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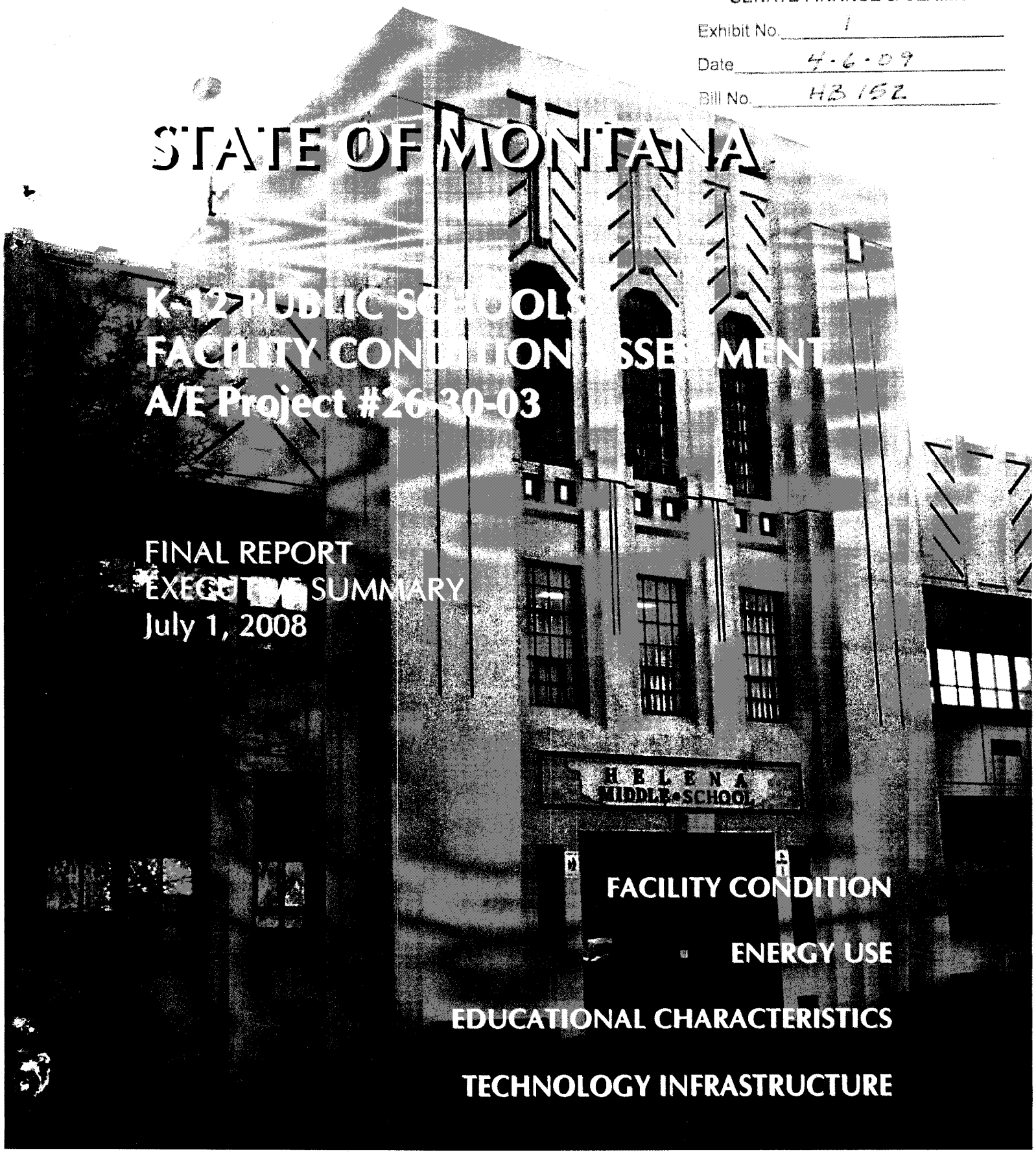
STATE OF MONTANA

K-12 PUBLIC SCHOOLS
FACILITY CONDITION ASSESSMENT
A/E Project #26-30-03

FINAL REPORT
EXECUTIVE SUMMARY
July 1, 2008



FACILITY CONDITION

ENERGY USE

EDUCATIONAL CHARACTERISTICS

TECHNOLOGY INFRASTRUCTURE

State of Montana
Department of Administration
Architecture & Engineering Division

DLR Group

STATE OF MONTANA

K-12 PUBLIC SCHOOLS
FACILITY CONDITION ASSESSMENT
A/E Project #26-30-03

Final Report
Executive Summary
July 1, 2008

Prepared By:

State Resource
Department of Administration
Architecture & Engineering Division
Attn: Joe Triem
PO Box 200103
Helena, MT 59620-0103
(406) 444-3104
jtriem@mt.gov

Consultant
DLR Group, Inc.
Architecture Engineering Planning Interiors
Attn: Scott Rose
421 SW 6th Avenue, Suite 1212
Portland, OR 97204
(503) 274-2675
srose@dlrgroup.com

Contributors:

Montana State University - Office of Facilities Services

Victoria Drummond, AICP
Associate University Planner
Montana State University
Planning, Design & Construction
PO Box 172760
Bozeman, MT 59717-2760
406-994-7914
Victoria.drummond@montana.edu

Megan Bergstedt
Data Information Specialist
Montana State University
Planning Design & Construction
PO Box 172760
Bozeman, MT 59717-2760
406-995-4213
mbergstedt@montana.edu

Kathy Brewer
Software Engineer
Montana State University
Facility Services
PO Box 172760
Bozeman, MT 59717-2760
406-994-6966
kbrewer@montana.edu

Department of Environmental Quality

Georgia Brensdal
Public Buildings & Renewable Energy Section
406-841-5240
www.deq.mt.gov/Energy/EESchool

Office of Public Instruction

http://www.opi.mt.gov/

Madalyn Quinlan
Chief of Staff
Office of Public Instruction
PO Box 202501
Helena, MT 59620-2501
406-444-3168
mquinlan@mt.gov

Paul Taylor
School Finance Division
Office of Public Instruction
PO Box 202501
Helena, MT 59620-2501
406-444-1257
ptaylor2@mt.gov

Denise Ulberg
School Finance Division
Office of Public Instruction
PO Box 202501
Helena, MT 59620-2501
406-444-1960
dulberg@mt.gov

Information provided in this report and its supplemental information is to be used only for the purposes as specifically outlined by the State of Montana House Bill No. 1 of the 59th Legislature Dec 2005 Special Session.

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APPENDICES
(Discs available upon request through A&E Division)

Cost Allowances and Deficiency Ratio by District (included)

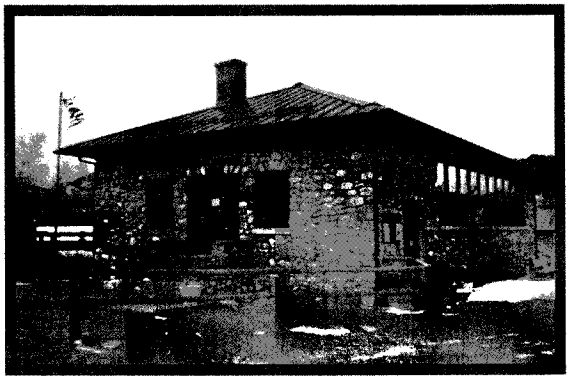
Facility Condition Report Database DISC 1

Educational Characteristic Files DISC 2

Technology Infrastructure Files DISC 3

PROJECT WEBSITE (available late summer 2008)

http://www.opi.mt.gov/Facilities/index.html



BACKGROUND & TYPICAL DATA

House Bill No. 1 of the 59th Legislature Special Session in December 2005, the impetus for this study, authorized the appropriation of funds for a condition and needs assessment and energy audit of K-12 public school facilities within the State of Montana. The timeline required by this legislation was to have this report completed by no later than July 1, 2008.

Section 1 further identifies data to include, but not be limited to the following:

- Total square footage
- Percentage of total square footage being utilized for educational programs
- Square footage per student

To accomplish this project within the time allowed and without ongoing operational staff, the State Architectural & Engineering Division chose to utilize existing resources within the private sector to complete the majority of the work required for this study.

The Architectural & Engineering Division of the State Department of Administration formally solicited proposals from qualified firms for the planning and execution of this work and selected, based on this process, a team of regional and local architectural, engineering, and facility assessment professionals led by prime consultant DLR Group, Inc. The project was managed out of DLR Group's Portland, Oregon office.

DLR Group is a nationally recognized expert in the assessment and design of educational facilities. They were chosen based on their experience to facilitate and provide the leadership necessary to maintain the project schedule, budget, and level of quality required for this volume of work. DLR Group has accomplished over 200 million square feet of such assessments and has developed training methods and protocols for accomplishing these tasks within tight time frames and with regular consistency between teams. The aggressive schedule was necessary in order to create a "snapshot in time" of all of the State's public school facilities. Assessments comparing, for example, two-year old data with two-month old data would not have provided the level of consistency desired for this report.

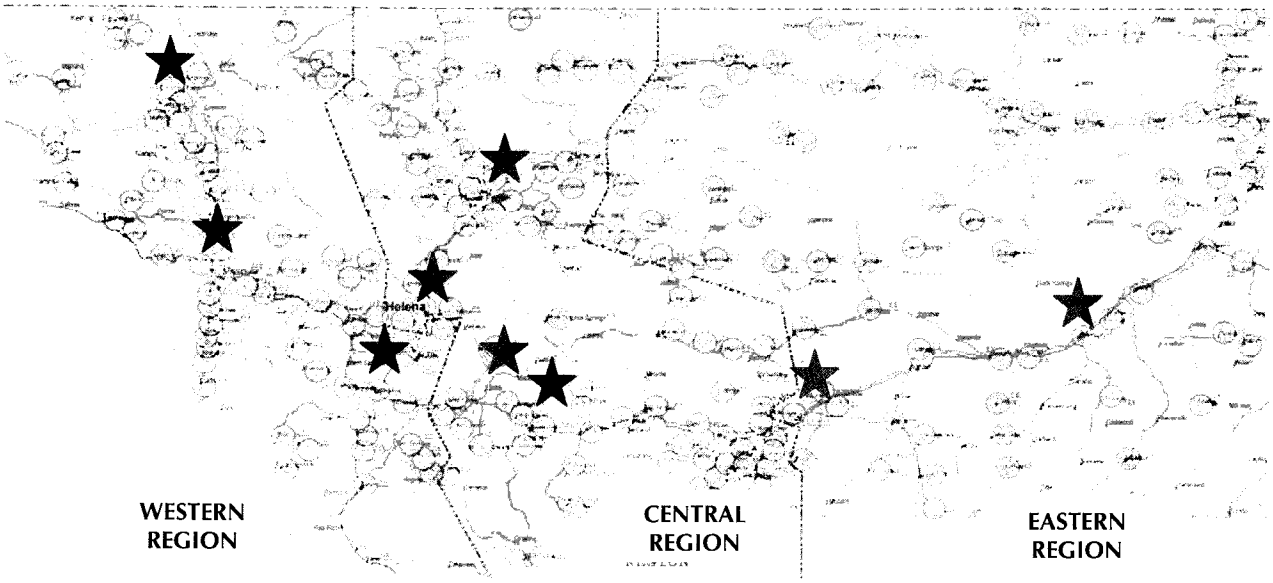
All site assessments were accomplished within a three-month window. This required:

- 42 field inspectors + 23 support and management personnel
- Visits to nearly 2,200 buildings
- Walking over 31 million square feet
- Driving to 240 towns
- Expending in excess of 15,000 hours on site (excluding travel time)
- Over another 6,000 hours in preparation, quality control, management, and reporting.
- The report and data, if fully printed, is over 30,000 pages
- Final costs: 7.6 cents / square foot

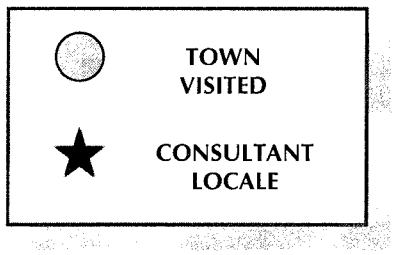
DLR Group utilized, and adapted for this study, the Facility Condition Inventory (FCI) system, created by Montana State University, as their database tool, for the purposes of maintaining consistency with other reports generated at the state level and to allow this study to be supported by a local presence in the future. To further facilitate this goal, DLR Group contracted with local architectural and engineering consultants to assist in performing the facility assessments. This leaves behind a framework of teams experienced in accomplishing this type of work. These consultants are as follows:

- Thomas Dean & Hoskins, Inc. (Great Falls, Bozeman, & Kalispell)
- HKM Engineering, Inc. (Billings, Bozeman, Butte, Great Falls, Helena, & Miles City)
- Stahly Engineering & Associates, Inc. (Helena & Bozeman)
- Oz Architects (Missoula)
- Consulting Design Solutions, Inc. (Manhattan)
- J2 Studio Architecture + Design (Bismarck, ND)
- Con'eer Engineering, Inc. (Billings)
- JGA Architects (energy consumption) (Billings)

The state was divided into three regions as illustrated below:



PLEASE NOTE: Additional information specific to the data for each site will be made available as "Read Only" information via a web site in late summer 2008. Interactive versions of the database will be made available through the State's A & E Division upon request from individual Districts interested in updating their Facility Condition Inventories, as capital investments are made. Staff from Montana State University will be available for training on the use of this system, as discussed later in this report.



The adaptability of the Facility Condition Inventory (FCI) system was tested by the DLR Group managers in a series of pre-test inspections conducted December 3-5, 2007 in Helena. The three test sites chosen were Helena Middle School, Kessler Elementary, and the Helena School District maintenance facility.

Inspector training was then conducted in Bozeman on January 9 and 10, 2008. Training sites selected were Longfellow (see below), Whittier, and Emily Dickinson elementary schools. At this time, back-up inspectors were also trained, such that 42 individual qualified inspectors were placed in the field at various times during the overall assessment period of January 14, 2008 through April 4, 2008. All team members possessed architectural and / or engineering backgrounds. Again, in excess of 15,000 hours were spent purely on the field assessment of the facilities.

Each of three regions was assigned a supporting project manager from within DLR Group, and each region's assignments were split between six 2-person teams, with back-up and roving inspectors.

General Building Data Collected

Total Buildings Assessed: **2,195**
Total Square Footage Assessed: **31,444,547**

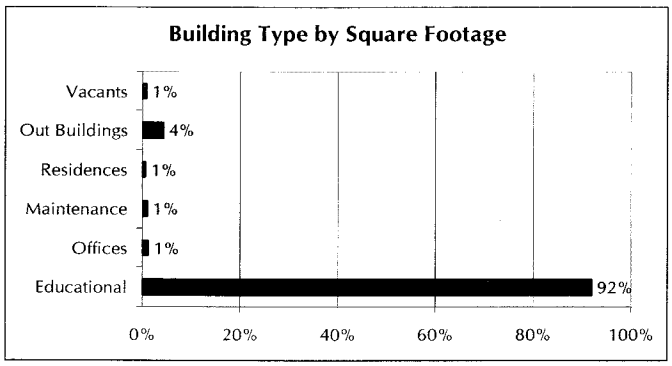
Those directly related to the delivery of education*
Buildings: **1,124 (51%)**
Square Footage: **28,901,808 (92%)**
Total Student Enrollment (day of site visit): **141,112**
Educational Square Footage / Student: **205 sf / student**

*Buildings included in these numbers are those that contain instructional spaces which are currently directly used for the delivery of education. Buildings not included in these figures are:

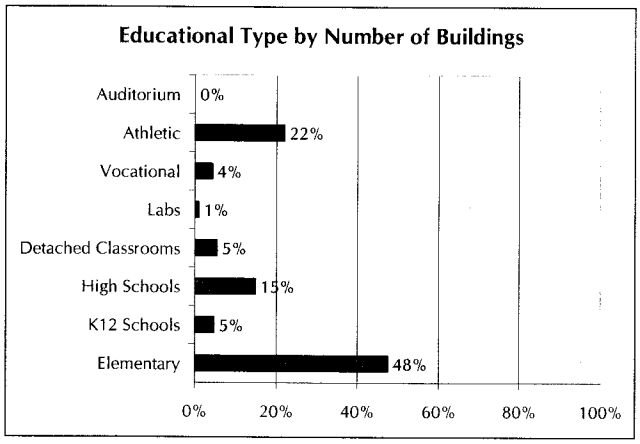
- District Administration Buildings
- Maintenance Facilities
- Storage Buildings
- Athletic Out Buildings
- Staff Residences
- Vacant Buildings

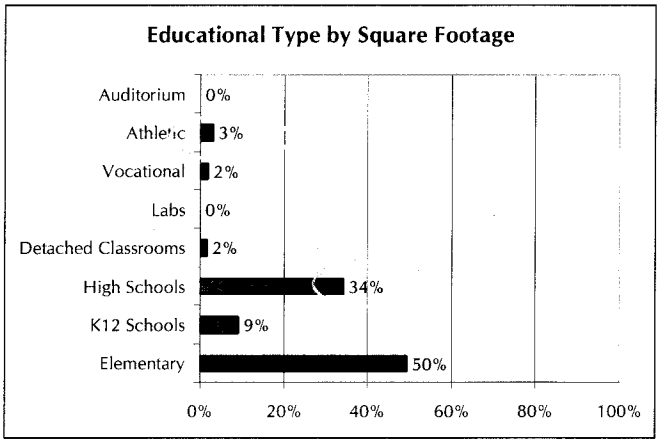
School / Facility Type*	Total Buildings Assessed	Total Square Footage	Total Academic Buildings	Total Academic Sq Ft	Total Student Enrollment	Educational Sq Ft / Student
Athletic Facilities	248	907,924	248	907,924		
Auditoriums	3	14,545	3	14,545		
Elementary Schools (K-8)	535	14,307,510	535	14,307,510	85,172	168 sf / student
Detached Classrooms**	60	480,428	60	480,428		
K-12 Schools	53	2,695,900	53	2,695,900	8,987	300 sf / student
High School	167	9,910,846	167	9,910,846	46,953	211 sf / student
Teaching Labs***	11	35,007	11	35,007		
Vocational School****	47	549,648	47	549,648		
Offices	58	370,000	NA	NA	NA	NA
Maintenance / Shops	86	328,086	NA	NA	NA	NA
Residences	133	208,952	NA	NA	NA	NA
Storage & Out Bldgs	769	1,392,409	NA	NA	NA	NA
Other and Vacants	25	243,292	NA	NA	NA	NA
Total	**2,195**	**31,444,547**	**1,124**	**28,901,808**	**141,112**	**205 sf / student #**

*The facility types provided are as broken down by FCI building category.
**For the purposes of the FCI reporting system, these detached classroom buildings are referred to as a "General Classroom" building type.
***Teaching Labs are defined as a specific building type by the FCI reporting system. All of these facilities were located on Junior High and High School sites.
****Vocational Schools are defined as a specific building type by the FCI reporting system. These are comprised of shop buildings (wood, metal, automotive, Ag, etc.) and other Career Technical Educational (CTE) designated structures.
#The TOTAL sf / student incorporates all of the square footages listed for educational delivery, though enrollments are only tracked in the elementary, high, and K12 school configurations.



Educational structures make up over 90% of the square footage examined. Specific break downs in each building of what rooms and auxiliary spaces were directly attributable to the delivery of education was not conducted. A building whose primary function is the delivery of education was considered wholly as such. Support buildings and sheds, although numerous in quantity, make up less than 10% of the building square footage examined.

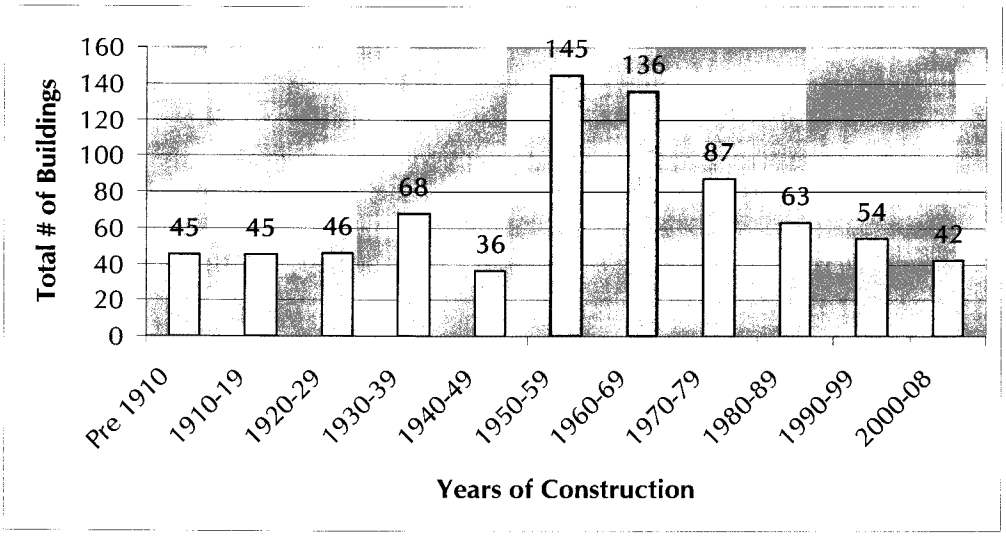




*Please note: the term "detached classroom" refers to instructional wings that are physically detached from the main buildings. This is a building type identified by the FCI system and as such sits separate from the other numbers. The total volume is negligible, but still represents square footage to be considered within the whole.

In breaking out the educational structures into the various instructional types, conventional elementary school buildings were the predominant buildings. Facilities serving any combination of grades up to the eighth grade were contained within this figure. Buildings serving the 12th grade were included in either the High School or K-12 figures, based on whether or not lower primary grades were served within the same building. When comparing these same buildings by square footage, the athletic figures drop off sharply, and the High School numbers then rival the elementary figures, given the relative size of the structures.

Building Age



*These figures are based on known building ages. This is approximately a 30% sampling, which is statistically indicative of the State's trends.

A large percentage of Montana's public school buildings were built in the 1950's and 1960's – post World War II, when school construction boomed across the United States. Many states also saw an increase in school construction during the Post World War I 1930's, but, in Montana, this increase was only slight.

No map is provided to identify where the oldest buildings are located. They are equally dispersed across the state and do not correlate to an economic or population density factor. However, state-wide, there has not been a significant investment in new buildings, and many of the school construction projects in the last few decades have been additions, which have sharply dropped off since the late 90's, coinciding with the declining enrollment (see page 11).

Vacant Buildings

There are approximately **25** buildings, in this assessment, that are abandoned, unused, or currently leased out for other community purposes. As these are still owned by the District, they were inspected as part of this report. This represents only a negligible number of the overall facilities and is only noted for the future potential of examination for expansion in those areas. The building types are broken down as follows:

Type	# of Buildings	Square Footage
Elementary School	13	144,724
Middle School	2	36,764
High School	2	47,104
Residence & Other	8	14,700

*Reasons provided to the inspectors for discontinuing the use of these facilities included: poor physical condition, decreased enrollment, and revenue potential.

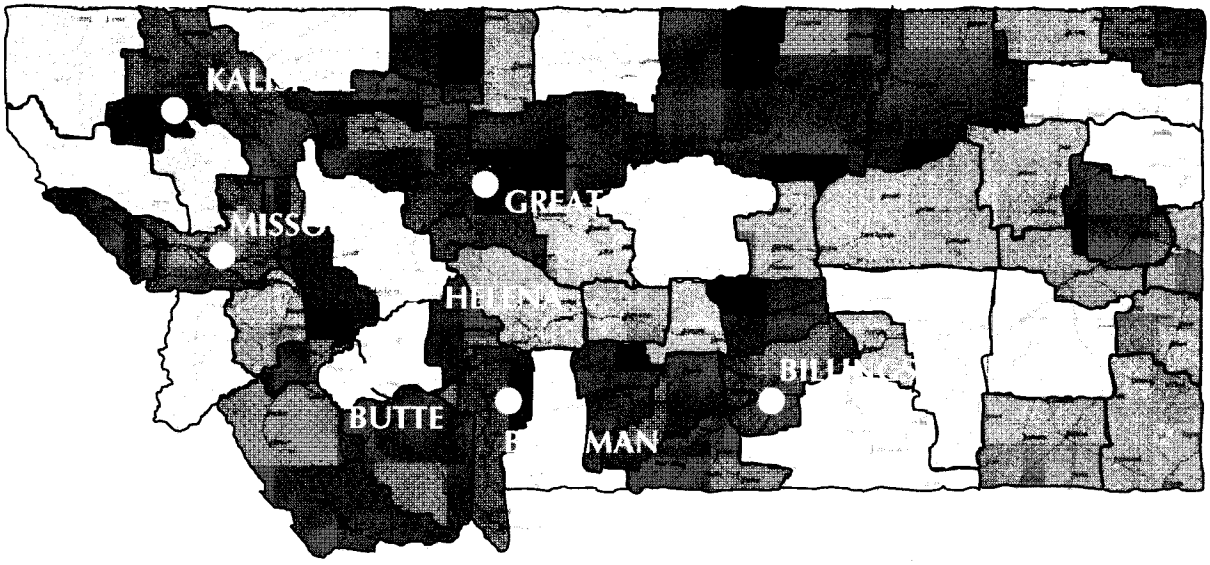
These vacant buildings, shown on the map immediately below, were excluded from the overall total of active school sites for the purpose of this report.

If increasing enrollment in these districts dictates a need for increased square footage, one approach may be to re-open these facilities or terminate leases with other entities to re-capture educational square footage. However, re-opening these facilities for the delivery of education, where that service has previously been interrupted, will trigger requirements to bring those facilities up to current code requirements.

Cost allowances included in the FCI portion of this report are for current deficiencies only. Other code deficiencies were observed and recorded but no allowances assigned, as their current use does not require that they be addressed. If the facilities are re-opened, DLR Group recommends that the District walk the local building official and Fire Marshall through the facility to identify what work items will be required to re-open these facilities as schools.

Student Enrollment

Numbers of students enrolled in each District was more concentrated near urban centers, with medium range figures in those outlying areas but then dropping off sharply in the eastern half of the State (save for Billings) and in the southwestern region as well.



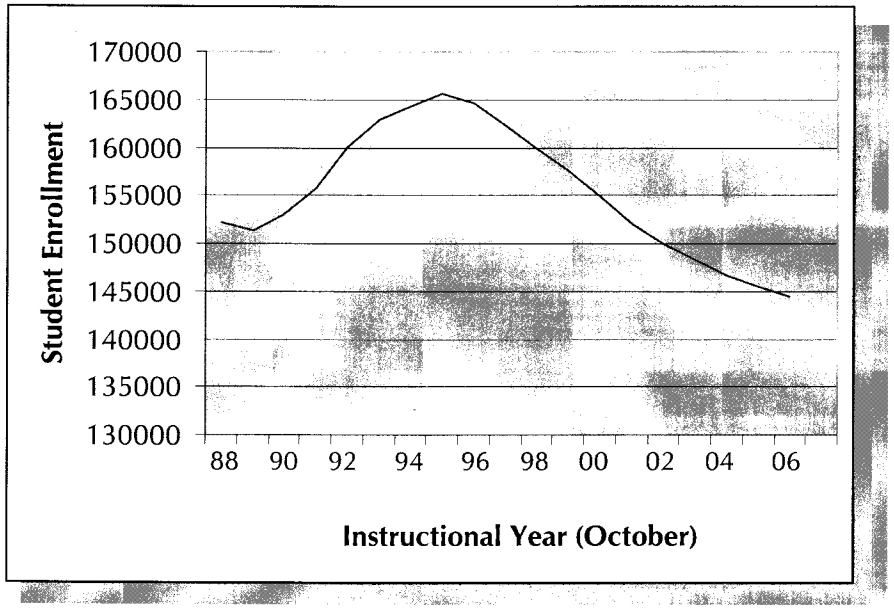
Student Enrollment by County*

< 500
500 - 1500
1501 - 2,500
2,501 - 10,000
> 10,000

*These numbers reflect the overall number of students (a range) within a County. It does not differentiate on a district-by-district basis.

YEAR	ENROLLMENT	YEAR	ENROLLMENT
1988	152,191	1998	159,988
1989	151,265	1999	157,556
1990	152,974	2000	154,875
1991	155,779	2001	151,947
1992	160,011	2002	149,995
1993	163,009	2003	148,356
1994	164,341	2004	146,705
1995	165,547	2005	145,416
1996	164,627	2006	144,418
1997	162,335	2007	143,405

Sources: US Department of Education and Montana Office of Public Instruction



Enrollment versus National Usage Targets

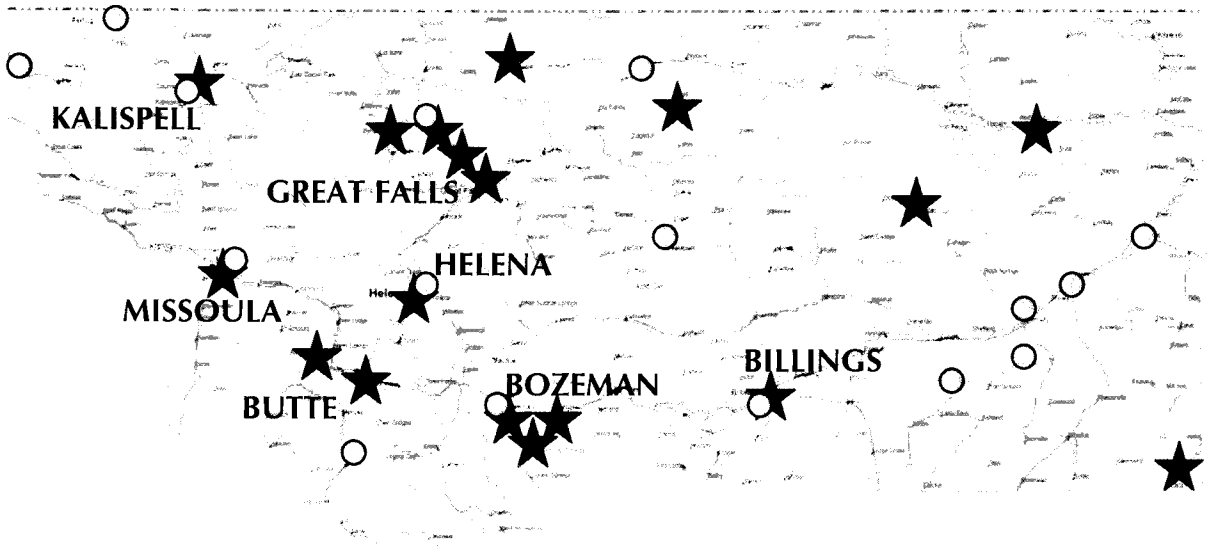
Student enrollment state-wide has dropped in the last twelve (12) years by over 20,000 students, or approximately 13% from their peak of 165,547 in 1995 to 143,405 in 2007 (see trend charts above). These trends increase the "square foot-per-student" ratio, unless facilities are closed or sold off. As noted previously, the state average sf / student is 205. DLR Group typically designs toward an average, between grades, of 130 sf / student. Ideally, schools should operate at approximately 15% under capacity to allow for growth and specialized instructional opportunities so would be in the 145 – 150 sf / student range.

Current Density Ratios:

	# of Schools	Square Footage (Total)	Evaluation
< 100 sf / student	65	1,330,785	CROWDED
100-129 sf / student	124	3,844,721	↓
130-150 sf / student	87	2,709,368	OPTIMAL
151-200 sf / student	156	6,756,446	↓
>200 sf / student	323	14,260,488	UNDER-UTILIZED

The large volume of low density occupancies relates to the decline in state enrollment in that last 12 years. It also provides insight into the relatively slower construction pace of new facilities in the last decade (refer to the "Building Age" chart above).

Locations of Towns with Multiple Low Density Sites (> 200 sf / student)

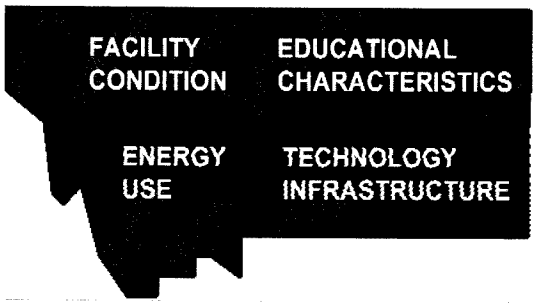


In general, those buildings showing a greater than 200 sf / student ratio likely have the capacity to take on additional student enrollment. Exceptions to this conclusion may be in instances where specialized programs are included within the curriculum, isolated or momentary declines in the population, new construction in anticipation of growth, or other anomalies that effect the full use of the facility. As such, plotted on the map above are only those sixteen (16) towns where 3 or more buildings exhibited very low student density ratios.

Again, note that vacant buildings are not included in these statistics. Vacant buildings are outlined on page 8 above. They have been re-plotted here on the map above as "stars".

There does not seem to be a direct correlation to vacant buildings and those areas showing the lowest student density. There also does not seem to be a single concentration for the lower student density. Nor is there a pattern of this demographic existing in only the rural or urban centers (Note both Billings and Havre show low student density in at least some of their buildings). Enrollment trends for each of these Districts should be studied further before making any conclusions regarding utilization.

Areas of Assessment



The areas of assessment incorporated into this report are as follows:

I. Facility Condition:
These observations record the types of building materials, equipment, systems that are present, as well as their levels of fatigue or failure. Each item is placed into a category and assigned a cost allowance for remediation or replacement.

II. Energy Use:
The focus of this section is to report energy conservation opportunities observed; emphasizing immediate and near term energy conservation and reduction opportunities that can be carried out on a building-by-building basis. Longer term energy conservation measures and recommendations to monitor individual building consumption are also included.

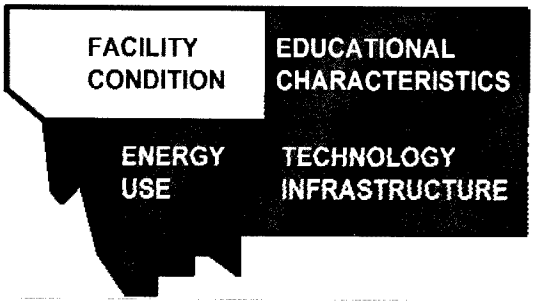
III. Educational Characteristics:
An Educational Characteristics Survey was conducted under this project to record general characteristics of existing Montana K-12 educational facilities and campuses, although the legislative mandate for this project did not require the collection of this data nor evaluation or recommendations. The information provided by this survey is intended as a local and regional resource for use in future planning as renovations, additions, new construction, developing cooperatives or consolidation is considered.

Please note: as individual FCI inspection forms are evaluated by Districts, the "Building Type" listed may not match its current function. The rationale for that is related to the cost structure of the database. As an example, a building may currently house a K-8 program, but the building was originally designed and utilized as a small high school. The building type listed in the FCI system will likely be "High School". If the K-8 program was placed in a new facility, it likely would not be built in the same manner, rather more specific to the needs of that program.

IV. Technology Infrastructure:
A Technology Infrastructure Survey was conducted under this project to record the information technology (IT) infrastructure characteristics of existing Montana K-12 educational facilities and campuses, although the legislative mandate for this project did not require the collection of this data nor evaluation or recommendations. Technology Infrastructure categories targeted in this survey include: Cable Plant, Telephone Service, Internet Access, and Classroom Video. The information provided will serve to establish baselines and trends for use as a local and regional resource for use in future planning.

Accompanying documentation follows for each of these sections of the assessment.

FACILITY CONDITION



As noted previously, the database and report model utilized for this study is based upon the Facility Condition Inventory (FCI) system developed by Montana State University - Office of Facilities Services (MSU-OFS). This same reporting method is utilized for the majority of State-owned buildings, and its use for the K-12 Public School Facility Condition Assessment is intended to provide both a familiar and consistent approach as well as a supported format for future modifications and re-assessments.

Facility Condition Assessments

Facility condition assessments are a common tool used by state and university systems throughout the United States to effectively and appropriately manage their capital assets. The purpose and value of facility condition assessments are nicely outlined in the following excerpts from MSU-OFS Facility Condition Inventory Manual, and the context is related to state-owned facilities:

> *"Periodic evaluation of the conditions of the state's facilities is an essential function for effectively managing facilities maintenance operations."*
>
> *"A properly conducted building evaluation, or audit, can serve to familiarize governing boards, administrators, building managers and maintenance personnel of the condition of their facilities and where deficiencies exist."*
>
> *"Often, people responsible for making budget or resource allocation decisions know that buildings, and the systems contained therein, are deficient, but they know few details about those deficiencies."*
>
> *"In many cases, this evaluation will also provide the facilities and maintenance groups with data to help them prioritize building renewal and deferred maintenance projects and assists in the effective day-to-day management of maintenance resources."*

The Montana University System and Montana State University in particular, has invested significant effort and resources into developing a facility assessment model that could be used by all university units, as well as for the varying needs of diverse State agencies. The resulting Facilities Condition Inventory (FCI) Program is based on the Model for Facilities Audits developed by the Association of Higher Education Facilities Officers (APPA) and is designed to provide facilities managers with a tool for evaluating and communicating data about their physical assets. The program uses a comparative cost database built upon numbers from a nationally recognized cost estimating system (R.S. Means).

The Facility Condition Inventory Program is available to all state, local government, and public school entities that may be interested, and is now in almost universal use throughout State government as a valuable facility management tool. In addition to solely being appreciated on a state level, The value and impact of this facility assessment model has been lauded on a more national scale by the recent award of the APPA Leadership in Educational Facilities 2008 Effective and Innovative Practices Award to MSU-OFS for the FCI program.

The remainder of this section will describe the basics of the FCI Program and its implementation for this study. At the end of this section is more information for districts who would like to use this study as a starting point for initiating their own facility condition inventory programs.

FCI Systems Descriptions

The FCI system characterizes a facility as eleven (11) building systems integrated within the FCI database. Each of these systems is described as follows:

Foundations: This includes stem walls and foundations as observed from the perimeter or available crawl spaces. This also includes exterior stairs and retaining walls.

Envelope: This includes exterior sidings and their finishes, window systems, exterior doors, frames, and hardware, and the structure's supporting columns and beams.

Floor System: This includes the structural portions of the floor, whether on-grade or elevated, as well as interior stair systems.

Roof System: This includes the structure supporting the roof and the actual roofing materials (membrane, shingles, flashing, etc.) themselves.

Finishes: This includes interior walls, ceilings, and floor finishes as well as interior door and window systems.

Specialties: This includes toilet partitions, interior signage, fixed seating (gym, auditorium, lecture, cafeteria, etc.), and room casework items (chalkboards, tack boards, built-in cabinets, etc.)

HVAC System: HVAC stands for "Heating, Ventilation and Air Conditioning". Components of this system include everything related to making those systems operate.

Plumbing System: This includes all of the typical plumbing fixtures as well as the piping going to, and coming from, those fixtures.

Electrical System: This includes the equipment providing service to the building and the devices inside the building – lighting, lighting controls, outlets, panels, wiring, etc. This also includes low voltage devices providing communications and data.

Conveying: This includes primarily elevators and lifts and their associated sub-components.

Safety Systems: The components included here relate to fire detection and suppression, exiting, asbestos, and ADA accessibility. Due to the fact that all schools are required by federal law to have in place Asbestos Management Plans, asbestos review was excluded from the scope of this report.

FCI Categories:

In addition to association with a building system, deficiencies identified by the field observations are broken down into these seven (7) categories, which are an integral part of the FCI database.

1. Safety: Observed as an immediate threat to life safety or building integrity. [Note: These represented a relatively minor number of observations during this project's site surveys, all of which were addressed during the course of the study through a Safety Notification Protocol. In that process, safety items identified by assessment teams were immediately reported to school officials and an immediate remedy, often a physical fix, was undertaken by school maintenance personnel immediately. If the remedy was temporary, the item was re-categorized as no longer an immediate life-safety hazard, but now a damage / wear out issue.]

2. Damage / Wear Out: Items observed as broken or vandalized or wore out to a point of being inoperable, difficult to service, or lacking integrity.

3. Codes and Standards: Systems observed to be not in code compliance and not grand-fathered* under current codes.

4. Environmental: Observed failures affecting the indoor environment including impacts to the building shell and the conditioning of interior space

5. Energy: Items to be implemented solely for the purposes of reducing energy consumption

6. Aesthetics: Items observed as currently performing as intended but seen as "aged", "dated", or "worn". [These items were excluded from this study, given the large volume of inspectors and the strong potential for subjective, rather than objective, reporting.]

7. Other / Non-FCI: Items observed as not in compliance with current codes, but either grand-fathered* into current construction, or other site accommodations have been made. These items will need to be addressed if renovations are done in the future, but are not generally considered current obligations or deficiencies.

   ** "Grand-fathered": Building design codes change over time and it is not uncommon for a facility to be built in complete compliance with codes at the time of construction, only to have new codes for new construction come into law. Most code guidelines consider this aspect of change and, with a few exceptions related to life-safety, do not deem a building deficient if it met building codes and laws in effect when the building was constructed – until such time as a building is significantly altered (new addition, major renovation) or subject to a change in use.*

FCI Cost Relationships

The FCI system is based upon the identification of deficiencies, the estimated cost of remediation of the deficiencies, and the replacement cost of the entire building. All cost estimates are for in-kind repairs or construction and do not include improvements that might be made to accommodate changing function or needs.

Cost estimates for remediation of observable deficiencies identified by assessment teams and the full replacement cost of the facility are automatically generated directly from the inherent cost tables within the FCI computer program. The cost tables incorporated in the version of FCI used for this report's assessment process were based upon *RS Means Square Foot Cost, 28th annual edition (2007).*

In respect to current replacement costs for typical school construction, current construction industry cost trends near the date of this report are as follows (Source: Engineering News Record, June 2008):

Elementary School
$190 / square foot construction cost
Middle School
$210 / square foot construction cost
High School
$235 / square foot construction cost

While the visual assessment part of the FCI process serves to identify observable deficiencies at each location, the FCI software program serves to assist facility management staff in the prioritization of resources across an entire campus or district. It also can serve to help target budget and maintenance levels to reach district Deficiency Ratio goals.

While the FCI software program provides a wealth of meaningful data, caution needs to be observed to refrain from using that information beyond its intended context.

In respect to the cost data used and estimates provided, it is important to note:

1. The cost estimates for repair of a given facility system are taken directly from the FCI database (*RS Means Square Foot Cost, 28th annual edition (2007)*).

2. The costs used represent construction costs only, and do not reflect design fees, contingencies, and other so called "soft" costs.

3. The costs used are in 2007 dollars. Depending upon the year of construction an inflation allowance should be added.

4. Exhaustive design analysis has not been provided. The charge of this study was to identify areas of fatigue and failure and provide allowance recommendations that reflect a replacement in-kind. Performance of a traditional design analysis may reveal multiple options for consideration at each location, some of which may result in higher initial costs due to unforeseen conditions or are simply better for the long term operational costs of the building.

5. There is no cost "weighting" based upon the different regions of the State. The FCI cost structure is based on an average of locality adjustment so the cost structure is the same for the entire State of Montana.

The FCI program works well when used as intended. Due to this inexact correlation to actual cost, this section will refer to these approximate estimates as cost allowances for the purposes of comparison between FCI systems and priorities. Facility managers who wish to undertake specific improvements should use the FCI process to identify and prioritize specific projects, and then implement a more detailed, project-specific cost estimate to ensure project budgets or requests for funding are reasonable and accurate at the anticipated time of construction.

Adapting the FCI System

The first step in adapting the FCI system for use in this study included the training of the DLR Group management staff on the use of the FCI and to understand the similarities and differences of the FCI with other databases DLR Group has used for past facility assessment projects. This manager training was conducted by Jeff Butler, Kathy Brewer, and Victoria Drummond of MSU-OFS over the course of two days, with continued technical support over the following months.

Given the varied nature of the building types encountered, the wide geographic area considered, and the need to immediately utilize a large inspection staff of 42 people, DLR Group worked with MSU-OFS to add to the system a standardized inspection form.

DLR Group typically utilizes such inspection forms to maintain consistency between inspection teams for large building volumes, and to collect the information in a short period of time. A similar form was generated here to electronically tie, as a front end, to the FCI database. With a clear description of symptoms and EXAMPLE remediations, interpretation variations between inspectors were minimized, thus maintaining quality data collection.

A pre-assessment test was conducted with key DLR Group staff at three different sites (five buildings) in Helena, to determine the necessary modifications to this form and its interrelationship to FCI.

After these modifications, inspector training was provided in Bozeman for both DLR Group inspectors and regional consultants. The training was facilitated by DLR Group with technical assistance and attendance by both MSU-OFS and the State A & E Division. Training consisted of both classroom instruction and field training at three different elementary school sites.

After training was completed two-person assessment teams dispersed throughout Montana and consisted, in most cases, of an architecturally trained inspector teamed with an engineer to provide a balanced perspective. DLR Group teamed key staff with Montana professionals in many cases, and provided technical and logistics support to all assessment teams through three regional managers.

Actual data was then collected over a 12-week period throughout the State and reviewed regularly for consistency in approach and thoroughness of information. This data was then fed into the FCI database to generate the comparative data that follows.

Deficiency Ratio

The Deficiency Ratio is expressed as an equation that compares the cost to address all of the observed deficiencies to the cost of replacing the facility in-kind.

$$DR = \frac{\text{deficiencies}}{\text{current replacement value}}$$

This index is typically on a scale of 0-100 percent. The relationship is such that the higher the percentage, the closer the cost of the repairs comes to the cost of a new facility. A high percentage indicates a building in poorer condition.

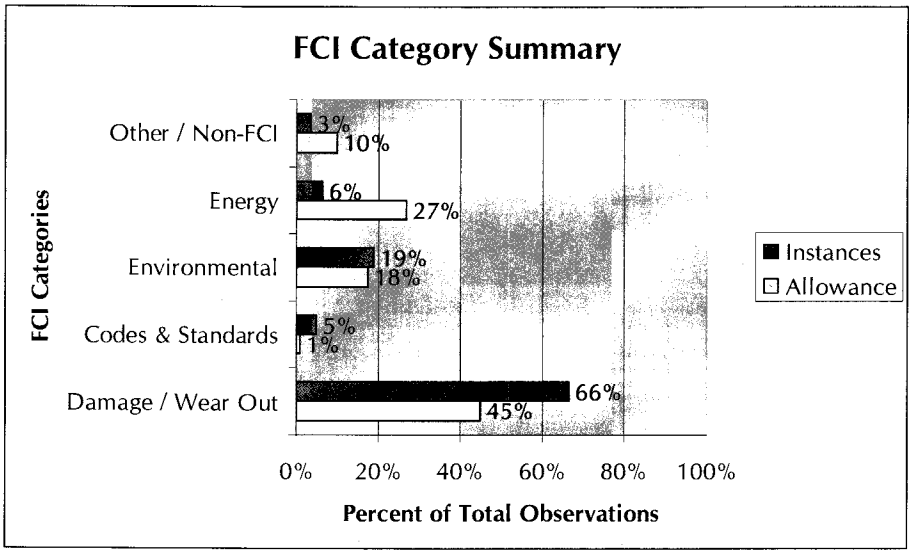
The table below indicates the Deficiency Ratio Percentage (DR) for the assessed buildings as a result of the observations performed.

	Deficiency Ratio	# of Buildings	Square Footage
GOOD	<5%	1488	11,678,908
	5-9%	449	11,027,591
FAIR	10-14%	141	4,721,035
	15-19%	61	2,386,739
POOR	20-24%	37	1,073,542
	>25%	19	556,732
	Total Buildings	**2,195**	**31,444,547**

Buildings exhibiting a Deficiency Ratio of less than 10% are generally considered to be in good condition. Those exhibiting a DR of between 10% and 20% are generally considered in fair condition. And those with a DR greater than 20% are generally considered to be in poor condition. Buildings with a DR of 50% or greater are considered to be experiencing such levels of fatigue or failure that the merits of reinvestment in the existing structure should carefully be considered.

Deficiency Ratio Percentages are broken down by District and FCI category within the appendix included with this report. Data on specific buildings within each district can be obtained from the CD appendixes available through the Architecture & Engineering Division.

Summary of Observations

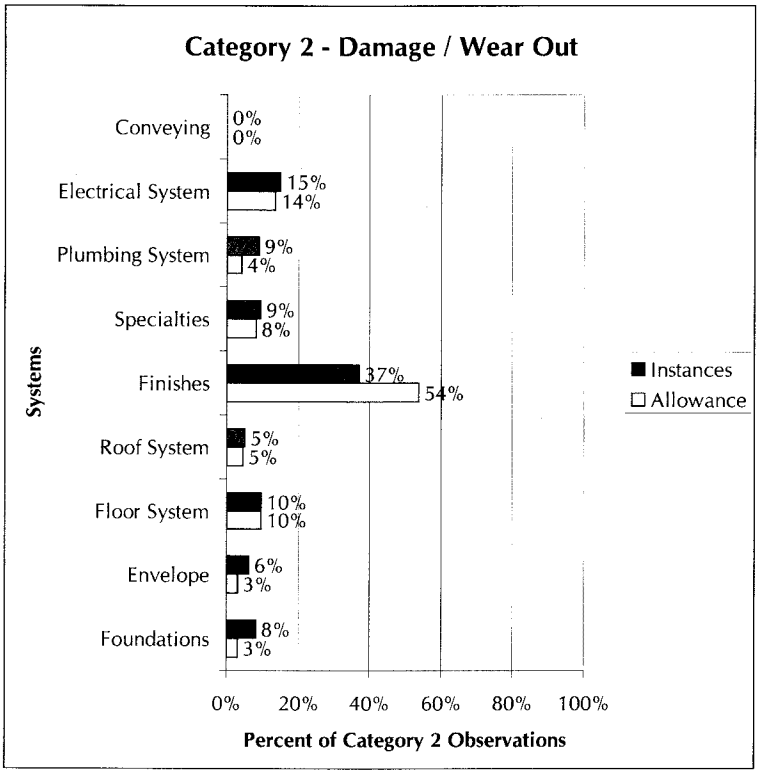


The graph above illustrates with the burgundy bar the percentage of instances or frequency with which the various categories of deficiencies were observed state-wide. For example, in the case of the environmental systems category, 19% of deficiency observations documented were of that type. The blue bar indicates the FCI cost allowance assigned to those same observed deficiencies. Using that same example, 18% of the deficiency costs documented were in the environmental systems category.

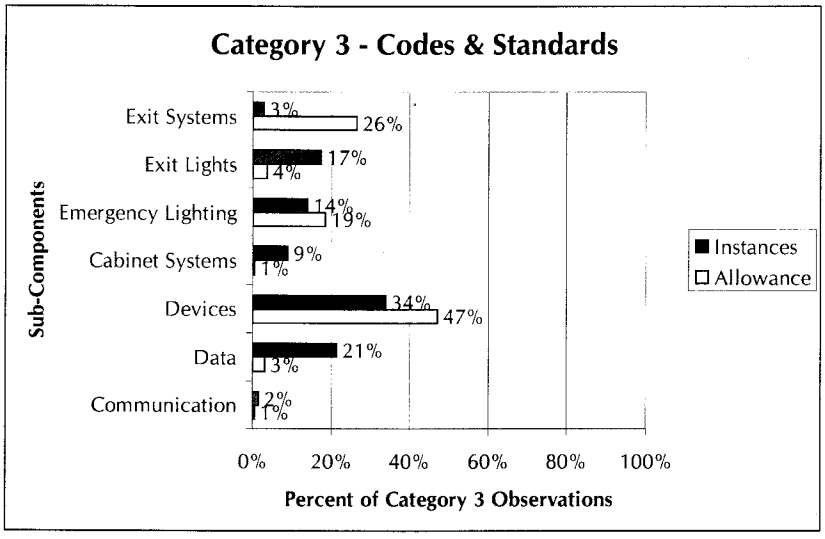
Damage / wear out observations and costs far outweighed the other categories, which is not unanticipated. The reasons for this are two-fold: damage and wear out tend to be considered lower priority than system break downs or failures of the building envelope - ending up on the deferred maintenance list; additionally, this category is the broadest, incorporating components from each building system within a typical building.

Although not as frequent as damage / wear out or environmental deficiencies, the energy category cost percentage becomes quite noticeable and worthy of comment. The main reason for the disproportion between costs versus frequency is likely because energy features tend to be systemic throughout an entire building as opposed to discrete, isolated locations. As such, cost allowances are based against a much larger building percentage.

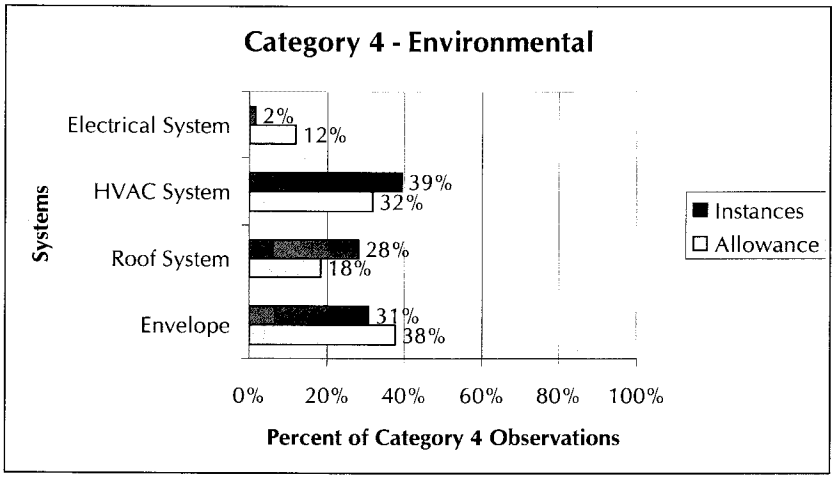
The following graphs show further break downs of these observations by Categories 2 (Damage / Wear Out), 3 (Codes & Standards), 4 (Environmental), and 7 (Other / Non-FCI). Category 5 (Energy) is more fully detailed in the Energy Use section of this report.



The largest component of the Damage / wear observations relates to finishes. This sub-category includes ceilings, walls and floors as well as doors, frames, hardware, stairs, etc. With 68% of the facilities in Montana constructed prior to 1970, this trend does not appear to be abnormal. Certain common deficiencies in some of the systems shown in this category fit more appropriately in other FCI categories; such as a failed roof membrane, which would be captured into the envelope category, shown on the following page.



A common matter at many locations is the need for more electrical outlets or "devices" as shown in the graph shown on the previous page. Again, given the age of the facilities and the codes they were built to, it is not uncommon for there to be two (2) outlets in a room. With the trend of increasing technology in the instructional environment, proper fire-code-compliant power supplies should be a high priority for districts and schools. Inappropriate use of extension cords and power strips can serve as both a tripping hazards and a risk of over-loading existing circuits.



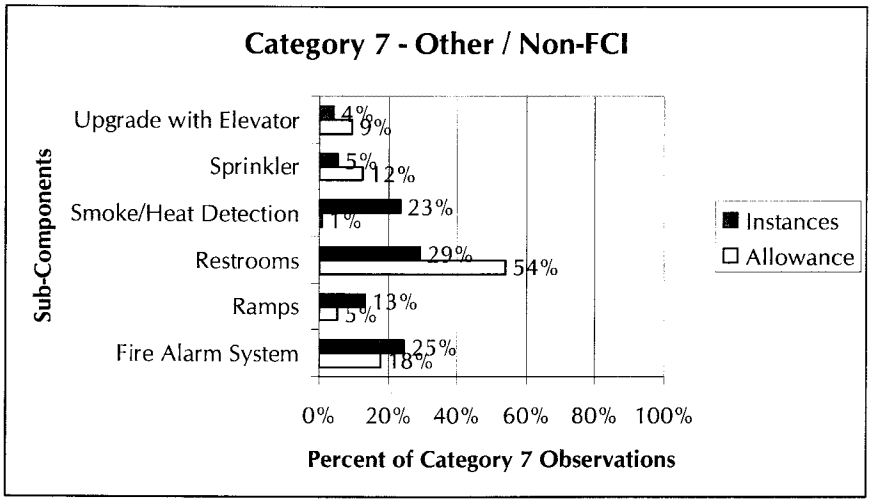
The noticeable trend in the environmental systems category is that roof and envelope issues combined make up almost 60% of the instances. As discussed later in this report (see Energy Use), this has a "ripple effect (see examples below)" in that, if uncorrected, have a strong potential to negatively impact other systems (see photo examples below).

Photo Examples of "Rippling Effect" Type Issues

Left: Windows with failing wood frames and sashes. Right: Interior wall finish damage due to moisture penetration from the building exterior.

Of equal concern is the ability to maintain constant temperatures within a facility through the HVAC system. Inconsistent operation and failing controls systems are the biggest culprits. However, without a complete building envelope, even a replacement HVAC system will struggle to maintain constant temperatures. The two systems should be addressed at the same time.

Detailed deficiency data on specific buildings within each district can be obtained from the CD appendixes available through the Architecture & Engineering Division.



It is important to note that none of the Category 7 items are required to be addressed at this time. They are improvements required to bring the building up to current code, and need not be addressed until either an accessibility need arises or a building renovations or addition is implemented.

For accessibility, the Americans with Disabilities Act require that, in general, all areas normally accessed by students, staff, and visitors be made accessible. In many cases, individual buildings have made reasonable accommodation rather than implanting permanent capital improvements. An example may be an alternate entry when the main entry has steps leading into it, or providing a clip board to write on, when the reception desk is too high. Again, these accommodations are sufficient for now, until the building is renovated or significantly modified.

The same is true for the fire protection and detection systems. Unless the local code official, in this case often the Fire Marshall, deems otherwise these buildings are grand-fathered in that their systems met code at the time of their construction, and unless the structure is modified, existing conditions or systems are allowed to remain.

Structural Observations

While on site, assessment teams queried facility personnel at each school or district as to whether a seismic analysis has been completed in the last five years by a licensed structural engineer. At approximately **93%** of the sites, no such analysis has been completed or is assumed to not have been completed as discussed with site staff.

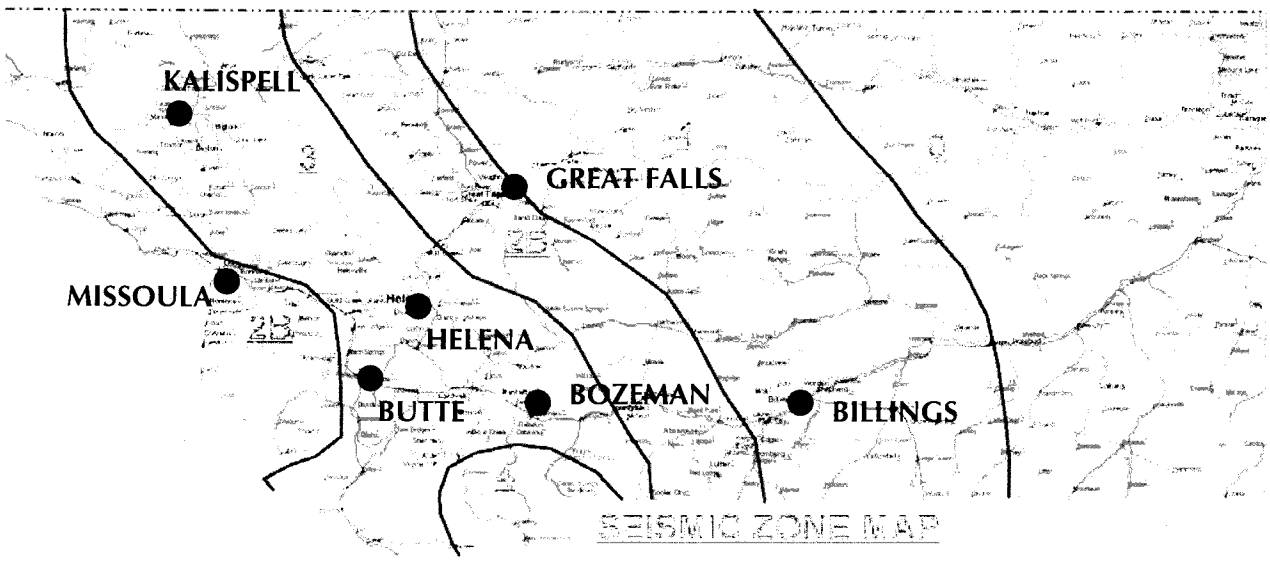
Certain Montana towns and schools lie in close proximity to the Rocky Mountains, each with varying levels of probability related to a possible seismic event. Those districts with school facilities in historically active seismic zones may want to consider the investment in varying levels of seismic analysis to further assess the estimated seismic performance of those facilities in the occurrence of a seismic event.

There are three different levels of seismic evaluation that can be conducted:

Tier 1: This is a rapid assessment. Evaluations are based on the age of the building, a look at the blueprints, and a quick visual assessment to identify any obvious structural fatigue or failure issues. If no issues exist, or minimal deficiencies are discovered, then reviews can end at this point. If significant fatigue or failure is observed, then a Tier 2 analysis would be prudent.

Tier 2: This is often referred to as the "benchmark building test". A structural engineer completes an assessment against the FEMA checklists by reviewing plans, visually identifying all potential deficiencies, listing them, running quick / cursory structural calculations (reviewing demand-to-capacity ratio), and reporting out on what passes and fails. At this point, the school district can elect to implement an action plan to remedy the deficiencies or conduct a Tier 3 analysis.

Tier 3: This is primarily conducted when a Tier 2 reveals a potential for substantial investment in the structure beyond existing budgetary constraints and the question is raised whether to re-invest in the structure or replace it, based solely on this data. In a Tier 3, significant calculations, analysis, and design activities are accomplished. These may include computer modeling.



The above map illustrates general regions of seismic activity. This map shows the "old" seismic zones that were familiar to many outside of the civil and structural engineering fields, where the higher numbers reflected greater seismic frequency. New methods for seismic analysis take into account much more than simple frequency, and a licensed structural engineer should be consulted to understand exactly how a particular facility is likely to be affected in a seismic event.

District Facility Assessment Programs – Building Upon this Report

The facility condition assessment process conducted for this project was a one-time or "snapshot" assessment of facility conditions on the date each site was visited.

The success of any ongoing facility assessment process depends on the use of the data collected, and the regular updating and management of new data as repair projects are completed or new concerns become evident with building age. It is highly recommended that districts continue to perform FCI observations on a 2-4 year recurring basis to achieve maximum benefit from this powerful and worthwhile tool in the overall management of their facility maintenance operations.

The assessments conducted under this project used the Montana University System facility assessment program (FCI) to leave behind a viable framework for individual school systems to continue to use this one-time investment to implement or continue an ongoing facility assessment program into the future. All data for each district will be made available for import into the district's FCI program, at their request

The Microsoft Access based, desktop compatible Facilities Condition Inventory (FCI) program developed by MSU-OFS is available to other state and local governmental agencies interested in using a software tool to establish and maintain their own facilities condition program. MSU provides a software CD, regular updates, a training manual and a training session. To find out more about MSU's FCI and to be included in a training session, please contact:

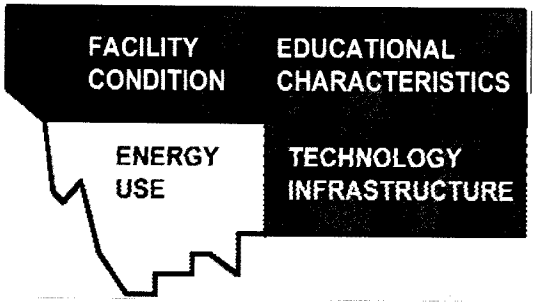
Victoria Drummond, AICP
Associate University Planner
Montana State University
Facilities Planning, Design & Construction
P O Box 172760
Bozeman, MT 59717-2760
406-994-7914
victoria.drummond@montana.edu

Megan Bergstedt
Data Information Specialist
Montana State University
Facilities Planning, Design & Construction
P O Box 172760
Bozeman, MT 59717-2760
406-995-4213
mbergstedt@montana.edu

Kathy Brewer
Software Engineer
Montana State University
Facilities Services
P O Box 172760
Bozeman, MT 59717-2760
406-994-6966
kbrewer@montana.edu

Schools wanting to continue a facility assessment program through the use of contracted services have the choice of using a number of Montana architects and engineers who participated in this original assessment and are familiar with the FCI process; those firms are identified in the background section of this report.

ENERGY USE



In addition to the main objective of a "facility condition and needs assessment", the legislation authorizing this project required the State to conduct an "energy audit" of Montana's K-12 public schools. DLR Group assisted the State in carrying out a basic energy audit consisting of two primary parts or areas of focus: 1) A visual audit and documentation of building components and systems that affect energy performance; and 2) Collection of historical energy consumption data.

Energy Conservation and Reduction

Given the current economic trends in fuel and energy costs, and the increasing emphasis to reduce carbon footprint, the attention of facility managers and administrators nation-wide has been focused on development of targeted strategies for reduction of energy consumption. This has been the approach to energy audits conducted most recently throughout New Jersey, New York, Massachusetts, Wisconsin, and Texas. Their focus, and the national trend, has been to set higher standards for new and existing construction based on the adoption of tough new energy codes and High Performance Building Standards; prescribing a significantly "better than code" standard for new construction and renovations as well as implementation of measures meant to significantly reduce consumption at existing facilities.

The focus of this section of the State of Montana report is to emphasize immediate and near term energy conservation and reduction opportunities that can be carried out on a building-by-building basis; furthermore, to recommend the use of actual energy consumption data to track the results of energy reduction efforts and identify buildings or campuses in need of a more detailed energy audit – aimed to identify causes of excessive energy use that are not readily discovered or observable to the naked eye.

Energy Conservation Measures – Operational & Behavioral Changes

The following are excerpts from School Planning & Management, December 2007:

> *"There is no correlation between the age of a building and energy efficiency."*
>
> *"There is also no correlation between square footage and energy (though obviously, more square feet will need more energy) and no correlation between energy used and whether the school is elementary, middle, or high."*
>
> *"How efficiently the building is operated is the key to how much energy will be saved."*
>
> *"There is no conflict between energy cost savings and environmental preservation. They, in fact, go hand-in-hand."*

The quickest and easiest energy savings opportunities are relatively simple and deliberate changes in building use. These take the form of operational and use modifications that are sometimes referred to as "cultural" or "behavioral" changes because their implementation requires us to alter how we traditionally conduct ourselves regarding energy use and environmental settings within a building.

The State of Montana has already taken steps to implement these types of measures to reduce consumption within State-owned buildings. In a January 15, 2008 memo to all State agencies, the Governor directed that the energy use of all cabinet-level agencies be reduced by 20% by the end of the year 2010 in accordance with the Governor's 20 x 10 Energy Initiative. Specific facility-related operational and behavioral changes outlined in subsequent direction by the Departments of Administration and Environmental Quality includes:

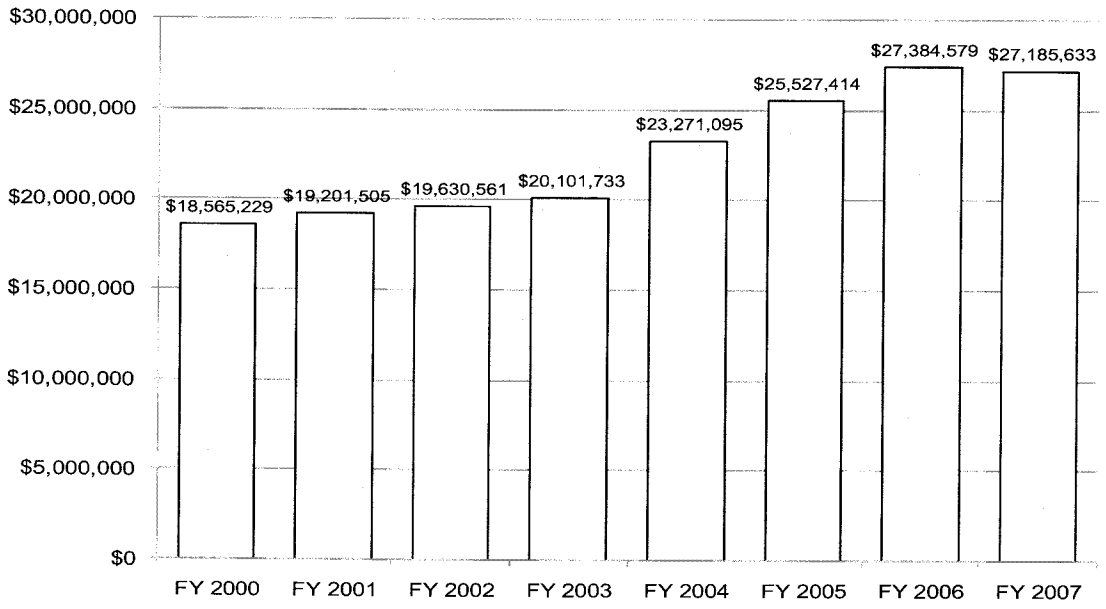
- Lower thermostat settings: Set thermostats between 68 and 71 degrees during the day in the winter months and at 60 degrees during evenings and weekends. The purpose of the low evening and weekend temperature is to avoid heating entire buildings at times when only a few people are working.
- Discourage or ban the use of space heaters, and choose radiant heat foot mats or panels if supplemental personal heat sources are necessary.
- Turn off all task lights, overhead lights, and nonessential lights when not in use.
- Turn off computers and other office equipment when not in use.
- Enable all energy saving features on computers and office equipment.
- When purchasing equipment, choose Energy Star rated products.
- Purchase green, or "earth friendly" office products

Although these recommendations are targeted at State-owned buildings and their operations, each one of them reasonably put into practice at the school level would result in immediate energy savings with virtually no investment.

Similar strategies are echoed by Energy Star - a national resource for energy reduction measures. According to this organization, "The nation's K-12 school districts spend more than $6 billion annually on energy . . . as much as 30 percent of a district's total energy is used inefficiently and unnecessarily." More information on specific energy conservation measures and how to audit the energy performance of a school can be found at www.energystar.gov.

Montana K-12 school districts spent more than $27 million for all forms of energy in fiscal year 2007. A modest 10% reduction in consumption across the board would result in over $2.7 million available on an annual basis for other school system needs.

The following graph identifies the funds spent on energy consumption at all public school facilities over the course of the last eight years. The emphasis of the graph is to indicate how energy consumption costs are an escalating factor in the District operating budgets and how even small reductions can garner substantial savings, as indicated in the paragraph above.



K-12 energy consumption for maintenance and operations of the schools, including gas, electricity and other fuels.

(Resource: Governor's Office of Budget and Program Planning)

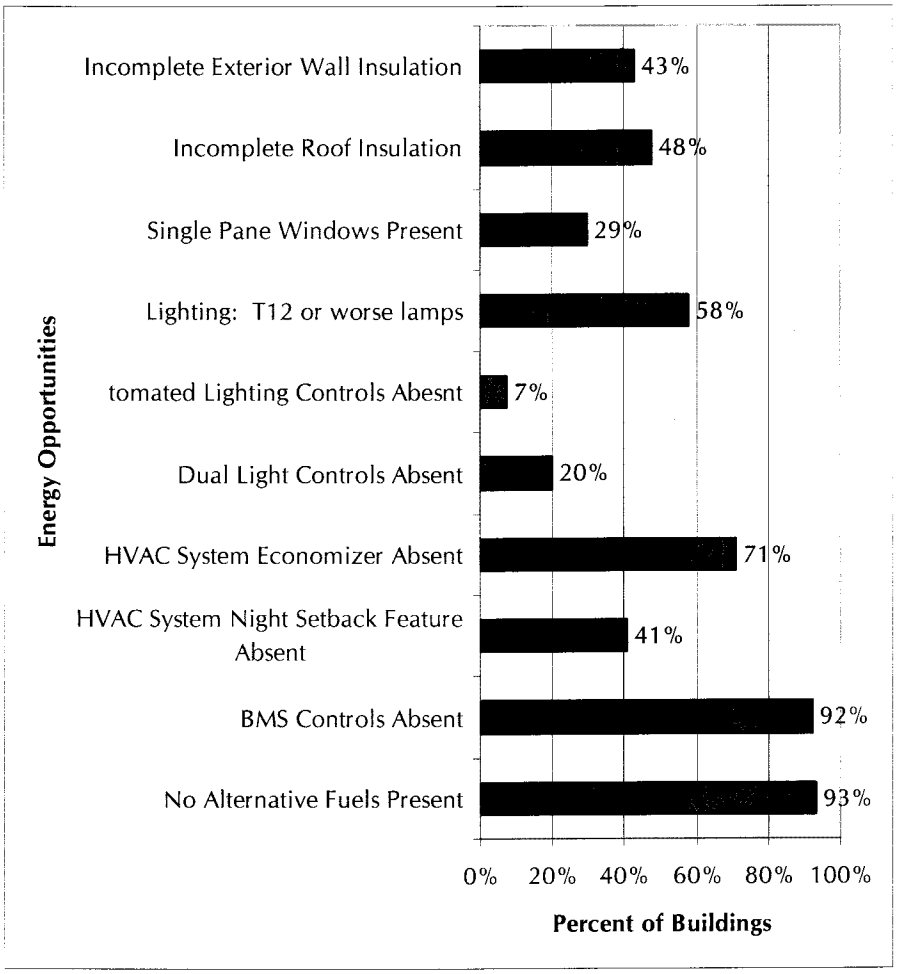
Energy Conservation Measures – Potential Energy Improvements

The next step for school districts striving to improve energy performance beyond relatively simple operational and behavioral modifications is the identification and implementation of potential capital improvements aimed at energy conservation opportunities.

During the process of conducting facility assessments field inspectors interviewed facility personnel and collected information at each of the sites regarding physical building components that directly relate to energy usage or to the facility's ability to control that usage. For example, if a structure is not insulated, a highly efficient heating system will still consume an enormous amount of energy in comparison to an insulated structure. Inspection teams sought to document incomplete insulation, single pane windows, inefficient lighting systems, advanced mechanical system controls, and other energy aspects of each building in use. This information can be converted into recommendations for energy conservation measures and building improvements with varying degrees of financial pay-back.

The following chart provides general findings and trends that were identified through the interview and visual assessment process. Following the chart are narratives of each type of Energy Conservation Opportunity shown, with general descriptions of the improvement and range of payback to recoup the improvement cost. Detailed field documentation of each building has been collected and will be made available to individual schools and districts for use in planning specific building improvements.

Energy Conservation Opportunities



Roof and Wall insulation: A significant number of facilities had areas of incomplete insulation. As noted previously in the facility condition section of this report 68% of the K-12 public school facilities in the State were built prior to 1970, and while exterior envelop and roof membranes are for the most part well maintained and functioning adequately full-scale replacements of siding and roofing "systems" appear on the whole to have been modest. Re-insulation projects are normally not stand-alone projects; rather the addition of insulation is typically incorporated as part of larger envelope improvement projects, so when siding and roofing is not removed and replaced that means insulation would not normally be replaced or added.

It is important to note that inspection teams only documented the presence or absence of building envelope insulation through visual observations or maintenance personnel interviews; it is likely that most facilities only have insulation that was prescribed by code at the time of construction and that levels of insulation would fall below current insulation code requirements, and in excess of 95% likely fall below new ASHRAE 90.1 and Energy Star guidelines.

Given the impacts to exterior and interior finishes to facilitate new or re-insulation, it would be cost-effective to include insulation improvements in conjunction with roof and siding replacement projects. Pay-back periods can range from a few years for easy installations (additional blown-in insulation in attic) to 15-20 years for installations that are significantly more difficult. An intangible benefit of this improvement is that it has the potential to improve student comfort, which generally translates into a better learning environment.

Single Pane Windows: Slightly less than one third of school buildings have single pane windows still in use. Single pane windows allow interior spaces to gain excessive heat in the warmer months and allow drafts in the colder months, both effecting comfort and run cycles for the heating, and, in some cases, cooling systems. Pay-back is typically calculated to be in the 15-20 year range, given the relatively high cost of window replacement and low tangible reductions in Heating Ventilation and Air Conditioning (HVAC) run times. The intangible benefit is again student comfort, which does translate into a better learning environment.

Lamps and Ballasts: Typically, lighting replacements are some of the first energy savings measures implemented; often referred to as the "low hanging fruit". Many of the larger school districts have already implemented this idea; however with nearly 60% of all schools still using older lighting, this is a prime area for consideration in respect to energy savings.

Incandescent bulbs, T12 fluorescent "tubes" (having a diameter of 12/8 (1-1/2) inches), and magnetic ballasts are all now considered older, energy-wasting technology that warrants replacement. Most new schools are built with T8 fluorescents, and T5 lamps are now also becoming available. Old light ballasts are being replaced with electronic ballasts for better energy performance and dimming capability. Some Districts have explored the use of LED fixtures at exit signs and limited task lighting applications.

For schools considering implementing a wholesale lighting upgrade it is generally prudent to assess not only the type of light and ballast, but to also evaluate the placement of light fixtures in the building spaces – through a lighting audit or study performed by an energy professional. Proper light placement and controls will not only serve to reduce consumption, but also can serve to improve light levels and quality as well as efficiently incorporate daylight into the learning environment. Because energy rebates are common, changing out the ballasts is relatively simple, and energy savings are high, pay-backs tend to be 3-6 years.

Dual Switching and Occupancy and Daylight Sensors: Lights often account for as much as 40% of the energy used in a typical school. By providing dual switching levels, automated light control and daylight sensors that dim lights when daylight is present, substantial energy savings can be realized. The majority of Montana K-12 public schools have various combinations of these types of lighting control measures already in place within their facilities.

Interestingly enough, the occurrence of these lighting controls far exceeds the presence of energy efficient lights, which indicates that in many cases the lighting controls have been added as a stand-alone energy improvement due to their relatively low initial cost and easy installation. While this effort is quick and does save energy, by comparison the energy saved is on a much lower scale than a well-designed lighting upgrade and schools should still pursue lighting upgrades as recommended in the preceding paragraphs.

HVAC System Economizer: Less than 30% of Montana K-12 public schools have this feature in place. An HVAC system economizer allows for energy efficient cooling and ventilation by using outside air to cool a building when interior temperatures require cooling and outdoor temperatures are sufficiently low, rather than expending energy to mechanically cool re-circulated interior air.

This improvement is often referred to as "free cooling" and is a code requirement for new construction. Retrofits of existing forced air systems to provide this feature are possible, but require modified air intakes, dampers, and improved control systems.

Due to the expense of modifications to existing systems and limited time frame Montana schools are operated when cooling is needed, typical pay-back periods are in the 10-12+ year range. The relatively long payback and potential system modifications that would ensue suggest schools consider adding this feature to existing facilities when the ventilation and air conditioning units are going to be replaced as part of a professionally-designed mechanical system upgrade.

Night Set-Back: This relatively easy energy-conserving feature is not yet in place at 41% of school facilities statewide. Night set-back controls can be as simple as a rudimentary time clock system, in comparison to the more sophisticated BMS system identified below, and is used for the primary purpose of minimizing non-essential run time for the HVAC equipment in a building.

Depending on the thermal characteristics of a building, typical heating systems can be set to turn off 2 hours prior to the end of the school day, and the heat provided earlier will be retained through that period of time, rather than actively heating during that same period. This will reduce run time by approximately 500 hours annually, which can generate a pay-back of one year or less. Although implementation of this measure has occurred at many facilities throughout the State, the quick payback of this improvement suggests implementation at the remaining 41% of facilities.

Building Management System (BMS) Controls: Building Management Systems are in use at less than 10% of school facilities statewide. BMS are computerized control systems that control heating and cooling at a minimum, and can also be used to program lighting, ventilation louvers, etc. These tend to have low initial costs and translate into substantial energy savings, with pay-backs of 5-8 years. With 92% of schools lacking a BMS, this measure would result in substantial reductions in energy consumption.

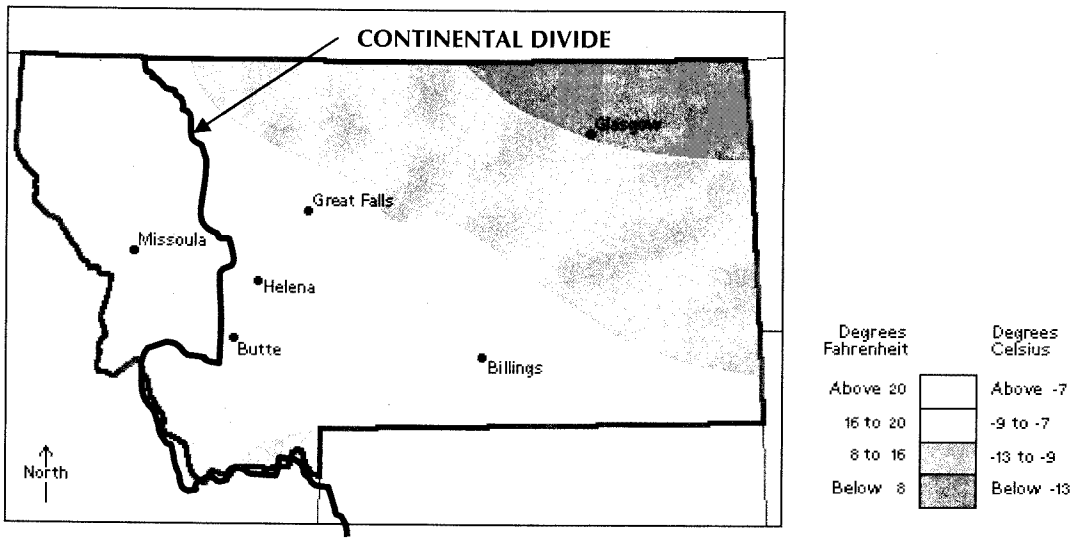
Alternative fuel sources: Alternative fuel sources are not in common use at Montana's K-12 public school facilities. A limited number of schools have incorporated biomass heating systems (wood chip boilers) and solar water heating systems. Solar water heating systems utilize available sunshine to preheat water and improve boiler efficiency. These are often relatively simple retrofits at an existing facility and tend to have a 6-8 year pay-back.

Biomass boiler systems are a bit more complicated and require a feasibility study to determine estimated pay-back, and to identify potential financial grants and assistance. The State of Montana Department of Natural Resources & Conservation's "Fuels for Schools" program provides guidance in the evaluation, financial assistance, and implementation process for schools considering biomass for new or replacement boiler systems (http://www.dnrc.mt.gov/Forestry/Assistance/Biomass/default.asp).

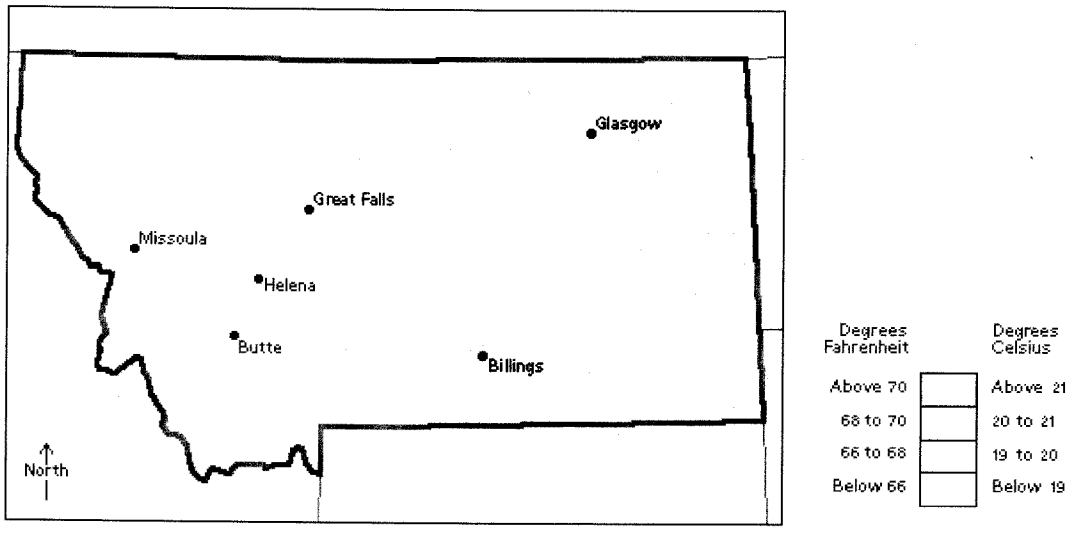
Historical Energy Consumption Data

Energy consumption is included within this study primarily for the purposes of establishing facility-specific benchmarks prior to energy conservation improvements, to monitor the effects of such improvements, and should not be used as a determining factor of whether a specific school site is a "good" performer or a "bad" performer versus other schools. The variables to setting a statewide "consumption standard" are far too great, with variations in school configurations, operational characteristics, and statewide micro-climates instead suggesting building-specific analysis to maintain reasonable guidance related to establishing energy performance standards and improvement goals. An example of the State's many micro-climates is exhibited in the following two charts:

Average January Temperatures



Average July Temperatures



Resource: 2008 World Book, Inc.

Multiple sources of utility energy often make up the total energy consumption of a typical Montana K-12 public school facility. Electricity and natural gas are the two most common forms of energy in use at most sites. Additionally, in some areas of the state coal and heating oil use is also a factor in the total energy consumption of a school facility. Montana schools are served by no less than 50 different cooperatives and suppliers.

On a parallel effort that began during ongoing site inspections, DLR Group focused a separate team of individuals and sub-consultants on the collection of actual energy consumption data. The aim of this aspect of the study was to collect two years of energy consumption data for all forms of energy

used at each school. This information has not been easily forthcoming due to a number of factors – including a number of utilities expressing a reluctance to release school-specific information, lack of electronic record systems, and billing systems that typically do not correlate specific meters to specific buildings.

The data collection effort begun with this study is ongoing and will continue past the submission date of this report. This information will be valuable to districts and schools wanting to track the results of ongoing and future energy reduction efforts and identify buildings or campuses warranting a more detailed energy audit because of excessive energy use, the cause of which cannot be determined at the basic level of audit performed within this study.

Although data collection for all facilities is not complete, the information gathered to date amounts to a level that will allow statistically accurate projection of consumption ranges and trends. While this report strongly encourages each individual district to primarily use the collected information to assess and improve their energy usage on a building-by-building basis, this data is nonetheless available for further research and evaluation by energy analysts who may desire to use that information for further research and comparison.

Summary

Ample opportunities exist at many of Montana's K-12 public schools to implement energy conservation measures of varying levels of payback and initial cost. Districts should strive to monitor and assess individual building consumption to track results of the implementation of such measures, and to continue to focus future efforts wisely.

Level 1 Measures: Behavioral changes that can be implemented immediately

1. Modify traditional thermostat settings; move "set" temperatures slightly cooler in the heating season and slightly warmer in the cooling season.
2. Perform night and weekend temperature set-backs.
3. Turn off all task, overhead, and non-essential lighting when not in use
4. Replace personal space heaters with radiant heating pads.
5. Purchase Energy Star equipment in the normal equipment replacement cycle.

Level 2 Measures: Implementation of energy conservation improvements with relatively quick paybacks

1. Replace existing incandescent and older fluorescent (T-12) lighting with T8 or T5 lamps and electronic ballasts. If considering wholesale light system replacement a lighting audit is recommended to evaluate proper fixture placement and optimum lighting controls.
2. Retro-commission existing buildings. This process is done by a building commissioning company, and is intended to investigate and bring back into adjustment a building's heating, ventilation and air condition systems. This process should be repeated approximately every five years to ensure building systems are being operated as designed and intended.
3. Install programmable, building-wide, system controls for both heating and cooling systems.
4. Install occupancy sensors, day light sensors, and dual ballast controls respectively where appropriate, and utilize task-oriented lighting wherever possible.
5. Load PC management software onto each computer, specifically designed to automatically turn on and off computers, optimize computer performance, and reduce computer-based power consumption.
6. Implement solar sources to assist hot water heating systems, and replace existing hot water hearers with Energy Star rated equipment.
7. Replace lighted exit signs with LED lamps.

Each of these Level 2 measures, if implemented in the schools observed, will have a pay-back of less than 8 years, most much less. These types of measures are often referred to as the "low hanging fruit" of energy conservation improvements. Rebate programs available through many of the larger utility companies target these relatively quick payback energy improvements.

Although not an improvement that results in a direct payback in itself, utility metering systems at each campus should be configured from the start to track energy consumption of each building separately in order to focus a district's efforts in energy conservation. In some cases this may take the form of installation of sub-meters at a cost; however being able to track energy consumption to the building level, as opposed to the campus level, will pay indirect dividends well into the future.

Level 3 Measures: Implementation of energy conservation improvements with relatively long-term paybacks

1. Increase roof insulation, during next scheduled roofing replacement, to current ASHRAE 90.1 compliance standards.
2. Increase wall insulation to current ASHRAE 90.1 compliance standards when replacing siding or modifying exterior walls.
3. Replace existing single pane windows with thermal pane windows with a solar heat gain coefficient of no more than 0.40 and a U-factor of no more than 0.32.
4. When replacing air handling units, incorporate economizers as a cooling method. When replacing a piece of major energy-consuming equipment such as this an energy study by a trained professional should be conducted to evaluate the applicability of new ventilation codes, alternative equipment choices and new technologies - as opposed to exact replacement in-kind.
5. When replacing boilers and furnaces, replace with Energy Star rated, high-efficiency units. When replacing a piece of major energy-consuming equipment such as this an energy study by a trained professional should be conducted to evaluate the applicability of new heating codes, alternative equipment choices and new technologies - as opposed to exact replacement in-kind.

While these Level 3 measures tend to have slower pay-back rates (15-20 years), they have a drastic improvement on building comfort, student behavior and performance. While Level 3 improvements may be implemented on a stand-alone basis, these types of improvements are often more economical to integrate with normal capital replacement cycles of related systems and building components.

Payback rates like those noted above are typically shown in terms of the number of years before the energy savings accumulates to the initial cost of the improvement. A recent study, highlighted in Greening America's Schools, suggests that indirect benefits and cost savings related to improvements in teacher health and retention can substantially shorten those pay-back times.

When new construction is scheduled or warranted, in addition to all of the measures listed above, design teams should be tasked to additionally consider:

- building orientation
- fitting the building to the environment
- capitalization on prevailing wind patterns
- evaporative cooling
- geo-thermal sources
- increased use of day-lighting

- storm water retention
- indigenous landscaping
- and other LEED design concepts intended to result in more sustainable and efficient buildings and campuses.

Further Assistance

The initial costs of any energy improvement may be reduced by energy grants available from individual utilities and other resources, and should be investigated on a case-by-case basis, given the large number of different utility providers and co-ops in the State.

Additionally, more specific guidance on HOW to implement these measures is also available.

The State's Department of Environmental Quality provides multiple links and assistance programs for assisting Districts in creating their own action plans for energy conservation.

The site is www.deq.mt.gov/Energy/EESchool

The data available is broken down into five categories:

Quick Tips: Listings are included for behavioral and low cost changes to realize immediate reductions in consumption.

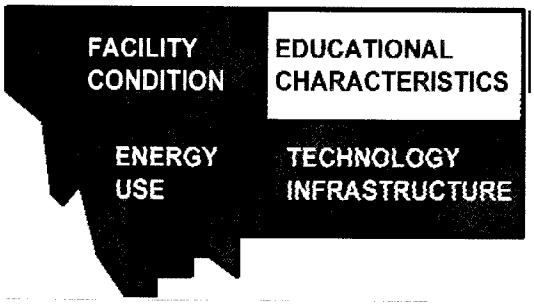
Expert Links: From the small ideas of light bulbs and windows to the more complex of building system commissioning, this section of the site provides direct guidance for how to get started.

Finance Options: Outlined here are just some financial alternatives including Universal Systems Benefit Funds, the State-sponsored INTERCAP Loan program, and resources for considering, selecting, and contracting with a private energy service company (ESCO) to implement improvements at no or low initial cost to a school through a process called "Performance Contracting".

DEQ Energy Services: Once under this heading, click on "School Assistance Program", and you will be provided with more detail on "$E=mc^2$", which is DEQ's technical assistance program for building identification, auditing, studies, financing, implementation, an oversight. This link covers the full gambit of a specific energy project or multiple projects.

Utility Contacts: This provides a list of links and contact information for state utilities such as Northwestern Energy, Montana-Dakota Utilities, Bonneville Power Administration, and multiple rural co-ops.

EDUCATIONAL CHARACTERISTICS



An Educational Characteristics Survey (ECS) was conducted under this project to record general characteristics of existing Montana K-12 educational facilities and campuses, although the legislative mandate for this project did not require the collection of this data nor evaluation or recommendations. The information provided by this survey is intended as a local and regional resource for use in future planning as renovations, additions, new construction, developing cooperatives or consolidation is considered.

Educational Characteristics Survey – Description and Purpose

The Educational Characteristics Survey was developed by a team of DLR Group's nationally experienced educational planners to objectively inventory each educational campus visited by the inspectors during the three month inspection process. This data is intended to present a snapshot of the physical characteristics of existing facilities within which educational programs are being delivered to students, for further evaluation and consideration in making facility and program decisions.

Determination of the particular facility attributes that should be present at any specific school, or within a specific district, is heavily dependent upon a number of factors and is normally a local or district level decision. And while recommended average gross square footage per student, outlined in the background section of this report, gives general guidelines of what is recommended in the way of gross educational space per student a number of interdependent factors related to community and district context, enrollment trends and school curriculum will weigh into decisions as to ultimate square footage needs of specific facilities.

Even within each school the general nature of specific instructional programs and grade organization, such as single or multi-grade classrooms, has a direct correlation to the spatial configuration and interdependencies within each building and the campus as a whole; the school's own educational requirements and philosophy in essence often dictates the "why" for each of its buildings and site attributes and how they are used and integrated in the entire aspect of successful educational delivery system at the district level.

A thoughtful planning and implementation process that considers all of those aspects is well beyond the intent of this report; however the facility information provided through this survey is available for use in such future local planning processes.

Educational Characteristics Baseline Data

There were four (4) key categories and various sets of sub-components of data collected by the Educational Characteristics Survey:

1. General Data
    a. Building Size
        i. Student Enrollment
        ii. Grade Configuration
        iii. Average number of Students per Class
        iv. Building Type
    b. Construction and Seismic Data
2. Site Amenities
    a. Outdoor Playing Fields
        i. Practice Level or Competition Level Fields
3. Room Types
    a. Physical Education, Athletics, Activity Spaces
    b. Core Instruction
    c. Specialized Instruction
    d. Support Services
4. Building Offerings and Amenities (Curriculum / Program)
    a. General Information (Pre-K, Certified Staff, Natural Light etc...)
    b. Security Systems (Visibility, Accessibility, Lock-down, etc...)
    c. Technology Systems
    d. Energy Systems

The specific educational characteristics that are identified under each category encompass more than the physical aspects of each school facility. It includes the site and the school's ability to offer specific amenities related to physical education requirements of their curriculum, as well as the ability to accommodate extracurricular activities (intramural and competition sports, performance events, etc).

Rooms and individual spaces were identified based on square footage and key physical characteristics that are indicative to the programs associated with those spaces. Those characteristics are discussed in more detail, as they are mentioned later in this section.

The following few charts and associated narrative provide a sampling of the data collected through the Educational Characteristics Survey process. What is shown in this summary report represents a small portion of the information collected with the ECS forms. Detailed information about each district, and more specifically each school, is available through the appendices (on CD), available through the Architecture & Engineering Division, as well as via links to the project website available at http://www.opi.mt.gov/Facilities/index.html.

Grade Configurations and Enrollment – Statewide

Public schools within Montana, those serving kindergarten up to and including grade 12, fall into three distinct categories: Elementary School Districts, High School Districts, and K-12 Districts. This is a familiar breakdown known to legislators and others involved with public education and school funding issues.

Montana is home to twelve tribal nations; eleven of these nations reside within their reserved homelands – reserved either through treaties or executive order. One, the Little Shell Band of Chippewa, is "landless." Schools located on or near the seven (7) reservations are public schools. With exception, there are two tribally operated, nonpublic schools accredited by the Board of Public Education: Two Eagle River on the Flathead Reservation, and the Northern Cheyenne Tribal Schools located at Busby on the Northern Cheyenne Reservation.

Please Note: the following enrollment numbers reflect equivalent ANB counts provided by OPI on a certain date and will not exactly correlate to the actual per-student counts provided to assessment teams while visiting school sites. General trends identified in this report are not affected measurably by these two alternative counting methodologies

STATE-WIDE ENROLLMENT

Districts	Grades Served	Number of Districts	Enrollment	Percent of Enrollment
K-12 Districts	K - 12	51	17,071	11%
Elementary Districts	K - 8	261	88,118	60%
High School Districts	9 - 12	109	42,419	29%
Totals	---	421	147,608	100%

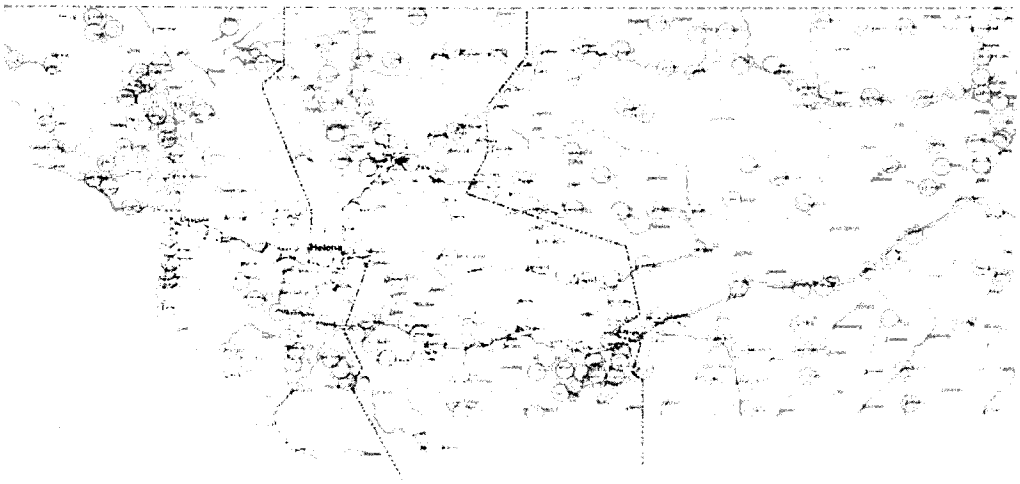
Districts serve as boundaries and "legal entities" for purposes including taxation, distribution of per-student funding, and reporting structure.

K-12 School Districts

There are 51 K-12 school districts with 2007 enrollment of approximately 17,071 students which accounts for 11% of the total enrollment statewide. K-12 districts, defined in 20-6-701 MCA, occur where an elementary district has the same district boundaries as a high school district. A single school board represents both, and all the taxpayers within the elementary district also reside in the high school district. A K-12 district is able to adopt one budget and one mill levy for the elementary and high school programs.

Enrollment in these 51 districts varies substantially between districts, from a low of 31 to a high of 1631 students. The following map highlights all of the Districts visited, and denotes the K-12 schools in RED.

K-12 School Districts
(highlighted in RED)



K-12 DISTRICT ENROLLMENT				
District Size	Number of Districts	Percent of Districts	Enrollment	Percent of Enrollment
< 41	1	2%	31	< 1%
41-150	20	39%	1,985	12%
151-400	19	37%	4,665	27%
401-850	6	12%	3,771	22%
851-2500	5	10%	6,619	39%
> 2500	---	---	---	---
Totals	51	100%	17,071	100%

Elementary School Districts

Elementary School Districts, defined in Title 20, Chapter 6, Part 2 MCA, are organized for the purpose of providing public education for all grades up to and including grade 8, and for preschool programs and kindergartens. 2007 enrollment in Montana's 261 elementary school districts totaled approximately 88,118 students; and individual district enrollment counts vary from a low of 2 to a high of 10,194 students.

ELEMENTARY DISTRICT ENROLLMENT				
District Size	Number of Districts	Percent of Districts	Enrollment	Percent of Enrollment
<41	97	37%	1529	2%
41-150	62	24%	4833	5%
151-400	59	22%	14,639	17%
401-850	21	8%	11,992	13%
851-2500	15	6%	18,424	21%
>2500	7	3%	36,701	42%
Totals	261	100%	88,118	100%

High School Districts

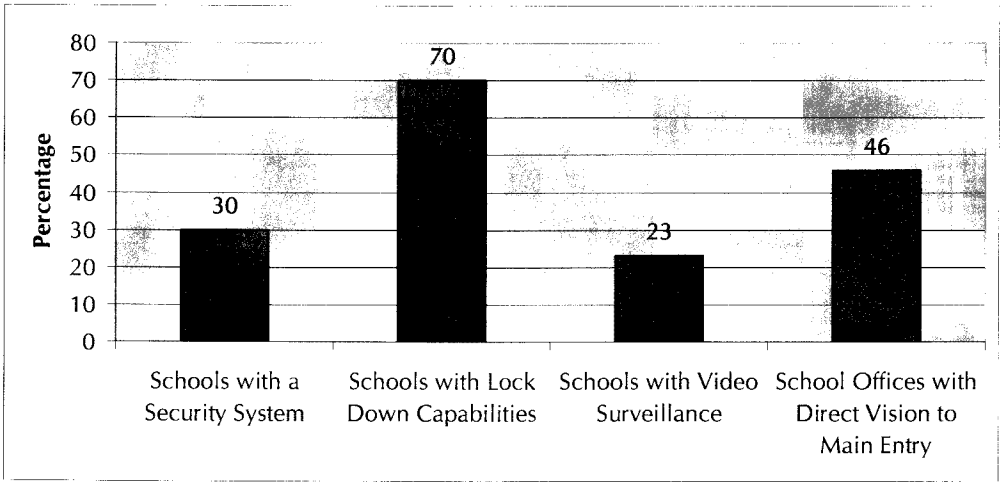
High School Districts, defined in Title 20, Chapter 6, Part 3 MCA, are organized for the purpose of providing public education for all grades beyond grade 8, including postsecondary programs, except those programs administered by community college districts or the Montana University System. 2007 enrollment in Montana's 109 high school districts totaled approximately 42,419 students; and individual district enrollment counts vary from a low of 17 to a high of 5,678 students.

HIGH SCHOOL DISTRICT ENROLLMENT				
District Size	Number of Districts	Percent of Districts	Enrollment	Percent of Enrollment
<75	31	28%	1,354	3%
75-200	37	34%	4,564	11%
201-400	19	18%	5,091	12%
401-1250	15	14%	8,819	21%
>1250	7	6%	22,591	53%
Totals	109	100%	42,419	100%

Within the various K-12, elementary, and high school districts individual facilities may take on a range of grade configurations including: Elementary, K-8, K-12, 7-12, middle school, junior high, and high school. Many of the smaller districts have fewer educational buildings; sharing a number of programs and spaces in order to deliver a variety of curricular programs to a diverse age group of students. Larger districts typically possessed a greater number of educational facilities, broken up into a greater separation of grade level configurations; these being on average K-6 elementary schools, 7-8 middle schools and 9-12 high schools.

School Security

School security continues to be a focus on a national level, at educational conferences provided by organizations such as NSBA and CEFPI. The emphasis at these seminars is to focus on policy and practice and less on automated systems.



Montana school districts appear to place significant emphasis on lock down training as is evident from the survey interviews with school staff. Districts should encourage individual schools to maintain and improve upon this effort through maintaining and implementing comprehensive security policies for all facilities where students gather.

Critical to effectively implementing a lock down is the ability to see a potential threat before it enters the building. A large percentage of schools do not have a direct line of sight from the main office to the point of building entry. This fact suggests that districts should review this potential condition, and possible remedies, at each school. For situations where it may not be feasible to provide a direct line of sight from the main office, other options may need to be explored.

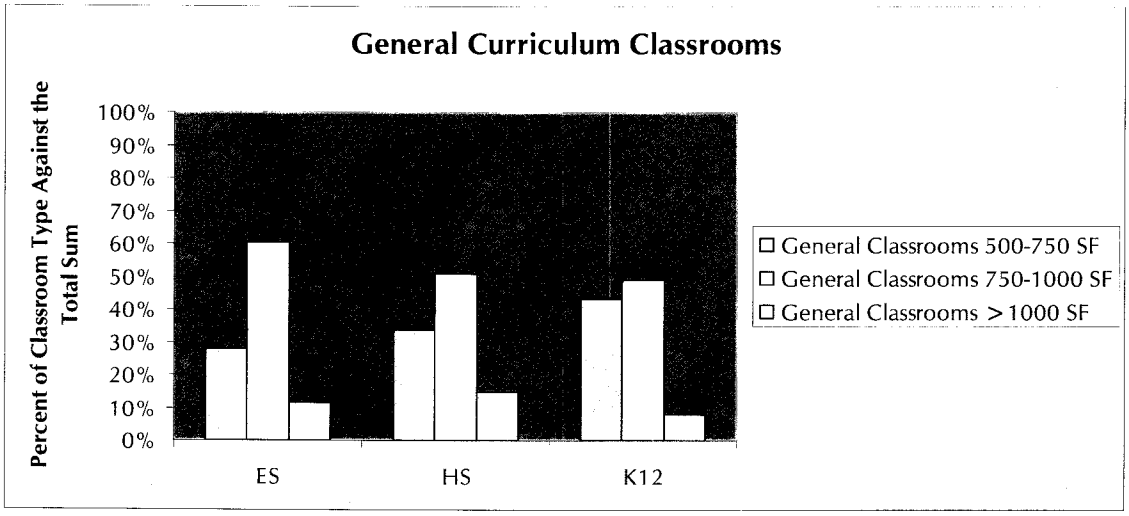
General Classroom Spaces

General classroom spaces are where a significant portion of the educational curriculum is delivered in schools for the various grade levels and associated learning activities. The sizes of classrooms are important not just for curriculum but for the different age groups of the students and the number of students per class. Younger age groups require more space for the diverse activities associated with their specific learning patterns and strategies.

Schools are typically designed around an average square foot per student. Understanding the enrollment patterns and desired populations of students per teacher will aid in the planning and alignment of the various grade levels.

DLR Group typically recommends and designs toward the following classroom spaces assuming approximately 25 students per class: Pre-K to kindergarten classrooms at 1,000 square feet or greater; first grade through sixth grade classrooms at 750-1000 square feet; and seventh grade through twelfth grade classrooms at 500-750 square feet. In addition to specific age groups, square footage plays a critical role in the delivery of the curriculum, as subjects such as, science will require larger spaces of 1,000 or more square feet because of the lab and the interactive engagement of the curriculum, students and the teacher.

Having the knowledge and / or inventory of the various classroom sizes will aid in the planning and alignment of grade levels throughout the various schools and / or school districts. This information can be used to help guide and determine grade level organization across the state of Montana.



Specialized Instruction Areas

While general classrooms constitute the majority of instructional spaces, the availability of Specialized Instructional Spaces is not universal at all of the State's K-12 facilities. Depending upon the grade configuration and educational programs to be delivered, these types of spaces may serve to enhance the capabilities of a particular school or can be shared between schools. Most of these programs can be accommodated for in standard classroom configurations, but spaces sized, configured, equipped, and designed for these programs generally provides superior function.

To provide a framework for differentiation from a general classroom, specialized instructional spaces were identified and documented based on key physical characteristics that are indicative to the programs associated with those spaces:

- Science Rooms - instructional spaces having permanent lab style casework, sinks and other fixed science related equipment.
- Music Rooms - instructional spaces incorporating higher ceilings, acoustical treatments, music equipment and associated storage.
- Art Rooms - instructional spaces having casework, storage, sinks, day lighting and related fixed equipment.
- Career Technical Education (CTE) Rooms - instructional spaces over 1000 square feet utilizing increased power / voltage needs, special exhaust and / or trade specific equipment (example: Family and Consumer Sciences, Technology Education, Agriculture Education, etc).
- Computer Labs – instructional spaces for at least 20 students with extra power and data access, and casework designated for the use of computers.
- Special Education Rooms – group instructional spaces of at least 1,000 sf in size and adjacent to fully ADA compliant restrooms with changing facilities.
- 1-on-1 Instruction Rooms – spaces less than 500 sf where small group, or individual instruction, regularly takes place.

The individual numbers for each site do not lend themselves to a comparative study due to the number of variables in terms of student enrollment, alternative programs, curriculum goals, etc. These numbers are available for each District upon that District's request.

As noted in the description of Specialized Instruction Areas, these spaces specifically designed for their respective purposes provide superior function; however most of the programs associated with these types of spaces can be reasonably accommodated in standard classroom configurations.

Other School Resource Areas and Building Amenities

Information was collected related to additional support and resource areas at schools, including Media Centers, Teacher Planning Centers, student commons, and core administration rooms.

Information was also collected related to certain building and site amenities including competition fields, fixed-seat auditoriums, performance stages, cafeteria/kitchen amenities, and hall lockers.

Districts desiring to determine if Specialized Instruction Areas or Other School Resource Areas and Building Amenities are present within their districts, or neighboring districts, can refer to the detailed information about each district, and more specifically each school, in this report's appendices (on CD), available through the Architecture & Engineering Division, as well as via links to the project website available at http://www.opi.mt.gov/Facilities/index.html.

School Programming and Planning Resources:
School Programming and Planning creates a number of challenges that are necessary for school districts to address, simply due to the changing characters of schools.

In the past, children have been taught on a discipline by discipline model. (Separate periods for science, math, language arts and social studies). Typically these subjects were lecture based and were taught utilizing textbooks and other one-directional media.

Through many recent publications, there is evidence of a shift toward multi-disciplinary learning and multi-source instruction. Increasingly, this learning process is being delivered on a project-based approach. Teams of students, with a teacher being more of a mentor; are given a project that is approached using a number of disciplines and any number of resources, such as the internet, to develop a solution. This change in methodology should and has affected the program delivery methods and use of school facilities.

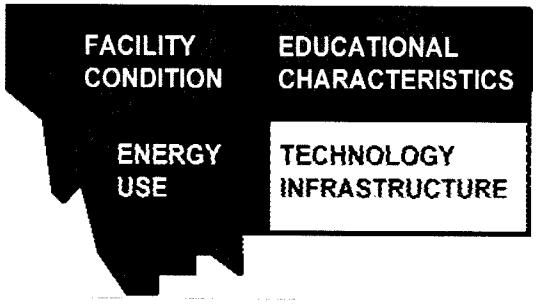
Over the years, many state departments of education as well as many educational organizations have developed standards to aid in the programming and planning of school facilities. These standards vary because of the learning processes and curricula that are different for each age group as well as for children with special needs. It is not possible to cover each and every variation in these standards. However, these basic standards are available to assist and guide in the process of evaluating the current educational curriculum and aid in the development of modifying and building new educational baselines for today's physical learning environments and methodologies.

A number of State and national resources and guidelines are available to use in facility planning, including:

- National Association for the Education of Young Children (NAEYC), PO Box 97156, Washington DC 20090-7156, www.naeyc.org
- Council of Educational Facility Planners (CEFPI), 9180 East Desert Cove Drive, Suite 104, Scottsdale, AZ 85260, www.cefpi.org
- The Language of School Design – Design Patterns for 21st Century Schools, Prakash Nair & Randall Fielding. (2007) www.designshare.com

The Montana Office of Public Instruction is a good starting point for additional information about these and other resources (http://www.opi.mt.gov/Facilities/Index.html).

TECHNOLOGY INFRASTRUCTURE



A Technology Infrastructure Survey was conducted under this project to record the information technology (IT) infrastructure characteristics of existing Montana K-12 educational facilities and campuses, although the legislative mandate for this project did not require the collection of this data nor evaluation or recommendations. The information provided by this survey is intended as a local and regional resource for use in future planning.

Technology Infrastructure Survey – Description and Purpose

Technology in education represents a fundamental change in the traditional methods of teaching and learning. Education-delivery strategies utilizing technology provide new opportunities for school districts to offer academic courses and professional development opportunities to every school across the state.

Integrating technology into Montana's educational framework will serve to proactively support a variety of student educational needs for the 21st Century. The Montana Office of Public Instruction (OPI) and the State Board of Public Education have put in place rules and guidelines aimed to establish learning standards and increase technological aptitude of students at all levels.

In his book, *"Keeping Pace With K-12 Online Learning: A Review of State-Level Policy and Practices"* John Watson demonstrates that technology has a positive effect on literacy and reading comprehension and that online learning holds promise for providing new educational opportunities for a wide range of students. The incorporation of technology in the educational environment has experienced rapid growth, with many states successfully delivering a variety of courses via the internet and video.

In order to determine the technology infrastructure present in each Montana public school, DLR Group assisted the State in gathering information regarding the existence of various technology components and systems. Providing the necessary information technology (IT) infrastructure is a precondition to the successful implementation of online and distance education. For that reason, questionnaires were distributed to district superintendants or school principals for redistribution to their IT staff. DLR Group made subsequent follow-up phone calls to answer questions and to provide further assistance in completion of the forms.

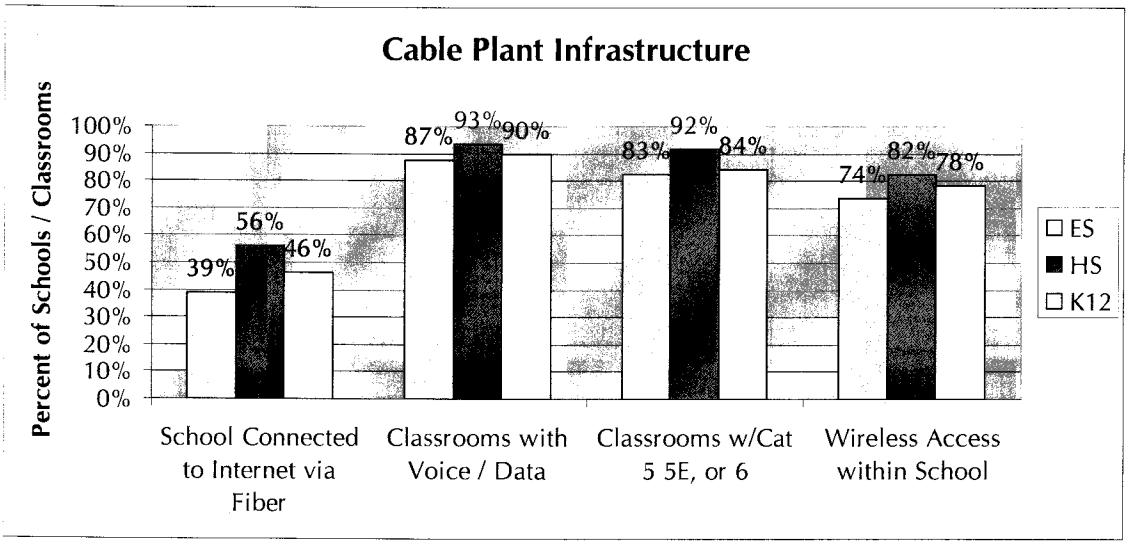
Technology Infrastructure categories targeted in this assessment include: Cable Plant, Telephone Service, Internet Access, and Classroom Video. The following are some key summaries of information provided by the schools:

Cable Plant

Commonly called the "backbone" of a technology communications system, cable plant refers to the IT infrastructure of low-voltage wiring or cabling used to seamlessly tie a school's technology network together. Network components may include servers, routers, computers, printers, projectors, "smart" chalkboards, interactive video, security systems, energy management systems and telecommunications.

There are a wide variety of cable plant configurations, manufacturers and specifications. In order to regulate them, both the Telecommunications Industry Association (TIA) and the Electronic Industries Alliance (EIA) have created a set of standards that address the general requirements, codes and recommended practices for the design and installation of wires and connectors in a cabling system.

The importance of cable plants, simply put, is that without this infrastructure, there is no ability to access information outside of a computer's own hard drive. Thus, only a fraction of a computer's potential benefit to students and teachers can be realized.



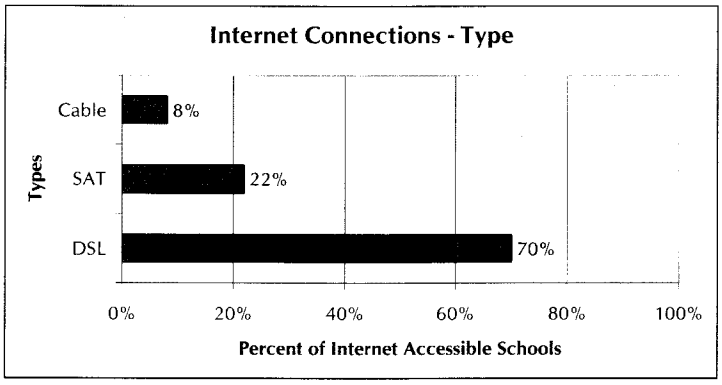
The technology infrastructure survey revealed that, on average, less than half of all schools are provided internet service through a fiber connection. The importance of this characteristic is to develop an understanding of how well individual schools are prepared to deploy high speed web based applications/services and support growing utilization trends into the future. A fiber connection from the internet to a facility's MDF will allow this future high speed access (1.544mb speeds or better) to occur.

A large percentage of classrooms within the state are wired to receive voice and data signals. The majority of those classrooms were served by Cat5, Cat 5E, or Cat 6 cable, which is sufficient to allow high speed data transmission. No analysis was done to determine the exact number of connection ports in each classroom, rather only if that connectivity existed. Depending on the cable leading to the room, the number of connection ports may be able to be expanded. Also important to note is that 45 sites identified no cable to the classrooms but still identified cable ports within the building. This could mean that either this access is limited to the administrative areas only, or wireless is available to the students in lieu of hard ports.

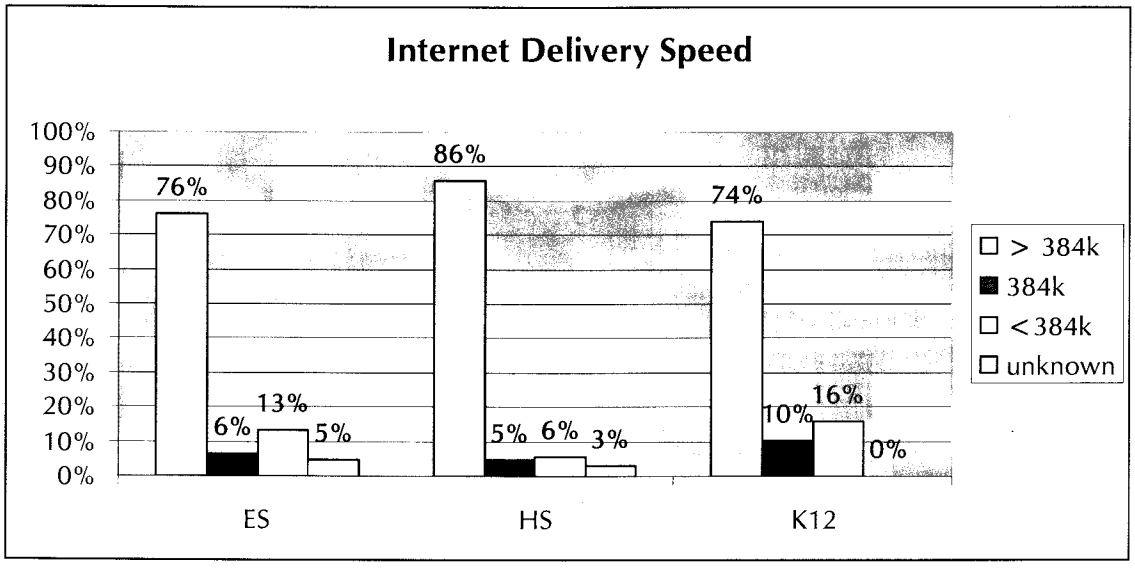
Information collected also indicates a significant percentage of schools with on-site wireless access. These wireless systems provide the capability to overcome limited hard-wired access in non-classroom environments for use by either small group studies or instructors.

Internet Access

The internet has become an integral part of education in the 21st century. The internet provides a new way of accessing an almost infinite range of resources and information across great distances, using a variety of connectivity methods such as telephone lines (DSL), cable modem (Cable), and Satellite Internet Services (SAT), each with various connection speeds and bandwidths.



Internet access in schools is becoming a necessity, with seemingly unlimited and ever-changing educational applications. The speed and reliability of internet access directly impacts behavior toward this evolving technology and influences its use as a tool in the classroom. Reliable delivery systems and high speed data transmission are critical for its full potential to be realized.



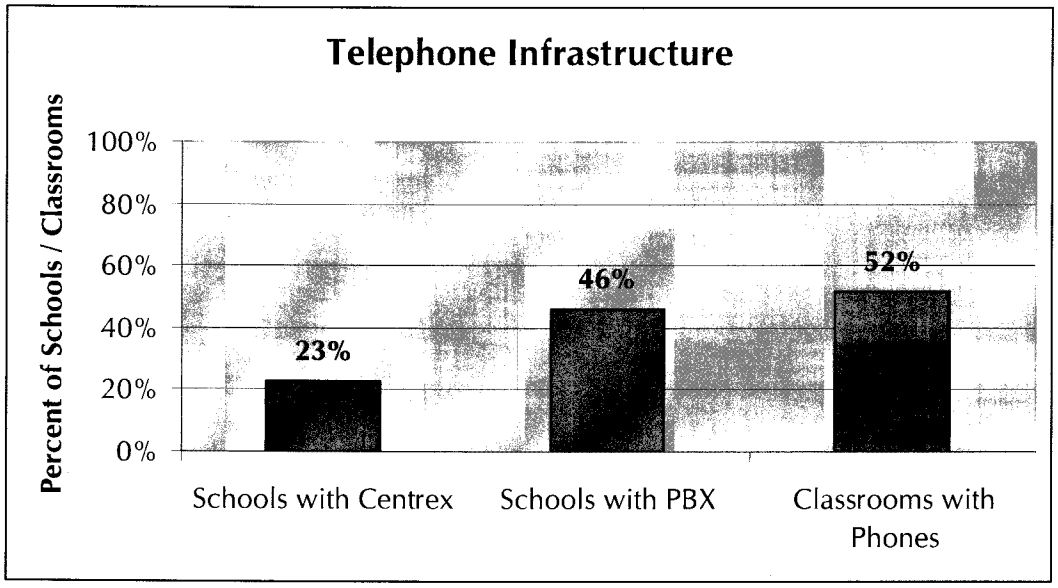
Overwhelmingly, connections are provided with a delivery speed of greater than 384K. Connection speeds of 384K or greater are required for interactive video and many other online learning opportunities.

Approximately 92% of schools have "Firewall" and "Filtering" software installed on their networks. With the advent of any technology, comes the potential for its misuse. This can occur either internally, or in the case of internet access, misuse from external assault targeting staff and students. This high level of internet security currently present at the Montana schools is a significant investment in the integration of technology in the classroom environment by maintaining it as a safe and reliable system. These internet security measures must be maintained and updated to ensure that school networks remain safe and secure against internal and external threats.

Telephone Service

The presence of telephones within a classroom is beneficial for general communication within the school, as well as with outside services in the event of an emergency. A direct, two-way communication system is advantageous in respect to safety in the school environment. As an alternative to the telephone system, many schools provide a one-way public address system as a viable alert system in the event of an emergency.

Telephones provide opportunities beyond notification of potential threats, such as enabling parents to be more engaged with their child's progress by more frequent access to their instructors.



Schools with PBX (private branch exchange) have an in-house telephone switching system that interconnects telephone extensions to each other as well as to the outside telephone network. A PBX enables a single-line telephone set to gain access to one of a group of pooled (shared) trunks by dialing an 8 or 9 prefix. PBXs also include functions such as least cost routing for outside calls, call forwarding, conference calling and call accounting. Modern PBXs use all-digital methods for switching, but may support both analog and digital telephones and telephone lines.

Schools with Centrex subscribe to a telephone service in which the PBX is located in the telephone company's facilities. Some CENTREX services provide the PBX switching at the customer's site, but control is still in the central office.

Schools without PBX or Centrex likely subscribe to separate individual lines for phone service.

Slightly over half of classrooms have phones installed. While this seems to contradict the earlier chart related to cable plant infrastructure, which noted that 96% of classrooms have voice/data connection ports – the difference simply means that more classrooms are wired for voice communications that actually have phone sets in place. It is not uncommon for individual Districts to adopt "no phone" policies within the schools in order to prevent uncontrolled use of the system.

Classroom / Interactive Video for Instruction

Distance learning provides a unique instructional environment. The objective of distance learning is to deliver additional or advanced academic programs online to all students including those of different learning abilities and with different needs, such as at-risk students and those in geographically remote regions of the state.

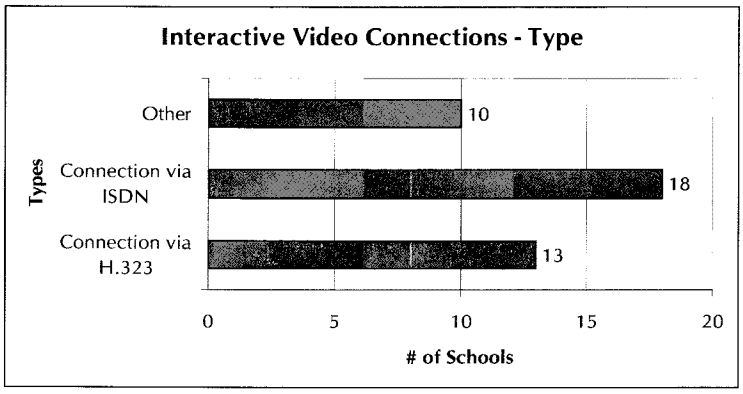
Distance learning opportunities are increasing at a fast pace, with current applications including static on-line correspondence courses, tele-courses, and interactive video conferencing. On-line correspondence courses are probably familiar to most people and may or may not require high-speed connectivity to the internet, depending upon the course content. Tele-courses and Interactive Video Conferencing are emerging as strong educational tools and their use requires much greater connectivity speeds, as will be the case as new educational applications are developed and put into use.

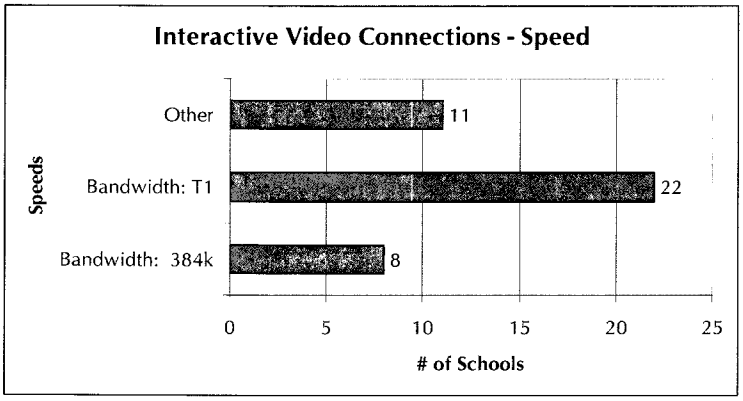
Tele-courses are courses that can include broadcast over public television segments, streaming internet courses, DVD's or videotapes. They provide flexibility and convenience to meet the diverse needs and schedules of students while maintaining high academic standards.

Interactive Video Conferencing (IVC) takes place when students or faculty at two or more sites are connected electronically in such a way that they can see, hear and interact with one another in "real time" (synchronously). For example, through this application a rural student in Malta can participate in a specialized course taking place in another community, rural or urban like Billings, if each location is capable of supporting IVC. Most of the IVC is conducted over the Internet and requires sufficient Internet speed and bandwidth with room for reasonable growth, and a high quality of service (QoS) mechanism in the network. Dedicated routes are generally recommended in order to achieve the high level of bandwidth sufficient to enable full use of the capabilities of IVC.

While the majority of schools have sufficient connectivity to support a wide range of distance learning applications, less than 10% possess the ability to use IVC in a classroom setting. Of the 41 schools that reported to have IVC capabilities, 7 are elementary schools, 15 are high schools, and 19 are K-12 schools.

The majority of schools with IVC are served through ISDN or H.323 connections. ISDN is a relatively old international standard for switched, digital dial-up telephone service for voice and data that has been around since the early 1980's. H.323 is the current International Telecommunication Union standard for real time voice and videoconferencing over packet networks, including LANs, WANs and the Internet. Although H.323 is a very comprehensive standard that supports voice, video, data, application sharing and white boarding, the parts relating to audio protocols have been widely used for IP telephony applications.





Given the relatively low percentage of schools utilizing IVC for distance learning, the connection types and speeds appear to be more a product of what has been readily available as opposed to a targeted standard. As the integration of technology into the classroom evolves, or even as a catalyst for that evolution, standards for delivery speed and access should be established to enhance school capabilities and ensure the compatibility of distance learning applications among Montana schools, districts and colleges and with approved educational settings outside the state.

While the importance of these applications is sometimes emphasized as a tool to connect remote learning environments to urban centers with larger resources, all schools can benefit from an interactive video system. Resources can be easily shared between multiple sites regardless of student populations for ease of costs.

Summary

Integrating technology into the existing educational frame work will serve to proactively support a variety of student educational needs for the 21st Century. To keep pace with advances in technology it is important for districts to provide an appropriate level of professional development and training and technical support, as well as constantly update and improve upon existing technology backbone, hardware and software, internet speed and bandwidth, and online learning opportunities.

To assist school districts with the funds necessary to purchase technology components, *The Elementary and Secondary Education Act (ESEA)* was established. This United States federal statute provides for funding to support a diversity of educational programs. Of particular relevance to the topics discussed in this report, the *ESEA Title II, Part D – Ed Tech Plan* (Enhancing Education Through Technology) has established that recipients of these funds must have a technology plan in place that meets federal regulations.

As a state facilitator of the *Ed Tech Plan*, the Montana Office of Public Instruction (OPI) has implemented the following goals and objectives in order to establish a technology plan and for improving academic achievement state-wide:

1. Integrate Technology into Curriculum and Instruction
2. Increase the Ability of Teachers to Teach
3. Enable Students to Meet Challenging State Standards

Many standards developed nationally encompass ALL aspects of the delivery of education via technology. As districts develop technology plans and standards they should address not only infrastructure aspects of technology, but also:

- Design of the curriculum
- Teacher training and continued development
- Student use patterns
- Technical support structures
- The E-learning environment
- System security
- Replacement cycles of hardware and software

Districts wanting to provide a technology infrastructure capable of accommodating the applications described in this report should consider the following guidelines:

1. Bandwidth, delivered over the local area network (LAN), of 10/100 mb.
2. Fiber internet access to the main distribution frame (MDF) of a facility and cabling from the MDF out to the individual voice/data connection ports throughout, with the exception of fiber to distance-learning labs.
3. Cabling designated Cat5 or better (Cat5E for new installations).
4. Internet connectivity in all instructional and office areas in all schools.
5. Switches and routers located in a central, designated MDF room - possibly additional designated IDF closets, depending on building size.
6. Maximum 5 students / instructional computer*
7. 1 computer / teacher*
8. Distance learning capabilities in all High Schools and all schools greater than 1 hour from a High School.

9. Wireless access to provide limited hard-wired access in non-classroom environments for use by either small group studies or instructors.

*Based on standard data array design delivery of 6 data ports per classroom: 1 for instructor and 5 for students

Based upon growing utilization, availability of new web-based applications and services, and increasing pressures on existing internet bandwidth a minimum connection speed of 1.544mb will soon be the minimum standard for "high-speed" internet access, with a connection speed of 3.0mb preferred.

Once baseline technology investments are made, the economic advantages of integrating technology into an existing educational framework become increasingly apparent, both in terms of reaching students with courses they otherwise would not have access to, and also in helping students develop skills critical for future success.

More information about Montana Office of Public Instruction's Ed Tech Plan and access to Federal E-rate funding to support one-time and ongoing infrastructure upgrades is available on-line at: www.opi.mt.gov/ERate2.html.

Resources:

Creating Connections / The CEFPI Guide for Educational Facility Planning, Chapter 8 – Infusing Technology.
State of Massachusetts Local Technology Plan Guidelines (School Year 2007 – 2008 through 2010 – 2011).

FINAL REPORT RECOMMENDATIONS

The 59th Legislature Special Session, assembled in December 2005 for the purpose of addressing K-12 Public School funding and related issues, gave the Department of Administration the task of "completing a condition and needs assessment and energy audit of K-12 Public School facilities in the state". The Architecture & Engineering Division (A&E) of the Department of Administration, with the assistance of a team of regional and local architectural, engineering, and facility assessment professionals led by prime consultant DLR Group, Inc., has completed the assessment process and this report is provided to serve as an executive summary of the general findings and trends revealed.

During the execution of school visits and site evaluations the assessment teams were tasked to collect the information that was necessary to comply with the direction of the legislation, which was to assess facility conditions and energy characteristics and to identify needs associated with those two facility aspects. The recommendations within this section are limited to the Facility Condition and Energy Use sections of this report.

A&E directed assessment teams to collect additional information about facility characteristics and technology infrastructure while on site - although the legislative mandate for this project did not require the collection of this data nor evaluation or recommendations – given the significant cost of travel and site evaluations. This additional information was gathered as a resource for schools and districts to use in future planning efforts.

SETTING FACILITY CONDITION STANDARDS

Existing Standards

The Board of Public Education has established standards for school facilities that require local school districts to comply with all building codes, regulations, and laws regarding accessibility, construction, and maintenance of school facilities. The Montana Standards of Accreditation for school facilities are contained in Administrative Rules of Montana, 10.55.908:

10.55.908 SCHOOL FACILITIES

(1) School facilities shall be constructed, maintained, and supervised in accordance with all applicable local, state and national codes, regulations, and laws.
(2) School facilities shall be of sufficient size and arrangement to meet all programs' educational goals.
(3) The board of trustees shall provide for educational facilities which are pleasant and reasonably safe for the conduct of the educational and extracurricular activities of students, and which will meet federal accessibility standards.
(4) The school shall provide the necessary equipment for emergency nursing care and first aid.
(5) When the board of trustees considers major remodeling or building a facility, it shall seek facility expertise in all affected program areas as well as comments from faculty, students, and community.
(6) The board of trustees shall have in writing a policy that defines the use of school facilities and resources."

District Standards

Beyond these general standards much is left to local decision-making by districts and communities in the setting of specific facility standards and goals. **Each district should have in place a long-range capital improvement program that identifies facility goals and outlines procedures and guidelines to be followed to approach and accomplish said goals.**

District level facility management standards and guidelines are often put into place to provide a process intended to result in meeting management and maintenance goals. Goals for the condition of each facility should be established, such as issues of structural integrity, aesthetics, function, maintenance, and/or performance.

With proper maintenance and timely re-investment, school buildings can and many do last well beyond a 50-60 year life span. A facility management goal can include a set of steps and measures that extend the existing building's useful life; or conversely to minimize major repairs and maintenance to a facility that no longer can be modified to accommodate its intended purpose, with the idea that a new building will be constructed as a replacement.

Energy standards are evolving daily, and district guidelines and policies need to be fluid and able to adjust to new technologies and a rapidly changing energy environment. Standards need to be set for not only the physical components of the facility but also for how it is operated. Energy Star (http://www.energystar.gov) continues to be a good source of information for "best practices" in the energy efficient operation of buildings.

DETERMINING FACILITY IMPROVEMENT PRIORITIES

District Facility Assessment Programs – Determining Conditions

The facility condition assessment process conducted for this project was a one-time or "snapshot" assessment of facility conditions on the date each site was visited. The success of any ongoing facility assessment process depends on the use of the data collected, and the regular updating and management of new data as repair projects are completed or new concerns become evident with building age. **It is highly recommended that districts continue to update this baseline data by performing FCI observations on a 2-4 year recurring basis to achieve maximum benefit from this powerful and worthwhile tool in the overall management of their facility maintenance operations and long-range planning.**

The assessments conducted under this project using the Montana University System facility assessment program (FCI) leaves behind a viable framework for individual school systems to continue to use this one-time investment to implement or continue an ongoing facility assessment program into the future. FCI training is provided on a regular basis by Montana State University – Office of Facilities Services and is open to state and local governmental participants, as well as interested consultants.

Districts wanting to use contracted services to continue a facility assessment program have the choice of a number of Montana architects and engineers who participated in this original assessment and are familiar with the FCI process; those firms are identified in the background section of this report.

Detailed Energy Audits – Determining Opportunities

DLR Group assisted the State in carrying out a basic energy audit consisting of two primary parts or areas of focus: 1) A visual audit and documentation of building components and systems that affect energy performance; and 2) Collection of historical energy consumption data.

The focus of this report is to emphasize immediate and near term energy conservation and reduction opportunities that school districts can implement on a building-by-building basis. Furthermore, the report recommends the continued metering of actual energy consumption data to track the results of energy reduction efforts and identify buildings or campuses in need of a more detailed energy audit – aimed to identify causes of excessive energy use that are not readily discovered or observable to the naked eye.

Districts wanting to conduct more detailed energy audits of school facilities should contact the Montana Department of Environmental Quality's "School Assistance Program", a technical assistance program for building identification, auditing, studies, financing, implementation, an oversight. The School Assistance Program can assist with a specific energy project or multiple projects. This DEQ program is available through: www.deq.mt.gov/Energy/EESchool

Setting Priorities at the District Level

Prioritization of facility improvements goals should clearly realize the relationship between facilities utilization and operational program objectives. The current relationships between facilities within a school district and on each individual school campus, as well as future plans should also be delineated.

Proposed capital improvements should be reviewed for justification, program impact, costs, relationship to any overall long-range strategic and site plans, and other pertinent factors. Ultimately, all proposed projects within a district will be competing for the same dollars and will need to be ranked in order of importance. The State of Montana provides the following guidelines to State agencies considering capital funding requests within the State's Long-Range Building Program:

> *RATIONALE FOR PRIORITY RANKING: Project prioritization should be based on items such as the following:*
>
> *(1) Does the project improve conditions that threaten life or property or involve improvements to comply with State or Federal regulations?*
>
> *(2) Is the project critical to the continuation of a current program level?*
>
> *(3) Does the project correct a problem that if not corrected would cause further deterioration of an existing structure?*
>
> *(4) Does the project accommodate a program expansion over which no control can be exercised by state government?*
>
> *(5) Will the project demonstrate a savings in operational costs that could offset the capital investment over a relatively short period of time?*
>
> *(6) Will the project facilitate a better utilization of an existing facility or the adaptation of it to a change in program direction?*
>
> *(7) Does this project continue or complete a project that has been previously authorized and/or funded?*

Another relatively simple prioritization approach intended primarily for Major Repairs and Maintenance projects is to separate those into three levels of importance:

CLASS I - Projects requiring immediate action to provide safety and protection against costly damage.

CLASS II - Projects that are necessary to correct problems, which, if neglected would deteriorate further into Class I situations or that must be done to provide efficient use of the facility or system.

CLASS III - Projects that are necessary to fully renew the facility or system.

Regarding the facility conditions observed during the site assessments undertaken for this report, priority status is recommended for improvements that protect the life of a building. Those deteriorated components that may have a ripple effect to other building components if not addressed are typically targeted first, in order to not "lose ground" with a district's overall capital investment. Examples of the types of improvements that, if not performed, may result in deterioration of other components of the facilities include:

- Siding
- Roofing
- Windows and exterior doors and hardware
- Structural settling and heaving
- Leaking plumbing
- Ungrounded electrical
- Poor performing HVAC

Safety improvements also command a high prioritization when it comes to public schools and the children they serve. Safety data collected in the field under this study included aspects of fire detection, notification, and suppression as well as some code access and egress issues. However, safety components should be examined by school districts on a case by case basis in respect to:

- Signage
- Adequate exterior lighting
- Overgrown landscape near entries and parking
- Lock in and out capabilities
- Security detection equipment

Energy conservation improvements have not always been a high priority in the past, but are quickly becoming, in many cases, a necessity. Many energy service providers are offering incentives or rebates to make energy improvements more affordable, and the aspect of supplemental funding outside of normal operating and capital budgets may serve to tip some energy projects to a higher priority when benefits are fully weighed against the actual cost.

Briefly reiterated here from the Energy Use section of this report are the three levels of succeeding energy conservation measures that are in order of speed of pay-back:

Level 1 Measures: Behavioral changes that can be implemented immediately

1. Lower thermostat settings.
2. Perform night and weekend temperature set-backs.
3. Turn off all lighting when not in use.
4. Replace personal space heaters with radiant heating pads.
5. Purchase Energy Star equipment when buying new.

Level 2 Measures: Implementation of energy conservation improvements with relatively quick paybacks

1. Replace existing incandescent and older fluorescent lighting.
2. Retro-commission existing buildings.
3. Install programmable building management systems.
4. Install occupancy and day light sensors, and utilize task-oriented lighting wherever possible.
5. Load PC management software onto each computer.
6. Implement solar sources to assist hot water heating systems.
7. Replace lighted exit signs with LED lamps.

Level 3 Measures: Implementation of energy conservation improvements with relatively long-term paybacks

1. Increase roof insulation.
2. Increase wall insulation.
3. Replace existing single pane windows.
4. When replacing air handling units, incorporate economizers as a cooling method.

When implementing Level 2 and Level 3 energy conservation measures it is important to conduct a study of the existing building system by a trained professional to evaluate the applicability of new codes, alternative equipment choices and new technologies - as opposed to exact replacement in-kind.

Capital improvement prioritization for public schools will likely vary depending upon local and regional issues and characteristics. Districts may want to set up their own prioritization categories based upon their own specific needs and funding environment. Regardless of the exact prioritization methods used, districts can use the facility assessment program available through this study, or begin their own, for the purpose of identification of deficiencies for further consideration.

IMPLEMENTATION OF IMPROVEMENTS

The purpose of the FCI process in the overall operation of a district, school or building is not to obliterate all deficiencies within all buildings, but rather to use the FCI process to identify and prioritize improvements.

Once capital improvements have been identified and prioritized, an accurate "project cost" will need to be determined. The FCI assessment program generates a cost estimate or allowance that reflects the "construction cost" of an improvement based upon the cost database that has been linked to a software program. This cost database is updated on a regular basis; however construction cost estimate may need adjustments between updates in order to account for the impact of construction inflation. These cost estimates are not generally considered to represent total "project cost" and therefore not directly submitted as funding requests without further investigation and detail.

A comprehensive cost estimate should be developed for each and every proposed project to ensure accuracy of budget requests and the ultimate ability to complete the improvements intended without additional or supplemental funds. Capital project estimates should include and identify preconstruction costs of architectural and engineering services, hazardous materials (asbestos) investigation, project management services, contingencies, and other so called "soft" costs. Particular care should be taken to identify all indirect costs, such as additional building systems that will be impacted in order to affect the fix or repair to the target building system or deficiency.

In summary, implementation of improvements such as the type identified in this facility assessment process, and described in this report, requires that school districts: establish facility standards and goals; determine facility improvement priorities; and define specific improvement projects for implementation.

END OF REPORT

APPENDIX
Cost Allowances and Deficiency Ratios by District

NOTES:

1) The budget estimates for repair of a given facility system are taken directly from the FCI database (RS Means Square Foot Cost, 28th annual edition (2007)). The budgets used are in 2007 dollars. Depending upon the year of construction, an inflation allowance should be added.

2) The cost allowances shown in these tables represent construction estimates only, and do not reflect design fees, contingencies, and other so called "soft" costs.

3) Enrollments shown (per District) are based on enrollment figures provided to site inspectors by the building staff contact on the day of their site visit in the Spring of 2008 and may not exactly match October 2007 enrollment OPI reports. The exceptions to this rule are Butte Elementary and Helena Elementary Districts where the field data provided was significantly different than OPI's reports, so was substituted in this chart with the latter. As such, the total of these numbers will differ from the Enrollment total within the Executive Summary Report.

4) If Gross Square Feet per Student is calculated from the data shown here, two items must be noted: A) The square footage shown here is for the total buildings in each District, which will be higher than the numbers shown in the main body of the report related to only educational buildings and their square footages (See page 7 of the Executive Summary), and B) Certain buildings and facilities within many School Systems are shared between Elementary and High School Districts within the System; and for inclusion in this table a shared building or facility was counted in one or the other, not both. Because of this trait pertaining primarily to shared facilities, conclusions of student density and deficiency ratios should consider collectively the facilities within the School System that may be comprised of several Districts.

5) Exhaustive design analysis has not been provided. The charge of this study was to identify areas of fatigue and failure and provide allowance recommendations that reflect a replacement in-kind. Performance of a traditional design analysis may reveal multiple options for consideration at each location, some of which may result in higher initial costs due to unforeseen conditions or are simply better for the long term operational costs of the building.

6) The Districts of Rapelje High, West Glacier Elementary, and Willow Creek High currently have no deficiencies noted by site inspectors. As identified in note 4 above, there are figures included in the elementary districts of Rapelje and Willow Creek, which may relate to these high school districts as well.

7) The Districts of Alzada Elementary, Knees Elementary, and Sylvanite Elementary are sitting vacant, so have no current enrollment.

8) The following Districts were unintentionally missed in the facility assessment process conducted in the Spring of 2008, in total representing approximately 3/10 of a 1% of total statewide enrollment and therefore not significantly affecting the conclusions of the Executive Summary or this chart. All of these Districts will be assessed in the Summer/Fall of 2008 to achieve 100% coverage of K-12 facilities throughout the State, and that information will be communicated directly to those schools upon completion. Ashland Elementary, Belfry K-12, Custer K-12, Deep Creek Elementary, Frazer Elementary, Frazer High School, Liberty Elementary, Lustre Elementary, Malmborg Elementary, Miami Elementary, Mountain View Elementary, and Paradise Elementary.

			Facility Condition Categories (definitions on page 17 of the Executive Summary and at end of this table)															
			1 - Life Safety		2 - Damage/Wear Out		3 - Codes		4 - Environmental		5 - Energy		6 - Aesthetics		7 - Other / Non-FCI		TOTALS	
District	Enrollment	Gross SF of Buildings	Cost Allowance	Deficiency Ratio	Cost Allowance	Deficiency Ratio	Cost Allowance	Deficiency Ratio	Cost Allowance	Deficiency Ratio	Cost Allowance	Deficiency Ratio	Cost Allowance	Deficiency Ratio	Cost Allowance	Deficiency Ratio	Cost Allowance	Deificiency Ratio
Absarokee Elementary	137	32,200	$0	0.0%	$8,400	0.0%	$0	0.0%	$1,951	0.0%	$2,334	0.0%	$0	0.0%	$0	0.0%	$12,685	0%
Absarokee High School	159	69,269	$0	0.0%	$213,177	1.9%	$0	0.0%	$109,201	1.0%	$211,394	1.9%	$0	0.0%	$29,332	0.3%	$563,103	5%
Alberton K-12	160	58,198	$0	0.0%	$915,394	8.4%	$126,694	1.2%	$123,301	1.1%	$403,157	3.7%	$0	0.0%	$388,996	3.6%	$1,957,541	18%
Alder Elementary	19	5,130	$0	0.0%	$3,632	0.4%	$3,515	0.3%	$908	0.1%	$5,630	0.5%	$0	0.0%	$17,398	1.7%	$31,083	3%
Alzada Elementary	-	3,500	$0	0.0%	$2,001	0.2%	$0	0.0%	$7,203	0.9%	$7,644	0.9%	$0	0.0%	$0	0.0%	$16,848	2%
Amsterdam Elementary	95	10,696	$0	0.0%	$1,313	0.1%	$1,994	0.1%	$8,366	0.4%	$16,146	0.9%	$0	0.0%	$9,662	0.5%	$37,481	2%
Anaconda Elementary	561	260,940	$0	0.0%	$1,575,404	3.5%	$47,455	0.1%	$489,832	1.1%	$1,054,646	2.3%	$0	0.0%	$1,391,501	3.1%	$4,558,839	10%
Anaconda High School	402	79,233	$0	0.0%	$59,791	0.5%	$0	0.0%	$9,555	0.1%	$399,334	3.5%	$0	0.0%	$453,609	3.9%	$922,290	8%
Anderson Elementary	192	33,819	$0	0.0%	$65,355	1.1%	$131	0.0%	$67,914	1.2%	$23,151	0.4%	$0	0.0%	$20,314	0.3%	$176,865	3%
Arlee Elementary	287	56,132	$0	0.0%	$755,152	8.0%	$24,878	0.3%	$147,573	1.6%	$231,086	2.5%	$0	0.0%	$249,386	2.7%	$1,408,076	15%
Arlee High School	126	47,794	$0	0.0%	$958,139	11.9%	$3,148	0.0%	$202,023	2.5%	$165,814	2.1%	$0	0.0%	$121,508	1.5%	$1,450,631	18%
Arrowhead Elementary	131	21,549	$0	0.0%	$29,662	0.8%	$0	0.0%	$686	0.0%	$6,698	0.2%	$0	0.0%	$2,467	0.1%	$39,514	1%
Ashland Elementary	See Note 8 Above																	
Auchard Creek Elementary	25	3,306	$0	0.0%	$220	0.0%	$7,913	1.0%	$0	0.0%	$0	0.0%	$0	0.0%	$7,928	1.0%	$16,061	2%
Augusta Elementary	54	20,114	$0	0.0%	$79,476	2.2%	$0	0.0%	$4,963	0.1%	$130,339	3.6%	$0	0.0%	$0	0.0%	$214,778	6%
Augusta High School	44	26,277	$0	0.0%	$284,103	6.7%	$0	0.0%	$36,154	0.8%	$225,219	5.3%	$0	0.0%	$7,490	0.2%	$552,967	13%
Avon Elementary	50	9,786	$0	0.0%	$9,522	0.4%	$1,338	0.1%	$1,495	0.1%	$48,484	2.0%	$0	0.0%	$12,139	0.5%	$72,978	3%
Ayers Elementary	14	2,150	$0	0.0%	$83,309	18.9%	$0	0.0%	$17,907	4.1%	$0	0.0%	$0	0.0%	$0	0.0%	$101,216	23%
Bainville K-12	102	72,200	$0	0.0%	$159,353	1.7%	$0	0.0%	$16,041	0.2%	$59,992	0.6%	$0	0.0%	$53,804	0.6%	$289,191	3%
Baker K-12	366	186,232	$0	0.0%	$625,927	2.2%	$17,286	0.1%	$4,150	0.0%	$28,294	0.1%	$0	0.0%	$1,037,505	3.6%	$1,713,162	6%
Basin Elementary	21	7,200	$0	0.0%	$68,924	4.7%	$0	0.0%	$8,110	0.6%	$53,266	3.6%	$0	0.0%	$30,503	2.1%	$160,803	11%
Bear Paw Elementary	8	6,286	$0	0.0%	$9,678	0.6%	$0	0.0%	$2,307	0.2%	$43,942	2.9%	$0	0.0%	$3,718	0.2%	$59,645	4%
Beaverhead County High School	358	90,480	$0	0.0%	$79,594	0.6%	$25,707	0.2%	$58,971	0.5%	$158,770	1.3%	$0	0.0%	$427,365	3.4%	$750,409	6%
Belfry K-12	See Note 8 Above																	
Belgrade Elementary	2,103	295,798	$0	0.0%	$381,995	0.9%	$3,892	0.0%	$70,563	0.2%	$651,914	1.5%	$0	0.0%	$161,899	0.4%	$1,270,263	3%
Belgrade High School	830	242,550	$0	0.0%	$1,082,958	3.5%	$13,365	0.0%	$37,065	0.1%	$614,747	2.0%	$0	0.0%	$86,161	0.3%	$1,834,295	6%
Belt Elementary	214	71,009	$0	0.0%	$280,837	3.0%	$0	0.0%	$2,566	0.0%	$47,699	0.5%	$0	0.0%	$40,766	0.4%	$371,868	4%
Belt High School	106	9,488	$0	0.0%	$24,711	1.3%	$0	0.0%	$5,023	0.3%	$7,342	0.4%	$0	0.0%	$1,005	0.1%	$38,082	2%
Benton Lake Elementary	9	2,400	$0	0.0%	$4,327	0.8%	$0	0.0%	$2,102	0.4%	$8,399	1.5%	$0	0.0%	$2,350	0.4%	$17,178	3%
Biddle Elementary	8	6,000	$0	0.0%	$4,714	0.4%	$1,070	0.1%	$12,058	0.9%	$20,346	1.6%	$0	0.0%	$0	0.0%	$38,187	3%
Big Dry Creek Elementary	3	1,056	$0	0.0%	$0	0.0%	$0	0.0%	$0	0.0%	$0	0.0%	$0	0.0%	$2,297	1.0%	$2,297	1%
Big Sandy Elementary	70	27,180	$0	0.0%	$257,602	5.4%	$1,462	0.0%	$0	0.0%	$95,989	2.0%	$0	0.0%	$27,351	0.6%	$382,404	8%
Big Sandy High School	80	55,200	$0	0.0%	$2,814	0.0%	$0	0.0%	$4,683	0.0%	$11,491	0.0%	$0	0.0%	$550	0.0%	$19,537	0%
Big Timber Elementary	353	60,106	$0	0.0%	$267,993	2.5%	$8,455	0.1%	$65,690	0.6%	$283,396	2.6%	$0	0.0%	$344,396	3.2%	$969,930	9%
Bigfork Elementary	472	79,673	$0	0.0%	$295,705	2.7%	$402	0.0%	$81,030	0.7%	$74,479	0.7%	$0	0.0%	$308,398	2.8%	$760,015	7%
Bigfork High School	332	61,345	$0	0.0%	$637,643	6.2%	$3,883	0.0%	$57,628	0.6%	$138,620	1.3%	$0	0.0%	$292,033	2.8%	$1,129,807	11%
Billings Elementary	10,178	1,325,228	$0	0.0%	$6,861,304	3.4%	$91,307	0.0%	$1,724,423	0.9%	$3,918,370	2.0%	$0	0.0%	$1,348,338	0.7%	$13,943,741	7%
Billings High School	6,141	1,100,141	$0	0.0%	$7,931,162	4.6%	$233,785	0.1%	$3,367,722	1.9%	$4,000,842	2.3%	$0	0.0%	$1,755,613	1.0%	$17,289,124	10%
Birney Elementary	6	3,600	$0	0.0%	$1,328	0.2%	$331	0.0%	$9,112	1.1%	$8,478	1.1%	$0	0.0%	$4,895	0.6%	$24,143	3%
Bloomfield Elementary	14	2,510	$0	0.0%	$7,429	1.4%	$431	0.1%	$8,983	1.7%	$7,535	1.4%	$0	0.0%	$13,204	2.5%	$37,582	7%
Blue Creek Elementary	434	19,000	$0	0.0%	$431,779	12.4%	$0	0.0%	$0	0.0%	$0	0.0%	$0	0.0%	$20,667	0.6%	$452,446	13%
Bonner Elementary	355	60,980	$0	0.0%	$67,414	0.7%	$8,404	0.1%	$3,824	0.0%	$110,699	1.2%	$0	0.0%	$174,590	1.9%	$364,931	4%

APPENDIX
Cost Allowances and Deficiency Ratios by District

			Facility Condition Categories (definitions on page 17 of the Executive Summary and at end of this table)															
			1 - Life Safety		2 - Damage/Wear Out		3 - Codes		4 - Environmental		5 - Energy		6 - Aesthetics		7 - Other / Non-FCI		TOTALS	
District	Enrollment	Gross SF of Buildings	Cost Allowance	Deficiency Ratio	Cost Allowance	Deficiency Ratio	Cost Allowance	Deficiency Ratio	Cost Allowance	Deficiency Ratio	Cost Allowance	Deficiency Ratio	Cost Allowance	Deficiency Ratio	Cost Allowance	Deficiency Ratio	Cost Allowance	Deificiency Ratio
Boulder Elementary	186	40,601	$0	0.0%	$59,562	0.8%	$0	0.0%	$29,428	0.4%	$52,396	0.7%	$0	0.0%	$2,789	0.0%	$144,174	2%
Box Elder Elementary	268	58,242	$0	0.0%	$442,488	5.1%	$11,798	0.1%	$10,258	0.1%	$314,580	3.6%	$0	0.0%	$95,707	1.1%	$874,830	10%
Box Elder High School	101	34,762	$0	0.0%	$54,072	0.8%	$2,656	0.0%	$2,960	0.0%	$68,514	1.0%	$0	0.0%	$13,008	0.2%	$141,210	2%
Bozeman Elementary	3,424	489,464	$0	0.0%	$1,029,144	1.3%	$2,202	0.0%	$1,064,733	1.4%	$989,123	1.3%	$0	0.0%	$756,540	1.0%	$3,841,742	5%
Bozeman High School	1,955	406,053	$0	0.0%	$1,646,650	3.0%	$4,582	0.0%	$1,027,789	1.9%	$2,260,456	4.1%	$0	0.0%	$602,621	1.1%	$5,542,099	10%
Bridger K-12	125	60,340	$0	0.0%	$76,616	0.8%	$5,578	0.1%	$40,040	0.4%	$37,752	0.4%	$0	0.0%	$36,216	0.4%	$196,202	2%
Broadus Elementary	150	25,000	$0	0.0%	$13,650	0.3%	$3,675	0.1%	$77,974	1.7%	$85,725	1.8%	$0	0.0%	$54,388	1.2%	$235,411	5%
Broadview Elementary	114	1,050	$0	0.0%	$0	0.0%	$0	0.0%	$0	0.0%	$0	0.0%	$0	0.0%	$2,852	1.0%	$2,852	1%
Broadview High School	38	27,519	$0	0.0%	$181,342	3.9%	$464	0.0%	$1,624	0.0%	$0	0.0%	$0	0.0%	$48,915	1.1%	$232,346	5%
Brockton Elementary	69	30,620	$0	0.0%	$37,590	0.8%	$0	0.0%	$81,217	1.8%	$15,220	0.3%	$0	0.0%	$4,775	0.1%	$138,801	3%
Brockton High School	68	25,645	$0	0.0%	$135,726	3.1%	$0	0.0%	$30,017	0.7%	$191,579	4.4%	$0	0.0%	$33,406	0.8%	$390,727	9%
Brorson Elementary	3	3,824	$0	0.0%	$4,542	0.6%	$562	0.1%	$0	0.0%	$14,145	1.8%	$0	0.0%	$11,380	1.5%	$30,629	4%
Browning Elementary	1,250	213,792	$0	0.0%	$1,042,810	2.9%	$348	0.0%	$75,870	0.2%	$13,014	0.0%	$0	0.0%	$289,001	0.8%	$1,421,042	4%
Browning High School	600	169,328	$0	0.0%	$196,574	0.7%	$2,710	0.0%	$185,479	0.6%	$52,956	0.2%	$0	0.0%	$434,297	1.5%	$872,016	3%
Butte Elementary	3,077	480,035	$0	0.0%	$6,223,629	8.1%	$20,607	0.0%	$1,226,741	1.6%	$1,187,968	1.6%	$0	0.0%	$1,281,688	1.7%	$9,940,632	13%
Butte High School	1,554	319,241	$0	0.0%	$1,643,590	3.8%	$4,450	0.0%	$442,063	1.0%	$755,049	1.8%	$0	0.0%	$574,021	1.3%	$3,419,174	8%
Bynum Elementary	12	7,050	$0	0.0%	$8,719	0.6%	$4,912	0.3%	$14,091	0.9%	$31,195	2.0%	$0	0.0%	$19,246	1.2%	$78,163	5%
Camas Prairie Elementary	3	3,000	$0	0.0%	$23,843	3.1%	$1,142	0.1%	$7,416	1.0%	$19,332	2.5%	$0	0.0%	$2,102	0.3%	$53,836	7%
Canyon Creek Elementary	176	48,259	$0	0.0%	$4,662	0.1%	$26,523	0.4%	$0	0.0%	$81,365	1.2%	$0	0.0%	$84,170	1.3%	$196,719	3%
Cardwell Elementary	51	14,520	$0	0.0%	$131,271	5.6%	$617	0.0%	$58,784	2.5%	$87,805	3.7%	$0	0.0%	$28,854	1.2%	$307,331	13%
Carter County High School	75	35,824	$0	0.0%	$12,169	0.2%	$806	0.0%	$102,497	1.8%	$32,713	0.6%	$0	0.0%	$75,782	1.4%	$223,966	4%
Carter Elementary	7	3,718	$0	0.0%	$21,613	3.0%	$0	0.0%	$4,177	0.6%	$15,216	2.1%	$0	0.0%	$2,891	0.4%	$43,898	6%
Cascade Elementary	221	120,000	$0	0.0%	$250,253	1.6%	$0	0.0%	$7,083	0.0%	$525,600	3.3%	$0	0.0%	$24,045	0.1%	$806,981	5%
Cascade High School	127	7,874	$0	0.0%	$5,251	0.4%	$0	0.0%	$3,905	0.3%	$15,413	1.1%	$0	0.0%	$4,547	0.3%	$29,117	2%
Cayuse Prairie Elementary	182	25,950	$0	0.0%	$56,040	1.4%	$2,822	0.1%	$34,697	0.9%	$19,392	0.5%	$0	0.0%	$88,247	2.2%	$201,199	5%
Centerville Elementary	166	47,836	$0	0.0%	$204,286	2.9%	$0	0.0%	$318,969	4.5%	$32,174	0.5%	$0	0.0%	$13,419	0.2%	$568,849	8%
Centerville High School	74	6,735	$0	0.0%	$25,872	2.6%	$0	0.0%	$23,706	2.3%	$20,152	2.0%	$0	0.0%	$1,239	0.1%	$70,969	7%
Charlo Elementary	232	21,744	$0		$261,559	6.2%	$5,018	0.1%	$26,681	0.6%	$170,749	4.1%	$0	0.0%	$38,990	0.9%	$502,998	12%
Charlo High School	125	36,501	$0	0.0%	$131,157	1.8%	$4,701	0.1%	$88,250	1.2%	$95,986	1.3%	$0	0.0%	$40,156	0.6%	$360,250	5%
Chester Joplin-Inverness Elementary	177	87,835	$0	0.0%	$907,639	7.6%	$60,866	0.5%	$76,566	0.6%	$12,831	0.1%	$0	0.0%	$13,351	0.1%	$1,071,253	9%
Chester Joplin-Inverness High School	83	57,034	$0	0.0%	$1,295,507	13.9%	$0	0.0%	$240,603	2.6%	$0	0.0%	$0	0.0%	$51,668	0.6%	$1,587,778	17%
Chinook Elementary	161	33,814	$0	0.0%	$132,917	2.2%	$22,912	0.4%	$786	0.0%	$8,037	0.1%	$0	0.0%	$12,665	0.2%	$177,318	3%
Chinook High School	163	69,226	$0	0.0%	$322,080	3.0%	$4,337	0.0%	$120,141	1.1%	$62,817	0.6%	$0	0.0%	$21,902	0.2%	$531,276	5%
Choteau Elementary	287	118,311	$0	0.0%	$1,236,163	7.5%	$24,384	0.1%	$127,492	0.8%	$517,137	3.1%	$0	0.0%	$249,258	1.5%	$2,154,434	13%
Choteau High School	126	9,144	$0	0.0%	$9,317	0.6%	$0	0.0%	$0	0.0%	$6,070	0.4%	$0	0.0%	$0	0.0%	$15,386	1%
Circle Elementary	150	26,554	$0		$49,126	1.0%	$3,505	0.1%	$98,367	2.0%	$90,018	1.8%	$0	0.0%	$162,418	3.2%	$403,433	8%
Circle High School	81	60,134	$0	0.0%	$111,757	1.2%	$17,446	0.2%	$146,636	1.5%	$249,920	2.6%	$0	0.0%	$147,519	1.5%	$673,279	7%
Clancy Elementary	290	80,204	$0	0.0%	$456,528	3.6%	$8,099	0.1%	$983	0.0%	$119,172	0.9%	$0	0.0%	$48,086	0.4%	$632,869	5%
Cleveland Elementary	9	4,028	$0	0.0%	$49,305	5.4%	$615	0.1%	$15,151	1.7%	$13,341	1.5%	$0	0.0%	$3,699	0.4%	$82,111	9%
Clinton Elementary	225	23,917	$0	0.0%	$1,582	0.0%	$1,799	0.0%	$2,298	0.1%	$35,899	0.8%	$0	0.0%	$95,126	2.1%	$136,704	3%
Cohagen Elementary	5	9,240	$0	0.0%	$63,029	2.7%	$0	0.0%	$8,289	0.4%	$31,387	1.4%	$0	0.0%	$12,557	0.5%	$115,261	5%
Colstrip Elementary	393	193,566	$0	0.0%	$301,057	1.3%	$0	0.0%	$161,786	0.7%	$8,024	0.0%	$0	0.0%	$0	0.0%	$470,866	2%
Colstrip High School	240	270,395	$0	0.0%	$537,189	1.5%	$12,015	0.0%	$145,444	0.4%	$34,461	0.1%	$0	0.0%	$9,210	0.0%	$738,319	2%
Columbia Falls Elementary	1,646	333,797	$0	0.0%	$1,963,350	3.9%	$43,146	0.1%	$664,292	1.3%	$479,432	1.0%	$0	0.0%	$830,187	1.7%	$3,980,407	8%
Columbia Falls High School	840	167,855	$0	0.0%	$1,355,797	5.6%	$51,241	0.2%	$1,339,521	5.5%	$811,784	3.3%	$0	0.0%	$819,390	3.4%	$4,377,733	18%
Columbus Elementary	428	56,322	$0	0.0%	$50,369	0.5%	$14,672	0.2%	$5,725	0.1%	$81,918	0.9%	$0	0.0%	$128,132	1.4%	$280,816	3%
Columbus High School	223	56,800	$0	0.0%	$107,685	1.2%	$3,641	0.0%	$16,621	0.2%	$7,447	0.1%	$0	0.0%	$41,266	0.5%	$176,660	2%
Conrad Elementary	380	102,010	$0	0.0%	$443,779	2.6%	$110,214	0.6%	$216,488	1.2%	$11,833	0.1%	$0	0.0%	$85,920	0.5%	$868,233	5%
Conrad High School	210	89,807	$0	0.0%	$528,083	3.5%	$0	0.0%	$232,276	1.6%	$131,324	0.9%	$0	0.0%	$153,122	1.0%	$1,044,805	7%
Cooke City Elementary	4	1,346	$0	0.0%	$0	0.0%	$0	0.0%	$0	0.0%	$4,922	1.9%	$0	0.0%	$2,863	1.1%	$7,784	3%
Corvallis K-12	1,388	194,735	$0	0.0%	$230,834	0.8%	$18,068	0.1%	$376,942	1.3%	$203,441	0.7%	$0	0.0%	$50,038	0.2%	$879,323	3%
Cottonwood Elementary	14	2,105	$0	0.0%	$9,132	1.9%	$0	0.0%	$5,533	1.2%	$12,154	2.6%	$0	0.0%	$6,267	1.3%	$33,085	7%
Cottonwood Elementary-Custer County	4	1,900	$0	0.0%	$1,862	0.4%	$356	0.1%	$0	0.0%	$9,377	2.1%	$0	0.0%	$1,927	0.4%	$13,521	3%
Cottonwood Elementary-Hill County	7	5,337	$0	0.0%	$21,150	1.7%	$1,924	0.2%	$737	0.1%	$18,114	1.5%	$0	0.0%	$6,536	0.5%	$48,460	4%
Creston Elementary	77	12,776	$0	0.0%	$27,296	1.3%	$0	0.0%	$6,186	0.3%	$45,831	2.2%	$0	0.0%	$5,031	0.2%	$84,344	4%
Culbertson Elementary	165	65,458	$0	0.0%	$529,088	5.7%	$0	0.0%	$270,279	2.9%	$209,086	2.3%	$0	0.0%	$105,874	1.1%	$1,114,327	12%
Culbertson High School	101	18,038	$0	0.0%	$97,820	4.3%	$0	0.0%	$66,231	2.9%	$30,256	1.3%	$0	0.0%	$58,302	2.5%	$252,610	11%

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District	Enrollment	Gross SF of Buildings	Cost Allowance	Deficiency Ratio	Cost Allowance	Deficiency Ratio	Cost Allowance	Deficiency Ratio	Cost Allowance	Deficiency Ratio	Cost Allowance	Deficiency Ratio	Cost Allowance	Deficiency Ratio	Cost Allowance	Deficiency Ratio	Cost Allowance	Deficiency Ratio
Custer County High School	593	213,608	$0	0.0%	$1,473,899	4.9%	$19,548	0.1%	$422,853	1.4%	$400,749	1.3%	$0	0.0%	$79,912	0.3%	$2,396,961	8%
Custer K-12	See Note 8 Above																	
Cut Bank Elementary	608	66,700	$0	0.0%	$192,439	2.0%	$1,289	0.0%	$196,694	2.0%	$153,633	1.6%	$0	0.0%	$140,127	1.4%	$684,183	7%
Cut Bank High School	304	38,009	$0	0.0%	$76,357	1.2%	$430	0.0%	$31,699	0.5%	$81,601	1.3%	$0	0.0%	$66,399	1.0%	$256,487	4%
Darby K-12	444	121,174	$0	0.0%	$1,746,791	9.4%	$873	0.0%	$428,995	2.3%	$426,977	2.3%	$0	0.0%	$11,234	0.1%	$2,614,870	14%
Davey Elementary	17	3,158	$0	0.0%	$25,334	3.0%	$244	0.0%	$0	0.0%	$14,460	1.7%	$0	0.0%	$18,573	2.2%	$58,612	7%
Dawson High School	410	179,257	$0	0.0%	$398,117	1.6%	$31,649	0.1%	$444,903	1.8%	$1,045,027	4.3%	$0	0.0%	$19,522	0.1%	$1,939,218	8%
Deep Creek Elementary	See Note 8 Above																	
Deer Creek Elementary	14	2,954	$0	0.0%	$7,124	1.1%	$0	0.0%	$8,933	1.4%	$9,999	1.5%	$0	0.0%	$0	0.0%	$26,056	4%
Deer Lodge Elementary	452	176,629	$0	0.0%	$717,244	2.7%	$30,186	0.1%	$187,233	0.7%	$1,043,819	3.9%	$0	0.0%	$701,182	2.6%	$2,679,665	10%
Deer Park Elementary	89	18,576	$0	0.0%	$25,065	0.7%	$598	0.0%	$6,357	0.2%	$23,797	0.7%	$0	0.0%	$77,998	2.3%	$133,815	4%
Deerfield Elementary	6	2,220	$0	0.0%	$1,740	0.4%	$109	0.0%	$173	0.0%	$6,700	1.5%	$0	0.0%	$5,084	1.1%	$13,807	3%
Denton Elementary	74	42,515	$0	0.0%	$111,631	1.7%	$0	0.0%	$388,314	6.0%	$261,552	4.0%	$0	0.0%	$216,582	3.3%	$978,080	15%
Denton High School	43	9,750	$0	0.0%	$2,787	0.2%	$872	0.1%	$19,530	1.3%	$17,649	1.1%	$0	0.0%	$5,967	0.4%	$46,804	3%
DeSmet Elementary	127	22,940	$0	0.0%	$5,230	0.1%	$5,483	0.1%	$19,554	0.5%	$108,264	2.5%	$0	0.0%	$31,402	0.7%	$169,932	4%
Dillon Elementary	684	208,310	$0	0.0%	$763,065	2.3%	$26,243	0.1%	$733,280	2.2%	$1,405,761	4.2%	$0	0.0%	$1,051,192	3.2%	$3,979,541	12%
Divide Elementary	11	3,248	$0	0.0%	$30,890	5.4%	$780	0.1%	$12,276	2.1%	$561	0.1%	$0	0.0%	$7,285	1.3%	$51,793	9%
Dixon Elementary	85	18,835	$0	0.0%	$133,034	3.1%	$12,085	0.3%	$34,050	0.8%	$48,119	1.1%	$0	0.0%	$30,905	0.7%	$258,193	6%
Dodson Elementary	42	46,228	$0	0.0%	$380,399	4.5%	$1,645	0.0%	$90,116	1.1%	$58,195	0.7%	$0	0.0%	$146,967	1.7%	$677,322	8%
Dodson High School	17	192	$0	0.0%	$109	0.4%	$0	0.0%	$1,943	7.6%	$0	0.0%	$0	0.0%	$0	0.0%	$2,052	8%
Drummond Elementary	136	15,000	$0	0.0%	$42,150	1.5%	$0	0.0%	$13,590	0.5%	$0	0.0%	$0	0.0%	$0	0.0%	$55,740	2%
Drummond High School	100	48,778	$0	0.0%	$137,580	1.3%	$13,740	0.1%	$4,002	0.0%	$160,873	1.5%	$0	0.0%	$122,962	1.1%	$439,157	4%
Dupuyer Elementary	5	6,310	$0	0.0%	$16,730	1.3%	$197	0.0%	$2,769	0.2%	$5,598	0.4%	$0	0.0%	$14,496	1.1%	$39,790	3%
Dutton / Brady K-12	111	89,000	$0	0.0%	$32,123	0.2%	$18,149	0.1%	$4,169	0.0%	$246,721	1.6%	$0	0.0%	$300,929	2.0%	$602,090	4%
East Glacier Park Elementary	38	7,954	$0	0.0%	$260,017	16.7%	$94	0.0%	$48,689	3.1%	$16,169	1.0%	$0	0.0%	$49,100	3.2%	$374,069	24%
East Helena Elementary	1,076	187,430	$0	0.0%	$1,099,076	4.1%	$0	0.0%	$276,741	1.0%	$474,191	1.8%	$0	0.0%	$34,256	0.1%	$1,884,264	7%
Edgar Elementary	4	13,020	$0	0.0%	$37,490	1.9%	$0	0.0%	$7,360	0.4%	$28,320	1.5%	$0	0.0%	$3,975	0.2%	$77,146	4%
Ekalaka Elementary	57	10,081	$0	0.0%	$15,103	0.9%	$2,150	0.1%	$31,212	1.8%	$37,932	2.2%	$0	0.0%	$53,097	3.0%	$139,495	8%
Elder Grove Elementary	353	70,160	$0	0.0%	$248,078	2.1%	$0	0.0%	$100,139	0.8%	$11,469	0.1%	$0	0.0%	$0	0.0%	$359,686	3%
Elliston Elementary	36	8,944	$0	0.0%	$16,073	0.7%	$0	0.0%	$300	0.0%	$46,660	2.0%	$0	0.0%	$28,219	1.2%	$91,253	4%
Elysian Elementary	118	30,290	$0	0.0%	$0	0.0%	$4,999	0.1%	$3,837	0.1%	$45,690	0.8%	$0	0.0%	$62,502	1.1%	$117,029	2%
Ennis K-12	355	91,933	$0	0.0%	$127,731	1.0%	$1,274	0.0%	$165,037	1.2%	$275,142	2.1%	$0	0.0%	$91,346	0.7%	$660,531	5%
Eureka Elementary	520	116,179	$0	0.0%	$3,644,910	22.0%	$64,573	0.4%	$517,739	3.1%	$409,768	2.5%	$0	0.0%	$496,301	3.0%	$5,133,291	31%
Evergreen Elementary	792	130,754	$0	0.0%	$286,664	1.2%	$17,042	0.1%	$78,237	0.3%	$242,297	1.1%	$0	0.0%	$297,185	1.3%	$921,426	4%
Fairfield Elementary	170	26,969	$0	0.0%	$61,017	1.5%	$0	0.0%	$13,894	0.3%	$6,857	0.2%	$0	0.0%	$0	0.0%	$81,769	2%
Fairfield High School	151	80,379	$0	0.0%	$293,860	2.2%	$0	0.0%	$20,555	0.2%	$79,710	0.6%	$0	0.0%	$7,021	0.1%	$401,145	3%
Fair-Mont-Egan Elementary	167	36,000	$0	0.0%	$78,976	1.0%	$4,451	0.1%	$15,577	0.2%	$178,076	2.3%	$0	0.0%	$179,633	2.4%	$456,712	6%
Fairview Elementary	155	54,723	$0	0.0%	$403,718	4.8%	$0	0.0%	$151,245	1.8%	$111,279	1.3%	$0	0.0%	$6,892	0.1%	$673,134	8%
Fairview High School	103	42,074	$0	0.0%	$119,542	1.2%	$0	0.0%	$62,690	0.7%	$254,563	2.7%	$0	0.0%	$139,351	1.5%	$576,145	6%
Fergus High School	420	106,326	$0	0.0%	$152,623	0.9%	$4,561	0.0%	$33,407	0.2%	$107,517	0.7%	$0	0.0%	$24,349	0.2%	$322,457	2%
Fishtail Elementary	8	3,795	$0	0.0%	$3,651	0.4%	$0	0.0%	$1,269	0.1%	$13,497	1.5%	$0	0.0%	$0	0.0%	$18,417	2%
Flathead High School	2,764	640,781	$0	0.0%	$386,942	0.4%	$1,316	0.0%	$3,280,305	3.3%	$418,178	0.4%	$0	0.0%	$810,912	0.8%	$4,897,652	5%
Florence-Carlton K-12	895	86,064	$0	0.0%	$798,858	6.0%	$12,913	0.1%	$163,669	1.2%	$249,415	1.9%	$0	0.0%	$516,820	3.9%	$1,741,675	13%
Forsyth Elementary	187	71,456	$0	0.0%	$20,274	0.2%	$18,158	0.1%	$62,098	0.5%	$0	0.0%	$0	0.0%	$155,453	1.2%	$255,983	2%
Forsyth High School	198	75,556	$0	0.0%	$15,640	0.1%	$0	0.0%	$45,043	0.4%	$29,651	0.2%	$0	0.0%	$156,245	1.3%	$246,580	2%
Fort Benton Elementary	135	45,744	$0	0.0%	$431,964	6.6%	$14,043	0.2%	$62,179	0.9%	$96,749	1.5%	$0	0.0%	$115,229	1.8%	$720,164	11%
Fort Benton High School	150	78,270	$0	0.0%	$362,537	3.3%	$0	0.0%	$99,746	0.9%	$81,825	0.7%	$0	0.0%	$12,381	0.1%	$556,488	5%
Fortine Elementary	57	15,210	$0	0.0%	$307,726	8.5%	$8,481	0.2%	$33,563	0.9%	$49,976	1.4%	$0	0.0%	$69,276	1.9%	$469,022	13%
Frazer Elementary	See Note 8 Above																	
Frazer High School	See Note 8 Above																	
Frenchtown K-12	1,230	192,841	$0	0.0%	$335,572	1.1%	$388,716	1.3%	$4,135	0.0%	$992,189	3.3%	$0	0.0%	$410,050	1.3%	$2,130,662	7%
Froid Elementary	55	18,890	$0	0.0%	$95,070	2.9%	$0	0.0%	$65,393	2.0%	$45,583	1.4%	$0	0.0%	$85,987	2.6%	$292,033	9%
Froid High School	19	9,840	$0	0.0%	$42,138	1.4%	$0	0.0%	$25,967	0.9%	$52,230	1.7%	$0	0.0%	$32,243	1.1%	$152,577	5%
Fromberg Elementary	111	9,850	$0	0.0%	$34,322	1.5%	$131	0.0%	$8,420	0.4%	$33,736	1.5%	$0	0.0%	$14,072	0.6%	$90,682	4%
Fromberg High School	37	43,563	$0	0.0%	$47,530	0.6%	$5,248	0.1%	$9,169	0.1%	$159,163	2.2%	$0	0.0%	$0	0.0%	$221,110	3%
Frontier Elementary	116	16,500	$0	0.0%	$106,345	3.6%	$0	0.0%	$14,717	0.5%	$38,102	1.3%	$0	0.0%	$19,351	0.7%	$178,515	6%
Galata Elementary	15	8,355	$0	0.0%	$80,982	3.7%	$0	0.0%	$6,546	0.3%	$19,302	0.9%	$0	0.0%	$1,418	0.1%	$108,247	5%
Gallatin Gateway Elementary	165	35,050	$0	0.0%	$199,936	3.3%	$1,507	0.0%	$12,182	0.2%	$46,192	0.8%	$0	0.0%	$46,611	0.8%	$306,429	5%
Gardiner Elementary	165	64,500	$0	0.0%	$193,500	1.9%	$0	0.0%	$27,919	0.3%	$169,361	1.7%	$0	0.0%	$8,966	0.1%	$399,745	4%
Gardiner High School	89	960	$0	0.0%	$817	0.5%	$0	0.0%	$4,573	2.8%	$1,065	0.7%	$0	0.0%	$0	0.0%	$6,456	4%
Garfield County High School	80	32,124	$0	0.0%	$179,585	3.1%	$19,831	0.3%	$37,945	0.7%	$118,906	2.0%	$0	0.0%	$50,805	0.9%	$407,073	7%

APPENDIX
Cost Allowances and Deficiency Ratios by District

			Facility Condition Categories (definitions on page 17 of the Executive Summary and at end of this table)															
			1 - Life Safety		2 - Damage/Wear Out		3 - Codes		4 - Environmental		5 - Energy		6 - Aesthetics		7 - Other / Non-FCI		TOTALS	
District	Enrollment	Gross SF of Buildings	Cost Allowance	Deficiency Ratio	Cost Allowance	Deficiency Ratio	Cost Allowance	Deficiency Ratio	Cost Allowance	Deficiency Ratio	Cost Allowance	Deficiency Ratio	Cost Allowance	Deficiency Ratio	Cost Allowance	Deficiency Ratio	Cost Allowance	Deificiency Ratio
Garrison Elementary	11	4,610	$0	0.0%	$6,233	0.7%	$556	0.1%	$20,739	2.3%	$12,235	1.4%	$0	0.0%	$5,241	0.6%	$45,002	5%
Geraldine Elementary	63	63,000	$0	0.0%	$87,578	0.9%	$384	0.0%	$49,525	0.5%	$101,084	1.1%	$0	0.0%	$236,282	2.5%	$474,852	5%
Geraldine High School	38	7,375	$0	0.0%	$1,746	0.1%	$0	0.0%	$39,946	2.2%	$74,168	4.0%	$0	0.0%	$30,700	1.7%	$146,560	8%
Geyser Elementary	53	35,769	$0	0.0%	$63,045	1.1%	$0	0.0%	$104,338	1.9%	$63,347	1.1%	$0	0.0%	$212,933	3.8%	$443,663	8%
Geyser High School	28	5,278	$0	0.0%	$12,880	1.2%	$80	0.0%	$11,395	1.0%	$8,340	0.8%	$0	0.0%	$386	0.0%	$33,081	3%
Gildford Colony Elementary	11	2,720	$0	0.0%	$11,454	1.2%	$0	0.0%	$1,235	0.1%	$0	0.0%	$0	0.0%	$5,917	0.6%	$18,606	2%
Glasgow K-12	814	130,000	$0	0.0%	$389,410	2.0%	$4,165	0.0%	$462,350	2.4%	$288,326	1.5%	$0	0.0%	$213,489	1.1%	$1,357,741	7%
Glendive Elementary	791	174,178	$0	0.0%	$286,514	1.1%	$4,902	0.0%	$522,480	2.1%	$864,250	3.4%	$0	0.0%	$360,078	1.4%	$2,038,225	8%
Gold Creek Elementary	9	1,584	$0	0.0%	$7,569	2.3%	$0	0.0%	$0	0.0%	$2,395	0.7%	$0	0.0%	$3,446	1.0%	$13,410	4%
Golden Ridge Elementary	12	2,180	$0	0.0%	$1,920	0.4%	$95	0.0%	$0	0.0%	$6,281	1.4%	$0	0.0%	$10,196	2.2%	$18,492	4%
Grant Elementary	10	4,620	$0	0.0%	$16,268	1.6%	$964	0.1%	$3,580	0.4%	$2,132	0.2%	$0	0.0%	$16,548	1.7%	$39,493	4%
Grass Range Elementary	37	23,554	$0	0.0%	$92,737	2.4%	$6,360	0.2%	$2,110	0.1%	$174,394	4.5%	$0	0.0%	$37,098	0.9%	$312,698	8%
Grass Range High School	34	5,040	$0	0.0%	$7,299	0.9%	$7	0.0%	$5,599	0.7%	$10,371	1.2%	$0	0.0%	$9,966	1.2%	$33,242	4%
Great Falls Elementary	6,968	1,179,222	$0	0.0%	$8,711,069	5.1%	$81,611	0.0%	$2,955,856	1.7%	$5,942,146	3.5%	$0	0.0%	$1,207,654	0.7%	$18,898,336	11%
Great Falls High School	3,274	680,884	$0	0.0%	$1,378,756	1.2%	$2,189	0.0%	$1,288,558	1.1%	$3,708,148	3.2%	$0	0.0%	$501,888	0.4%	$6,879,539	6%
Greenfield Elementary	49	20,739	$0	0.0%	$91,057	2.6%	$404	0.0%	$21,407	0.6%	$24,035	0.7%	$0	0.0%	$4,226	0.1%	$141,129	4%
Greycliff Elementary	23	4,394	$0	0.0%	$22,249	1.8%	$0	0.0%	$703	0.1%	$15,417	1.3%	$0	0.0%	$10,219	0.8%	$48,587	4%
Hall Elementary	23	4,225	$0	0.0%	$5,284	0.6%	$2,801	0.3%	$2,584	0.3%	$18,506	2.2%	$0	0.0%	$12,578	1.5%	$41,752	5%
Hamilton K-12	1,593	402,626	$0	0.0%	$1,218,683	2.2%	$71,688	0.1%	$480,780	0.9%	$877,921	1.6%	$0	0.0%	$116,369	0.2%	$2,765,441	5%
Hardin Elementary	1,215	232,031	$0	0.0%	$257,987	0.7%	$0	0.0%	$172,013	0.5%	$330,723	1.0%	$0	0.0%	$272,569	0.8%	$1,033,292	3%
Hardin High School	452	104,168	$0	0.0%	$169,819	1.0%	$4,804	0.0%	$47,319	0.3%	$162,457	1.0%	$0	0.0%	$277,437	1.7%	$661,836	4%
Harlem Elementary	273	49,300	$0	0.0%	$11,971	0.1%	$28,146	0.3%	$131,054	1.5%	$9,479	0.1%	$0	0.0%	$0	0.0%	$180,650	2%
Harlem High School	258	101,544	$0	0.0%	$736,193	4.9%	$0	0.0%	$63,170	0.4%	$6,541	0.0%	$0	0.0%	$96,791	0.6%	$902,695	6%
Harlowton Elementary	107	19,553	$0	0.0%	$34,056	0.9%	$0	0.0%	$0	0.0%	$9,649	0.3%	$0	0.0%	$71,316	1.9%	$115,022	3%
Harlowton High School	130	55,852	$0	0.0%	$631,002	6.7%	$3,736	0.0%	$231,928	2.5%	$189,168	2.0%	$0	0.0%	$255,322	2.7%	$1,311,156	14%
Harrison K-12	99	37,876	$0	0.0%	$92,199	1.5%	$426	0.0%	$12,130	0.2%	$257,797	4.2%	$0	0.0%	$2,168	0.0%	$364,721	6%
Havre Elementary	1,269	243,319	$0	0.0%	$1,704,716	4.6%	$29,552	0.1%	$2,141,075	5.8%	$542,023	1.5%	$0	0.0%	$767,987	2.1%	$5,185,353	14%
Havre High School	617	179,922	$0	0.0%	$2,309,236	8.6%	$17,975	0.1%	$253,938	0.9%	$373,748	1.4%	$0	0.0%	$1,093,998	4.1%	$4,048,895	15%
Hawks Home Elementary	8	2,300	$0	0.0%	$1,992	0.5%	$0	0.0%	$1,586	0.4%	$542	0.1%	$0	0.0%	$229	0.1%	$4,349	1%
Hays-Lodge Pole K-12s	235	164,837	$0	0.0%	$4,475,955	17.1%	$184,957	0.7%	$456,542	1.7%	$409,671	1.6%	$0	0.0%	$223,340	0.9%	$5,750,464	22%
Heart Butte K-12	147	85,184	$0	0.0%	$369,487	2.5%	$5,956	0.0%	$97,089	0.7%	$115,986	0.8%	$0	0.0%	$1,560	0.0%	$590,078	4%
Helena Elementary	5,168	779,160	$0	0.0%	$4,503,078	3.9%	$183,811	0.2%	$1,600,966	1.4%	$2,182,108	1.9%	$0	0.0%	$1,848,330	1.6%	$10,318,293	9%
Helena Flats Elementary	235	25,000	$0	0.0%	$46,335	1.3%	$0	0.0%	$4,076	0.1%	$36,525	1.0%	$0	0.0%	$21,183	0.6%	$108,118	3%
Helena High School	2,997	700,599	$0	0.0%	$3,935,927	3.8%	$44,666	0.0%	$1,155,279	1.1%	$2,826,559	2.7%	$0	0.0%	$369,653	0.4%	$8,332,084	8%
Hellgate Elementary	1,247	157,511	$0	0.0%	$52,850	0.2%	$7,090	0.0%	$9,623	0.0%	$114,832	0.5%	$0	0.0%	$49,172	0.2%	$233,568	1%
Helmville Elementary	26	7,200	$0	0.0%	$0	0.0%	$6,096	0.3%	$0	0.0%	$7,555	0.4%	$0	0.0%	$6,153	0.3%	$19,803	1%
Highwood Elementary	56	30,000	$0	0.0%	$172,505	3.6%	$0	0.0%	$18,888	0.4%	$71,243	1.5%	$0	0.0%	$75,570	1.6%	$338,206	7%
Highwood High School	36	4,730	$0	0.0%	$5,507	0.6%	$0	0.0%	$0	0.0%	$13,259	1.4%	$0	0.0%	$0	0.0%	$18,766	2%
Hinsdale Elementary	58	45,712	$0	0.0%	$166,649	2.4%	$0	0.0%	$106,244	1.5%	$42,348	0.6%	$0	0.0%	$104,680	1.5%	$419,920	6%
Hinsdale High School	26	10,682	$0	0.0%	$27,559	1.6%	$0	0.0%	$13,344	0.8%	$24,644	1.4%	$0	0.0%	$4,844	0.3%	$70,391	4%
Hobson K-12	112	64,508	$0	0.0%	$112,419	1.0%	$9,284	0.1%	$129,071	1.2%	$51,606	0.5%	$0	0.0%	$128,200	1.2%	$430,580	4%
Hot Springs Elementary	115	12,333	$0	0.0%	$151,282	7.0%	$661	0.0%	$1,973	0.1%	$10,135	0.5%	$0	0.0%	$53,365	2.5%	$217,416	10%
Hot Springs High School	90	42,486	$0	0.0%	$550,746	5.8%	$29,147	0.3%	$263,326	2.8%	$163,299	1.7%	$0	0.0%	$129,689	1.4%	$1,136,207	12%
Huntley Project K-12	733	131,905	$0	0.0%	$93,747	0.4%	$6,125	0.0%	$21,044	0.1%	$546,238	2.5%	$0	0.0%	$189,694	0.9%	$856,847	4%
Hysham K-12	124	62,289	$0	0.0%	$97,707	1.0%	$48,983	0.5%	$37,429	0.4%	$184,678	1.9%	$0	0.0%	$119,578	1.2%	$488,374	5%
Independent Elementary	268	26,285	$0	0.0%	$463,891	10.0%	$14,530	0.3%	$227,407	4.9%	$36,088	0.8%	$0	0.0%	$0	0.0%	$741,916	16%
Jackson Elementary	13	5,446	$0	0.0%	$84,547	7.2%	$1,640	0.1%	$7,187	0.6%	$3,027	0.3%	$0	0.0%	$21,547	1.8%	$117,947	10%
Jefferson High School	243	71,162	$0	0.0%	$228,180	2.1%	$0	0.0%	$104,617	1.0%	$165,867	1.5%	$0	0.0%	$159,856	1.5%	$658,520	6%
Joliet Elementary	259	80,725	$0	0.0%	$249,095	2.0%	$445	0.0%	$0	0.0%	$99,672	0.8%	$0	0.0%	$15,398	0.1%	$364,610	3%
Joliet High School	116	5,130	$0	0.0%	$3,049	0.4%	$0	0.0%	$1,264	0.2%	$3,394	0.4%	$0	0.0%	$0	0.0%	$7,706	1%
Jordan Elementary	87	18,628	$0	0.0%	$155,385	4.5%	$1,865	0.1%	$88,333	2.6%	$69,437	2.0%	$0	0.0%	$28,726	0.8%	$343,746	10%
Judith Gap Elementary	37	29,647	$0	0.0%	$89,414	1.2%	$0	0.0%	$63,275	0.9%	$107,885	1.5%	$0	0.0%	$34,605	0.5%	$295,179	4%
Judith Gap High School	17	6,800	$0	0.0%	$14,986	1.2%	$0	0.0%	$8,853	0.7%	$9,225	0.7%	$0	0.0%	$5,221	0.4%	$38,285	3%
Kalispell Elementary	2,906	366,239	$0	0.0%	$1,153,907	1.9%	$29,643	0.0%	$341,588	0.6%	$1,473,966	2.4%	$0	0.0%	$618,361	1.0%	$3,617,465	6%
Kester Elementary	4	2,746	$0	0.0%	$67,878	12.2%	$180	0.0%	$17,232	3.1%	$15,580	2.8%	$0	0.0%	$4,426	0.8%	$105,297	19%
Kila Elementary	164	20,095	$0	0.0%	$40,990	1.0%	$4,351	0.1%	$11,298	0.3%	$61,247	1.5%	$0	0.0%	$4,294	0.1%	$122,181	3%
King Colony Elementary	9	1,512	$0	0.0%	$458	0.1%	$0	0.0%	$80	0.0%	$5,144	1.7%	$0	0.0%	$519	0.2%	$6,202	2%
Kinsey Elementary	89	12,000	$0	0.0%	$21,269	1.0%	$2,176	0.1%	$36,216	1.7%	$37,788	1.7%	$0	0.0%	$33,431	1.5%	$130,880	6%
Kircher Elementary	33	2,112	$0	0.0%	$2,390	0.5%	$100	0.0%	$0	0.0%	$9,021	2.1%	$0	0.0%	$6,073	1.4%	$17,584	4%
Knees Elementary	-	2,750	$0	0.0%	$0	0.0%	$0	0.0%	$212	0.0%	$9,323	1.5%	$0	0.0%	$9,131	1.5%	$18,666	3%
Lambert Elementary	47	40,000	$0	0.0%	$250,660	3.9%	$0	0.0%	$208,628	3.2%	$121,392	1.9%	$0	0.0%	$69,870	1.1%	$650,550	10%
Lambert High School	37	2,000	$0	0.0%	$413	0.1%	$0	0.0%	$683	0.2%	$5,189	1.6%	$0	0.0%	$229	0.1%	$6,515	2%

APPENDIX
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			Facility Condition Categories (definitions on page 17 of the Executive Summary and at end of this table)															
			1 - Life Safety		2 - Damage/Wear Out		3 - Codes		4 - Environmental		5 - Energy		6 - Aesthetics		7 - Other / Non-FCI		TOTALS	
District	Enrollment	Gross SF of Buildings	Cost Allowance	Deficiency Ratio	Cost Allowance	Deficiency Ratio	Cost Allowance	Deficiency Ratio	Cost Allowance	Deficiency Ratio	Cost Allowance	Deficiency Ratio	Cost Allowance	Deficiency Ratio	Cost Allowance	Deficiency Ratio	Cost Allowance	Deficiency Ratio
Lame Deer Elementary	310	74,849	$0	0.0%	$43,690	0.3%	$12,246	0.1%	$75,470	0.5%	$272,519	1.7%	$0	0.0%	$65,918	0.4%	$469,842	3%
Lame Deer High School	259	33,588	$0	0.0%	$54,622	0.7%	$0	0.0%	$13,766	0.2%	$5,268	0.1%	$0	0.0%	$733	0.0%	$74,389	1%
LaMotte Elementary	68	5,900	$0	0.0%	$17,890	1.2%	$279	0.0%	$0	0.0%	$966	0.1%	$0	0.0%	$11,095	0.7%	$30,231	2%
Laurel Elementary	1,299	176,406	$0	0.0%	$239,308	0.7%	$0	0.0%	$100,238	0.3%	$5,395	0.0%	$0	0.0%	$19,866	0.1%	$364,808	1%
Laurel High School	576	155,389	$0	0.0%	$533,407	2.2%	$1,062	0.0%	$148,230	0.6%	$308,218	1.3%	$0	0.0%	$227,350	0.9%	$1,218,267	5%
Lavina K-12	85	36,937	$0	0.0%	$163,952	2.8%	$0	0.0%	$86,600	1.5%	$54,064	0.9%	$0	0.0%	$52,506	0.9%	$357,121	6%
Lennep Elementary	2	1,550	$0	0.0%	$13,498	4.2%	$0	0.0%	$3,296	1.0%	$5,304	1.7%	$0	0.0%	$3,372	1.1%	$25,470	8%
Lewistown Elementary	908	153,385	$0	0.0%	$833,146	3.7%	$4,157	0.0%	$83,359	0.4%	$373,869	1.6%	$0	0.0%	$298,184	1.3%	$1,592,715	7%
Libby K-12	1,329	333,943	$0	0.0%	$7,986,044	14.7%	$95,062	0.2%	$1,558,880	2.9%	$970,904	1.8%	$0	0.0%	$1,323,291	2.4%	$11,934,181	22%
Liberty Elementary	See Note 8 Above																	
Lima K-12s	86	51,535	$0	0.0%	$92,051	1.1%	$1,518	0.0%	$237,088	2.8%	$330,433	3.8%	$0	0.0%	$286,666	3.3%	$947,756	11%
Lincoln County High School	313	90,000	$0	0.0%	$65,925	1.0%	$0	0.0%	$0	0.0%	$0	0.0%	$0	0.0%	$0	0.0%	$65,925	1%
Lincoln K-12	175	40,784	$0	0.0%	$12,339	0.2%	$1,457	0.0%	$1,027	0.0%	$58,287	0.9%	$0	0.0%	$174,208	2.8%	$247,319	4%
Lindsay Elementary	12	8,100	$0	0.0%	$13,694	0.8%	$2,612	0.1%	$0	0.0%	$30,999	1.7%	$0	0.0%	$42,663	2.4%	$89,968	5%
Livingston Elementary	926	174,075	$0	0.0%	$1,666,822	6.2%	$36,594	0.1%	$151,378	0.6%	$551,614	2.0%	$0	0.0%	$26,697	0.1%	$2,433,105	9%
Lockwood Elementary	1,157	173,470	$0	0.0%	$83,487	0.2%	$5,205	0.0%	$67,591	0.2%	$109,811	0.3%	$0	0.0%	$114,252	0.3%	$380,345	1%
Lodge Grass Elementary/High School	358	93,200	$0	0.0%	$491,911	3.4%	$0	0.0%	$106	0.0%	$27,812	0.2%	$0	0.0%	$196,688	1.4%	$716,518	5%
Lolo Elementary	587	85,876	$0	0.0%	$28,720	0.2%	$0	0.0%	$54,723	0.3%	$207,767	1.3%	$0	0.0%	$203,607	1.2%	$494,817	3%
Lone Rock Elementary	265	17,860	$0	0.0%	$141,389	4.0%	$0	0.0%	$1,826	0.1%	$65,858	1.8%	$0	0.0%	$40,762	1.1%	$249,835	7%
Lustre Elementary	See Note 8 Above																	
Luther Elementary	43	10,875	$0	0.0%	$19,327	0.8%	$6,648	0.3%	$339	0.0%	$29,668	1.3%	$0	0.0%	$14,556	0.6%	$70,537	3%
Malmborg Elementary	See Note 8 Above																	
Malta K-12	574	186,367	$0	0.0%	$821,470	2.7%	$1,580	0.0%	$93,423	0.3%	$164,650	0.5%	$0	0.0%	$128,422	0.4%	$1,209,546	4%
Manhattan Elementary	340	56,200	$0	0.0%	$145,554	1.4%	$1,950	0.0%	$0	0.0%	$158,671	1.6%	$0	0.0%	$101,333	1.0%	$407,507	4%
Manhattan High School	214	46,590	$0	0.0%	$840	0.0%	$1,069	0.0%	$0	0.0%	$2,737	0.0%	$0	0.0%	$0	0.0%	$4,646	0%
Marion Elementary	118	17,301	$0	0.0%	$94,864	2.5%	$8,252	0.2%	$4,920	0.1%	$122,929	3.2%	$0	0.0%	$34,297	0.9%	$265,263	7%
McCormick Elementary	14	4,778	$0	0.0%	$2,006	0.2%	$0	0.0%	$1,873	0.2%	$12,059	1.1%	$0	0.0%	$5,496	0.5%	$21,435	2%
McLeod Elementary	7	1,839	$0	0.0%	$3,316	0.9%	$0	0.0%	$3,241	0.8%	$664	0.2%	$0	0.0%	$421	0.1%	$7,642	2%
Medicine Lake K-12	96	75,330	$0	0.0%	$711,888	6.3%	$0	0.0%	$42,284	0.4%	$63,516	0.6%	$0	0.0%	$194,673	1.7%	$1,012,360	9%
Melrose Elementary	16	8,750	$0	0.0%	$124,701	6.0%	$1,216	0.1%	$58,535	2.8%	$58,458	2.8%	$0	0.0%	$49,735	2.4%	$292,645	14%
Melstone Elementary	49	36,400	$0	0.0%	$0	0.0%	$25,007	0.4%	$0	0.0%	$122,741	2.0%	$0	0.0%	$35,426	0.6%	$183,174	3%
Melstone High School	27	5,202	$0	0.0%	$1,117	0.1%	$693	0.1%	$1,142	0.1%	$13,823	1.6%	$0	0.0%	$0	0.0%	$16,775	2%
Melville Elementary	10	2,481	$0	0.0%	$463	0.0%	$152	0.0%	$0	0.0%	$0	0.0%	$0	0.0%	$852	0.0%	$1,468	0%
Miami Elementary	See Note 8 Above																	
Miles City Elementary	1,018	168,804	$0	0.0%	$451,458	1.8%	$225,551	0.9%	$236,290	0.9%	$659,136	2.6%	$0	0.0%	$427,155	1.7%	$1,999,590	8%
Missoula Elementary	5,335	825,751	$0	0.0%	$978,611	0.8%	$187,004	0.2%	$269,720	0.2%	$3,035,405	2.6%	$0	0.0%	$1,371,405	1.2%	$5,842,146	5%
Missoula High School	4,551	1,013,734	$0	0.0%	$1,399,244	1.0%	$125,353	0.1%	$800,945	0.6%	$3,023,630	2.1%	$0	0.0%	$1,854,080	1.3%	$7,203,251	5%
Molt Elementary	3	2,112	$0	0.0%	$1,646	0.3%	$0	0.0%	$957	0.2%	$7,160	1.5%	$0	0.0%	$0	0.0%	$9,763	2%
Monforton Elementary	180	11,767	$0	0.0%	$25,908	1.3%	$322	0.0%	$3,180	0.2%	$52,829	2.6%	$0	0.0%	$0	0.0%	$82,240	4%
Montana City Elementary	354	67,658	$0	0.0%	$0	0.0%	$0	0.0%	$0	0.0%	$66,778	0.9%	$0	0.0%	$10,071	0.1%	$76,849	1%
Moore Elementary	71	30,000	$0	0.0%	$107,688	2.0%	$7,763	0.1%	$89,628	1.7%	$7,560	0.1%	$0	0.0%	$54,120	1.0%	$266,759	5%
Moore High School	43	716	$0	0.0%	$68	0.0%	$0	0.0%	$0	0.0%	$0	0.0%	$0	0.0%	$92	0.0%	$160	0%
Morin Elementary	26	7,968	$0	0.0%	$7,697	0.4%	$896	0.0%	$0	0.0%	$65,705	3.6%	$0	0.0%	$17,334	0.9%	$91,633	5%
Mountain View Elementary	See Note 8 Above																	
Nashua K-12	126	56,140	$0	0.0%	$617,181	7.6%	$0	0.0%	$204,498	2.5%	$117,953	1.5%	$0	0.0%	$198,976	2.4%	$1,138,608	14%
North Harlem Colony Elementary	6	3,472	$0	0.0%	$12,070	1.6%	$2,406	0.3%	$24,598	3.3%	$5,902	0.8%	$0	0.0%	$7,951	1.1%	$52,928	7%
North Star Elementary	81	40,605	$0	0.0%	$119,812	1.7%	$26,240	0.4%	$92,610	1.3%	$90,076	1.3%	$0	0.0%	$16,002	0.2%	$344,740	5%
North Star High School	84	46,936	$0	0.0%	$135,670	1.8%	$15,784	0.2%	$11,601	0.2%	$43,040	0.6%	$0	0.0%	$22,026	0.3%	$228,121	3%
Noxon Elementary	88	47,942	$0	0.0%	$29,964	0.4%	$0	0.0%	$805	0.0%	$380,030	5.0%	$0	0.0%	$42,817	0.6%	$453,616	6%
Noxon High School	86	8,664	$0	0.0%	$0	0.0%	$0	0.0%	$0	0.0%	$4,776	0.0%	$0	0.0%	$0	0.0%	$4,776	0%
Nye Elementary	9	3,160	$0	0.0%	$537	0.1%	$0	0.0%	$1,071	0.2%	$8,055	1.7%	$0	0.0%	$0	0.0%	$9,663	2%
Olney-Bissell Elementary	79	15,050	$0	0.0%	$19,226	0.6%	$353	0.0%	$2,548	0.1%	$37,319	1.1%	$0	0.0%	$39,840	1.2%	$99,286	3%
Opheim K-12	60	49,104	$0	0.0%	$501,863	6.4%	$5,711	0.1%	$45,967	0.6%	$135,640	1.7%	$0	0.0%	$176,924	2.2%	$866,105	11%
Ophir Elementary	170	32,000	$0	0.0%	$13,955	0.2%	$314	0.0%	$14,284	0.2%	$24,950	0.4%	$0	0.0%	$9,343	0.1%	$62,846	1%
Ovando Elementary	19	8,068	$0	0.0%	$2,151	0.2%	$1,049	0.1%	$65	0.0%	$0	0.0%	$0	0.0%	-$10,879	0.8%	$14,145	1%
Paradise Elementary	See Note 8 Above																	
Park City Elementary	242	2,940	$0	0.0%	$0	0.0%	$0	0.0%	$0	0.0%	$0	0.0%	$0	0.0%	$5,381	1.0%	$5,381	1%
Park City High School	99	53,096	$0	0.0%	$69,388	0.7%	$3,350	0.0%	$3,084	0.0%	$76,187	0.8%	$0	0.0%	$48,958	0.5%	$200,967	2%
Park High School	520	83,600	$0	0.0%	$1,395,781	11.6%	$5,743	0.0%	$237,156	2.0%	$484,847	4.0%	$0	0.0%	$171,342	1.4%	$2,294,870	19%
Pass Creek Elementary	9	1,424	$0	0.0%	$1,822	0.7%	$41	0.0%	$0	0.0%	$3,129	1.3%	$0	0.0%	$0	0.0%	$4,992	2%

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District	Enrollment	Gross SF of Buildings	Cost Allowance	Deficiency Ratio	Cost Allowance	Deficiency Ratio	Cost Allowance	Deficiency Ratio	Cost Allowance	Deficiency Ratio	Cost Allowance	Deficiency Ratio	Cost Allowance	Deficiency Ratio	Cost Allowance	Deficiency Ratio	Cost Allowance	Deficiency Ratio
Peerless K-12	24	22,816	$0	0.0%	$88,627	2.1%	$0	0.0%	$17,243	0.4%	$178,974	4.3%	$0	0.0%	$48,781	1.2%	$333,625	8%
Pendroy Elementary	32	5,630	$0	0.0%	$27,037	2.3%	$0	0.0%	$2,933	0.2%	$40,176	3.4%	$0	0.0%	$12,893	1.1%	$83,039	7%
Philipsburg K-12	176	109,081	$0	0.0%	$491,887	3.2%	$0	0.0%	$172,485	1.1%	$189,000	1.2%	$0	0.0%	$208,500	1.4%	$1,061,872	7%
Pine Creek Elementary	27	4,326	$0	0.0%	$2,696	0.4%	$0	0.0%	$0	0.0%	$12,096	1.6%	$0	0.0%	$7,591	1.0%	$22,383	3%
Pine Grove Elementary	8	1,032	$0	0.0%	$4,302	1.9%	$111	0.0%	$1,090	0.5%	$3,121	1.4%	$0	0.0%	$591	0.3%	$9,214	4%
Pioneer Elementary	67	8,211	$0	0.0%	$14,352	1.1%	$4,677	0.3%	$1,051	0.1%	$0	0.0%	$0	0.0%	$20,515	1.5%	$40,594	3%
Plains Elementary	76	25,930	$0	0.0%	$52,023	1.3%	$1,113	0.0%	$2,132	0.1%	$16,711	0.4%	$0	0.0%	$52,157	1.3%	$124,136	3%
Plains High School	380	26,665	$0	0.0%	$70,292	1.5%	$8,628	0.2%	$90,521	2.0%	$118,249	2.6%	$0	0.0%	$126,278	2.7%	$413,968	9%
Pleasant Valley Elementary	5	1,984	$0	0.0%	$2,391	0.5%	$403	0.1%	$1,075	0.2%	$6,377	1.2%	$0	0.0%	$165	0.0%	$10,412	2%
Plenty Coups High School	80	109,648	$0	0.0%	$1,145,234	6.8%	$0	0.0%	$437,579	2.6%	$368,415	2.2%	$0	0.0%	$233,529	1.4%	$2,184,757	13%
Plentywood K-12	387	187,830	$0	0.0%	$1,288,320	4.7%	$0	0.0%	$269,550	1.0%	$732,359	2.6%	$0	0.0%	$199,111	0.7%	$2,489,341	9%
Plevna K-12	84	57,396	$0	0.0%	$140,894	1.2%	$844	0.0%	$23,719	0.2%	$171,011	1.4%	$0	0.0%	$19,023	0.2%	$355,492	3%
Polaris Elementary	4	1,780	$0	0.0%	$22,428	6.1%	$971	0.3%	$3,013	0.8%	$7,029	1.9%	$0	0.0%	$6,694	1.8%	$40,136	11%
Polson Elementary	1,135	177,639	$0	0.0%	$975,730	3.4%	$33,082	0.1%	$136,789	0.5%	$313,884	1.1%	$0	0.0%	$548,290	1.9%	$2,007,774	7%
Polson High School	520	126,515	$0	0.0%	$819,983	4.1%	$40,104	0.2%	$177,817	0.9%	$417,792	2.1%	$0	0.0%	$931,311	4.7%	$2,387,006	12%
Poplar Elementary	550	117,577	$0	0.0%	$746,142	4.2%	$1,644	0.0%	$270,606	1.5%	$51,804	0.3%	$0	0.0%	$180,921	1.0%	$1,251,117	7%
Poplar High School	264	110,449	$0	0.0%	$591,239	3.3%	$159	0.0%	$87,567	0.5%	$134,095	0.8%	$0	0.0%	$431,094	2.4%	$1,244,155	7%
Potomac Elementary	107	7,325	$0	0.0%	$2,648	0.2%	$1,039	0.1%	$0	0.0%	$14,817	1.0%	$0	0.0%	$39,619	2.7%	$58,123	4%
Powder River County High School	195	68,932	$0	0.0%	$83,303	0.8%	$16,875	0.2%	$184,889	1.8%	$367,715	3.6%	$0	0.0%	$359,813	3.6%	$1,012,595	10%
Powell County High School	418	80,000	$0	0.0%	$40,868	0.4%	$0	0.0%	$193,008	1.7%	$322,300	2.9%	$0	0.0%	$223,316	2.0%	$779,492	7%
Power Elementary	81	38,058	$0	0.0%	$70,825	1.3%	$12,597	0.2%	$10,413	0.2%	$16,454	0.3%	$0	0.0%	$164,752	3.0%	$275,042	5%
Power High School	48	6,390	$0	0.0%	$3,467	0.2%	$252	0.0%	$3,551	0.2%	$5,406	0.3%	$0	0.0%	$7,116	0.4%	$19,791	1%
Pryor Elementary	39	16,120	$0	0.0%	$21,809	0.7%	$0	0.0%	$60,811	2.0%	$53,510	1.7%	$0	0.0%	$19,749	0.6%	$155,880	5%
Ramsay Elementary	145	29,230	$0	0.0%	$253,889	5.0%	$2,051	0.0%	$20,404	0.4%	$119,401	2.3%	$0	0.0%	$115,262	2.3%	$511,007	10%
Rapelje Elementary	44	26,628	$0	0.0%	$103,342	2.4%	$0	0.0%	$18,861	0.4%	$43,184	1.0%	$0	0.0%	$88,587	2.1%	$253,974	6%
Rapelje High School	23	360	$0	0.0%	$0	0.0%	$0	0.0%	$0	0.0%	$0	0.0%	$0	0.0%	$0	0.0%	$0	0%
Rau Elementary	79	12,000	$0	0.0%	$38,513	1.6%	$0	0.0%	$0	0.0%	$45,216	1.9%	$0	0.0%	$12,091	0.5%	$95,820	4%
Red Lodge Elementary	298	48,100	$0	0.0%	$103,884	1.2%	$72,656	0.9%	$149,161	1.8%	$72,742	0.9%	$0	0.0%	$105,046	1.3%	$503,489	6%
Red Lodge High School	190	43,839	$0	0.0%	$98,354	1.2%	$0	0.0%	$42,750	0.5%	$134,330	1.7%	$0	0.0%	$44,283	0.6%	$319,716	4%
Reed Point Elementary	55	4,510	$0	0.0%	$6,822	0.7%	$0	0.0%	$3,319	0.4%	$18,435	2.0%	$0	0.0%	$26,129	2.9%	$54,704	6%
Reed Point High School	35	25,590	$0	0.0%	$7,185	0.2%	$0	0.0%	$170	0.0%	$10,292	0.3%	$0	0.0%	$21,044	0.5%	$38,692	1%
Reichle Elementary	15	4,628	$0	0.0%	$6,559	0.6%	$0	0.0%	$726	0.1%	$1,790	0.2%	$0	0.0%	$2,072	0.2%	$11,148	1%
Richey Elementary	48	8,352	$0	0.0%	$32,286	2.0%	$1,202	0.1%	$3,680	0.2%	$27,999	1.7%	$0	0.0%	$50,039	3.0%	$115,207	7%
Richey High School	23	50,211	$0	0.0%	$455,021	4.5%	$13,202	0.1%	$57,807	0.6%	$258,769	2.6%	$0	0.0%	$216,178	2.2%	$1,000,977	10%
Roberts K-12	127	139,906	$0	0.0%	$1,197,309	6.0%	$330	0.0%	$367,122	1.8%	$495,117	2.5%	$0	0.0%	$126,523	0.6%	$2,186,400	11%
Rocky Boy Elementary	293	49,681	$0	0.0%	$627,691	8.4%	$30,897	0.4%	$23,479	0.3%	$205,530	2.7%	$0	0.0%	$11,377	0.2%	$898,974	12%
Rocky Boy High School	246	86,331	$0	0.0%	$426,205	2.6%	$11,728	0.1%	$39,108	0.2%	$157,496	1.0%	$0	0.0%	$21,204	0.1%	$655,741	4%
Ronan Elementary	896	190,234	$0	0.0%	$1,566,572	5.2%	$19,605	0.1%	$633,463	2.1%	$713,876	2.4%	$0	0.0%	$387,759	1.3%	$3,321,276	11%
Ronan High School	351	127,932	$0	0.0%	$1,166,851	5.9%	$13,293	0.1%	$205,047	1.0%	$577,763	2.9%	$0	0.0%	$393,245	2.0%	$2,356,198	12%
Rosebud Elementary/High School	100	44,184	$0	0.0%	$69,686	1.0%	$15,177	0.2%	$22,778	0.3%	$26,033	0.4%	$0	0.0%	$86,004	1.2%	$219,678	3%
Ross Elementary	5	2,180	$0	0.0%	$21,110	4.1%	$0	0.0%	$3,093	0.6%	$7,585	1.5%	$0	0.0%	$4,536	0.9%	$36,324	7%
Roundup Elementary	291	35,757	$0	0.0%	$17,190	0.3%	$16,621	0.3%	$103,983	2.1%	$9,907	0.2%	$0	0.0%	$53,462	1.1%	$201,163	4%
Roundup High School	270	78,798	$0	0.0%	$74,903	0.4%	$0	0.0%	$11,397	0.1%	$18,301	0.1%	$0	0.0%	$87,312	0.5%	$191,912	1%
Roy K-12	69	34,460	$0	0.0%	$83,431	1.4%	$13,101	0.2%	$2,941	0.0%	$212,576	3.5%	$0	0.0%	$118,566	1.9%	$430,615	7%
Ryegate K-12	91	28,500	$0	0.0%	$289,966	5.7%	$5,788	0.1%	$8,204	0.2%	$60,064	1.2%	$0	0.0%	$44,888	0.9%	$408,909	8%
Saco Elementary	43	76,524	$0	0.0%	$21,951	0.2%	$0	0.0%	$0	0.0%	$228,352	1.9%	$0	0.0%	$113,201	0.9%	$363,504	3%
Saco High School	29	18,159	$0	0.0%	$9,833	0.2%	$0	0.0%	$6,406	0.1%	$12,522	0.3%	$0	0.0%	$17,934	0.4%	$46,695	1%
Sand Springs Elementary	7	1,118	$0	0.0%	$5,007	2.1%	$0	0.0%	$1,307	0.5%	$3,465	1.4%	$0	0.0%	$2,362	1.0%	$12,141	5%
Savage Elementary	60	25,178	$0	0.0%	$138,337	3.3%	$15,182	0.4%	$123,399	2.9%	$67,313	1.6%	$0	0.0%	$118,214	2.8%	$462,445	11%
Savage High School	46	8,200	$0	0.0%	$11,099	0.6%	$0	0.0%	$5,926	0.3%	$12,098	0.7%	$0	0.0%	$7,165	0.4%	$36,287	2%
Scobey K-12	240	96,600	$0	0.0%	$284,556	2.0%	$0	0.0%	$72,425	0.5%	$166,166	1.2%	$0	0.0%	$52,610	0.4%	$575,757	4%
Seeley Lake Elementary	180	50,111	$0	0.0%	$7,036	0.1%	$0	0.0%	$0	0.0%	$4,116	0.0%	$0	0.0%	$154,622	1.9%	$165,774	2%
SH Elementary	3	2,300	$0	0.0%	$3,832	0.7%	$1,157	0.2%	$506	0.1%	$8,147	1.6%	$0	0.0%	$6,847	1.3%	$20,488	4%
Shawmut Elementary	6	8,400	$0	0.0%	$63,218	3.1%	$2,171	0.1%	$28,869	1.4%	$36,074	1.8%	$0	0.0%	$11,816	0.6%	$142,149	7%
Shelby Elementary	590	97,737	$0	0.0%	$1,146,840	7.5%	$24,746	0.2%	$275,517	1.8%	$187,996	1.2%	$0	0.0%	$50,207	0.3%	$1,685,306	11%
Shelby High School	280	119,322	$0	0.0%	$182,818	1.2%	$16	0.0%	$43,628	0.3%	$32,335	0.2%	$0	0.0%	$199,377	1.3%	$458,175	3%
Shepherd Elementary	347	41,898	$0	0.0%	$64,795	0.9%	$5,829	0.1%	$30,569	0.4%	$109,471	1.4%	$0	0.0%	$91,697	1.2%	$302,361	4%
Shepherd High School	487	121,067	$0	0.0%	$22,400	0.1%	$14,934	0.1%	$108	0.0%	$227,281	1.3%	$0	0.0%	$253,691	1.5%	$518,414	3%
Sheridan Elementary	148	55,663	$0	0.0%	$50,310	0.6%	$8,439	0.1%	$75,631	0.9%	$57,402	0.6%	$0	0.0%	$73,452	0.8%	$265,233	3%
Sheridan High School	89	92,713	$0	0.0%	$41,787	0.4%	$9,034	0.1%	$98,741	0.8%	$131,191	1.1%	$0	0.0%	$193,851	1.6%	$474,604	4%

APPENDIX
Cost Allowances and Deficiency Ratios by District

			Facility Condition Categories (definitions on page 17 of the Executive Summary and at end of this table)															
			1 - Life Safety		2 - Damage/Wear Out		3 - Codes		4 - Environmental		5 - Energy		6 - Aesthetics		7 - Other / Non-FCI		TOTALS	
District	Enrollment	Gross SF of Buildings	Cost Allowance	Deficiency Ratio	Cost Allowance	Deficiency Ratio	Cost Allowance	Deficiency Ratio	Cost Allowance	Deficiency Ratio	Cost Allowance	Deficiency Ratio	Cost Allowance	Deficiency Ratio	Cost Allowance	Deficiency Ratio	Cost Allowance	Deficiency Ratio
Shields Valley Elementary	115	37,716	$0	0.0%	$158,979	2.4%	$4,245	0.1%	$132,368	2.0%	$190,110	2.8%	$0	0.0%	$183,017	2.7%	$668,719	10%
Shields Valley High School	130	43,856	$0	0.0%	$104,681	1.4%	$1,450	0.0%	$79,656	1.1%	$176,382	2.4%	$0	0.0%	$5,211	0.1%	$367,380	5%
Sidney Elementary	714	129,059	$0	0.0%	$831,324	4.1%	$39,384	0.2%	$244,969	1.2%	$618,326	3.0%	$0	0.0%	$300,445	1.5%	$2,034,448	10%
Sidney High School	413	89,337	$0	0.0%	$392,827	2.9%	$0	0.0%	$226,061	1.7%	$369,678	2.8%	$0	0.0%	$350,056	2.6%	$1,338,622	10%
Simms High School	110	52,157	$0	0.0%	$202,679	2.4%	$677	0.0%	$7,587	0.1%	$169,475	2.0%	$0	0.0%	$123,184	1.5%	$503,602	6%
Smith Valley Elementary	211	21,764	$0	0.0%	$21,135	0.5%	$0	0.0%	$5,895	0.1%	$53,937	1.2%	$0	0.0%	$6,032	0.1%	$86,998	2%
Somers Elementary	567	84,999	$0	0.0%	$1,145,398	8.2%	$24,811	0.2%	$234,915	1.7%	$343,994	2.5%	$0	0.0%	$209,100	1.5%	$1,958,218	14%
South Stacey Elementary	4	1,860	$0	0.0%	$3,957	1.0%	$806	0.2%	$1,824	0.5%	$6,509	1.6%	$0	0.0%	$2,977	0.7%	$16,072	4%
Spring Creek Colony Elementary	8	1,367	$0	0.0%	$3,393	1.1%	$235	0.1%	$814	0.3%	$4,140	1.4%	$0	0.0%	$3,344	1.1%	$11,927	4%
Spring Creek Elementary - Decker	6	5,300	$0	0.0%	$1,760	0.3%	$0	0.0%	$0	0.0%	$1,884	0.3%	$0	0.0%	$2,920	0.4%	$6,564	1%
Spring Creek Elementary - Powderville	3	1,700	$0	0.0%	$4,566	1.5%	$1,377	0.4%	$0	0.0%	$5,799	1.9%	$0	0.0%	$3,698	1.2%	$15,440	5%
Springdale Elementary	7	850	$0	0.0%	$1,146	0.7%	$0	0.0%	$568	0.3%	$3,338	2.0%	$0	0.0%	$1,655	1.0%	$6,706	4%
Springhill Elementary	8	2,692	$0	0.0%	$2,225	0.4%	$0	0.0%	$0	0.0%	$8,031	1.6%	$0	0.0%	$5,038	1.0%	$15,294	3%
St Regis K-12	125	54,000	$0	0.0%	$152,783	1.9%	$2,734	0.0%	$54,519	0.7%	$100,894	1.2%	$0	0.0%	$254,440	3.2%	$565,370	7%
St. Ignatius K-12	479	97,296	$0	0.0%	$1,358,870	9.1%	$13,149	0.1%	$698,221	4.7%	$345,420	2.3%	$0	0.0%	$281,009	1.9%	$2,696,669	18%
Stanford K-12	112	56,320	$0	0.0%	$296,727	3.3%	$18,000	0.2%	$98,655	1.1%	$28,597	0.3%	$0	0.0%	$96,291	1.1%	$538,270	6%
Stevensville Elementary	160	93,313	$0	0.0%	$664,945	4.0%	$77,143	0.5%	$91,213	0.6%	$141,655	0.9%	$0	0.0%	$184,239	1.1%	$1,159,195	7%
Stevensville High School	1,404	90,601	$0	0.0%	$497,845	3.0%	$53,783	0.3%	$73,768	0.4%	$329,141	2.0%	$0	0.0%	$197,506	1.2%	$1,152,044	7%
Sun River Valley Elementary	184	85,665	$0	0.0%	$310,852	2.1%	$0	0.0%	$42,082	0.3%	$339,257	2.3%	$0	0.0%	$51,426	0.3%	$743,617	5%
Sunburst K-12	170	92,908	$0	0.0%	$539,667	3.8%	$20,809	0.1%	$82,680	0.6%	$254,433	1.8%	$0	0.0%	$246,199	1.7%	$1,143,787	8%
Sunset Elementary	4	1,740	$0	0.0%	$0	0.0%	$922	0.2%	$0	0.0%	$4,536	1.1%	$0	0.0%	$2,920	0.7%	$8,378	2%
Superior K-12	339	84,286	$0	0.0%	$977,455	6.5%	$22,683	0.2%	$151,294	1.0%	$428,923	2.8%	$0	0.0%	$228,727	1.5%	$1,809,082	12%
Swan Lake-Salmon Elementary	3	2,080	$0	0.0%	$29,950	5.3%	$1,337	0.2%	$1,486	0.3%	$22,567	4.0%	$0	0.0%	$1,129	0.2%	$56,470	10%
Swan River Elementary	170	33,600	$0	0.0%	$41,237	0.8%	$0	0.0%	$0	0.0%	$39,626	0.8%	$0	0.0%	$22,999	0.4%	$103,863	2%
Swan Valley Elementary	43	12,865	$0	0.0%	$106,879	4.0%	$863	0.0%	$42,014	1.6%	$94,517	3.5%	$0	0.0%	$25,778	1.0%	$270,051	10%
Sweet Grass County High School	201	60,405	$0	0.0%	$319,250	3.4%	$4,494	0.0%	$14,528	0.2%	$116,722	1.2%	$0	0.0%	$199,569	2.1%	$654,563	7%
Sylvanite Elementary	-	2,149	$0	0.0%	$0	0.0%	$0	0.0%	$0	0.0%	$6,437	2.0%	$0	0.0%	$0	0.0%	$6,437	2%
Target Range Elementary	448	65,628	$0	0.0%	$99,777	1.1%	$9,442	0.1%	$1,971	0.0%	$41,789	0.5%	$0	0.0%	$114,503	1.3%	$267,482	3%
Terry K-12	89	88,403	$0	0.0%	$122,508	0.9%	$33,955	0.2%	$25,594	0.2%	$256,345	1.8%	$0	0.0%	$423,910	2.9%	$862,311	6%
Thompson Falls Elementary	320	42,110	$0	0.0%	$248,004	3.4%	$0	0.0%	$93,418	1.3%	$220,220	3.0%	$0	0.0%	$97,211	1.3%	$658,853	9%
Thompson Falls High School	230	69,845	$0	0.0%	$308,753	2.4%	$0	0.0%	$108,733	0.8%	$570,709	4.4%	$0	0.0%	$178,981	1.4%	$1,167,176	9%
Three Forks Elementary	392	84,627	$0	0.0%	$102,574	0.6%	$0	0.0%	$29,615	0.2%	$75,334	0.5%	$0	0.0%	$114,340	0.7%	$321,862	2%
Three Forks High School	187	32,111	$0	0.0%	$53,351	0.8%	$0	0.0%	$8,101	0.1%	$23,677	0.4%	$0	0.0%	$45,029	0.7%	$130,157	2%
Townsend K-12	700	138,450	$0	0.0%	$262,259	1.3%	$1,213	0.0%	$7,541	0.0%	$109,494	0.5%	$0	0.0%	$243,371	1.2%	$623,877	3%
Trail Creek Elementary	2	1,500	$0	0.0%	$9,860	3.3%	$294	0.1%	$1,580	0.5%	$5,749	1.9%	$0	0.0%	$3,736	1.2%	$21,219	7%
Trego Elementary	44	14,071	$0	0.0%	$435,224	16.6%	$4,135	0.2%	$37,941	1.4%	$117,221	4.5%	$0	0.0%	$7,309	0.3%	$601,830	23%
Trinity Elementary	9	6,600	$0	0.0%	$3,318	0.3%	$2,580	0.2%	$0	0.0%	$12,196	1.1%	$0	0.0%	$4,946	0.4%	$23,040	2%
Trout Creek Elementary	50	27,357	$0	0.0%	$31,644	0.7%	$15,386	0.3%	$5,006	0.1%	$55,320	1.2%	$0	0.0%	$36,746	0.8%	$144,103	3%
Troy Elementary	292	55,050	$0	0.0%	$52,972	0.5%	$1,147	0.0%	$173,531	1.8%	$192,752	2.0%	$0	0.0%	$69,460	0.7%	$489,862	5%
Troy High School	183	48,981	$0	0.0%	$68,056	0.8%	$0	0.0%	$31,837	0.4%	$69,203	0.8%	$0	0.0%	$7,832	0.1%	$176,928	2%
Turner Elementary	57	34,750	$0	0.0%	$580,415	10.1%	$0	0.0%	$121,279	2.1%	$117,177	2.0%	$0	0.0%	$100,488	1.7%	$919,359	16%
Turner High School	34	17,126	$0	0.0%	$338,913	8.3%	$590	0.0%	$78,671	1.9%	$100,151	2.4%	$0	0.0%	$55,455	1.4%	$573,779	14%
Twin Bridges K-12	107	60,464	$0	0.0%	$22,968	0.2%	$327	0.0%	$5,834	0.1%	$102,343	1.1%	$0	0.0%	$147,960	1.6%	$279,432	3%
Ulm Elementary	88	31,360	$0	0.0%	$126,250	2.5%	$0	0.0%	$160,886	3.1%	$66,635	1.3%	$0	0.0%	$56,334	1.1%	$410,105	8%
Upper West Shore Elementary	8	7,207	$0	0.0%	$97,866	6.3%	$2,178	0.1%	$35,489	2.3%	$67,967	4.4%	$0	0.0%	$29,430	1.9%	$232,930	15%
Valier Elementary	80	20,645	$0	0.0%	$56,709	1.4%	$0	0.0%	$5,161	0.1%	$40,300	1.0%	$0	0.0%	$22,913	0.5%	$125,082	3%
Valier High School	64	55,920	$0	0.0%	$421,936	4.5%	$38,940	0.4%	$20,267	0.2%	$153,076	1.6%	$0	0.0%	$114,882	1.2%	$749,102	8%
Valley View Elementary	330	43,503	$0		$447,466	6.9%	$0	0.0%	$144,034	2.2%	$287,142	4.4%	$0	0.0%	$95,139	1.5%	$973,781	15%
Van Norman Elementary	5	3,080	$0	0.0%	$1,479	0.2%	$0	0.0%	$4,492	0.7%	$12,052	1.8%	$0	0.0%	$8,773	1.3%	$26,797	4%
Vaughn Elementary	81	25,690	$0	0.0%	$161,065	3.2%	$1,275	0.0%	$611	0.0%	$79,822	1.6%	$0	0.0%	$5,434	0.1%	$248,207	5%
Victor K-12	354	84,314	$0	0.0%	$59,207	0.5%	$32,810	0.3%	$92,175	0.7%	$274,872	2.2%	$0	0.0%	$411,275	3.3%	$870,339	7%
Vida Elementary	22	8,719	$0	0.0%	$32,537	1.7%	$4,139	0.2%	$78,433	4.1%	$60,631	3.2%	$0	0.0%	$55,137	2.9%	$230,877	12%
Warrick Elementary	5	3,762	$0	0.0%	$22,945	2.6%	$1,396	0.2%	$146	0.0%	$13,021	1.5%	$0	0.0%	$6,527	0.7%	$44,035	5%

APPENDIX
Cost Allowances and Deficiency Ratios by District

			Facility Condition Categories (definitions on page 17 of the Executive Summary and at end of this table)															
			1 - Life Safety		2 - Damage/Wear Out		3 - Codes		4 - Environmental		5 - Energy		6 - Aesthetics		7 - Other / Non-FCI		TOTALS	
District	Enrollment	Gross SF of Buildings	Cost Allowance	Deficiency Ratio	Cost Allowance	Deficiency Ratio	Cost Allowance	Deficiency Ratio	Cost Allowance	Deficiency Ratio	Cost Allowance	Deficiency Ratio	Cost Allowance	Deficiency Ratio	Cost Allowance	Deficiency Ratio	Cost Allowance	Deficiency Ratio
West Glacier Elementary	26	9,900	$0	0.0%	$0	0.0%	$0	0.0%	$0	0.0%	$0	0.0%	$0	0.0%	$0	0.0%	$0	0%
West Valley Elementary	404	49,784	$0	0.0%	$115,823	1.6%	$2,894	0.0%	$193,556	2.7%	$120,993	1.7%	$0	0.0%	$66,507	0.9%	$499,773	7%
West Yellowstone K-12	204	52,668	$0	0.0%	$70,441	0.9%	$296	0.0%	$6,809	0.1%	$142,077	1.9%	$0	0.0%	$6,030	0.1%	$225,654	3%
Westby K-12	58	41,940	$0	0.0%	$248,427	3.8%	$0	0.0%	$29,181	0.4%	$75,078	1.2%	$0	0.0%	$232,283	3.6%	$584,970	9%
White Sulphur Springs Elementary	92	25,000	$0	0.0%	$154,713	4.0%	$368	0.0%	$108,738	2.8%	$14,095	0.4%	$0	0.0%	$29,459	0.8%	$307,371	8%
White Sulphur Springs High School	121	39,580	$0	0.0%	$101,452	1.7%	$0	0.0%	$61,586	1.0%	$32,280	0.5%	$0	0.0%	$104,419	1.7%	$299,737	5%
Whitefish Elementary	1,129	172,640	$0	0.0%	$239,025	1.0%	$0	0.0%	$47,309	0.2%	$191,159	0.8%	$0	0.0%	$0	0.0%	$477,493	2%
Whitefish High School	654	125,847	$0	0.0%	$580,920	3.2%	$0	0.0%	$1,313,197	7.2%	$561,290	3.1%	$0	0.0%	$456,270	2.5%	$2,911,677	16%
Whitehall Elementary	273	73,107	$0	0.0%	$952,923	7.6%	$8,732	0.1%	$318,760	2.5%	$69,877	0.6%	$0	0.0%	$27,694	0.2%	$1,377,986	11%
Whitehall High School	205	52,238	$0	0.0%	$1,250,404	12.9%	$0	0.0%	$251,474	2.6%	$43,775	0.5%	$0	0.0%	$297,484	3.1%	$1,843,136	19%
Whitewater K-12	52	60,036	$0	0.0%	$95,794	0.9%	$0	0.0%	$60,674	0.6%	$59,884	0.6%	$0	0.0%	$0	0.0%	$216,351	2%
Whitlash Elementary	3	5,632	$0	0.0%	$20,809	2.0%	$0	0.0%	$913	0.1%	$11,841	1.1%	$0	0.0%	$8,669	0.8%	$42,232	4%
Wibaux K-12	148	100,043	$0	0.0%	$216,809	1.3%	$11,758	0.1%	$315,682	1.9%	$145,437	0.9%	$0	0.0%	$609,486	3.8%	$1,299,173	8%
Willow Creek Elementary	30	25,700	$0	0.0%	$4,045	0.1%	$0	0.0%	$0	0.0%	$25,846	0.9%	$0	0.0%	$0	0.0%	$29,892	1%
Willow Creek High School	23	608	$0	0.0%	$0	0.0%	$0	0.0%	$0	0.0%	$0	0.0%	$0	0.0%	$0	0.0%	$0	0%
Winifred K-12	87	38,666	$0	0.0%	$22,720	0.3%	$0	0.0%	$28,021	0.4%	$141,461	2.0%	$0	0.0%	$19,805	0.3%	$212,007	3%
Winnett K-12	96	40,902	$0	0.0%	$1,008	0.0%	$3,805	0.0%	$827	0.0%	$142,603	1.7%	$0	0.0%	$19,700	0.2%	$167,942	2%
Wisdom Elementary	19	5,248	$0	0.0%	$53,912	4.4%	$0	0.0%	$1,024	0.1%	$18,779	1.5%	$0	0.0%	$0	0.0%	$73,715	6%
Wise River Elementary	20	3,652	$0	0.0%	$263	0.0%	$1,779	0.2%	$0	0.0%	$5,191	0.6%	$0	0.0%	$20,839	2.2%	$28,072	3%
Wolf Creek Elementary	11	5,952	$0	0.0%	$96,414	8.3%	$657	0.1%	$17,354	1.5%	$33,557	2.9%	$0	0.0%	$27,056	2.3%	$175,038	15%
Wolf Point Elementary	495	71,449	$0	0.0%	$329,875	3.1%	$15,504	0.1%	$113,902	1.1%	$7,157	0.1%	$0	0.0%	$61,621	0.6%	$528,060	5%
Wolf Point High School	351	126,855	$0	0.0%	$777,462	4.3%	$0	0.0%	$230,445	1.3%	$29,607	0.2%	$0	0.0%	$56,251	0.3%	$1,093,765	6%
Woodman Elementary	35	8,160	$0	0.0%	$3,340	0.2%	$1,935	0.1%	$0	0.0%	$39,689	2.0%	$0	0.0%	$16,055	0.8%	$61,017	3%
Wyola Elementary	70	21,000	$0	0.0%	$35,375	0.8%	$415	0.0%	$0	0.0%	$84,138	1.9%	$0	0.0%	$12,916	0.3%	$132,843	3%
Yaak Elementary	6	3,629	$0	0.0%	$364	0.0%	$60	0.0%	$0	0.0%	$15,610	1.9%	$0	0.0%	$0	0.0%	$16,034	2%
Yellowstone Academy Elementary	160	15,000	$0	0.0%	$420,156	15.1%	$0	0.0%	$944	0.0%	$75,600	2.7%	$0	0.0%	$3,435	0.1%	$500,136	18%
Zurich Elementary	41	14,104	$0	0.0%	$12,898	0.6%	$363	0.0%	$338	0.0%	$2,741	0.1%	$0	0.0%	$4,374	0.2%	$20,714	1%
TOTALS			$0		$155,900,880		$4,429,994		$54,819,906		$87,197,683		$0		$56,702,844		$359,051,307	6.0%

FCI Category Definitions as described on page 17 of the Executive Summary:

In addition to association with a building system, deficiencies identified by the field observations are broken down into these seven (7) categories, which are an integral part of the FCI database.

1. Safety: Observed as an immediate threat to life safety or building integrity. [Note: These represented a relatively minor number of observations during this project's site surveys, all of which were addressed during the course of the study through a Safety Notification Protocol. In that process, safety items identified by assessment teams were immediately reported to school officials and an immediate remedy, often a physical fix, was undertaken by school maintenance personnel immediately. If the remedy was temporary, the item was re-categorized as no longer an immediate life-safety hazard, but now a damage / wear out issue.]

2. Damage / Wear Out: Items observed as broken or vandalized or wore out to a point of being inoperable, difficult to service, or lacking integrity.

3. Codes and Standards: Systems observed to be not in code compliance and not grand-fathered* under current codes.

4. Environmental: Observed failures or conditions affecting the indoor environment including impacts to the building shell and the conditioning of interior space.

5. Energy: Improvements to building components or systems to be implemented solely for the purposes of reducing energy consumption.

6. Aesthetics: Items observed as currently performing as intended but seen as "aged", "dated", or "worn". [These items were excluded from this study, given the large volume of inspectors and the strong potential for subjective, rather than objective, reporting.]

7. Other / Non-FCI: Items observed as not in compliance with current codes, but either grand-fathered* into current construction, or other site accommodations have been made. These items will need to be addressed if renovations are done in the future, but are not generally considered current obligations or deficiencies.

* *"Grand-fathered": Building design codes change over time and it is not uncommon for a facility to be built in complete compliance with codes at the time of construction, only to have new codes for new construction come into law. Most code guidelines consider this aspect of change and, with a few exceptions related to life-safety, do not deem a building deficient if it met building codes and laws in effect when the building was constructed – until such time as a building is significantly altered (new addition, major renovation) or subject to a change in use.*