COLORADO
Department of Education

Division of Capital Construction

PUBLIC SCHOOL FACILITIES MASTER PLAN GUIDELINES
BEST DIVISION OF PUBLIC SCHOOL CAPITAL CONSTRUCTION

A master plan is produced through a team effort involving school administration, staff, students, community members, and professional consultants with disciplines in education, planning, programming, architecture, engineering, construction, facility management, and facility operations, and technology. The master plan research process should utilize information and resources available locally, nationally, and internationally. The following is a minimum outline of a facility master plan.

A master plan is comprised of **two major components**:

ONE: A thorough assessment of a school district, charter school, BOCES, or Colorado School for the Deaf and Blind (CSDB) facility inventory including but not limited to:

- An assessment of all facilities in the public school entities inventory. The BEST program completed an assessment in early 2010 which is available for reference. Include but don't limit to:
  - Condition;
  - Educational suitability;
  - Energy performance;
    - Ability to deploy new (energy intensive) technologies
  - Historical significance;
  - Utilization;
    - Is each facility under-utilized, over-utilized, properly utilized;
      - SF per pupil for each facility should be identified;
      - Programs being delivered in each facility should be identified;
        - Are the spaces where programs are delivered adequate?
- Demographic information:
  - District population trends for the last 10-years in general and specifically the last 5-years. Include but don't limit to:
    - Include general population;
    - Classroom population;
    - Decline, increase, stable;
    - Median age and is the population getting younger, stable, getting older.
  - Economics of the general population, including but not limited to:
    - Industry and business make up of the area;
    - Are the economics weak, strong, stable;
    - Influences that may impact the economics:
      - Currently;
      - In the next 5-years.
  - Median household income;
  - Median home cost;
  - Access to information technology including regional telecommunications infrastructure.
- Summary of the performance of the public school entity, including but not limited to:
  - Graduation rates;
    - Percent of pupils that go to college;

- Percent that stay in the community;
- Percent that move out of the community.

- Test scores;
- Educational programs;
- Educational specialties;
- Athletics.

- Geographic area;
- Operation costs:
  - Utilities;
  - Maintenance;
    - Custodial;
    - Systems maintenance.
  - Cost per year and cost per SF to maintain each facility.

TWO: Once the phase one assessment work is completed there should be a thorough, thoughtful, analysis of the results which identifies strengths, weakness, and deficiencies that can be built on or could be improved. If there are deficiencies identified the master plan should result in options or a strategic plan for the next 5-years to correct or improve those deficiencies, including but not limited to:

- A summary of the strengths and weaknesses;
- Options and possible corrective actions for addressing the weaknesses and deficiencies, including but not limited to:
  - Costs associated for each option;
  - Pros and cons for each option;
    - Impact on educational delivery;
    - Itemized cost, including how they are determined;
    - Impact on operating cost.
  - Life cycle analysis for each option.
- Ability to implement the options, including but not limited to:
  - Funding;
    - General fund;
    - Bond election;
    - BEST grant;
    - DOLA grant;
    - GOCO grant;
    - CHS grant;
    - Other grants.
  - Resources, including but not limited to:
    - Maintenance staff;
    - In-house operations staff;
    - Consultants.
- Impact of implementing or not implementing the plan.
  - On educational delivery;
  - Operating cost.

It is important to note that a master plan is a <u>dynamic document</u> and should be continually updated to reflect any changes in assessment data as well as demographic information. Additionally, rules and regulations should be established outlining procedures required to amend the master plan.

A master plan is:

- A tool for administration, staff, and communities to make educated decisions regarding facilities. Should they be:

        - Renovated?
        - Shut down and abandoned to create better utilization of other facilities?
        - Demolished and replaced?
        - Historically restored?
        - Other?
    - An assessment of facility inventory for condition and educational suitability, and a short term and long term plan for addressing deficiencies identified in the assessment.

A master plan is not:

- Just a plan for a specific project or a project plan. It is much more.
- A final solution.
- A BEST grant, although it may identify potential BEST grant projects and provide justification for the need of the projects.
- A wish list from the administration and community.

Proposed Outline

I – Table of Contents

II - Executive Summary

Provide a brief summary of the information provided in the master plan. At a minimum, the executive summary should include the following with additional detail provided within the body of the master plan:

- Background and Demographic Information:
    - History;
    - Location;
    - Demographics comprising student body and community.
- Assessment Findings:
    - School educational programming and adequacy;
    - Facility conditions;
    - Future use analysis.
- Conclusion

III – History of School District, Charter School, BOCES, or CSDB

Describe the history of the school district or charter school and the surrounding region, including but not limited to:

- When was the school district or charter school established and why?
- How was its name determined?
- Provide a timeline of events from its establishment to present day describing major growth and decline periods and reason for growth/decline;
- Provide supporting graphs and charts;
- List any historically significant sites, any building over 50 years of age, or properties owned by the school, or located within the school's boundaries.

IV - Location of school district or charter school boundaries

- Provide map illustrating geographic location of school district or charter school in the state of Colorado;
- Provide map delineating school district or charter school's boundary lines with facility sites identified;
- Describe the location relative to other major cities and services. Include location to higher education facilities, universities, private schools, technical schools and community colleges;
- On maps show major highways, streets, roads, railroads, airports and other transportation modes;

- Describe the location in terms of elevation and climate trends;
- Describe the location in regards to its potential for renewable energy savings. Evaluate the districts location in respect to:
    - Solar;
    - Wind;
    - Geothermal;
    - Biomass.

V - District demographics

An understanding of the demographics is important to determine past, current and future trends. Demographic information should be obtained and collected to provide an understanding of the demographic make-up and resulting needs.

Demographic information is available through the following government agencies:

- Colorado Department of Education (CDE);
- State of Colorado Department of Local Affairs (DOLA);
- U.S. Census Bureau.

VI - Historical Significance

- The evaluation shall take into consideration the historical significance of the facility and other community valued attributes. At the earliest stages of planning, if a historical building defined as one that is 50 or more years old may be affected as part of the master planning process, CDE must be contacted to request a determination of effect from the Colorado Historical Society as per CRS 24-80.1-104(2)(a);
- The master planning team must take into consideration the historical society's position if a determination is made that the planned project may adversely affect a building of historical significance, and provide CDE with adequate information as part of the consultative process between the two state agencies (CDE & CHS);
- The process outlined is a time sensitive process and must therefore be prioritized early in the initial phases of the master planning.

VII – BEST Facility Assessment

The BEST assessment results may be used as a reference to help develop the master plan. The BEST Facility Assessment results should be reviewed and updated if necessary.

VIII - Educational programming and adequacy

This portion of the assessment should compare the public school entities offered programming against the Colorado Academic Standards listed below. If programs are not provided in the areas set forth indicate why. Describe programs that are provided by the school not included in the Colorado Academic Standards (VoAg & VoTech) and reason for inclusion. Describe how the schools current facilities meet or are deficient in meeting the educational program needs being taught.

- Dance
- Drama and Theatre Arts
- Comprehensive Health & Physical Education
- English Language Proficiency
- Mathematics
- Music
- Reading
- Writing and Communicating
- Science
- Social Studies
- Visual Arts
- World Languages

IX - Complete Inventory of facilities

This portion of the assessment should include, in spreadsheet format, all facilities owned or leased by the school district or charter school including, educational facilities, administration buildings, gymnasiums, multipurpose facilities, libraries, cafeterias, maintenance buildings, storage buildings, storage sheds, water pump houses, concession stands and sports fields and bleachers.

The following information should be included for each facility:

- Name of facility;
- Address of facility;
- Use of facility (i.e. elementary school, preschool, etc.);
- Square footage of facility;
    - Verification of SF of facility;
    - If previous drawings and/or the statewide assessment are used to determine SF, the information is to be field verified for accuracy;
- Year built;
- Description of construction (i.e. slab on grade with masonry walls and metal roof, etc) ;
- Additions to facility:
    - Use of addition;
    - Square footage of addition;
    - Year of addition;
    - Description of construction.

Provide a site plan of each facility locating the property line along with notes of important site and building elements. The use of satellite map imagery illustrates site and building elements.

Provide floor plans with graphic scale of education facilities when possible.

X - Facility Evaluation and Future Use Analysis

- Provide a separate overall building narrative analysis describing the condition and educational suitability of each of the buildings, the most pressing and long-term needs, and any additional relevant comments that would assist the reader in gaining a snapshot understanding of the buildings condition and needs. Provide relevant "titled" photos that support the Master Plan;
- Floor plans are helpful in the Master Plan for all educational programmed spaces clearly identifying all current and existing educational programs within the floor plan. If as-built drawings are not available a sketch showing all current and existing programmed spaces within the buildings should be adequate;
- Provide a professional evaluation on the structural soundness of each building;
- Evaluate the building envelope including exterior wall and roof construction;
- Evaluate all facilities and key building components compared against "Capital Construction Assistance Public Schools Facility Construction Guidelines". (This document is available on the CDE's web site under capital construction grants);
- Each facility should be field assessed/reviewed to determine all the facilities deficiencies and to provide repair/replacement cost associated with each identified deficiency. The assessment evaluation should utilize a facility condition index (FCI) or equal evaluation approach;
- List major code violations for ADA accessibility, fire safety systems, life safety systems, electrical systems, and mechanical and plumbing systems.

XI - Energy, HVAC, O & M Analysis

- Include a code review and energy efficiency evaluation. Include utility costs and other operating costs for each building. Identify areas of the building where thermal comfort is not being achieved through adequate heating, cooling and natural ventilation and identify areas where the thermal envelope is compromised. Identify areas not meeting current energy codes;
- Evaluate the major heating and cooling systems for energy efficiency, condition and operation and also evaluate the lighting systems for energy efficiency, condition and operation.

XII - SF Analysis

Master Plan materials should:

- Clearly outline the total SF and the SF for each facility;
- Identify SF/student;
- Identify capacity of the current facilities compared to the current enrollment and how it relates to the programs being delivered;
- Include a utilization matrix showing how the facilities are currently utilized.

XIII - Site Evaluation

- Include site evaluations including bus/vehicle/pedestrian traffic patterns, sports fields, soft and hard playground surfaces, parking lots and safe parent/student/staff conditions, ADA compliance for general use of the building, site lighting, site drainage, and deficiencies noted;
- Emergency and fire department access to site and building for existing and proposed site improvements and building improvements;
- Master plan should include evaluation of existing utility infrastructure and its location with respect to the existing and proposed facilities for power, water, sanitary and storm sewer, and telecommunication systems;
- Acreage for each site.

XIV – Technology

Describe the technology infrastructure:

Network Topology

- Type of cabling;
- Type and Age of hardware;
- Source of bandwidth and Internet connectivity.

Network Infrastructure

- Data network equipment;
- Voice network equipment;
- Firewall and security;
- Backup and Recovery;
- Availability and campus connectivity if applicable.

System Standards and Specifications

- Operating System;
- Active directory standards;
- Email Services;
- Wireless Services.

Educational Technology

- Smart Boards;

- Student Equipment;
- Laboratory Equipment;
- Other Classroom Equipment.

XV - Future Use Analysis

Include analysis and narrative regarding the district and/or community's current and future use of any facilities that are changing usage as a result of the planning process.

XVI – Strategic Plan for Implementation

From the findings develop a strategic plan that establishes options for specific directions and actions to implement the district's master plan.

Options for Facilities

- If applicable multiple options should be presented with associated costs, narrative discussion, and pros/cons of each option;
  - Impact on educational delivery;
  - Itemized cost including how cost are determined;
  - Impact on operating cost.
- Indicate the impact of options/recommendations/conclusions/proposed construction to the adjacent properties, streets, infrastructure and general area;
- Provide a narrative that summarizes each of the options explored and use a matrix type exhibit for detailed pros/cons;
- Indicate the impact on the community for each option presented;
- Long range impact of implementing or not implementing each option including: educational delivery, initial cost, operation and maintenance costs and projected energy costs. Compare these costs to their current O & M and energy costs of operating the existing facilities.

High Performance Objectives

High performance objectives/components should be evaluated and included as part of the master plan process including a LEED or CO-CHPS scorecard (if applicable) and narrative of high performance opportunities that can be achieved.

Funding

A funding discussion should be included noting multiple funding sources and a plan for contacting and applying/soliciting funding from each source.

Capital Renewal

A capital renewal plan should also be a part of the strategic plan. The capital renewal plan allows the school district or charter school to plan for replacement costs in the future when the major building systems require replacement

Prioritized long-term (5-10 year) project implementation list with cost estimates

Relevant information regarding an implementation plan, phased if needed, should be included with the master plan.

Provide in spreadsheet or database format a list of five year projects required to satisfy deficiencies identified in the facility assessment. Each project shall be accompanied with a cost estimate utilizing RS Means cost data, or equal. Projects proposed in years 2-5 should take inflation into account.

XVII - Conclusion

This section should clearly and concisely convey the final solutions and the rationale behind the final solutions determined through the master plan process. The following topics should be covered at a minimum:
Document master plan process in detail with brief narrative descriptions of each meeting held as part of the master planning process;

- Identify team members involved and their roles. Provide contact information for each member;
- Include all ideas discussed and options explored;
- Describe overall methodology.