comparisons between locations within the same geographic areas may vary significantly. An LEA shall assure that the value of an educational facility site is reasonable with respect to current market values for the region it is located in. Real estate appraisers, realty professionals and legal counsel are recommended as professional consultants before site acquisition.

Educational Facility Construction Limitations of JHAs

New Educational Facility Construction Coordination

A new educational facility will have a significant impact on a neighborhood and local community. It is important for LEA educational facility planners to consult with JHA planning officials, UDOT planners, CAC, and associated utility providers to ascertain potential project impacts and complexities of the proposed project.

Coordination with Counties, Cities and Towns (JHAs)

JHAs will have regulations, standards, and specifications that will be applicable to educational facility design and construction within its boundaries. It necessary to consult with JHAs early in the planning process to eliminate any potential issues with their applicable regulations.

LEA educational facility construction may have a significant impact on local vehicle and school bus traffic patterns, utility routing and other associated infrastructure as well as planning and zoning ordinances within the JHA. Prior to developing CDs for a new educational facility, or the expansion of an existing facility, LEAs shall coordinate with affected JHAs and utility providers [see 53A-20-108 of the Utah Code]. LEAs shall ensure that the siting of a new educational facility or an expansion of a facility in the intended location will comply with applicable local government regulations and will not conflict with entitled land uses [see 10-9a-305 for municipalities and 17-27a-305 for counties, and 10-9a-406 of the Utah Code]. LEAs shall ensure that all JHA services and utilities required for educational facility construction activities will be provided in a logical cost-effective manner and that any potential safety hazards are mitigated.

LEA facilities planners shall engage the JHA Planning and Zoning Department early in the planning phase. The JHA will review the project plan with respect to local ordinances, planning and zoning requirements, and master plans regarding the site-specific parcel that the LEA proposes to construct on.

Educational facility site selection is a process that will involve the CAC, public planning agencies as well as other impacted entities and stakeholders. The public community should be kept continuously informed of the growing needs of the LEA for new

educational facility sites. Formal processes and procedures should be utilized that will clearly, concisely, and document the rational for selecting or rejecting a proposed educational facility site. The site that an LEA selects and proposes for an educational facility shall be planned and programmed in advance of the design of the facility.

A proactive working relationship with the JHA is an invaluable consideration with respective of the local JHA political and economic environments. Prior to property acquisition, LEAs should contact the JHA to research local growth trends and potential zoning changes that may affect the proposed site. During the preliminary site planning and design phases, an LEA shall consult with the JHAs Planning and Zoning Department for input. The DP shall engage the JHA engineering staff for information regarding ROWs, pedestrian pathways, utilities, and adjacent property uses that may be affected by the siting of an educational facility.

When new educational facilities require off-site street improvements or utility connections, the JHA will require construction and inspections to meet JHA standards and specifications. Storm drainage detention requirements are locally regulated. Fire suppression water systems constructed on an educational facility property are required to be meet the JHA and Fire Marshal's standards and specifications.

Coordination with Utility Providers

Utilities planning and design for new educational facility construction shall be considered before construction commences. JHAs may own, provide, and operate some local utilities. LEA facility planners shall collaborate with local utility providers regarding the availability, capacity, required extensions and existing locations of required utility infrastructure during the pre-design and design phases.

Impact Fees

LEAs may be required to pay impact fees. It is helpful to understand allowable impact fees and involve legal counsel as necessary to ensure that only applicable fees are incurred. Before a JHA or private entity can impose an impact fee, they are required to create an Impact Fee Facilities Plan. This is also referred to as a Capital Facilities Plan and may also require a fee that meets the definition of impact fee under Section 11-36a-102 subject to

chapter 11-36a-204 or the General Plan for JHAs serving a population of less than 5,000 with respect to the last federal census containing the elements outlined in 11-36a-302. Entities utilizing General Plans shall ensure that impact fees imposed are based upon a reasonable plan and proper notice is given regarding the associated impact fees.

There are situations in which LEAs may be able to negotiate lower impact fees or eliminate them altogether. Some examples are:

Agreements entered with the JHA that may utilize athletic fields, gymnasiums, auditoriums, or common spaces for community use in exchange for impact fees.

Agreements reached that the cost for run-off into storm systems is reduced.

Some examples of impact fee questions for consideration are:

What impact fees are being charged and for what infrastructure?

What fees have the potential to be charged?

Is this project a new facility, renovation, or remodel of an existing facility?

What improvements and dedications are required?

Are future oversizing requirements factored into the impact fee equation?

Are improvements or dedications of a project or system improvement required?

Is the project type specifically identified in the JHAs impact fee plan?

Are the specific system improvements listed in the JHAs impact fee plan?

Do the specified improvements have a value to the JHA other than as a system improvement?

How has the JHA previously imposed impact fees to LEAs?

JHA authority limitations:

May NOT impose requirements for landscaping, fencing, aesthetic considerations, construction methods or materials, additional building inspections, municipal building codes, building use for educational purposes or the placement or use of temporary classroom facilities on educational facility property. All portable

classroom facilities shall be properly inspected to meet the state-adopted building codes and all other applicable standards and specifications.

May NOT require an LEA to participate in the cost of any ROW, pedestrian pathway or study of the impact on an LEA respective to the ROW or pedestrian pathway that is not reasonably necessary for the safety of educational facility students and not located on or contiguous to facility property unless the ROW or pedestrian pathway is required to connect an otherwise isolated educational facility site to an existing ROW or pedestrian pathway.

A JHA may NOT require an LEA to pay fees not authorized under Utah Code

A JHA may NOT provide for inspection of educational facility construction or assess a fee or other charges for inspection, unless the LEA is unable to provide for inspection by a qualified inspector under criteria established by USBE Rule

A JHA MAY require an educational facility to pay impact fees imposed by the Impact Fees Act

Educational facilities may be exempted from imposed impact fees if the JHA affirmatively state it in its ordinance.

Exactions Purposes

Legitimate governmental purpose
Reasonably related to impact
Proportional to the additional impact created

Utah legislation requires a reasonable and appropriate exaction which is an individualized assessment that would place the burden on the developer to establish a process that is efficient to administer and will result in fewer demands for the educational facilities.

SUMMARY

JHAs may impose exactions and impact fees for educational facilities

LEAs shall ensure exactions and impact fees are appropriate to the educational facility

Exactions and impact fees may have opportunities for negotiation

If you have any questions and need subject matter expertise, consult legal counsel

Conditional Use Permits

A conditional use permit (CUP) allows a JHA to authorize conditional uses that may be essential to a particular community but are not specifically allowed property uses within the current zoning district. CUPs are designed to allow flexibility within zoning ordinance and boundaries. CUPs provide an opportunity to allow a zoning restricted use where they would otherwise be prohibited. CUPs may be granted for a multitude of reasons. Churches, schools, and small home-based businesses in residential neighborhoods are examples of allowable uses of a CUP. CUPs enable a JHA to regulate property uses that may have detrimental impacts to the community. Examples of common uses allowed with CUP requirements are defined within a JHAs planning and zoning ordinance.

Consideration of a CUP is a discretionary act provided by the respective JHA. A CUP application rendered by a JHA shall be scheduled and heard at a public hearing and if approved is subject to pertinent conditions defined within the CUP ordinance. Dependent on the JHAs ordinance requirements, hearings are typically held by a Planning and Zoning Board, the planning commission, or a zoning administrator. The owners of adjacent property within a specified distance prescribed through ordinance from the site requesting the CUP shall be given advance notice of the date, time, and location of the hearing to allow opportunity to give comment with respect to the specific CUP application.

If a conditional use permit is approved by ordinance some questions to consider for the approval process are:

Is the public hearing notice complete in its description of the project location and use being requested?

Is the public hearing notice issued from a legal representative of the JHA?

Is the proposed use compatible and suitable for the proposed site?

Are conditions of approval for dedications of land reasonably related to the intended use and its associated impacts?

Are environmental considerations clearly identified and defined with respect to the JHAs regulations and ordinances?

Are the required environmental considerations clearly defined?

Are the JHAs process determinations and approvals based upon substantial evidence within the record?

3. Educational Facility Schematic and Design Development

Once long-range planning has been completed, priority criteria for education facility requirements have been established, and potential sites have been identified, planning for a specific educational facility will commence. If an educational facility supports the education programs and goals established by the LEA, a determination of the education plan shall precede the planning and design of a facility. Educational outcomes of planning and programming shall be identified within the education specifications. Planning with respect to complete and carefully determined specifications is essential to a functional and cost-effective facility.

Education Specifications

Education planning specifications are obtained through the planning and programming phases by the LEA facility manager, Building Official, administrators and the DP. The creation of this document is the responsibility of the LEA administrators. The foundational components of an education program will describe education specifications, goals of the respective programs, and prescribed student outcomes. These will be determined by the LEA administration within the constraints of statutory and administrative rules. The format in which education specifications are expressed will vary between LEAs different pedagogies.

Written Education Specifications

The education specifications should be outlined, specified in detail, clearly and concisely articulated, and shall be provided to the DP to mitigate the potential for any planning and design misinterpretations.

Format and Language

The educational specifications shall be organized and written in a format that is easily communicated. Education specifications should not be purported as potential design

solutions. They are a statement of the educational standards, plans and adequacy of the LEA.

Education Specifications Developed Conjunction with LEA Planning Team and Consultants

Education specifications shall be developed by LEA administration, educators, and the education planning team. Education specifications shall provide the DP with information respective of several specific domains:

> General philosophy of the facility. It shall articulate the goals and values to be achieved, and educational outcomes proposed for the facility.
>
> Known educational activities and organizational development requirements necessary to support their programs, including the proposed quantity of student enrollment.
>
> Requirements for dedicated spaces and space relationships within the educational facility programing and other associated activity spaces.

Additional information that may be helpful to the DP include characteristics of the community, special requirements to combine classroom space for larger instructional areas during certain periods of the day, cafeteria space that may double as a commons or presentation areas, after school programs or space for potential community use. Other predetermined general educational facility characteristics that are useful to identify are the need for self-contained classrooms, current technology to be utilized, and the need for in-school specialized spaces. Actual needs and requirements will vary by LEA and the specific educational facility.

Planning Utilizing Education Specifications

Education specifications should identify the design expectations and requirements and shall be communicated effectively, accurately, and in specific detail. The planning process that results in written education specifications is paramount. It shall be representative of

LEA Board and administration, educators, CAC, DP, and educational consultants if contracted. Education specifications developed by the planning team will require approval of the LEA board.

The education specification planning team should be aware of current trends in education and design solutions provided by DP. Educational facility consultants may provide data on trends in education and educational facilities. An educational facility will inevitably outlast the current programs for which it was designed. Therefore, it should take into consideration future flexibility regarding future additions, remodels, and renovations.

Technology may assist with a well designed and constructed educational facility. This capability will be a prerequisite consideration for new educational facilities to mitigate early facility obsolescence due to ever changing technology and education programs.

Designing Safe, Secure and Healthy Educational Facilities

Violence in our schools is both a safety and security concern. The threat is real and failure to act opens LEAs to liability. The most important concern is the safety, security and protection of students, staff, and visiting patrons. Security programs and policies shall be implemented by LEAs to reduce potential for aggression, threats, or acts of violence. Training of staff shall be established to identify safety and security measures. Security systems and equipment shall be installed within new and existing facilities. Security systems are an essential component of educational facility design and shall be established throughout the planning and design phases. Value engineering out security is prohibited. The entire educational facility campus shall be designed to ensure that education, safety and security of students and staff is primary, and that the potential of violence is eliminated.

Several security related designs may be implemented when a school is being planned and programmed. It is the LEA's responsibility to ensure that the DP examine all potential recommendations and regulations regarding educational facility safety and security. The DP will propose design solutions for mitigation of threats of violence. The discussion of safety and security should be addressed with respect to both the exterior and interiors of the educational facility during planning, programming, and design phases.

Perimeter of Facility Grounds

All educational facilities shall have a weapon-free boundary. Signs shall be posted clearly indicating this. Students shall be able to safely access and egress educational facility grounds. Landscaping at educational facilities shall attempt to eliminate all potential concealed spaces. The public should be able to view the facility for any illicit or suspicious activities.

Parking Areas

Exterior lighting shall be designed for safety and security. Adequate lighting levels are essential to the security of the educational facility site. Adequate lighting shall be in place for safety and security measures when the facility is occupied. Educational facility parking shall have line-of-sight to the facility and the surrounding ROWs.

Direct access to the school is essential and shall be monitored. Pedestrian pathways to an educational facility should be minimized in length for the safety and security of students and staff. Security cameras should be installed and monitored. Pedestrian pathways should be visible from the educational facility.

Educational Facility Perimeter

Blind locations for someone to hide shall be eliminated. Educational facility access and egress locations shall be able to be secured for the safety and security of students and staff. Provisions to secure exterior doors shall be regulated by code and allow for emergency egress.

Roof access shall be limited to the interior of the facility. There shall be no roof access from the exterior of the facility. This will include any exterior structural or architectural components of the facility that would allow for access into the facility via the roof.

Educational Facility Interior

Exterior access and egress doors shall be able to be secured. Educational facility interior spaces should be able to be segregated and secured when portions of the facility are in use for community activities. Facility signage shall be properly and clearly demarcated. Single points of entry with secure vestibules shall be designed to allow for monitoring of the public requiring access and egress to the educational facility. LES security personnel, if contracted, should be proximate to the main entrance of the facility. Electronic access systems shall be designed to allow for securing the facility at all points of access and egress. Common areas and community spaces should have staff supervision.

Emergency Communications

Being able to communicate in a disaster or violent incident is paramount. A two-way public address system and panic buttons should be installed in each classroom with a back-up power supply.

Selecting a Design Professional

Administrative Rule 33-5 - Construction and DP Selection provides direction for the selection of DP services. It is state policy to give public notice of all requirements for DP services and to negotiate contracts for these services based on demonstrated competence and qualifications for the professional services at fair and reasonable prices. Cost is prohibited as being part of the criteria determining the awarded firm an LEA contracts.

Annual Statement of Qualifications and Performance

LEAs are required to request firms providing DP services to submit a statement of qualifications and performance information that shall include the following:

- The name of the firm and the location of its Utah offices and indicate the principal location of business

The age of the firm and its average number of employees over the past five years

The education, training, and qualifications of members of the firm and key employees

The experience of the firm with respect to their technical capabilities and project experience in educational facility design

The names of at least three former clients who have contracted their professional services within the last year

Any other pertinent information regarding qualifications and performance information requested by the LEA

Request for Statements of Interest

LEAs shall prepare a request for Statements of Interest (SOI), or a Statement of Interest and Qualifications (SOIQ) that details the LEA project requirements for DP services and shall contain evaluation criteria in accordance with legislative codes and USBE rules.

Small Purchases of Design Professional Services

When the procurement of DP services is estimated to be less than $20,000.00, LEAs may select the provider from either a list of firms who have submitted annual statements of qualifications and performance information, or from other qualified firms. The state procurement code requires if procurement is estimated to exceed $20,000.00, the DP selection committee method must be utilized. When the total estimated cost of construction will be more than $99,999.00, services shall be procured following all applicable codes and rules.

Design Professional Selection Committee

The LEA DP selection committee shall consist of three members, at least one of whom is qualified, when possible, in the professions of architecture or engineering. One member of the committee shall act as chair and coordinate negotiations of the contract with the most qualified firm. Contracts will be awarded at compensation which the LEA determines as fair, reasonable, and compliant with applicable legislative rules. The committee shall consider the estimated value, project scope, schedule, project complexity and professional experience of the DP firm with educational facility design. The selection committee shall provide for consideration no less than three firms to be evaluated as professionally and technically qualified unless less than three firms responded to the request for SOI or SOIQ.

Should the selection committee be unable to agree on a satisfactory contract with the firm first selected at a price that an LEA determines to be fair and reasonable, negotiations with that firm shall be formally terminated. The selection committee shall then begin negotiations with qualified firms until a DP agreement is reached. If a DP agreement is not reached through this process, the LEA shall recommence the advertisement phase.

Educational Facility Design

Once an LEAs long-term plan is completed, a site has been formalized and approved, the education specifications are compiled and completed, the DP shall be contracted. The DP shall review the site and adjacent community for design considerations. The education specifications shall be reviewed and updated as necessary when new information substantively deviates from the original education specifications.

An LEA design committee should have representatives from the LEA Board, educators, support staff, and the CAC. The DP shall meet with the LEA design committee to review the project requirements. The design committee shall review schematic design of the facility, site layout, site access proposed construction materials, mechanical systems, and architectural aesthetics.

Site Planning and Design

Site access, adjacent traffic patterns, surrounding property uses, facility orientation and aesthetics are important considerations for the design process. On-site school bus routing, delivery access, utility connections, personal automobile and pedestrian access and egress, athletic fields, MEP, and custodial spaces, shall all be part of the planning and design.

The JHA shall be notified to allow review the educational facility with respect to their planning and zoning ordinances, local traffic implications, utility regulations and requirements regarding connections to the required educational facility infrastructure. Other impacted agencies shall be notified of the project to allow them the opportunity to give comment. The DP shall coordinate these efforts in conjunction with LEA staff and the JHA.

Schematic Design (SD)

The DP will create floor plans, elevations, and renderings indicating the educational facility design intent. SDs shall have pertinent information to show compliance with the education specifications and requirements of the design committee. A site plan shall be included as a reference document. A preliminary budget within an LEAs financial constraint shall be provided. SDs shall be reviewed by the design committee and LEA staff and be presented to the CAC for comments.

Design Development (DD)

When SDs are approved by the LEA, the DPs shall review construction materials, mechanical systems, fire alarm and suppressions systems, communications systems, and safety and security requirements. The DP shall contract with associated engineers and other design professionals required for the project design. Educators, administrators, custodial staff, food services, transportation services, fire services, and other applicable LEA staff shall be consulted for comments, suggestions, recommendations, and perform a detailed plan review.

The DP shall prepare detailed drawings and an outline construction specification. An updated budget is submitted for review to ensure that project is within budget. DDs should be reviewed by the design committee and LEA staff. Approval will be given by administrative staff or an LEA board. DDs will later be utilized in the value engineering process.

Construction Documents (CD)

When DDs are formally approved and value engineering has been completed, the DP shall prepare final detailed plans and specification CDs to be utilized in the bidding process and for the Contractor to construct the project. A final budget review shall occur before bidding. Bid, design, and construction contingencies should be included within the final budget as protection against cost overruns. Approval to proceed to the bidding process shall formally be given by the LEA Board or administrative staff.

Design Professionals Ongoing Role

When the educational facility design is complete, a final plan review shall be performed by LEA staff. The DP will assure continuity from the original education specifications to the completion of CDs for the project. Some LEAs will have DPs and project managers on staff but may still benefit from contracted DPs subject matter expertise for external review. DPs shall continue their contracted professional services through Substantial Completion or Final Acceptance based on their contractual obligations.

A one-year post occupancy and contract warranty review of the project by the DP and LEA Building Official is a contracted function to be utilized to identify any incomplete functional, or aesthetic issues required for correction while the project remains under warranty.

4. Plan Review and Value Engineering

Value Engineering and Lifecycle Costing at Design Development

The obligation to conserve energy and reduce long-term operational costs requires LEAs to utilize planning techniques that will contribute to the design and construction of energy-efficient and cost-effective educational facilities. Two closely related management tools that are available for facility construction planning and design are value engineering and life-cycle costing.

Value Engineering (VE)

Value engineering is a systematic approach for facility construction and ongoing operations and maintenance. This process should take place at the completion of DDs and again at completion of CDs. This allows for details of building design, materials, and systems to be evaluated and then reevaluated.

VE is required to assure that the project is completed respective to long-term value to the LEA, community, and quality of the educational facility. Life cycle costing should be utilized to help determine alternative options, alternative materials, FF&E options, and all functional mechanical systems.

VE may be completed in many ways. The LEA design committee and DP should be implementing this process throughout both the DD and CD phases. The purpose of value engineering is to validate the quality and cost effectiveness of the project from the perspective of total life cycle which is from cradle to grave, from beginning of construction through decommissioning and demolition of the educational facility. Life-cycle analysis is an important aspect of the value engineering process.

Value engineering shall not be conflated with scope reduction or cost-cutting. Value engineering does not increase risk, budget, schedule, operational or life-cycle costs and does not decrease the scope or quality of the project. VE increases the benefit and value through operational effectiveness, reliability, and increased throughput.

Life-Cycle Costing

Life-cycle analysis is the determination of the total cost of a facility or elements within an educational facility over the life cycle from construction to decommissioning and demolition. The principal components of life-cycle costing are:

The initial capital costs, including actual construction, architectural and engineering fees, fixtures, furniture, equipment, land, site work, and landscaping.

Annual costs that include renovation, alteration and replacement costs, maintenance and custodial utilities, energy and other associated costs that are not part of the initial construction costs.

Finance, interest, and bonding expenses related to the facilities design and construction.

Structural Peer Review of Construction Documents

As part of the plan review by the DPs and LEA Building Official shall complete a third-party structural state-adopted building code review of the educational facility and shall be done at the completion of 100% CDs. An independent third party licensed structural engineer shall perform this analysis. At this time, all structural components should be identified in sufficient detail, and this shall be completed before construction documents are issued for bid.

All educational facility construction and major additions to existing facilities are subject to peer review. Sufficient time shall be allocated during the design phases to implement any corrections deemed pertinent to the construction of the project without impacting the project schedule. The latest version of the building code provides seismic ground data for a DP to utilize as educational facilities are designed. DFCM has established basic design criteria for snow and wind loads and soil frost depths for facilities within the state of Utah. These are located on the DFCM website.

USBE Review Process

The LEA Building Officer is responsible for coordinating JHAs and USBE to ensure appropriate documents are filed for all construction projects estimated to cost more than $99,999. USBE is tasked with tracking projects costing more than $99,999. Projects utilizing federal funds shall be reported to the USBE. The process begins with the submittal of an SP-4 and all items listed within the Pre-Construction Checklist. The information contained within the SP-4 identifies the project scope, location, what the LEA is designing and constructing, who the project DP is, and preliminary cost estimates. These forms shall be submitted online to the School Construction and Facilities Specialist at USBE. The completed SP-4, with preliminary CDs commences the formal approval process. These projects will require the CO be obtained by USBE.

Energy Code Plan Review

Energy conservation is a major component in the design and construction of every new educational facility. The educational facility design shall comply with state and federal regulations to ensure an energy efficient design. Energy codes are intended to promote cost-effective design practices and technologies that minimize long term energy consumption without sacrificing either the comfort or productivity of the facilities occupants. All new educational facility projects shall comply with all applicable energy codes. These requirements apply to the building envelope, distribution of energy, systems and equipment, mechanical systems, water heating, lighting, and other applicable energy management component systems. A complete set of ASHRAE/IES Standard 90.1 compliance forms may be obtained by submitting a request form to the ASHRAE/IES Standard 90.1 Energy Code. The Utah State Building Board has set a standard that is twenty-five percent higher for all new state-owned buildings than the ASHRAE/IES Standard 90.1-2004 Energy Code.

Educational programs promoting energy conservation contribute to general energy awareness and environmental best practices. Educational facilities are required to address their educational facility component systems and processes for decreased energy consumption. New facilities purposefully designed to conserve energy in facility operations over the life cycle of the facility are an integral component of an LEAs overall energy conservation program. USBE encourages LEAs to meet or exceed the U.S. Environmental Protection Agency's goals for Energy Star to earn the Energy Star designation for their educational facilities.

The DP and LEA Building Official are required to provide a written energy code compliance report performed by an ICC certified commercial plan reviewer to USBE School Constructions and Facilities Specialist prior to construction and based on 100% CDs. During construction, field inspections shall be conducted to ensure the facility is constructed in compliance with the applicable energy codes.

Certified Plans Examiner Review

Prior to bidding of an educational facility project, the LEA Building Official shall ensure that an ICC certified commercial plans examiner review CDs for compliance with all applicable codes. Correcting an error in the design phase can save up to ten times the cost and the associated schedule impact of discovering it in the design phase that would create a potential costly change order and a negative schedule impact.

State Risk Management Plan Review

Utah State Risk Management can provide preliminary school construction plan reviews for Americans with Disability Act accessibility and playground equipment safety.

Local JHA Health Department Plan Review

The local JHA health department will perform plan reviews to ensure the project complies with all applicable federal, state, local codes, and regulations.

State Fire Marshal Plan Review

All plan review submittals whether they are for the fire and life safety plan review, a fire sprinkler plan review, fire alarm plan review, or kitchen automatic fire suppression system plan review shall be accompanied by the most current review application form for the type of review requested along with the DPs code analysis for the project. No incomplete plans will be accepted for review by the State Fire Marshal's office. All supporting

specifications, calculations and stamped plans must be supplied at the time of submittal. Some examples would be cut sheets on the hardware, the engineer water supply analysis, architectural, electrical, fire protection and mechanical plans, building specifications, finish schedules, as well as door and window schedules. Questions pertaining to these should be directed to the Utah State Fire Marshal's Office.

The final plan review must be completed by the DP, LEA Building Official and the State Fire Marshal's office prior to bidding the project. It is important that DPs plan for appropriate review time within the project schedule. All plans and specifications must be complete when they are submitted for review. The plans must also show all buildings and roadways within 150 feet of the proposed building for exposure determination.

Remodel or addition project plans and specifications must also show enough of the existing facilities and site to determine proper fire protection and personnel exiting as well as whether the project causes or compounds any problems with existing structures. This includes any relocatable buildings near the potential educational facility.

A specific review response letter noting where the plan and/or specification documents are deficient is sent back to the DP for a response that requires revisions to Contract Documents where applicable.

Review items may address but not be limited to:

Fire lanes, hydrants and FDC locations
Combustible or flammable liquid storage and use
Corridor construction
Fireproofing of structural members (spray or encasement)
Stairs and ramps
Exit enclosures, including passageways
Shafts
Fire extinguisher locations and types
Open areas, such as commons areas or cafeterias
Pass-through passageways
Intervening rooms
Special doors (overhead, sliding or folding)
Dead ends and obstructions
Hazardous areas (science labs, boiler rooms, shops, etc.,)
Attic smoke and draft stops

Insulations
Wood usage in connection with construction types
Door and window schedules, along with hardware
Finish schedule
Special architectural applications
Fire and smoke dampers
Plenums
Emergency lighting
Exit signs
Fire alarm systems, including placement of horn/strobe, pull stations, heat and smoke detectors, and fan shut down
Sprinkler and alarm plan and specification submittals must be reviewed by the project engineer of record and designed by a Nicet III or greater for each discipline.
IFC 510 Emergency Responder Communication Coverage

A plan review letter is generated by the LEA Building Official together with personnel at the State Fire Marshal's office, and sent to the DP. The comments regarding the plan's specifications are then returned to the DP for any required corrections. The DP must respond to the LEA Building Official and the State Fire Marshal's plan review letter in writing prior to the commencement of any construction. Review fees are the responsibility of the applicant to resolve prior to receiving a completed plan review letter.

School Safety and Security Requirements

School buildings are required to have universal access key boxes that are installed at main entry points and contain master keys and access devices that provide complete access to all areas of the school's building(s). Access to the universal access key boxes is limited to authorized emergency responders. Universal access key boxes are required to be electronically monitored for tampering and be weather and vandal resistant. Damaged or malfunctioning boxes are required to be immediately replaced or repaired by the school. The school is required to work with the county security chief and local first responders in determining optimal box placement. The location of universal access key box locations and protocols are required to be included in school emergency response plans, building schematic diagrams provided to emergency responders and in school safety and security training manuals.

Upon new construction or major remolding of a school building, an LEA is required to work in direct coordination with the state security chief, the county security chief, and the school safety and security director to ensure accessible and strategically placed

installation of Automated External Defibrillators (AED). One AED is required to be located in the main office(s), and additional AEDs are required to be located within 500 feet of the following areas: gymnasiums, auditoriums, any portable or temporary outbuilding, and in centralized locations of building(s).

State Fire Marshal Inspections

The State Fire Marshal's office may inspect all facets of project construction. The State Fire Marshal's office will issue a Certificate of Fire Clearance only after the completion of the project, and only after the successful testing and approval of all fire prevention, fire suppression and exiting systems. Inspection is required when work and system components are exposed for inspection, prior to concealment or coverage by construction materials and finishes, at 95% of completion, and at final approval. The DP, contractor, a representative from the LEA, and the local fire department shall be invited for the final completion inspection. The State Fire Marshal's office shall be present at all required inspections. All appropriate sub-contractors shall be present for the final inspection.

At the 95% inspection the State Fire Marshal's office will check all, but not limited to, the following:

Fire department access
Fire hydrant placement and operation
Fire walls (area separation complete to the deck, penetrations, dampers, etc.,)
Exiting Systems
Sprinkler piping, and standpipes
Certificates of underground piping tests
Rated door and window frames
Insulation and coverings
Fireproofing
Penetrations of structural members
Heating procedure equipment
School hot works programs

Prior to the final inspection, the DP shall assure that the project is complete and ready for inspection. The DP should schedule the final inspection, arranging for all the participants to be there. Those who should attend the final inspection are:

Design Professionals
General contractor
Project engineers
LEA representatives
Fire sprinkler system contractor
Electrical contractor
Mechanical contractor
Fire alarm system contractor
LEA Building Official
Representative from the State Fire Marshal's office
Representative from the JHA fire department
Assigned Building inspector

A complete walk-through of the entire project is conducted again, checking all correction items listed for 100% completion. An inspection of the fire sprinkler system is conducted noting coverage, and completeness of the system and to insure its functionality. The fire alarm system will be inspected for operation and adequate coverage. This also includes the twenty-four-hour battery test, emergency lighting and exit signs, door operation and hardware, mechanical systems inspected and tested for shut down, exhaust or special features including fire/smoke dampers. The kitchen hood fire suppression system is inspected and tested, including the fire alarm tie-in and fuel shut offs. All special doors such as roll-up doors or horizontal folding doors are inspected and tested for functionality. Inspectors also check to ensure all appropriate certificates have been obtained. Compliance with IFC 510 Emergency Responder Communication Coverage is verified by approved testing agencies and local first responding departments.

It is important that a key plan, map, and legend showing the fire zones and the fire sprinkler plan be installed proximate to the fire alarm control panel to aid the local fire department and emergency personnel should there be a fire within the facility.

The State Fire Marshal's office will generate a written final inspection report and send it to the project DP and LEA. Fire clearance is only issued after all fire and life safety items previously listed as deficient are resolved.

The LEA shall understand that occupancy will not be permitted without obtaining the Certificate of Fire Clearance, the inspector of record's final inspection, and all other required documentation is submitted. At that time, a Certificate of Occupancy will be issued.

5. Procurement Process

The construction procurement or bidding process is one of the most important steps in the construction of a new facility or the remodeling of an existing facility. If not carried out properly, the process may potentially create legal issues which may cause delays or complications. Improper bidding can also end up increasing final project costs. Any problems related to procurement must be resolved prior to the commencement of construction. The scope of service shall be clearly defined for the project to be successful.

Procurement Preparation

Prior to procuring any construction services, key decisions will have been given consideration. Some of the key factors to consider would include when the project must be ready to be occupied, the type of project, the requirements of the procurement unit, the location, size, scope, complexity, and economics of the project, the amount and type of financing available for the project, the availability, qualification, and experience of the procurement unit's personnel, the availability, qualifications, and experience of outside consultants and contractors, the results achieved on similar projects, and the advantages and disadvantages of utilizing different project delivery methods. See R33-13-203(3).

The Utah Procurement Code and Administrative Rules allow public school construction to be implemented utilizing different project delivery methods which are as follows: Single Prime (General) Contractor, Multiple Prime Contractors, Design-Build, Construction Manager Not at Risk, and Construction Manager or General Contractor (Construction Manager at Risk). These methods are not mutually exclusive and may be combined on projects. In each project, the methods may be adapted to fit the circumstances of the project. See R33-13-203(4). If a method other than Lowest Competitive Bid is selected, then it is possible for the owner to pre-qualify bidders. State law requires not only using certain delivery methods, but also that criteria be utilized in the selection of DPs and construction firms. See 63G-6a-15; R33-13; and R33-15.

When selecting DPs, the following shall be included in determining the most responsive and responsible offeror: basic information about the person or firm, experience and work history, management and staff, qualifications and certification, licenses and certifications, applicable performance ratings, financial statements, and any other pertinent information deemed necessary. See R33-15-301. The LEA must clearly state the criteria weighting in the solicitation. Note: Cost cannot be a factor utilized in the selection process of design professionals.

When pre-qualifying for public projects, the qualifications will usually depend on the financial stability of the bidding company and the scope of projects the company has completed in the past. A surety company will also be required to certify that the bidder is capable of bonding for the required budgeted cost of the project. An example of the pre-qualification information for a contractor to submit can be found in American Institute of Architects (AIA) Document A305.

Bid Documents

Bidding documents should include the following:

- Solicitation or invitation to bid
- Instructions to bidder
- Bid forms
- Information on bid security or bond, if required
- Owner-contractor agreement form
- Performance bond, and labor and material payment bond, if required
- General and any supplementary conditions of the contract
- Drawings and specifications
- Any addenda issued prior to the receipt of bids
- Complete list of alternates either additive or deductive

Bid documents shall be made available to all bidders in their entirety. Making only portions of documents available will most likely result in inaccurate bids as several documents may contain vital information relating to a particular scope of work needed for comparable and accurate bids. The DP can assist the Owner in providing required documents needed by the contractor to obtain responsible bids.

To maintain compliance, all plan holders or bidders are required to register their

addresses, phone numbers, and contact persons with the DP. This information will be utilized for the purpose of issuing addenda, document tracking, and deposit refunding which are requirements of the bidding process. If the project is posted on the Utah Public Procurement Place, listing the bid number and website in the bidding documents for addenda information is acceptable.

Solicitation

For educational facility construction, the law requires that bids be advertised for a minimum of seven days. This shall be done on the main website for the procurement unit or on a website provided by the Utah Division of Purchasing for posting a public procurement notice. It is advantageous for the LEA to advertise through a bid service such as the Intermountain Contractor, or other bid service publications. The DP should also prepare the bid form for the LEA. The bid form shall be clear, concise, and filled in completely by the bidder. Failure on the part of any bidder to fulfill the bidding requirements shall be considered nonresponsive. There is no allowance for deviation from the criteria outlined in the solicitation during the proposal evaluation process. All evaluation committee members for procurements are required to complete a conflict-of-interest form.

Deposits

When distributing bid documents to bidders, the LEA or DP should collect a deposit to ensure the return and good condition of all contract documents. These documents will later be turned over to the successful bidder to be distributed to their subcontractors. If a bidder does not return the bid documents, their deposit will be forfeited. The recommended deposit amount should be approximately equal to the amount required to reproduce the documents. It is imperative that bid documents are returned for safety and security of the project and public educational facility.

Insurance

All Contractors and Subcontractors shall carry a specified amount of workers compensation insurance applicable for the project. Contractors and subcontractors shall

also carry Commercial General Liability Insurance, Automobile Liability Insurance, Aircraft Liability Insurance (when applicable) and Valuable Papers and Records Insurance (when applicable). The insurance provider is required to be licensed to do business in the state of Utah or have an AM Best rating of no less than A-VIII.

Insurance Provided by the Owner

Subject to the insurance provisions of the construction Contract the LEA may require securing at its own expense specific coverage for all Contractors and Subcontractors of all tiers performing work at the project site. An LEAs insurance will not apply to vendors, suppliers, material dealers, truckers, or others who merely furnish property and/or transport materials, parts, or equipment to or from the project site. The LEA shall provide the following insurance:

Workers Compensation Insurance with Utah statutory limits for contractors in accordance with UCA 34A-2 Workers Compensation Act. Refer to your Workers Compensation carrier to ensure your limits meet the statutory requirements. Each contractor will be issued an individual Workers Compensation policy, losses on projects will affect individual experience modifiers.

Commercial General Liability Insurance affording insurance for the hazards of the premises and operations (including explosion, collapse, and underground hazards), elevators, independent contractors, completed operations and products, broad form property damage (including completed operations), blanket contractual liability, and personal injury liability. The Division of Risk Management typically requires limits of $1,000,000 per occurrence and $3,000,000 aggregate.

Excess/Umbrella Insurance—refer to Risk Management for applicable limits.

Railroad Protective Liability Insurance (as required)—refer to Risk Management for applicable limits.

Builder's Risk Insurance—refer to Risk Management for applicable limits.

DP Professional Errors and Omissions Liability Insurance—refer to Risk Management for applicable limits.

Contractors' Pollution Liability Insurance—refer to Risk Management for applicable limits.

Insurance Provided by Contractors

The risks associated with an educational facility project should pass through to the contractors and subcontractors. All contractors, including subcontractors, shall maintain the following insurance:

Workers Compensation Insurance with Utah statutory limits for contractors in accordance with UCA 34A-2 Workers Compensation Act.

Commercial General Liability Insurance with $3,000,000 aggregate and $1,000,000 per occurrence limits

Commercial Automobile Liability Insurance with $1,000,000 per occurrence, combined single limit

Aircraft Liability Insurance (when applicable)

Valuable Papers and Records Insurance (when applicable)

Certificates evidencing insurance coverage must be submitted to the owner prior to commencing work.

The State of Utah, through the Division of Risk Management, has contracted with the following insurance brokerage firm:

Moreton & Company
101 S 200 E Suite #300
Salt Lake City, UT 84111

Addenda

During the bidding period, it is natural for the potential bidders to have questions regarding the contract and bid documents. Occasionally, the DP may want to change the documents to reflect the concerns addressed during the bid period. The LEA or DP should never answer a question over the phone unless the answer can be found within the bid documents. All responses shall be in writing and submitted to all plan holders as part of an official addendum. Doing otherwise jeopardizes the bid process and could result in a bidder contesting the bid results. It is also recommended that any information regarding

the bid be directed to the DP or LEA regarding disqualification for noncompliance. It is generally best practice to have all addenda issued through the DP. All questions during bidding should be processed through the DP.

Processing and Evaluation of Bids

After the solicitation has closed, the DP and LEA will open bids submitted by the deadline identified in the solicitation. Bids not submitted by the deadline shall not be accepted. An initial review of the bids shall be completed to confirm completeness of the bids including the presence of the bond and securities, and any irregularities discovered during this review. Following evaluation of the bids, the successful bidder shall be notified.

Awarding the Contract

After evaluating bids, the LEA shall award a contract to the lowest responsible bidder. Once a Contractor has been selected, the LEA may negotiate with the contractor regarding any changes to the bid. However, if major changes are necessary, the solicitation may need to be canceled and re-bid.

Procurement (Bidding) Process Summary

The American Institute of Architects (AIA) has several documents available to assist in the bidding process and may be consulted to obtain the necessary documents. LEA and DPs can help secure these documents. The LEA's legal counsel should also be consulted, along with the LEA's purchasing departments or those assigned to oversee such procedures.

Purchasing Specifications and Procedures

A specification is a detailed description of materials, supplies, equipment, or construction work that is used in the procurement process to inform prospective Contractors of the LEAs intent. A statement of scope of work is a specification generally utilized for the

procurement of professional or construction management services. One of the purposes of the Utah Procurement Code is "to foster broad-based competition within the free enterprise system." Specifications or statements of work for all construction shall be written to not to restrict competition to a single supplier.

The purpose of a specification is to serve as a basis for obtaining a supply or construction item adequate and suitable for the procuring agencies' needs and the requirements in a cost-effective manner, considering the total cost of ownership and operation as well as initial acquisition costs. Specifications shall permit the maximum practicable competition consistent with this intent. Specifications are to be drafted with the objective of clearly and concisely describing the procuring agencies' requirements.

There are three general types of specifications used in preparing contracts for equipment, supplies, or construction: functional or performance specifications, design specifications, and brand name or equal specifications. While these general types are described below, it is rare to find specifications that fit completely into just one of the three categories. Many specifications will contain a combination of design and performance requirements and may include brand name or equal descriptions of project components. The Division of Facilities Construction and Management Administrative Rule R23-1 is a compliance document that an LEAs construction purchasing personnel should comply with for their projects.

Functional or Performance Specification

Functional or Performance Specifications contain performance characteristics that are desired for the product or material that identify the specified item functionality. The detailed design or exact measurements are not defined. Performance specifications state the overall requirements that each contractor will supply to meet the required performance specification.

Design Specifications

Design specifications contain a description of intention as opposed to performance standards. Design specifications may be as detailed as needed. Depending on the nature

of the item, the design specifications may contain precise measurements, tolerances, materials, product tests, quality control, and other detailed information, provided competition is not being limited to a sole source. The information furnished in the specification should be sufficiently detailed to ensure that all items manufactured to the specifications will be virtually the same.

Brand Name or Equal Specifications

Brand name or equal specifications are clear and accurate product descriptions. These descriptions shall not contain features that unduly restrict competition. It may be necessary to describe technical requirements for materials and equipment by referencing brand name products to define performance or other salient requirements. References to brand names shall be followed by the words "or equivalent" and a description of the design and functional or performance characteristics is required. Specific brand names may be utilized only when establishing design and quality standards and only if there is no other reasonable method of designating the required quality of the item desired. When brand names or catalog numbers are utilized, bidders shall be informed that these references establish only a design or quality standard and any other products that clearly and demonstrably meet the standard are also acceptable.

LEAs should avoid incorporating a particular manufacturer's specification as the project specification. This may give the appearance of restricting competition and suggest that other manufacturers' products are at a disadvantage and may not be accepted. If the LEA specifies a brand name cabinet, for instance, the essential key elements or features of the product shall be stated.

Contractor-Developed Specifications

To ensure objective contractor performance and eliminate unfair competitive advantage, contractors contracted to develop or draft specifications, requirements, statements of work, invitations for bid, or requests for proposals must be excluded from competing in the procurement of such projects. The only exceptions to this rule are for a design-build construction project or other procurements determined and qualified in writing by the procurement official.

Procurement Official Duties in Maintaining Specifications

LEAs are independent procurement units, as established by the Utah Procurement Code. As such, the LEA's procurement official may prepare, issue, revise, maintain, and monitor the use of specifications for supplies, services, and construction. The procurement official may enter Contracts with others to prepare construction specifications when there will not be a substantial conflict of interest. The procurement official shall retain the authority to approve all specifications.

All specifications shall seek to promote overall economy and best use for the purposes intended and encourage competition in satisfying the LEA's and State's needs and shall not be unduly restrictive. The requirements of this part regarding the purposes and non-restrictiveness of specifications applies to all specifications, including but not limited to, those prepared by architects, engineers, designers, and draftsmen for all public Contracts.

Utah Antitrust Law

The primary purpose of the antitrust laws is to protect inter-brand competition. The Utah Antitrust Act identifies the legislative findings and purpose of the act:

> The Legislature finds and determines that competition is fundamental to the free-market system and that the unrestrained interaction of competitive forces will yield the best allocation of our economic resources, the lowest prices, the highest quality and the greatest material progress, while at the same time providing an environment conducive to the preservation of our democratic, political and social institutions.
>
> The purpose of this act is, therefore, to encourage free and open competition in the interest of the general welfare and economy of this state by prohibiting monopolistic and unfair trade practices, combinations, and conspiracies in restraint of trade or commerce and by providing adequate penalties for the enforcement of its provisions.

Preference for Commercially Available Products

Recognized commercially available products shall be procured wherever practicable. In developing specifications, accepted commercial standards are to be used and unique products shall be avoided to the extent practicable.

Non-restrictiveness Requirements

All specifications must be written in such a manner as to describe the requirements specified without having the effect of exclusively requiring a proprietary supply or construction item, or procurement from a sole source where a rigid standard is specified and there are no other allowed substitutions due to the nature of the conditions to be met unless no other manner of description will suffice. This may only be utilized when restrictive standards are necessary and there is only one proprietary product known that will meet the required specifications and standards. In this event, a written determination shall be approved by the LEA procurement official that it is not practicable to use a less restrictive specification. The written determination shall be kept within the purchasing and project files.

Procedures for Developing Specifications

Specifications may designate alternate supplies or construction items where two or more design, functional, or proprietary performance criteria will satisfactorily meet LEA requirements. The specification shall also contain a nontechnical section to include any solicitation or contract term or condition such as a requirement for the time and place of bid opening, time of delivery, payment, liquidated damages, and similar contract matters.

Use of Proprietary Specifications

The LEA procurement official shall seek to designate at least three brands as standard references and state that substantially equivalent products to those designated will be considered for award, with specific conditions of approval being described within the specification. Unless the procurement official determines that the essential characteristics

of the brand names included in the proprietary specifications are commonly known, a description of the design, functional, or performance characteristics which are required must be included.

The LEA shall also solicit other product sources to achieve the degree of competition that is practical. If only one source can meet the requirement, the procurement shall be made in accordance with Section 63G-6a-802 and R33-8-101.

Conditions for Use of Sole Source Procurement

Sole source procurement may be used only if a requirement is reasonably available from a single supplier. A requirement for a particular proprietary item does not justify a sole source procurement if there is more than one potential bidder or offeror for that item. Examples of circumstances which could necessitate sole source procurement are:

There is only one source for the procurement item

Transitional costs are unreasonable or cost prohibitive

Other circumstances that make awarding a contract through a standard procurement process impractical or not in the best interest of the procurement unit

The determination as to whether procurement may be made as a sole source shall be made by the LEA procurement official in writing. The procurement official may specify the application of the determination and its duration. In cases of reasonable doubt, competition should be solicited. Any request that a procurement be restricted to one potential contractor shall be accompanied by an explanation as to why no other product will be suitable or acceptable to meet the need. The procurement officer shall conduct negotiations, as appropriate, as to price, delivery, and terms. See 63G-6a-802 and R33-8-101.

Emergency Procurement

Section 63G-6a-803 UCA provides instructions for emergency procurement. This section of the Code states, in part, "a procurement official may authorize a procurement unit to engage in an emergency procurement without using a standard procurement process if the procurement is necessary to: (a) avoid a lapse in a critical government service; (b) mitigate a circumstance that is likely to have a negative impact on public health, safety, welfare, or property, including a natural disaster; or (c) protect the legal interests of a public entity.". When making an emergency procurement, the procurement unit shall make a written determination documenting the basis for the emergency and the selection of the procurement item. A record of the determination and selection shall be kept in the procurement and project files.

Procurement Records Retention

Section 63G-6a-2003 UCA, "Record of Contracts Made," requires the procurement official to maintain a record of all contracts made under Section 63G-6a-506 [Small purchases], 63G-6a-802 [Award of a contract without engaging in a standard procurement process], or 63G-6a-803 [Emergency procurement], in accordance with Title 63G, Chapter 2, Government Records Access and Management Act. The record shall contain each contractor's name, the amount and type of each contract, and a listing of the procurement items to which the contract relates. Records shall be kept for the longer of six years, the time otherwise required by law, or the time provided by rule made by the rulemaking authority.

Documents and Documentation

It is extremely important to document procurement determinations. Documentation and archival records retaining standards are required by statutes or administrative rules. Most procurement conflicts involve a lack of proper documentation. The Utah State Board of Education and Division of Archives and Records Service developed the UTAH R.A.M.P. (Records Appraisal & Management Program) which provides a recommended retention schedule and is intended to serve as a guide for LEAs. LEAs may adopt the entire schedule, individual sections, or a modified version of such.

Additional information can be found at the Utah State Archives web site. Many documents and forms are available on the Utah State Division of Purchasing and General Services web site.

The Division of Facilities Construction and Management (DFCM) web site also has many constructions agreement standard documents such as architect, engineer, contractor agreements, etc., Documents can be found under "Construction MGMT", then "DFCM Standard Documents".

Cost Plus a Percentage of Cost Contract Restrictions

Section 63G-6a-1205 places restrictions on the use of cost plus a percentage of cost contracts. Such contracts may be utilized only if approved by the procurement official, it is standard practice in the industry, and the percentage and method of calculating costs are in accordance with industry standards. A cost-reimbursement contract may be utilized only when a determination is made in writing by the procurement official that such contract is likely to be less costly to the LEA than any other type or that it is impracticable to obtain the supplies, services, or construction required except under such a contract.

Unlawful Conduct

It is illegal for any person working in a public capacity—whether for a state agency or an educational procurement unit like a school district or charter school—to ask for or accept compensation for their procurement process or decisions—see 63G-6a-2404(2):

> "It is unlawful for a procurement professional or contract administration professional, or a family member of either, knowingly to receive or accept, offer or agree to receive or accept, or ask for a promise or pledge of, a gratuity or kickback from a person who has or is seeking a contract with or a grant from a public entity."

It is also illegal for any person to offer compensation—see 63G-6a-2404(1):

> "It is unlawful for a person who has or is seeking a contract with or a grant from a public entity knowingly to give, or offer, promise, or pledge to give, a gratuity or kickback to: (i) the public entity; (ii) a procurement professional or contract

administration professional; or (iii) an individual who the person knows is a family member of an individual described in Subsection (1)(a)(ii)."

The penalties for such conduct are identified in Section 63G-6a-2404(4).

U.S. Citizenship Verification

U.S. citizenship verification for all those contracting with an LEA is outlined in Utah Law 63G-12 "Utah Immigration Accountability and Enforcement Act." It requires LEAs to verify that all those they contract with (not just limited to construction), and all those they employ, are either legal U.S. citizens or are legally approved to be working in the United States.

Federal Funds Used in Projects and Debarment Verification

Federal law requires LEAs to verify that those they contract with verify that those entering contracts using federal funds have not been debarred through the System for Award Management.

LEA Surplus Property

LEAs are required to comply with state law when they choose to purchase, or are involved in the resale of, surplus property. LEAs are allowed certain rights when it comes to purchasing certain types of surplus property. Information regarding the purchase or resale of surplus property can be found at the following:

Purchase of Surplus Property (Land) – 53G-4-902

Resale of Surplus Property (Land) – 53G-4-903

State-Owned Surplus Property – R33-26-101

6. LEA Building Officials and Construction Inspection Procedures

Building Code Inspection Requirements

All new construction, additions, remodels, or renovations scope of work that an LEA has assumed responsibility and contracted for, and which the LEA authorizes work, shall be subject to inspection under the administrative and direct operational control of the LEA Building Official.

LEAs shall appoint a Building Official that has direct administrative and operational control and responsibility for inspection of all new construction, facility additions, and any renovations of LEA educational facilities. LEAs shall provide in writing the name of the Building Official and notify USBE of any personnel changes of this position. The LEA Building Official is responsible for coordinating with JHAs and USBE to ensure that the appropriate documents are filed for all construction projects exceeding $100,000, or those funded with federal funds and those for which USBE will be issuing a Certificate of Occupancy. The LEA Building Official is authorized and directed to enforce all the provisions of the state-adopted building codes.

LEA Construction Inspection

LEA boards shall be accountable to USBE to ensure that all LEA permanent or temporary construction, renovation, and inspection are conducted in accordance with the state adopted building codes, and in accordance with Administrative Rules R392-200 “Design, Construction, Operation, Sanitation and Safety of Schools" and R277-471 “School Construction Oversight, Inspections, Training and Reporting."

Charter school boards shall be accountable to the State Charter School Board and USBE to ensure that all charter school permanent or temporary construction, building additions, renovation, and inspection is conducted in accordance with the state adopted building codes, UCA 53E-3-7 “School Construction”, and in accordance with Administrative Rules R392-200 “Design, Construction, Operation, Sanitation and Safety of Schools” and R277-471 “School Construction Oversight, Inspections, Training and Reporting.” Each local charter school board shall appoint an LEA Building Official who cannot be an employee hired by the contractor or developer, and who has direct administrative and operational

control and responsibility for inspection of all an educational facility's new construction, facility additions, remodels, or renovations of the educational facility. The LEA Building Official shall report to the local charter school board. The local charter school board shall provide the name of the LEA Building Official in writing to USBE and notify USBE officials of any changes of this individual. The LEA Building Official shall monitor all charter school building construction and inspection to ensure compliance with the provisions of the state adopted building code, UCA 53E-3-7. The LEA Building Official is responsible for coordinating with JHAs and USBE to ensure that the appropriate inspection and construction documents are filed in for all construction projects and those inspected by the JHA or a privately contracted inspection in which the educational facility is located.

The LEA Building Official may adopt and enforce supplemental LEA policies to clarify the provisions of the state adopted building codes and UCA 53E-3-7 for LEA personnel. Such interpretations shall be in conformance with the intent and purpose of the building codes insofar as they are expressed in the building codes or in legislative rule. In accordance with LEA administrative procedures and with the approval of the LEA School Boards, LEAs may appoint technical officers, inspectors, and other employees as authorized by legislative rule. LEA staff providing inspections shall hold a current ICC certification and licensing through DOPL. All ICC and DOPL certified and licensed inspectors inspecting LEA construction projects shall be Class I licensed for the category for construction projects they are inspecting. The LEA Building Official may deputize inspectors or employees as necessary to carry out the functions of the LEA as the local authority. All inspections and reviews are required to comply with Administrative Rule R277-471.

If an LEA is unable to provide appropriate school construction inspection services, the USBE Superintendent may provide for private inspection services from a list of qualified inspectors determined by the Superintendent and charge the LEA for those services. Fees shall be established in advance for these inspection services.

The State of Utah has adopted amendments to the facility codes. The amendments can be found at the Utah Uniform Building Standards Act Rules, R156-56 Utah State Building Standards Utah Code, Title 58.

An LEA may employ one of three methods for educational facility construction inspection under Utah Code 53E-3-706 that shall be procured, financially compensated, and acting as an agent of the LEA:

An independent licensed ICC certified building inspector

A licensed and ICC certified building inspector employed by the LEA

A licensed and ICC certified building inspector approved by the local JHA in which the construction activity occurs.

The state adopted building code, Utah Code Section 15A, provides for regulation of local inspectors of construction, additions, remodels, renovations and other construction related activities. LEA boards are accountable to ensure that all LEA permanent and temporary construction, addition, remodels, renovation inspection is conducted in accordance with the state adopted building codes.

Utah Code Section 15A-1-202 of the Utah Code states:

"Compliance agency" means:

(a) An agency of the state or any of its political subdivisions which issues permits for construction regulated under the adopted codes

(b) Any other agency of the state or its political subdivisions specifically empowered to enforce compliance with the codes

(c) Any other state agency that chooses to enforce codes adopted under this chapter by authority given to the agency under a title other than part 3, Factory Modular Units Administration Act.

LEAs shall assign a certified inspector for related code enforcement. USBE Administrative Rule R277-471-3, "Oversight of School Inspections" requires an LEA Building Official to be appointed by each LEA:

LEAs shall ensure that all LEA permanent or temporary construction, additions, remodels, renovation inspections are conducted in accordance with the applicable laws to provide the minimum requirements to safeguard public health, safety and general welfare of educational facility occupants while utilizing a comprehensive, cost effective and efficient design.

The LEA Building Official shall monitor educational facility building construction to ensure compliance with the provisions of Utah law and the SCFRM. The LEA Building Official shall ensure that educational facility construction conforms with the intent and purpose of

Utah law and the SCFRM. The LEA Building Official may adopt and enforce supplemental LEA policies to clarify the intent of the provisions of Utah law and the SCFRM.

USBE is responsible for developing, updating, and publishing this SCFRM. LEA boards, administrators and other personnel are required to act consistent with the SCFRM. Rule 277-471-9. USBE shall develop and provide an electronic version of the SCFRM on the USBE School Finance website consistent with 53E-3-707.

The SCFRM shall include process, legal requirement references, and resource information on LEA construction, operations, maintenance, and minimum requirements to safeguard the public health, safety, and general welfare of occupants. USBE shall review and update the SCFRM every three years. LEA boards and LEA personnel shall act in accordance with the SCFRM.

Coordination With Local Jurisdictions Having Authority

LEAs construction projects will have impacts on truck, automobile, and school bus traffic patterns, the location of utilities and other facility infrastructure supporting the educational facilities, and planning and zoning ordinances of a JHA. Prior to an LEA developing plans and specifications for a new educational facility, or the expansion of an existing facility, the LEA shall coordinate with the JHA land use authorities and local utility providers per 53E-3-710 of the Utah Code.

LEAs shall ensure that the siting or expansion of an educational facility in the proposed locale shall comply with applicable JHA general plans and will not conflict with entitled land uses per 10-9a-305 and 10-9a-406 of the Utah Code. LEAs shall ensure all JHA services and utilities required by the educational facility construction will be provided in a logical and cost-effective manner and that potential traffic hazards are avoided or appropriately mitigated.

Prior to developing CDs for a new educational facility or the expansion, remodeling or renovation of an existing facility, LEAs shall coordinate with local health department officials, JHAs, the State Fire Marshal, DEQ, EPA and with UGS.

To ensure that geologic and seismic hazards are considerations for all proposed LEA sites, Utah Geological Survey recommends the following:

Prior to purchase and site planning have an initial screening of the site for geological hazards.

Once an educational facility site has been chosen, a qualified geo-technical consultant shall include within a technical investigation a complete site-specific geologic-hazards evaluation.

An LEA may choose to submit the geo-technical consultant's report to UGS for review. UGS will evaluate the adequacy of the report and submit a review letter to the LEA recommending either approval or need further evaluation. Reviews performed by UGS may require a fee.

Charter schools are considered a permitted use in all zoning districts within a JHA except for JHAs having designated zones for sexually oriented businesses or businesses which sell alcohol. A charter school may be prohibited from certain locations unless the LEA provides a waiver of liability from the JHA and the charter school board. Land use applications for approval required for a charter school, including applications to construct shall be processed on a priority basis by the JHA. Parking requirements for a charter school shall not exceed the minimum parking requirements for public educational facilities.

Before an LEA construction project construction commences, LEAs shall obtain a construction project number from USBE by completing and submitting construction project forms as listed on the Pre-Construction Checklist and the SP-4 provided by USBE for all educational facility projects. Those utilizing federal funding will require a Certificate of Occupancy be obtained through USBE.

All LEA CDs shall be reviewed and approved by a licensed and certified plans examiner before LEA projects commence construction. Inspections may be obtained through three different sources as previously outlined within the SCFRM.

The LEA Building Official shall identify and provide to USBE the total number of inspections with the name and disciplines of each inspector using the SP-8 Construction Inspection Summary Report form. The LEA Building Official shall ensure each inspector is licensed and certified. Third party special inspections are not required to be submitted but shall be maintained with the project files for future auditing purposes.
When a project is completed, the LEA Building Official shall obtain the final inspection from the inspector of record and the Certificate of Fire Clearance from the Utah State Fire

Marshal's office and submit them with the SP-9 Final Inspection Certificate and Verification form certifying all inspections were completed in compliance with the state adopted building code and rule R277-471, "School Construction Oversight, Inspections, Training and Reporting,". The Building Official shall complete and send the final completed SP-9 form to USBE upon completion of the project. When the requirements for the SP-9 have been met, the SP-10 Certificate of Occupancy shall be submitted to USBE along with all supporting documentation.

Monthly Inspection Reports

The LEA Building Official shall provide monthly inspection reports during construction and reported on the SP-8 form to USBE. LEAs shall maintain copies of inspection reports within the project file for future auditing. Inspection reports shall be filed with USBE electronically.

An independent building inspector shall not be an employee of the DP, developer, contractor, or any subcontractor on the project. They shall be approved by the respective JHA or LEA Building Official and be ICC and DOPL certified to perform the respective required inspections as delineated within the SCFRM.

Final Inspections

Prior to the final inspection, the DP shall assure that the project is substantially complete for a final construction inspection. The DP, Building Official or designee shall arrange for the final inspection. The following project participants are recommended attendees for the final inspection:

General contractor
Design Professionals
LEA Building Official
Emergency contractor
MEP contractors
Building Inspectors
Representative from the State Fire Marshal's office
Representative from the local fire department
Representative from the local health department

After project Substantial Completion, the LEA Building Official shall submit to USBE all required inspections of the educational facility complete with the SP-9 certifying all inspections have been conducted in accordance with the state adopted building codes, UCA 15A.

Certificate of Occupancy

The LEA Building Official shall either issue or request the CO for the educational facility from USBE 30 days after an LEA request for the issuance of a certificate authorizing permanent occupancy of the educational facility. USBE will either issue to the LEA a CO of the educational facility or deliver to the LEA a notice indicating deficiencies with an LEAs compliance. Upon an LEAs request with the completed SP-9, and the Certificate of Fire Clearance, the LEA shall request the issuance of a permanent CO. After an LEA has remedied any inspection deficiencies and notified USBE that deficiencies have been completed, USBE shall issue a CO authorizing permanent occupancy of the facility to the LEA Building Officer.

A CO shall satisfy the JHA requirements. The LEA Building Official shall electronically submit a copy of the certificate to USBE and the JHA Building Official. LEAs utilizing ICC and DOPL certified building inspectors shall seek a CO authorizing permanent occupancy for the educational facility from the JHA where the educational facility is located. A copy of the permanent CO shall be filed with USBE.

Boilers, Elevators, Health Department and Fire Marshal Inspections

The Utah Boiler and Pressure Vessel Act Boiler and Pressure Vessel Act 34A-7-101 to 105 UCA establishes minimum standards for installation and operation of boilers and pressure vessels. The act authorizes the Labor Commission of Utah to adopt rules to enforce this Act. The Boiler and Pressure Vessel Rules regulate boiler and pressure vessel requirements. The Boiler and Pressure Vessel Rules and the Boiler and Pressure Vessel Compliance Manual are resources that provide details how the Division of Safety and the Labor Commission of Utah enforces provisions of Utah Code Annotated Boiler and Pressure Vessel Act 34A-7-101 through 105, UCA and Administrative Rule R616-2 Boiler and Pressure Vessel Rules

Under the provisions of the Utah Boiler and Pressure Vessel Rules, all new boilers, pressure vessels, water heaters and storage tanks, unless otherwise exempt, shall be designed, installed, inspected, and certified in accordance with the applicable American Society of Mechanical Engineers (ASME) Codes and all other applicable codes and standards. A copy of the pressure vessel Manufacturer's Data Report, signed by the manufacturer's representative and the authorized inspector shall be filed with the Chief Boiler Inspector of Utah.

Pressure vessels shall be installed in accordance with the requirements of the ASME Code and the Utah Boiler and Pressure Vessel Compliance Manual. Boiler installations shall comply with the Controls and Safety Devices for Automatically Fired Boilers ASME CSD-1 when the boiler heat input is greater than 400,000 BTU, but less than 12.5 million BTU. Boiler installations with heat output greater than 12.5 million BTU shall comply with Standards for the Prevention of Furnace Explosions/Implosions in Single Burner Boilers per National Fire Prevention Association 8501 and Standards for Prevention of Furnace Explosions and Implosions in Multiple Burner Boilers – NFPA 8502.

7. The Americans with Disabilities Act (ADA)

All new construction, remodels, renovations, and pedestrian pathways for educational facilities shall be readily accessible to persons with disabilities.

The International Building Code (IBC) Standard A117.1, American National Standards Institute (ANSI), Americans with Disabilities Act Accessibility Guidelines (ADAAG), and Uniform Federal Accessibility Standards (UFAS) are accessibility standards an LEA shall comply with. The most restrictive of these standards shall be adhered to. ANCI regulations state:

> The specifications in this standard make buildings and facilities accessible to and usable by people with such physical disabilities as the inability to walk, difficulty walking, reliance on walking aids, blindness and visual impairment, deafness and hearing impairment, incoordination, reaching and manipulation disabilities, lack of stamina, difficulty interpreting and reacting to sensory information, and extremes of physical size based generally upon adult dimensions. Accessibility and usability allow a person with a physical disability to independently get to, enter and use a building or facility.

This ANSI standard provides specifications for all elements of an occupied educational facility. LEAs shall follow all requisite local, state, and federal accessibility codes and standards. In cases of code conflicts, federal ADA accessibility standards shall prevail over conflicting local or state law, administrative rules, and regulations.

Title II Programs shall be readily accessible unless it would create a fundamental alteration in the nature or financial or administrative burden. Any legal defense of this shall be fully documented and reviewed by legal counsel. The Utah State Division of Risk Management can review new construction, additions, renovations, and remodeling plans for ADA - Section 504 compliance. Contact State Risk Management for more information.

8. Fire Code Inspection

Fire Prevention Systems

Educational facilities with an institutional kitchen shall have a fume hood system to safely remove cooking vapors from the educational facility. A fume hood with fire protection over the equipment, behind the hood filters, and within a duct system is required over all commercial kitchen equipment which produces grease-laden vapors including but not limited to cooking surfaces, deep fat fryers, griddles, broilers, range tops, grills, and skillets.

Fire extinguishing systems shall be interconnected to fuel or power supply for all cooking equipment. The interconnection shall automatically shut down all cooking equipment and electrical receptacles located under the hood as required by code when the alarm is activated. The shut-off valves and switches shall require a manual operation to reset. The fire extinguishing system shall be activated by heat fusible links or by a manual activation device installed at an approved location.

The following inspections are required for kitchen hood systems:

Hood filters shall be removed and cleaned sufficiently on a periodic basis to prevent the accumulation of grease, dust, and lint. A record of cleaning dates shall be maintained in or near the kitchen area.

Fusible links and automatic sprinkler heads shall be replaced annually or according to the manufacturer's recommendations whichever is more stringent.

A fume hood system shall be inspected and serviced every six months and immediately after activation.

Inspections shall be forwarded to the Utah State Fire Marshal's office and JHA health department.

All inspections and maintenance of kitchen hood systems shall be conducted by a qualified and licensed contractor. For more information contact the State Fire Marshal's office and the JHA health department.

Fire Alarm Procedure

Fire alarms shall comply with the International Fire Code Chapter 4 and Utah Code 15A Chapter 5.

Occupied Facilities

When an alarm is received, a designated competent person at the educational facility shall determine if an actual fire exists. If a fire does exist, the facility designated competent person shall notify the local fire department and the educational facility shall be evacuated. If no fire exists, the designated competent person shall notify security that it is a false alarm. Security personnel shall call the educational facility to verify the false alarm.

Unoccupied Facilities

When a fire alarm is activated, and the facility is unoccupied the fire department shall be notified of the incident. Security monitors shall notify the designated competent person to respond and assist the local fire department. The security officer shall notify the maintenance department supervisor of the alarm.

Fire Drill Procedures

Fire exiting drills shall be conducted in accordance with the State Uniform Fire Code Section 13.301 and Utah Code 53A-3-402.

LEAs shall conduct a minimum of two fire exiting drills at the beginning of the school year and one fire exit drill each month while school is in session. See Administrative Rule R277-400.7. B. for the required number of drills in a school year.

When an educational facility is preparing for a fire drill, the security office shall be notified. When an alarm has been activated, and a fire drill is not planned, staff at the educational facility shall determine whether there is a fire. If there is a fire, staff shall report it to the fire department and evacuate the building. Educational facilities shall maintain a log of fire drills listing dates required to evacuate the facility. Fire drills shall be implemented to avoid a distinction between fire drills and actual fires.

Fire drills are required at different hours of the day or evening, during the class changes, when the school is in assembly, during recess, and as required in 408.3.3 of the IFC. If a fire drill is conducted when students are accessing or egressing stairways between classes, the students shall be instructed to immediately proceed to the nearest exit.

The intent of every drill is to actively maintain and control egress from the educational facility. As identified in 401.7 International Fire Code, evacuations are required via unplanned activation of a fire alarm system or by any other emergency drill. Monitors shall be appointed to assist in the execution of all fire drills. Fire drill monitors shall be instructed to hold doors when necessary to prevent spread of fire or smoke. Restrooms and other ancillary spaces shall be inspected for educational facility occupants. Fire drills are required to simulate an actual fire condition. Occupants shall not be allowed reentry into the facility after the alarm has sounded. In accordance with IFC, occupants shall assemble at a designated exterior location of the facility and remain there until the facility has been cleared for occupancy.

When it is necessary for fire drill pedestrians to cross ROWs, signs stating “STOP– SCHOOL FIRE DRILL” shall be carried by monitors to the intersecting traffic and pedestrian locations to control traffic during the drill. Fire exit drills in educational facilities shall not include fire extinguishing operations.

Fire Alarm Signals

All fire exit alarms shall be activated within the fire alarm system to ensure operational functionality. The fire panel recall signal shall be separate and distinct from all other signals. Fire alarm signals shall be distinctively identifiable.

It shall be the duty of principals, educators, custodians, properly trained and designated volunteers to inspect all facility egress pathways to ensure stairways, doors, and other exits are in proper functional egress condition. Open plan educational facilities require extra surveillance to ensure that egress pathways are identified and maintained free of obstruction. Emergency fire evacuation drills shall comply with the IFC

9. Portable Educational Facilities

Portable facilities, also referred to as relocatable or modular structures, have several advantages for an LEAs need. Portable structures have been utilized to increase occupant capacity of an existing educational facility to reduce the immediate need for permanent facility space. Portable facilities shall comply with all applicable building code requirements. Utilities and other services shall be designed and installed by licensed, certified, bonded, and insured Contactors. Portable buildings shall meet the requirements of the IBC. All portable buildings shall be located and installed in accordance with seismic, snow and wind loads. LEA Building Officials are required to ensure that relocatable buildings meet appropriate design criteria.

The following is an abbreviated checklist for LEAs to consider when locating or relocating portable structures on educational facility campuses:

Approve the site location with the JHA and State Fire Marshal.

Portable facilities shall not be located within 20 feet of a permanent facility by Fire Code.

All locations for relocatable units shall comply with all applicable requirements found in the Pre-Construction Checklist. Portable structures shall be reviewed by the:

State Fire Marshal's office.
LEA Building Official
District transportation director (if applicable).
LEA asbestos personnel maintaining records for LEAs.
Others as applicable.

When determining a portable structure location or site an abbreviated list is:

Contact Blue Stakes and all underground utilities providers.
Do not locate portables directly under high voltage utility lines.
Determine and comply with all easements and rights-of-way.
If the portable is located on a grass area, remove the sod and disconnect sprinkler heads under the portable.
Ensure the site has adequate drainage
Ensure the site can easily relocate portables when necessary

Pedestrian pathways
Electrical power service
Water and sewage
Gas utility
Intercom and bell signals
ADA compliance
Maintenance and snow removal

State Fire Marshal's reviews of Relocatable Educational Facilities

Plan submittals and inspections are required as follows:

Site plan

A site plan is an architectural contract document that functions as an overview map of and educational facility campus. The site plan allows the Fire Marshal to verify emergency vehicle and fire department access, access to fire hydrants, fire department connections, and other fire protection and life safety features for the educational facility. Site plan review submittals shall utilize the fire and life safety submittal form. Site plan reviews are required for the following purposes:

Anytime there is an addition to a relocatable
Anytime a relocatable is moved or reset on the same Educational Facility site
Anytime a relocatable is moved onto another Educational Facility site
Anytime there are changes to the exterior footprint of the relocatable structure

Fire and Life Safety plan review

This an architectural contract document that indicates existing and fire rated and life safety features. They are utilized to make determinations of the need for emergency fire protection systems and life safety requirements. Fire and life safety plan reviews are required for the following purposes:

Any relocatable that has not been previously approved
Anytime more than four classrooms are connected or grouped together
Anytime a relocatable is used for any purpose other than classroom

Required Fire Alarm and Fire Sprinkler plan review due to fire protection systems and life safety alterations

Anytime there is an addition to the fire alarm system
Anytime the fire alarm system is a new installation
Anytime a new fire sprinkler system is installed in a relocatable
Anytime a fire sprinkler system is disconnected, altered, or relocated

Fire Marshal Inspection

Anytime a plan submittal is required, the work outlined on the plan shall be inspected for code compliance

The construction of a relocatable built locally shall be inspected as required for any other new construction of an Educational Facility

Building Officials approval

The LEA Building Official shall approve all relocatable removals and installations

The LEA Building Official shall provide to the Utah State Fire Marshal's office a copy of the Final Inspection Report following the installation of a relocatable before the inspection of the Fire Code Official.

10. Outdoor Playgrounds and Learning Centers

Playgrounds

Playgrounds are a fundamental part of the learning experience. They shall be safe, nurture play, and may be an extension of the educational learning environment to accommodate the Core Curriculum. This includes play equipment, hard surface and sand areas, and athletic fields. An LEA shall provide safe, hazard-free playgrounds by providing qualified, licensed playground specialists. Playgrounds shall meet design criteria for compliant fall zones, adequate resilient surfacing, good drainage, proper surface grades, and avoid hazards of entrapment, protrusions, clothing entanglement, tripping, falls, limitations of blind spots and have an open view of the playground when possible. Playgrounds shall be ADA accessible. LEAs shall ensure that education programs align with current child nutrition requirements to reduce the potential loss of federal funding.

Playground Equipment

All school playground equipment shall be designed and installed in compliance with the Handbook for Public Playground Safety published by the U.S. Consumer Product Safety Commission, Utah State Risk Management criteria, and ADA accessibility standards. ADA regulations are required for all sporting and playground facilities.

Playgrounds shall be inspected when they are constructed or modified. Education facility personnel shall complete weekly and monthly visual safety inspections. LEA educational facility personnel shall provide documented annual playground safety inspections to be maintained with the facilities files for auditing purposes. LEAs shall ensure that students use appropriate personal protective equipment when applicable.

Hard-Surface, Sod Fields, and Sand Play Areas

LEAs shall provide adequate hard surface areas, age-appropriate game standards, delineation markings, and separate areas for hard-surface games to meet the needs of students. LEAs shall plan and provide for Core Curriculum related activities.

LEAs may provide sand play areas for imaginative, creative, and social skill development. LEAs may consider providing features such as walking pathways to promote healthy lifestyles. Adequate playing fields should be provided to accommodate typical field games to develop interpersonal social interaction, team building skills, and individual skills that promote physical, intellectual, emotional, and social development.

LEAs shall control the use of skateboards, in-line skates, bicycles, golfing, unauthorized access to facility grounds and other potential liabilities. Policies for enforcement regarding property damage, and injuries shall be maintained for inappropriate use of play equipment. Appropriate signage prohibiting these activities shall be provided for each educational facility.

Outdoor Classrooms

LEAs may consider providing outdoor classrooms to extend their indoor educational facility that will accommodate the USBE Core Curriculum.

Section 2 – Educational Facilities Management, Maintenance, and Operations Requirements

11. Legal Liability in Building Maintenance and Operations

LEA staff involved in the operations and maintenance of educational facilities shall be aware that accidents may occur in educational facilities and on facility grounds. LEAs shall take into consideration the potential for legal action against them. The concept behind a self-inspection is to identify and mitigate potential liability issues before they occur or become a liability. Facility staff have a duty to address all items before they become life-safety issues or legal liabilities for the LEA.

It is important for staff involved in performing self-inspections and the maintenance of educational facilities to understand the implications of negligence and importance of maintaining safe and healthy facilities. LEAs have a duty to provide a safe and healthy environment for students, staff, and others who utilize the educational facilities. Self-inspection tools provide a means of identifying potential issues that may decrease and LEAs liability. Self-inspection policies and procedures are designed to identify specific issues that could potentially become liabilities. OSHA requirements, hazardous waste management, and other safety regulations established by federal and state agencies shall be included in self-inspections.

For further information LEAs should contact State Risk Management.

12. Underground Natural Gas Piping

The Labor Commission of Utah has established the following items for consideration of underground natural gas piping at educational facilities:

Establish a written operation and maintenance plan.
Establish a written emergency plan.

Maintain accurate mapping of underground gas facilities.
Establish procedures for maintenance work on pipeline leaks, cathodic protection, and other required testing records.
Establish cathodic protection when steel piping is placed underground.
Establish training programs for employees involved in gas system operations and maintenance.

The Labor Commission of Utah has also established the following considerations for annual maintenance of natural gas underground piping:

Maintenance testing and repair records.
Annual leak survey of all underground piping.
Annual testing of cathodic protection.
Maintain training records.
Annual inspection and preventative maintenance of valves and connections.
Annual inspection of above-ground piping for atmospheric corrosion.

13. Fire and Structural Wall Identification

Fire walls, area separation walls, occupancy separations, and structural bearing walls shall be identified according to the IBC code requirements. Required labeling of fire and area separation walls, occupancy separation walls, and structural load bearing walls will assist future facility managers, DPS and LEA facility maintenance personnel to identify and maintain the integrity of these walls.

A program should be implemented for the labeling of fire and structural walls. This shall include the education of maintenance and custodial staff of the importance of maintaining the integrity of these walls and provide information of the potential risks to the life-safety of occupants. Should there be a need to penetrate or modify walls and a set of as-built plans are not readily available, obtaining the services of qualified DPs are recommended.

14. Nonstructural Earthquake Hazards

LEAs staff shall take active measures to identify nonstructural hazards in educational facilities and to ensure that these hazards are mitigated. Nonstructural hazards may occur in every element of an educational facility. Nonstructural elements include ceilings, lighting, windows, office equipment, computers, cabinetry, HVAC and MEP equipment, furnishings, and items stored on shelves or hung on walls. In an earthquake, nonstructural elements have the potential to cause injury, loss of life, extensive damage to the facility, or interruption of an educational facility's normal operations. Self-inspections and surveys of these nonstructural elements are a way of identifying a potential life-safety hazard before it becomes a liability. Earthquake hazard mitigation shall meet the IBC regulations for nonstructural components for seismic design. When hazards are identified they shall be prioritized for mitigation.

15. Indoor Air Quality (IAQ)

General Provisions

LEA school boards and Building Officials shall take appropriate action to ensure educational facilities maintain a safe and healthy indoor environment. LEA facility maintenance personnel shall be provided the requisite resources needed to maintain LEA educational facilities in their intended functional capacity. Life-safety issues that protect the health and welfare of the occupants of the educational facilities shall be prioritized.

The importance of educating and training LEA maintenance staff regarding indoor air quality is paramount. Indoor air quality is an important aspect for the health, safety, and welfare of the educational facility occupants. LEAs shall ensure that the air quality is healthy, clean, and conducive to a positive learning environment. Indoor air quality (IAQ) monitoring and related improvements shall be completed in an organized, detailed, and documented process and maintained as facility records for future auditing purposes.

An environmental specialist should be appointed for each LEA. The environmental specialist should be responsible for mechanical systems and work directly with the

maintenance staff to address any issues relating to indoor air quality. An essential component of an IAQ maintenance program is being proactive.

Air Filtration

The foundation of any IAQ maintenance program is the routine maintenance of air filters. Maintenance and custodial personnel shall identify each filter location within each educational facility and maintain an air filter log.

Outside Air Intake, Exhaust, Return Air and Air Handlers

The educational facility HVAC system has a direct correlation to facility air quality. It shall be clean and functionally operational. Maintenance personnel shall inspect outside air intake, supply, and return ducts, louvers, bird screens, pre-filters, pre-heat coils, outside damper blades, and damper motors for obstructions that may cause potential issues for HVAC systems and IAQ.

Pollution Source Management

IAQ maintenance personnel should be able to recognize sources of compromised IAQ. Maintenance personnel expertise may prevent, mitigate, or eliminate problems before they can become larger issues and negatively affect air quality. An abbreviated list of potential air quality issues is listed below.

High indoor humidity areas with water damage as evidenced by:

Stained ceiling tiles
Visible mold or mildew
Damp walls or carpet
Steam or high humidity
Visible condensation
Below grade locations or crawl spaces

Inadequate exhaust in areas such as:

- Chemical storage
- Science or photography labs
- Printing press and art spaces
- Welding or soldering area
- Paint booths
- Kitchens and loading docks

Results of occupant activities such as:

- Food or garbage accumulation
- Use of insect sprays
- Use of portable fuel heaters

Unoccupied areas and general clean up:

- Mechanical equipment and utility rooms
- Attics and storage rooms
- Ceiling plenums or raised floors
- Below grade and interstitial spaces

Being proactive and documenting potential pollution sources can eliminate IAQ issues before they occur.

Responding to Occupant Complaints

It is important to utilize a step-by-step written procedure for responding to IAQ complaints. Maintenance and custodial personnel are not expected to immediately solve all indoor air quality problems, but they are expected to respond, document, and follow through with every reported incident.

An IAQ complaint and response log should be developed. The log should contain the following elements:

- Building, area, room
- Occupant submitting complaint

Description of the occupant's concern

The IAQ response log should identify the reported indoor air quality complaint. An abbreviated list of these would include:

Comfort-temperature or humidity problem
Diminished ventilation
Odors
Recurring of ongoing issues

Surrounding facility areas should be reviewed to verify potential IAQ sources within:

Storage rooms
Utility closets
HVAC systems
Portable fans or heater
Construction, remodels, or renovations
New carpet, wall coverings, painting, or new office furniture that may be off gassing

Basic air quality measurements to be reviewed are:

Temperature
Relative humidity
The time of day the event
Potential air contamination
HVAC controls sequence of operation

If there is a delay in the progress of compliance with IAQ, communication is key to working through issues. Conversations and dates related to compromised IAQ should be documented. An IAQ log shall be maintained with the specific mitigation action taken. LEA IAQ maintenance and custodial personnel are an invaluable resource to the resolution of air quality issues.

16. Radon Gas in Educational Facilities

Radon is a natural radioactive gas formed by the decay of uranium in the earth's soils. It is tasteless, odorless, and invisible. It may work its way to the earth's surface through cracks and porous soils. Radon gas is diluted into the outdoor atmosphere and poses minimal danger because of the high ratio of air to radon.

Health Risks of Radon

Radon can seep through gaps in the foundation and may become trapped in the confined spaces of a facility. Long-term exposure to radon under these conditions has been associated with an increased risk of lung cancer. The EPA estimates that radon is responsible for up to 15,000 deaths annually.

Radon Detection

Because radon gas is odorless, tasteless, and invisible, specialized equipment is required for detection. There are two basic detection methods which are a charcoal monitor and an alpha-track detector.

A charcoal monitor may be placed in a section of a facility for three to four days. It is then returned to the laboratory for analysis. An alpha-track detector may be placed in the facility for approximately two weeks to three months before being returned to a laboratory for analysis. Long-term testing averages the exposure to radon gas levels over a predetermined time frame.

Reduction of High Levels of Radon

Radon mitigation is often relatively quick and inexpensive. An abbreviated list of steps that may potentially lower dangerous levels of radon gas or prevent it from entering educational facilities are:

Intentional ventilation of the educational facilities.

Natural ventilation or use of HVAC systems to increase air flow.
Crawl space ventilation
Sealing cracks in foundations, basement walls, floors, or moldings.
Sealing loose fitting pipes where they penetrate foundations and walls.
Seal and vent sump pumps.
Seal basement floors and walls with a protective sealant.
Ventilate on-grade floor slabs.

Contact State Risk Management for more detailed information on radon and radon abatement procedures.

17. Asbestos Removal and Containment within Educational Facilities

The Asbestos Hazard Emergency Response Act (AHERA) is a provision of the Toxic Substances Control Act. AHERA requires local educational agencies to inspect for asbestos-containing materials within facilities to prepare management plans and active mitigation that prevent and reduce asbestos hazards. All LEAs are subject to AHERA's requirements.

Characteristics of Asbestos

Asbestos is comprised of a group of natural minerals. Commercial mining of asbestos in the United States was in the banned 1980s. Once extracted from the earth, asbestos-containing rock is crushed and grated. This produces long thread-like fibers of asbestos material.

Asbestos laden materials are divided into two groups, Serpentine and Amphibole. All asbestos in the serpentine group is Chrysotile. This is the most common type of asbestos found in facilities within the United States. It accounts for approximately 95 percent of the asbestos found in our nation's structures. It is commonly known as "white asbestos" because of its natural color.

The amphibole group contains five types of asbestos. Amorite, the second most common type of asbestos found in buildings in the United States is referred to as "brown asbestos" because of the color of it as a natural mineral. Crocidolite, or "blue asbestos", has been used in high-temperature insulation products and on chemical resistant surfaces. The remaining three types of asbestos in the amphibole group are Anthophyllite, Tremolite, and Actinolite. These are rare and have limited commercial value. They may be occasionally found as contaminants or minor constituents in the other types of asbestos-containing materials.

Uses of Asbestos

Asbestos has been utilized in thousands of products because it is plentiful, readily available, cheap, strong, does not burn, conducts heat and electricity poorly, and is resistant to chemical corrosion. Products made with asbestos are often referred to as asbestos-containing materials (ACM).

Asbestos has proven particularly useful within the construction industry. Building materials that contain asbestos are referred to as asbestos-containing building materials (ACBM). Commercial usage of asbestos products in the construction industry was most common from about 1945 to 1980. Some of the most common uses of ACBM include:

Insulation material - usually spray-applied, trowel-applied, or manually installed after being performed to fit surfaces such as pipes for thermal insulation and condensation control.

Acoustical or soundproofing material trowel or sprayed on applications.

Miscellaneous materials: Asbestos has been added to asphalt, vinyl, cement, and other materials to make products like roofing felts, exterior siding and roofing shingles, wallboard, pipes for water supply, combustion vents, and flues for mechanical heating waste gases. Fibers in asbestos cement, asphalt, and vinyl materials are usually firmly bonded into materials and typically will be released only if the material is physically damaged. Asbestos in roofing and siding materials exposed to the ultra-violet spectrum may slowly deteriorate and has the potential to release fibers.

Examples of the more common ACBM found in facilities are flooring, vinyl base, mastic, roofing materials, gaskets in heating and air-conditioning equipment, ceiling panels and tiles, wallboard, joint compound, plaster, pipe and boiler insulation, duct-wrap insulation, duct joint tape, duct vibration dampening cloth, fireproofing on structural members, fire brick for boilers, fire doors, acoustical spray-on, and concrete pipes.

Friable vs. Non-Friable ACBM

Friable ACBM will release fibers into the air more readily than non-friable ACBM. AHERA differentiates between friable and non-friable ACBM. The AHERA regulations define friable ACBM as material that may be crumbled, pulverized, or reduced to powder by hand pressure when dry. Friable ACBM also includes previously non-friable material and when it is compromised to the extent that when dry it may be crumbled, pulverized, or reduced to powder by hand pressure or demolition it may become friable. Undamaged non-friable ACBM should be treated as friable if any action performed on the material will make it friable.

Categories of Asbestos-Containing Building Materials

EPA identifies three categories of ACBM:

> Surfacing Materials—Interior ACBM that has been sprayed on, troweled on, or otherwise applied to surfaces such as structural members, walls, ceilings and for acoustical, decorative, fireproofing, or other purposes. This includes acoustical plaster, hard plasters, fireproofing insulation, spray-applied or blown-in thermal material, joint or patching compound, and textured paints or plasters.
>
> Thermal System Insulation—Insulation used to control heat transfer or prevent condensation on pipes and pipe fittings, boilers, breeching, tanks, ducts, and other parts of hot and cold-water systems, HVAC systems or other mechanical systems. These insulation materials include pipe lagging, pipe wrap, HVAC duct insulation, block insulation, cements and mud, and a variety of other products such as gaskets and ropes.

Miscellaneous Materials—Other non-friable products and materials found on structural components, structural members, or fixtures, such as floor tile, ceiling tile, construction mastic for floor and ceiling materials, sheet flooring, fire doors, asbestos cement pipe and board, wallboard, acoustical wall tile, and vibration damping cloth.

Summary and Key Points

These are some important terms used in the AHERA. The designated AHERA competent person at each LEA shall be familiar with:

Asbestos-containing material (ACM) — any material or product that contains more than one percent asbestos.

Asbestos-containing building material (ACBM)—Surfacing ACM, thermal system insulation ACM, or miscellaneous ACM that is found in or on interior structural members or other parts of a building.

Friable ACBM—Material that may be crumbled, pulverized, or reduced to powder by hand pressure when dry. Friable ACBM also includes previously non-friable material when it becomes damaged to the extent that when dry it can be crumbled, pulverized, or reduced to powder by hand pressure.

Non-friable ACBM—Material that when dry may not be crumbled, pulverized, or reduced to powder by hand pressure.

Surfacing ACM—Interior ACM that has been sprayed on, troweled on, or applied to surfaces such as structural members, walls, and ceilings, for acoustical, decorative, fireproofing, or other material surfaces.

Thermal system ACM—Insulation used to control heat transfer or prevent condensation on pipes and pipe fittings, boilers, breeching, tanks, ducts, and parts of hot and cold-water systems, HVAC systems or other mechanical systems.

Miscellaneous ACM—Other mostly non-friable products and materials such as floor tile, ceiling tile, construction mastic for floor and ceiling materials, sheet flooring, fire doors,

asbestos cement pipe and board, wallboard, acoustical wall tile, and vibration damping cloth.

Asbestos Health Risks

The health effects associated with asbestos exposure have been studied in detail for many years. Results of these studies show that inhalation of asbestos fibers leads to increased risk of developing several lung diseases.

EPA Policy for Asbestos Control in Educational Facilities

The EPA bases its policy for asbestos control in educational facilities on the following premises:

> Although asbestos is hazardous, the risk of asbestos-related disease depends upon ingestion, primarily upon exposure to airborne asbestos fibers through inhalation.
>
> Based upon available data, the average airborne asbestos levels in facilities appear to be low. Accordingly, the health risk to most building occupants appears to be low.
>
> Removal may not be in an LEAs best interest to reduce asbestos exposure. An improper removal can create a dangerous situation where none previously existed.

The EPA only requires asbestos removal to prevent significant public exposure to airborne asbestos fibers during building demolition or renovation activities. Identified asbestos will pose minimal risk if it is well maintained through an operations and maintenance program. Improper operations and maintenance may also cause potentially hazardous situations. The EPA requires a proactive in-place management program whenever ACBM is discovered, and it is not removed.

Local Education Agency Responsibilities

LEAs shall have an accredited inspector conduct required asbestos inspections of each educational facility under its authority. The State Department of Environmental Quality and Division of Air Quality can provide this service. A reinspection by an accredited inspector of all friable and non-friable known or assumed ACBM in each facility shall be conducted at least once every three years that a management plan is in effect. An accredited management planner shall review all three-year inspection reports. For each inspection and re-inspection, an accredited inspector shall provide a written assessment of all friable known or assumed ACBM within the facility.

LEAs shall have an accredited asbestos management planner review the results of the inspections, reinspection's and assessments and make written recommendations of appropriate response and mitigation actions. LEAs shall select the appropriate response actions and mitigation consistent with the assessment of the ACBM mitigation and the recommendations of the management planner. LEAs shall implement an O&M program whenever friable ACBM is present or assumed to be present in an educational facility.

Building inspectors, asbestos management planners, DPs, contractors, supervisors, and asbestos workers shall complete EPA or state-approved courses and receive accreditation before they perform any asbestos-related activities. AHERA also specifies training requirements for LEA designated competent persons, custodial and maintenance workers.

LEAs shall:

Conduct periodic surveillance in each building under its authority at least once every six months after a management plan is in effect.

Comply with requirements to provide notification about asbestos activities to workers, students, parents, teachers, and short-term staff.

Maintain records in accordance with AHERA regulations.

Affix a warning label adjacent to any friable and non-friable ACBM of assumed ACBM discovered in routine maintenance areas at each educational facility.

The AHERA Designated Competent Person shall provide a statement that the LEA has met, or will meet within a specified time period, the responsibilities listed below. All references

are to specific provisions to the AHERA regulations. The AHERA Designated Competent Person should be able to answer affirmative to each statement below:

The activities of any persons who perform inspections, re-inspections, and periodic surveillance, develop and update management plans, develop and implement response actions, including operations and maintenance, are carried out in accordance with 40 CFR Part 763, Subpart E.

All custodial and maintenance employees shall be trained as required in 40 CFR Part 763, Subpart E and all other applicable federal and state regulations of the Occupational Safety and Health Administration Asbestos Standard for Construction, the EPA Worker Protection Rule, and applicable state regulations.

All workers and educational facility occupants, or their legal guardians, shall be informed at least once each school year regarding inspections, response actions, post-response action activities including periodic re-inspections and surveillance activities that are currently scheduled or are in progress.

Temporary staff who may encounter asbestos in facilities shall be provided with relevant information regarding the locations of ACBM and assumed ACBM materials.

All warning labels shall be posted in accordance with § 763.95.

All management plans shall be made available for review and notification shall have been provided in accordance with § 763.93(g).

The competent person designated by the LEA according to § 763.84(g) (1) has received adequate training as required by § 763.84(g)

An LEA shall consider that any conflict of interest may arise from the interrelationship between the accredited person and if this potential conflict might influence the selection of certified personnel to perform activities under 40 CFR parts 763, Subpart E.

AHERA Inspections

Summary key points about AHERA Inspections:

An AHERA inspection shall be conducted by an accredited inspector. The inspector shall identify all areas and materials that are suspected of containing asbestos.

All material suspected of being ACBM shall be assumed to be ACBM unless the area is sampled, and the analysis of the samples show them to be non-asbestos containing materials. An adequate quantity of samples shall be taken, or the area will be defined ACBM regardless of the results of the analysis.

Once the inspector has identified all ACBM within an educational facility they shall perform a physical assessment of all non-friable and friable ACBM. This will involve the categorization of the material into one of seven AHERA Physical Assessment Classifications.

The results of an AHERA inspection and assessment shall be documented in an inspection report. This report will be utilized by the management planner to make written recommendations on appropriate response actions.

Asbestos Management Plan

The asbestos management plan is a site-specific guidance document that the LEA Designated Competent Person shall adhere to when managing the ACBM present with an educational facility. The asbestos management plan shall be prepared by an accredited management planner and periodically updated. The asbestos management plan shall include documentation required under § 763.87 of the AHERA Rule for each laboratory performing a bulk sample analysis and the results of each analysis.

The asbestos management planner shall recommend appropriate response actions for all areas containing friable ACBM. The response actions implemented to mitigate friable asbestos shall require a project design specifying how to conduct the asbestos abatement.

Final air clearance of an educational facility space after a response action to mitigate, remove, encapsulate, or enclose ACBM shall involve a visual inspection and the collection

and analysis of air samples. Final air sampling shall be completed using the transmission electron microscopy method unless the project involves no more than 160 square feet or 260 linear feet, in which case phase contrast microscopy may be used. The LEA Designated Competent Person is responsible for ensuring that activities related to the asbestos management plan are implemented and that the management plan is updated in a timely manner.

Re-Inspections and Periodic Surveillance

If any ACBM remains in an educational facility, the facility shall be re-inspected at least once every three years. The re-inspection and assessments and reassessments shall be conducted by an accredited inspector. The results of the inspection shall be submitted to the Designated Competent Person within 30 days to be included in the management plan.

The asbestos management planner shall:

Review the results of the re-inspection

Provide a written response action and preventive measure recommendations for each area of friable surfacing, miscellaneous ACBM, and each area of ACBM

Determine whether additional mitigation is necessary and if so, specify how, when, and where to perform mitigation

Include an implementation schedule for the recommended activities and make an estimate regarding the resources required to conduct the requisite activities

Review the adequacy of the O&M program

At least once every six months after a management plan is in effect, the LEA shall conduct periodic surveillance in any building that contains ACBM or is assumed to contain ACBM.

Operations and Maintenance Program

An O&M program shall be implemented whenever friable ACBM is present or assumed to be present in an educational facility or whenever any non-friable ACBM or assumed non-friable ACBM is about to become friable due to any or all activities performed within the facility.

Unless the educational facility has been mitigated using methods described at § 763.91(c) of the AHERA Rule within the previous six months, all areas of an educational facility where friable ACBM, friable suspected ACBM, assumed to be ACBM, or significantly damaged ACBM is present, it shall be mitigated after the completion of the AHERA inspection and before the initiation of any response action other than O&M activities or repair.

Specialized work practices and procedures shall be followed for any O&M activities disturbing friable ACBM. When a fiber release episode occurs, the work practices implemented shall depend on whether the episode is minor or major in nature. A minor fiber release episode consists of the falling or dislodging of three square or linear feet or less of friable ACBM. A major fiber release episode consists of the falling or dislodging of more than three square or linear feet of friable ACBM.

Once ACBM is identified, or assumed to be present, the LEA shall start a notification and warning program to inform all impacted and affected parties of a potential hazard within the educational facility and provide basic information on how to avoid the hazard. An LEA educational facility is required to attach a warning label immediately adjacent to any friable and non-friable ACBM and suspected ACBM that is assumed ACBM that is discovered in routine maintenance areas. In locations where fiber levels exceed permissible exposure limits, or are required to wear pressure respirators, an LEA shall establish a medical surveillance and respiratory protection program.

The LEA Designated Competent Person can minimize accidental disturbances of ACBM during maintenance and renovation activities by establishing a permit system that requires work orders be processed in collaboration with the designated Competent Person. Specific work practices shall be followed when routine maintenance activities are being conducted dependent on the likelihood that the any activities will disturb the ACBM and cause fibers to be released.

Handling and Disposing of Waste

The amount and type of asbestos present determine whether an LEA shall notify the DEQ and what procedures an LEA shall follow to control an asbestos release. If the amount exceeds the regulatory threshold, a written notification shall be submitted ten working days prior to any asbestos stripping, removal operation or demolition operation. EPA regulations, along with state and local requirements provide detailed instructions on the handling, transport, and disposal of asbestos materials. These include emission control methods such as wetting, leak proof wrapping, labeling of containers, record keeping and an on-site designated Competent Person. Asbestos waste shall be disposed of at a site that meet federal, state, and local requirements.

Training and Accreditation

AHERA requires that LEAs employ accredited persons to perform activities associated with asbestos management. Asbestos management planners, DPs, and asbestos inspection personnel shall complete EPA or state-approved courses that result in accreditation. AHERA details specific training requirements for LEA designated Competent Persons, maintenance, and custodial personnel.

Designated Competent Person Training

AHERA requires that the AHERA designated Competent Person be adequately trained to fulfill their responsibilities. Due to differing needs and capabilities of LEAs, the amount and condition of the ACBM, AHERA does not list a specific training course or specific number of hours of training for most staff. Regulations requiring training shall include, but not limited to, the following topics:

Health effects of asbestos

Detection, identification, and assessment of ACBM

Options for controlling ACBM

Asbestos management program

Relevant federal regulations and state administrative rules concerning asbestos, including AHERA, regulations of OSHA, UDOT, and EPA

Training completed by the LEA designated Competent Person shall be documented by course name, dates, and hours of training. This shall be kept as a permanent part of the asbestos management plan and records.

Training for Maintenance and Custodial Staff

An LEA shall ensure that all maintenance and custodial staff working within an educational facility containing ACBM receive a minimum of two hours of awareness training. New custodial and maintenance employees must be trained within 60 days after the commencement of employment. The awareness training shall include, but is not limited to:

Information regarding asbestos and its various uses and forms.
Information on the health effects associated with asbestos exposure.
Locations of ACBM identified within each educational facility.
Information on how to recognize damaged, deteriorated, and delaminated ACBM.
The name and telephone number of the LEA designated Competent Person.
Information on the availability and location of the asbestos management plan.

Staff that could potentially disturb ACBM shall receive an additional 14 hours of training. Once completed, attendees will be trained to conduct small scale, short-duration activities for a minor fiber release episode cleanup and mitigation.

Additional training shall include, but is not limited to:

Descriptions of the proper methods for handling ACBM.

Information on the use of personal protection measures and respiratory protection.

The provisions of the AHERA Rule relating to O&M activities (40CFR763.91) and training and periodic surveillance (40CFR763.92) as well as Appendices A-E of the Rule and EPA Regulations contained in 40 CFR Part 763, subpart G, and in 40 CFR Part 61, Subpart M, and OSHA regulations;

Hands-on training in the use of respiratory protection and other personal protective measures and safe working practices.

Accredited Personnel

Under AHERA, LEAs may employ the following individuals only if they have completed EPA- or State-approved training courses, passed the examination, and received accreditation.

Building Inspectors - Building inspectors shall complete a minimum of three days, 24 hours of training. Training course information shall cover technical information required to identify and describe ACBM and associated data required to write an inspection report.

Asbestos Management Planners – Asbestos management planners shall complete a two-day or 16-hour course after they have completed and passed the exam for the building inspector training. The course is an extension of the building inspector training and provides information regarding how to develop a schedule, plan for implementation of response actions for hazards or potential hazards identified in the inspection report, how to develop an O&M plan, and how to prepare and update an asbestos management plan.

DPs - DPs shall complete a three-day (24 hours) abatement project designer training course. The DP course shall cover design response actions, abatement projects, basic concepts of design, engineering controls and proper work practices as required by regulations.

Contractors and Supervisors - Contractors and supervisors shall complete a minimum of five days or 40 hours of training. The course shall cover proper safe working practices and procedures, legal liability, contract specifications, insurance and bonding, and air monitoring. This course fulfills the OSHA competent person training requirement and the National Emission Standards for Hazardous Air Pollutants (NESHAP) trained representative requirement.

Asbestos Workers - An asbestos worker shall complete a minimum of four days or 32 hours of training. The course shall cover work practices and procedures, personal protective equipment, health effects of asbestos exposure, and other

information critical to individuals who work in an abatement area with hazardous materials.

Updating training is required for all levels of accredited personnel on a yearly basis.

Record Keeping

An LEA shall maintain a copy of the asbestos management plan in its administrative offices, on site at the educational facility, and the plan shall be available to persons for inspection without restriction.

An LEA shall maintain records of asbestos events that occur after submission of the asbestos management plan. These records include training information, routine periodic surveillance information, abatement information, small-scale short duration O&M activity information, information on O&M activities other than small-scale short-duration, information on fiber release episodes, information on response actions and preventive measures, and air sampling data. These records shall be included within the asbestos management plan. For each area where all ACBM has been abated, the LEA shall retain the records of asbestos events for three years after the next reinspection. It is the responsibility of the LEA designated Competent Person to ensure that complete and up-to-date records are maintained and included in the asbestos management plan.

Related Regulations

The AHERA Rule regulates asbestos responsibilities for an LEA. There are several federal regulations that the LEA shall be knowledgeable of when implementing an asbestos management program. These regulations include:

National Emission Standards for Hazardous Air Pollutants (NESHAP)

Occupational Safety and Health Administration (OSHA) Construction Industry Standard (29 CFR 1926.1101) and General Industry Standard (29 CFR 1910.1001)

The EPA Worker Protection Rule (40 CFR § 763.121)

Department of Transportation (DOT) regulations governing the transport and disposal of asbestos-containing materials (49 CFR Parts 171 and 172)

Through implementation of AHERA regulations, an LEA will not only protect the health and welfare of occupants within its facilities, but also potentially limit its legal liability. These regulations are considered minimum standards.

18. Hazardous Waste Management

A hazardous waste is any solid, liquid, or contained gaseous material no longer in use that will either be stored, recycled, or disposed of. LEAs may generate hazardous wastes that may cause health exposures if not handled and properly disposed of. These hazardous wastes may cause injury, death or create environmental contamination. Wastes that are considered hazardous are regulated by federal and state public health and environmental safety laws.

The Hazardous Waste Laws, Regulations, and Rules

There are two methods a waste may be brought into the hazardous waste category and are regulated via a specified listing and identification characteristics.

Listed Wastes

LEA waste is considered hazardous if it appears on any one of the four lists of hazardous wastes contained in the federal Resource Conservation and Recovery Act (RCRA) regulations. These hazardous wastes have been listed if they exhibit one of the characteristics described below or contain any number of toxic constituents that have been shown to be harmful to health and the environment. RCRA has identified over 400 hazardous wastes.

Characteristic Wastes

If a hazardous waste does not appear on one of the EPA lists, it is considered hazardous if it has one or more of the following characteristics:

> It is easily combustible or flammable. It is an ignitable waste. Some examples are paint wastes, certain de-greasers, or other solvents.
>
> It dissolves metals or other materials or burns the skin. This is corrosive waste. Some examples are waste rust removers, waste acid, or alkaline cleaning fluids, and waste battery acid.
>
> It is unstable or undergoes rapid or violent chemical reaction with water or other materials. This is a reactive waste. Some examples are cyanide plating wastes, waste bleaches, and other waste oxidizers.

If a hazardous waste sample is tested and shows extraction procedure (EP) toxicity it is a hazardous waste. Hazardous wastes are EP toxic if an extract from the waste is tested and found to contain high concentrations of heavy metals or specific pesticides that could potentially be released into the air or ground water.

Safety Data Sheets

Safety data sheets (SDS) are a detailed information bulletin prepared by the manufacturer or importer of a chemical that describes the physical and chemical properties, physical and health hazards, routes of exposure, precautions for safe handling and use, emergency and first-aid procedures, and control measures for use of chemicals. Chemical manufacturers and importers shall develop an SDS for each hazardous chemical they produce or import and shall provide the SDS at the time of the initial shipment of a hazardous chemical to a distributor and end user. Product distributors and vendors shall ensure that downstream employees are provided SDSs.

Each SDS shall be written in English and include information regarding the specific chemical identity of the hazardous material involved and the common names. Product data shall be provided regarding the physical and chemical characteristics of the hazardous chemical, known acute and chronic health effects and related health information, exposure limits, whether the chemical is a carcinogen regulated by OSHA or

UOSH, emergency and first-aid procedures and the identification name, address, and telephone number of the organization responsible for preparing the SDS sheet. Copies of the SDS for hazardous chemicals at each educational facility shall be readily available to all employees working within that area. All personnel shall be informed of the location where SDSs are stored at each facility.

Labeling Chemicals

Chemical manufacturers and importers shall convey the hazard information they acquire through their evaluations to LEAs by means of labels on containers and SDSs. Each container is required to be properly labeled, tagged, and marked with the identity of hazardous chemicals and shall detail hazard warnings appropriate for employee protection. The hazard warnings may be any type of message, words, pictographs, or standard symbols that provide general information regarding the hazards of the chemical contained and the targeted organs affected if applicable. Labels shall be legible and prominently displayed.

Categories of Hazardous Waste Generators

There are three categories of hazardous waste generators:

1. Generators of no more than 220 pounds or 25 gallons per month These are commonly known as conditionally exempt small quantity generators. The federal hazardous waste laws require that you:

    Identify all hazardous waste you generate.

    Send this waste to a hazardous waste facility, landfill, or other approved facility. The names of licensed hazardous waste removal companies under state contract are available from the Utah State Purchasing and General Services Office.

    Generators in this category must not accumulate to more than 220 pounds of hazardous waste.

2. Generators of 220 to 2,200 pounds or 25 to under 300 gallons of hazardous waste, and no more than 2.2 pounds of acutely hazardous waste in any month. The federal hazardous waste laws require:

Comply with the 1986 rules for managing hazardous waste, including accumulation, treatment, storage, and disposal requirements. These include:

Obtain a U.S. EPA identification number and completing "Notification of Hazardous Waste Activity" forms and "Uniform Hazardous Waste Manifest" forms if shipping hazardous wastes.

Comply with rules pertaining to managing hazardous waste on-site i.e., storage times, quantities, handling requirements, obtaining requisite permits, taking adequate precautions to prevent accidents, and being prepared to handle accidents appropriately.

Comply with rules for shipping hazardous waste off-site.

3. Generators of more than 2,200 pounds or 300 gallons or more than 2.2 pounds of acutely hazardous waste in any month. Federal hazardous waste laws require compliance with all applicable hazardous waste management laws and rules of the RCRA amended in November 1984 and the final regulations effective September 1986.

To determine the category of hazardous waste generator that an LEA is categorized as, the LEA shall quantify the hazardous wastes that it generates in a calendar month. The total weight determines the waste generator category. The explanation below summarizes the hazardous wastes you shall count and wastes that you do not count when you determine your waste generator status.

Measuring Your Hazardous Waste:

Count all quantities of listed or characteristic hazardous wastes that:

Accumulate on-site for any period prior to subsequent management

Package and transport off-site

Place directly in a regulated on-site treatment or disposal unit

Generate as bottoms or sluggers and remove from product storage tanks

Hazardous wastes specifically exempted from measuring:

Spent lead-acid batteries that will be sent off-site for reclamation

Used oil that has not been mixed with hazardous waste

Hazardous waste that may be left in the bottom of containers that have been completely emptied through conventional means

Residue in the bottom of product storage tanks

Reclaimed waste continuously on-site prior to reclamation

Hazardous waste in an elementary neutralization unit, a totally enclosed treatment unit, or a wastewater treatment unit. An elementary neutralization unit is a regulated tank, container or transport vehicle which is designated to contain and neutralize corrosive wastes.

Hazardous wastes discharged directly to a publicly owned treatment works (PTOW) facility without being stored or accumulated first. POTWs are public utility facilities that treat industrial and domestic sewage for disposal. Discharge to a POTW shall comply with the Clean Water Act.

Hazardous wastes that an LEA has measured once during the calendar month and treated on-site or reclaimed and reused.

Typical Hazardous Waste Materials

LEAs typically generate hazardous wastes from applied technology shops, grounds pesticides, chemical treatment shops, maintenance paint shops, science laboratories and facility and vehicle cleaning and maintenance activities. Some examples may include:

Acids, bases, or mixtures having a pH less than or equal to 2 or greater than or equal to 12.5, are considered corrosive. For a complete description of corrosive wastes, see 40 CFR 261.22, Characteristics of Corrosivity. The following are some of the more commonly used corrosives found in LEAs: Acetic acid, Ammonium hydroxide, Chromic acid, Hydrofluoric

acid, Ni/cad batteries nitric acid, Oleum, Perchloric acid, Phosphoric acid, Potassium hydroxide, Sodium hydroxide, Sulfuric acid.

Heavy metals and other inorganic waste materials exhibit the characteristics of EP toxicity and are considered hazardous if the extract from a representative sample of the waste has any of the specific constituent concentrations as shown in 40 CFR 261.24, Table 1. This may include dusts, solutions, wastewater treatment sluggers, paint wastes, waste inks, and other such materials which contain heavy metals/inorganics. The following are some of the more commonly used heavy metals and inorganics found in LEAs: Arsenic, Barium, Chromium, lead, Mercury, Silver, Ignitable wastes.

Ignitable wastes include any liquids that have a flash point less than 140 degrees Fahrenheit, any non-liquids that are capable of causing a fire through friction, absorption of moisture, or spontaneous chemical change, or any ignitable compressed gas as described in 49 CFR 173.300. For a complete description of ignitable wastes, see 40 CFR 261.21, Characteristics of Ignitability. Examples are spent solvents, solvent still bottoms, ignitable paint wastes (paint removers, brush cleaners and stripping agents), epoxy resins and adhesives (epoxies, rubber cements and marine glues), and waste inks containing flammable solvents. The following are some of the more commonly used ignitable wastes found in LEAs: Acetone, Benzene, Cyclohexanone, Diesel fuel, Ethyl acetate, Gasoline, Methanol oil-based paints with lead, Paint-related materials, Petroleum distillates, Roofing tar.

Pesticides listed as hazardous waste are pesticide wastes marked with an asterisk that have been designated acutely hazardous. For a more complete listing, see 40 CFR 261.32 and 261.33 for specific listed pesticides, and other wastes, waste waters, sluggers, and by-products from pesticide formulators. The following are some of the more commonly used pesticides found in LEAs: Arsenic Pentoxide, Arsenic Trioxide, Acetic Acid, Decon, DDT, Endrin, Nicotine, Strychnine.

Reactive wastes include reactive materials or mixtures that are unstable, react violently with or form explosive mixtures with water, generate toxic gases or vapors when mixed with water or when exposed to pH conditions between 2 and 12.5 in the case of cyanide or sulfide bearing wastes, or are capable of detonation or explosive reaction when heated or subjected to shock. For a complete description of reactive wastes, see 40 CFR 261.23, Characteristics of Reactivity. The following are some of the more commonly used re-actives found in LEAs: Acetyl chloride, Chromic acid, Cyanides, Hypochlorite's organic peroxides, Perchlorates, Permanganates, Sulfide.

Solvents, spent solvents, solvent mixtures, or solvent still bottoms may be hazardous. These include solvents used in degreasing, paint brush cleaning and distillation residues from reclamation. See 40 CFR 261.31 for the most listed hazardous waste solvents. The following are some of the more commonly used solvents found in LEAs: Benzene, Carbon tetrachloride, Ethanol, Isobutane, Kerosene, Methyl ethyl ketone naphtha, Nitrobenzene, Petroleum solvents, Toluene, White spirits.

Spent lead-acid batteries shall be reported on the notification form only if they are not recycled. Spent lead-acid batteries that are to be recycled do not need to be measured to determine the quantity of hazardous waste that an LEA generates per month, nor do they require a hazardous waste manifest when shipped off educational facility premises. Some of the more commonly used lead-battery products found in LEAs are lead dross, spent acids, and lead-acid batteries.

Managing Hazardous Waste On-Site

Some important information to understand about managing hazardous wastes on-site are:

Comply with storage time, quantity, and handling requirements for containers and tanks

Quantify amounts of hazardous wastes

Obtain a storage, treatment, or disposal permit if wastes are stored, treated, or disposed of on-site in a manner requiring a permit

Take adequate precautions to prevent accidents, spills and exposures and be prepared to mitigate them, as necessary

Storing Hazardous Waste On-Site

LEAs may store no more than 13,200 pounds of hazardous waste on site for up to 180 days or for up to 270 days if the waste is to be shipped to a treatment, storage, or disposal facility that is located over 200 miles away. When exceeding these time or

quantity limits, the site shall be considered a storage facility, and LEAs shall obtain a storage permit and meet all RCRA storage requirements. LEAs are allowed to store hazardous waste up to 180 or 270 days to allow quantities to accumulate as it is prepared to relocate it off-site for treatment or disposal.

LEAs may store hazardous waste in 55-gallon drums, tanks, or other containers suitable for the type of waste generated following regulations to protect human health, the environment and reduce the likelihood of damages or injuries caused by leaks or spills of hazardous wastes. If LEAs store your hazardous waste in containers, they shall be maintained such that:

Clearly mark each container with the words: "HAZARDOUS WASTE" and with the date you began to collect waste in that container.

Maintain containers in good working condition, handle them carefully, and replace any all-damaged containers.

Do not store hazardous waste in a container if it may cause rupture, leaks, corrosion, or other potential failures.

Keep containers closed except when filling or emptying them.

Inspect the container for leaks or corrosion every week.

Ensure when storing ignitable or reactive wastes that containers are placed as far as possible from the facility property line to create a safety buffer zone to adjacent properties. Consult the safety buffer zone regulations for tanks containing ignitable or reactive wastes. These regulations specify required distances considered as safe buffer zones for various liquids regarding the characteristics of combustible and flammable liquids

Never store hazardous wastes in the same container that could react that would cause fires, leaks, or other releases.

Ensure the stored hazardous waste is taken off-site or treated within 180 days.

Inspect all monitoring systems on each operating day and inspect the tanks themselves for leaks or corrosion every week.

Preparing for and Preventing Accidents

When hazardous waste is generated and stored on-site, precautions shall be taken to prevent sudden or accidental release to the environment. It is important to carefully operate and maintain the safety of the educational facility to reduce the possibility of fire, explosion, or release of hazardous waste.

LEAs shall have appropriate emergency communications and fire extinguishing equipment required for hazardous waste handling. LEAs shall plan, collaborate, and communicate with local fire, police, and hospital officials to ensure their ability to appropriately respond to potential emergencies. Emergency precautions and preparations at LEA sites may include:

- Installing and maintaining emergency equipment such as alarms, telephones, two-way radios, and appropriate fire extinguishers
- Provide available locations for emergency equipment and response teams to obtain access to the educational facility in the event of an emergency
- Communicate with local fire, police, hospital officials and state or local emergency response teams detailing the types of hazardous wastes handled
- Maintain readily accessible emergency contacts and locations of emergency equipment
- Employees shall know proper waste handling and emergency procedures
- Have a dedicated hazardous waste emergency coordinator to ensure that emergency procedures are implemented in the event of an emergency

Maintaining Good Housekeeping and a Safe and Healthy Environment

Responsible waste management can be as simple as utilizing good housekeeping practices such as reuse of materials, recycling or reclaiming waste, treating waste to reduce its hazards, or reducing the total amount of hazardous waste being generated.

Good housekeeping practices are, but not limited to:

Not combining nonhazardous waste with hazardous waste
Reducing the quantity of your hazardous waste when possible
Avoid combining different hazardous wastes
Avoid spills or leaks of hazardous wastes
Ensure the original containers of hazardous products are empty before they are disposed of
Avoid using more of a hazardous product than is required
Conduct self-inspections

The best way to prepare for a routine inspection is to conduct a self-inspection. Several items for consideration are:

Is there documentation of the amounts and kinds of hazardous waste generated and how are they determined hazardous?

Are the requisite SDSs in a readily available location?

Is there a U.S. EPA Identification Number?

How long as a hazardous material been stored

Is waste shipped off-site? If so, by which material carrier and to which designated hazardous waste management facility? Has the material carriers' insurance, bonding and other requisite credentials been reviewed and validated?

Are there copies of manifests used to ship your hazardous waste off-site? Are they filled out correctly? Have they been signed by the designated Competent Person?

Is LEA hazardous waste stored in the proper containers?

Are the containers properly dated and marked?

Have LEAs posted emergency telephone numbers and the location of emergency equipment?

Are all employees thoroughly familiar with proper hazardous waste handling and emergency procedures?

Maintaining National Response Center contacts?

Hazardous materials

An LEA may be affected by an accident involving a hazardous material carrier.

Warning

Warning of a hazardous materials incident outside of an LEA is normally communicated by the fire department, police department, or emergency management agency officials when such incidents occur proximate to the educational facility or pose a threat to the facility.

Preparation

The vulnerability of the educational facility to hazardous material threats should be determined during the hazard analysis. The JHA emergency management agency or the Title 111, SARA local emergency preparedness planning committee will have information regarding the risk zone for a hazardous material spill or release from a transportation route or an educational facility. Hazards in adjacent areas of an educational facility should be identified, evaluated, and mitigated as required in Utah Law prior to occupancy of the facility.

LEAs shall plan for evacuations and have alternative contingencies should response time not permit evacuation and for the sheltering in place students and staff. Ensure emergency notification of a hazardous material release or spill.

Response

Determine the need for evacuating the facility or sheltering in place.

Evacuate the area, move crosswind and never directly with or against the wind as it may contain chemical fumes.

Be prepared to render first aid.

Notify LEA admiration and designated Competent Person
Occupants shall not return to the school until the fire department or emergency personnel and the principal or director have declared the area or facility safe.

Initiate early or late dismissal, as necessary.

19. Storage of Flammable and Combustible Materials

Care shall be taken when storing, handling, or using flammable and combustible materials. It is important to identify how hazardous an individual flammable or combustible material may be. The intent of this section is to provide information for LEA employees to assist in identifying and controlling fire hazards presented by combustible and flammable materials utilized and stored within educational facilities. There are many factors that may increase the hazardous nature of a material such as vapor pressure, boiling point, temperature, dispersion, available oxygen or oxidizing chemicals, and sources of ignition.

Chemicals are divided into various classes and subcategories to further help identify their degree of flammability:

> FLAMMABLE liquid is any liquid with a flash point below 100 F, a vapor pressure not exceeding 40 psi at 100 F, and a boiling point below 100 F.
>
> Class I-A includes those liquids having flash points below 73 F and a boiling point below 100 F.
>
> Class I-B includes those liquids having flash points below 73 F and a boiling point at or above 100 F.
>
> Class I-C includes those liquids having flash points at or above 73 F and below 100 F.

COMBUSTIBLE liquids are those with flash points at or above 100 F, but below 200 F. They are further classified into:

Class II–those liquids having flash points at or above 100 F but below 140 F.

Class III–those liquids having flash points at or above 140 F.

Class III-A–flash points at or above 140 F, but less than 200 F.

Class III-B–flash points at or above 200 F.

UDOT defines a flammable liquid as any liquid that gives off flammable vapors at or below a temperature of 80 F. Flammable or combustible materials shall only be stored in approved containers designated for the specific material. Small amounts of flammable or combustible materials may be stored for use in approved containers within an educational facility and returned to a central storage location when no longer needed. Quantities greater than ten gallons shall be stored within an approved metal storage cabinet designed and approved to store and vent flammable or combustible liquids. The maximum quantity of combined materials is 120 gallons. Class I liquids shall not be stored in a basement. Consult the International Fire Code for standards specifying quantity limits of stored hazardous materials within educational facilities.

The mixing of flammable or combustible materials with other laboratory chemicals, explosives, pesticides, herbicides, or re-actives is prohibited. Flammable or combustible materials shall be stored separately in appropriate containers and cabinets. Cylinders containing compressed gases shall be isolated in secure locations, properly capped, physically secured and not proximate to flammable or combustible storage areas.

When tanks or containers are being filled, sufficient vapor volume and adequate space shall be maintained above and around the liquid so it may safely expand as temperatures vary. Tanks and containers shall not be stored near heat sources with large temperature fluctuations. This includes containers in direct sunlight or near heating and ignition sources. Adequate ventilation shall be provided for any location where flammable or combustible materials are stored or used.

All containers shall be listed and approved for its intended use and labeled with the name of the chemical, hazard rating, and quantity of material. Only the quantity of material to be consumed during a given shift shall be dispensed into other containers. Do not place

materials into a larger container than it was purchased as there are restrictions on the size of container allowed for each type of flammable material. When pouring flammable liquids from one container into another, care shall be taken to assure the containers are grounded and bonded to each other to reduce the static electric charge on either container.

Sources of ignition around flammable or combustible storage areas shall be eliminated. Smoking and open flames are prohibited, and the area shall have requisite signage for the hazardous of combustible material. Grinders, saws, spark-producing equipment, spark-producing brush-type motors, welders, electric heaters, cigarettes, gas appliances such as stoves and ovens, hot water heaters, open flames, candles, lighters, and matches are examples of ignition sources that shall not occur within storage areas.

Portable fire extinguishers shall be mounted in visible and readily accessible locations. Approved metal waste receptacles with self-closing lids shall be utilized to dispose of cleaning rags or other waste materials that have been impregnated with flammable or combustible materials.

Refer to the International Fire Code and National Fire Protection Association codes and standards for more information regarding hazardous materials.

20. Roof Inspection and Maintenance

An important reason for establishing a roof inspection management and maintenance program is to protect the capital investment of educational facilities. A roof maintenance program may detect minor problems before major damage to a roof of facility occurs.

Establishing a Roof Inspection Management and Maintenance Program

Establishing Roof Data Files

Each educational facility should have a roof plan that identifies all roof areas, original building roof areas, reroofed areas, and the roof type. Information contained within the file is essential to a roof inspection. The record files should contain the following sections:

Original Building Roof Design Section:

Project records, roof drawings, specifications, and applicable addendums

Roof plan delineating location of all penetrations and rooftop equipment

Approved submittals of material manufacturer's specifications and materials used in the original construction of the roof

Installation Section:

Field reports related to the roofing installation.

All correspondence between the parties involved in the installation of the roof including general contractor, roofing subcontractor, DP, and roofing consultant.

Warranty Section:

Roof warranties and Contractor contact information.

Inspection Maintenance Section:

Periodic inspection reports
Maintenance repair reports
Records of any construction changes and modifications made to the roof decking
Record of rooftop equipment services and repairs made to the roof

Implementing a Roof Inspection Program

Roof inspections should be completed annually. Additional roof inspections should be completed after major storms, when vandalism relating to the roof is suspected, or after any rooftop equipment service or installation is performed.

It is recommended that a standard checklist be developed for all roofing systems. Standard checklists help to develop continuity and consistency of reporting. When roofing issues are identified, the roofing file should be consulted for repair recommendations. Every inspection checklist should be returned to the master roofing file for consultation for the next inspection.

Maintenance scheduling and implementation

Scheduling should be completed based on the following criteria:

Immediately related to storm or vandalism damage repairs
Annually for roofing repairs
Annually for flashing repairs

Methods of Program Development

An effective roof management program may be created in different formats. An LEA should develop a comprehensive in-house program to address roof management with the following items.

Establishing roof information files

Implementing a roof inspection program with periodic inspections.

A combination of LEA staff and roofing consultants to perform roof inspections.

Roof Inspection Procedures

A key element of a roof maintenance program is regularly scheduled and systematic roof inspections for identification of potential issues. If a roofing system warranty is under contract, the warrantor shall be contacted to administer the warranty. In absence of a warranty a professional roofing consultant should be contracted to obtain repair and maintenance recommendations.

Before an exterior roof inspection is conducted, the interior of the facility should be reviewed.

Check interior walls and ceilings for signs of water and staining

A combined floor plan and roof plan should be developed for interior inspection to indicate where there may be any potential issues at the roof level

The exterior walls and overhangs should be inspected for moisture, cracks, and signs of movement

The roof should be inspected for the following components:

Cap and perimeter flashings
Edge metal
Base flashings
Penetrations
Perimeters around all openings
Field membrane
Other components as required.

During a maintenance inspection the following should be completed:

Properly dispose of debris and organic plant material and repair any damage.
Clean drains, gutters, down spouts, and scuppers
Aggregate surfacing shall be reviewed for placement
Inspect mechanical unit and perimeter flashing

The following procedures will have a significant impact on the service life of an LEA facility roof system:

Limit and control roof access and use designated roof walkway pads.
Take immediate action to repair leaks and damage.

Penetrations or equipment additions to the roof system should only be completed in collaboration with a professional roofing consultant and a structural engineer. Implementing a comprehensive roof management and maintenance program and contracting a roofing consultant are essential to maintaining sound roofing systems.

21. Facility Graffiti Removal and Prevention

Graffiti on educational facilities diminishes the educational climate, aesthetic appearance of the educational facility, and potentially encourages more graffiti and vandalism. Graffiti

shall be removed completely and in a timely manner. Facility personnel should take photographs of all graffiti tags to document the damage for facility files, and to communicate with LEA administration, security personnel, and local authorities.