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School District #2  
**Billings Public Schools**  
2018 Facilities Master Plan  
April 2018

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## Executive Summary

The 2018 Master Plan identifies strategic planning goals to prioritize facility improvements to use available space more efficiently and focus on educational delivery methods and programming for grades K-5, 6-8, and 9-12 including emphasis on the District's Career and Technical Education program needs. Considerations in the Master plan include recommendations for deferred maintenance and life cycle costs, increased capacity, and educational program equity among facilities in the District. This document recognizes the recommendations that have been implemented through the 2013 bond funding and creates priorities for capital improvements to fund CTE facilities in the district.

At the district's elementary and middle schools, this document creates recommendations for deferred maintenance and life cycle costs, capacity, equity, and educational adequacy among facilities. Priorities at the K-8 level include a focus on CTE curriculum and to minimize the number of portable classrooms.

The master plan creates recommendations for deferred maintenance and life cycle costs, capacity, equity, and educational adequacy for the three comprehensive high schools and the Career Center. A primary focus of the master plan is to assess infrastructure needs relating to the developing of CTE curriculum at the secondary level. The master plan incorporates proposals for other district facilities, including the Daylis Stadium Master Plan.

## 2018 Master Plan Recommendations Summary

\$ 20.0M	<b>K-8 Educational Adequacy</b>
\$ 15.1M	<b>High School Educational Adequacy</b>
\$ 1.2M	<b>K-8 Building, Site, Life Cycle, Deferred Maintenance, and ADA Compliance</b>
\$ 31.8M	<b>High School Building, Site, Life Cycle, Deferred Maintenance, and ADA Compliance</b>
\$ 60.5M	<b>Career Center - new 21st century facility</b>
\$ 10.6M	<b>Daylis Stadium Master Plan - with alternates</b>
\$139.2M	<b>Total</b>

*cont. on next page*

# EXECUTIVE SUMMARY

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## Executive Summary (cont.)

### K-8 Facilities

To address educational adequacy and equity between all of the districts K-8 facilities and to align capacity with demographic enrollment projections, the Master Plan recommends the following projects:

\$16,329,600	Classroom additions to remove portable classrooms and account for enrollment projections at 6 elementary schools and multipurpose room additions to accommodate equity at 9 elementary schools (multi-purpose rooms identified in 2013 master plan)
\$ 3,685,500	Physical Education additions to accommodate equity at 2 middle schools (identified in 2013 master plan)
<b>\$20,015,100</b>	<b>Subtotal</b>

To address deferred maintenance, life cycle costs, and ADA compliance needs at all K-8 facilities the Master Plan recommends a variety of projects throughout the district:

\$ 3,193,491	Building, Site, Life Cycle, Deferred Maintenance, ADA Compliance at Elementary Schools
\$ 3,441,713	Building, Site, Life Cycle, Deferred Maintenance, ADA Compliance at Middle Schools
(\$ 5,445,000)	to be completed by summer 2018 with 2013 bond funds
<b>\$ 1,190,204</b>	<b>Subtotal</b>

### High School Facilities

To address equity, educational adequacy improvements to CTE facilities between all of the district's high schools, the Master Plan recommends the following projects:

\$ 3,063,175	Modifications to existing CTE spaces at Senior
\$ 3,165,900	Modifications to existing CTE spaces at Skyview
\$ 2,951,025	Modifications to existing CTE spaces at West
\$ 5,872,500	Performing Arts Renovations at Senior High (identified in 2013 master plan)
<b>\$15,052,600</b>	<b>Subtotal</b>

To address deferred maintenance, life cycle costs, and ADA compliance needs at all high school facilities the Master Plan recommends a variety of projects throughout the district:

\$ 12,212,715	Deferred Maintenance, Life Cycle, and ADA Compliance at Senior
\$ 6,753,427	Deferred Maintenance, Life Cycle, and ADA Compliance at Skyview
\$ 12,915,802	Deferred Maintenance, Life Cycle, and ADA Compliance at West
<b>\$ 31,881,944</b>	<b>Subtotal</b>

### Career Center

The Master Plan identifies two scenarios to meet the requirements of a 1,000 student capacity facility at the Career Center site with the program developed through the master planning process:

\$ 51.1M	Renovation of high bay fabrication spaces, demolition and new classrooms
\$ 60.5M	Construct a new 21st Century CTE facility at the Career Center site

### Daylis Stadium

The Daylis Stadium Master Plan, developed in 2015, calls for a new track, field, lighting, grandstands, locker rooms, and restrooms. (design and costs by CTA Architects)

\$ 8,373,592	Daylis Stadium Master Plan - Base
\$ 10,604,459	Daylis Stadium Master Plan - with Alternates



## Purpose for the Master Plan

The Billings Public Schools 2018 Master Plan is a comprehensive update to the 2013 Facilities Master Plan and provides recommendations for facility planning for Career and Technical Education programs based on the 2016 CTE Program Review document, a 2017 Demographic Report, and the 2018 Master Planning process.

This document will help to guide facilities planning and improvements for the next ten years and represents the culmination of six months of meetings, workshops, presentations, and school tours with Billings School District staff, teachers and students, the School Board, and Billings community members and business leaders. All those involved are committed to providing outstanding educational facilities for students to become college and career ready as well as providing access and equity to CTE programs.

The 2018 Master Plan identifies strategic planning goals to prioritize facility improvements to use available space more efficiently and focus on educational delivery methods and programming for grades K-5, 6-8, and 9-12 including emphasis on the District's Career and Technical Education program needs. Considerations in the Master plan include recommendations for deferred maintenance, life cycle, increased capacity, and educational program equity among facilities in the District.

## Acknowledgements

The Billings School District and A&E Architects / Integrus Architecture would like to thank all those who have participated in the facilities master planning workshops over the past six months. Grateful appreciation is extended to the members of the Core Leadership Team, whose comments, feedback, hard work and dedication to improving our schools has been invaluable in making this process successful.

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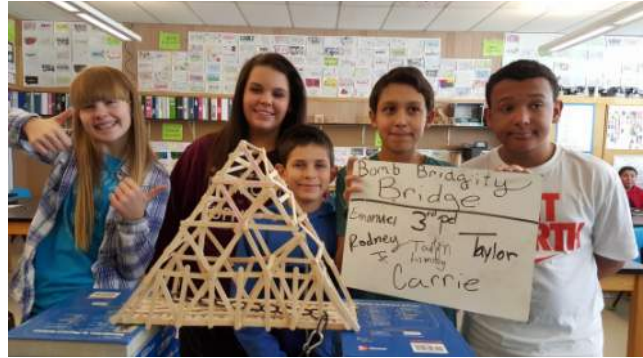
CTE Advisory Committee

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Dusty Eaton  
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## District Mission Statement

Billings Public Schools Community strives to inspire, educate and empower students to be responsible and innovative global citizens who achieve their full potential.



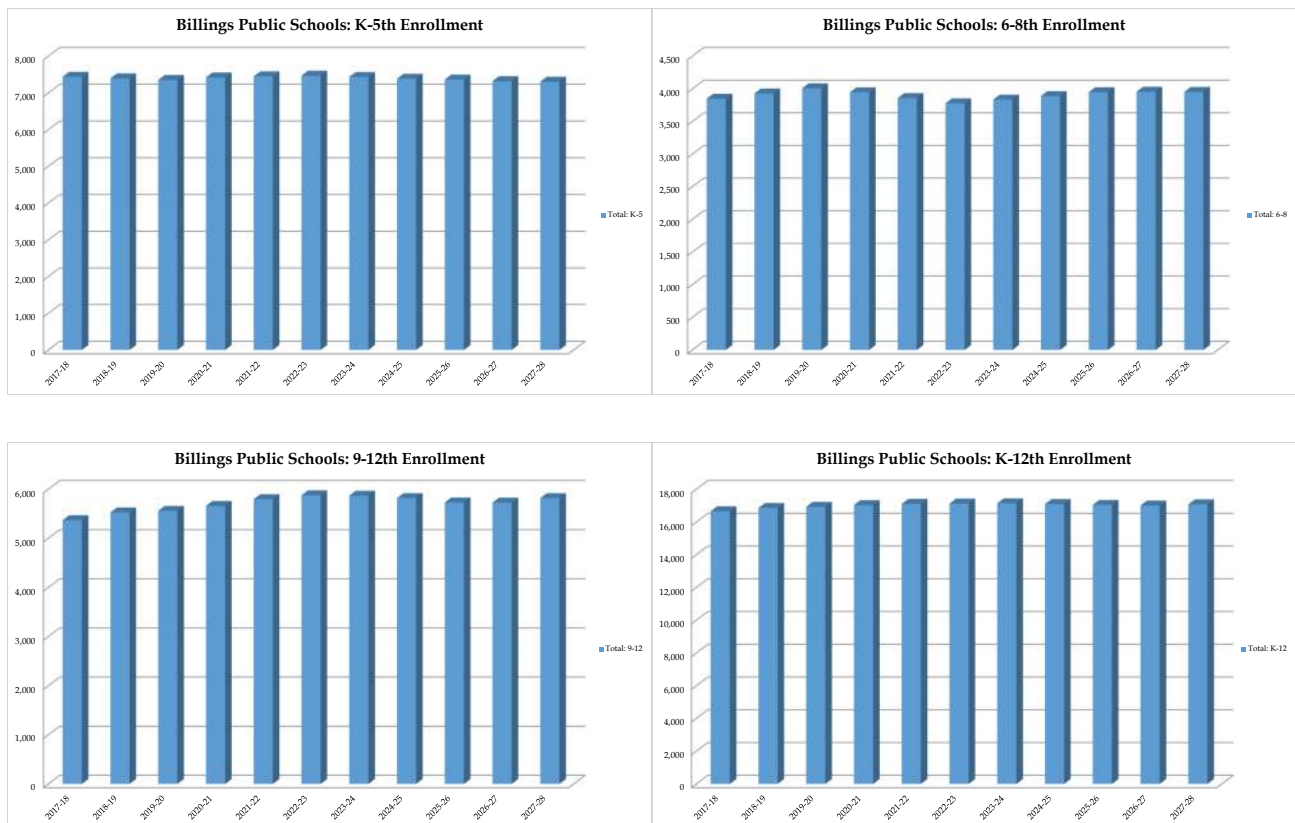
## District Goals

- **Student Achievement**  
Optimize learning for each student through rigorous, engaging, diverse and equitable opportunities
- **Highly Qualified Staff/Staff Development**  
Establish and maintain an excellent, diverse and well-trained staff, supported by professional development that reflects student need
- **Resource Management**  
Maximize efficient and transparent allocation of resources to support student achievement
- **Facilities**  
Develop, maintain and enhance efficient facilities that promote a safe and healthy instructional environment
- **Community Engagement**  
Engage our community, maximize community investment and meaningful collaboration to enhance student learning

## Demographic Projections and Enrollment

As part of the 2018 Master Plan, Billings Public School hired Cropper GIS to perform a demographic study understand capacity needs for the next 10 years. Current 2017-2018 school year enrollment district wide is 16,658 student; 7,440 elementary students, 3,848 middle school students, and 5,370 high school students. The demographic report identified the following:

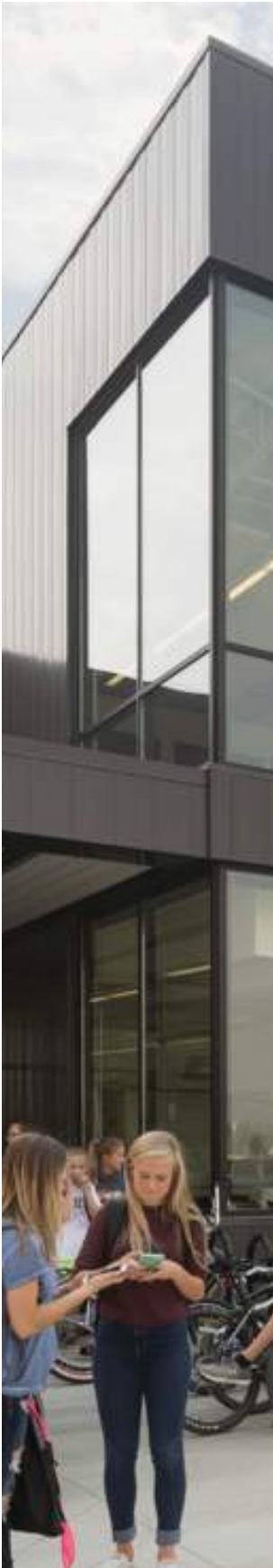
- School District 2 enrollment is expected to grow in the next decade, but elementary schools will see a slight decrease
- K-12 expectations for growth by the 2027-28 school year is reduced by about 200 students compared to the 2013 demographic report, but is still about 400 students more than are currently enrolled.
- Overall, elementary enrollment is expected to drop 1.8 percent; middle school is expected to increase 2.7 percent; high school is expected to increase 8.3 percent.
- Enrollment at Skyview and West High is expected to grow by about 300 students over the next decade. Senior High's enrollment is expected to shrink by about 150 students.



## Demographic Projections and Enrollment

The 2017 Demographic Study for current and future enrollments at all district facilities for the next 10 years are outlined below. Functional and target capacities for each school have been calculated from the 2013 Master Plan and the 2014 redistricting study done by Cropper GIS. Highlighted red cells identify schools with enrollment greater than the **functional capacity**. The Career Center capacities and enrollment projections were not identified in the demographic or redistricting reports.

School Name	Functional Capacity	Target Capacity	School Year										
			2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28
Alkali Creek ES	394	364	331	336	349	362	363	358	353	350	350	347	345
Arrowhead ES	460	426	434	429	413	414	427	445	455	463	477	490	502
Beartooth ES	416	385	385	392	390	404	422	418	416	413	411	408	407
Bench ES	394	364	385	389	395	390	402	401	396	393	389	382	379
Big Sky ES	394	364	407	409	410	406	397	385	377	373	369	367	365
Bitterroot ES	350	324	369	374	379	392	409	420	416	411	403	396	391
Boulder ES	416	385	428	424	430	432	419	398	388	380	372	366	362
Broadwater ES	400	370	373	369	379	378	368	359	358	357	356	354	355
Burlington ES	263	243	227	225	230	239	248	255	252	248	247	245	242
Central Heights ES	329	304	267	253	221	219	221	221	221	219	220	220	220
Eagle Cliffs ES	460	426	374	375	380	396	389	406	404	400	394	388	384
Highland ES	285	264	292	289	280	278	277	282	282	281	280	278	275
McKinley ES	400	370	263	255	245	239	240	246	244	241	240	239	240
Meadowlark ES	460	426	480	487	505	513	516	508	504	501	498	495	493
Miles Avenue ES	329	304	267	268	259	264	254	250	249	246	244	241	239
Newman ES	263	243	222	218	209	208	204	205	209	210	212	212	214
Orchard ES	438	405	367	350	339	342	339	340	338	333	333	331	332
Poly Drive ES	329	304	342	346	326	320	313	308	308	306	309	310	312
Ponderosa ES	394	364	270	251	244	229	225	229	232	234	237	239	240
Rose Park ES	307	284	256	253	253	252	260	263	265	265	266	263	260
Sandstone ES	460	426	405	399	394	400	407	411	412	411	411	411	412
Washington ES	263	243	296	305	323	344	350	360	356	351	345	339	337
<b>K-5 Totals</b>	8204	7588	7440	7396	7353	7421	7450	7468	7435	7386	7363	7321	7306
Ben Steele MS	715	661	745	811	801	784	778	786	796	795	782	778	782
Castle Rock MS	715	661	584	551	530	504	506	482	502	503	534	538	539
Lewis & Clark MS	743	687	769	800	846	824	824	824	840	833	853	861	859
Medicine Crow MS	715	661	704	724	772	791	744	731	759	832	848	842	835
Riverside MS	604	559	522	524	503	494	466	433	413	402	410	415	417
Will James MS	664	614	524	519	556	550	541	521	526	525	521	521	521
<b>6-8 Totals</b>	4156	3843	3848	3929	4008	3947	3859	3777	3836	3890	3948	3955	3953
Senior HS	1686	1560	1928	1946	1834	1843	1837	1846	1855	1847	1786	1765	1773
Skyview HS	1684	1558	1621	1735	1835	1857	1918	1912	1903	1867	1845	1876	1938
West HS	1731	1601	1821	1847	1890	1961	2041	2118	2110	2104	2099	2087	2107
Career Center (current max enrollment 627)													
<b>9-12 Totals</b>	5101	4719	5370	5528	5559	5661	5796	5876	5868	5818	5730	5728	5818
<b>District Totals</b>			16658	16853	16920	17029	17105	17121	17139	17094	17041	17004	17077



## Overview

For the 2018 Master Plan a core leadership team was created and a series of visioning meetings were held. Focus areas for the Core Leadership Team included; goal setting, community outreach, CTE facilities for secondary education, and programming for curriculum at the Career Center.

A series of CTE focused workshops were facilitated where the Core Leadership Team reviewed the 4 Pillars of CTE developed by the CTE advisory group and created goals specific to infrastructure and facilities for CTE at the secondary schools. The team explored national trends and best practices being implemented in a variety of facilities in the region and identified resources within the district for CTE and community partnerships. A program was developed for a facility at the Career Center site using the Montana Career Pathways as a guide to developing opportunities for a new facility to make students college and career ready. The planning team conducted principal interviews and school tours at Senior, Skyview, West, the Career Center, and the Lincoln Center to assess opportunities and constraints of CTE programs at the specific sites. Community open houses were held at the Career Center to present the career pathway systems and provide opportunities for feedback from the community for the direction of CTE in the district.

The planning team facilitated discussions with CTE teachers at each of the high schools. Discussions focused on 3 concepts; current spatial limitations that restrict program opportunities, potential infrastructure upgrades to accommodate future programs, and how high school CTE programs collaborate with the Career Center and what that connection looks like in the future. Discussion topics focused around equipment, infrastructure, and storage needs. Staff concerns are further expanded upon in the section.

## 2016 CTE Program Review Document Summary

The 2016 CTE Program Review document provided recommendations to address program development in CTE and to address access, equity, and best practices in CTE. Regarding building facilities the following recommendations were made:

- Engage in a facilities review and consider a bond for updating/modernizing/constructing modern buildings/facilities for CTE programs with industry standard equipment
- Determine exactly what the Career Center is and what role it serves in Billings Education, then enter into a re-branding and development of a 5 year plan with a clear and shared vision focusing on programs of study leading to dual credit and/or certification opportunities, with strong alignment with identified industry demands.

### CTE Mission Statement

**As a public-private partnership, we will define and implement strategic direction for career and technical education that serves our community's current and future workforce needs and provides students a foundation for exceptional career opportunities.**



### Four Pillars of CTE

#### 1. Leadership & Communication:

Through strategic communication and planning we create a culture of career awareness in our school and throughout the community. Our leadership holds the vision and we champion the integration of CTE education for all students.

##### Action Plan

- Create a current definition of CTE

- Identify stakeholder groups and establish line of communication and protocols

#### 2. Program Development:

Representatives of Billings Public Schools, business and industry leaders collaborate to infuse and fully integrate CTE education within K-12 curriculum, emphasizing career pathways and establishing work opportunities at businesses throughout the community.

##### Action Plan

- Examine all career offerings and identify high demand programs for possible implementation.

- Align every class with an identified career pathway

- Introduce Career Cruising and Inspire Billings to the entire school district and local businesses

#### 3. Infrastructure & Facilities:

We plan for and create learning environments driven by CTE needs, standards and activities.

##### Action Plan

- Complete comprehensive facilities review including 10 year demographic projection

- Prioritize recommendations for structures and industry standard equipment in preparation to move forward

#### 4. Engagement & Accountability:

By engaging measures, monitoring outcomes, analyzing and reporting data, we ensure that the CTE Partnership Advisory Board achieves the CTE Partnership Mission.

##### Action Plan

- Engage employers and post-secondary partners to visit middle and high schools

- Complete a survey of high school graduates to establish baselines to help provide for effective program evaluation

## CTE Master Plan Facility Goals



For the 2018 Master Plan a core leadership team was created and a series of visioning meetings were held. Focus areas for the Core Leadership team included; goal setting, community outreach, and facility opportunities. Below are the goals created by the core leadership team relating specifically to the Infrastructure & Facilities Pillar of CTE. These goals will serve as a touch base throughout the master plan process and for future facilities projects.

- **Grow and enhance a positive reputation for CTE Career Pathways in the greater Billings community**
  - *Create facilities that inspire learners*
  - *Re-brand the Career Center*
  - *Develop facilities which allow flexibility for the district to accommodate multiple CTE delivery models*
- **Create facilities that support the development of the skills, confidence, and motivation necessary for students to become life-long innovators.**
- **Develop infrastructure which supports capacity needs and a diverse range of CTE options at the Career Center**

### Virtual Tours

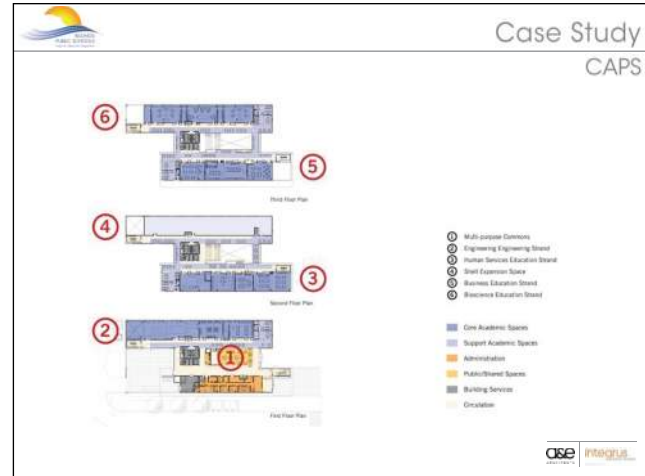
#### Blue Valley Center for Advanced Professional Studies (CAPS)

##### Comments from Leadership Group

- Great spaces - quality elevates the student experiences
- Like the science labs - use for lecture, lab, and demonstration in one space – fixed desks & lab stations with wheeled perch seating.

Project goals were formulated in collaborative workshops that included administrators, educators, industry leaders, business professionals, and the project designers. Each participant was critical in developing the vision for the project and in lending his or her perspective on the direction of the industry “strands”: engineering; bioscience; business, technology, and media; and human services, each of which encompasses sub-pathways and was selected due to its relevancy in the Kansas City regional marketplace. In addition, the business accelerator features rapid prototyping labs.

The examination of ideal environments identified several common programmatic threads—large flexible spaces for “doing,” transparent project areas for collaboration, and small group areas for real-world meetings. The building organizes all spaces on three levels around a centralized student commons. Rising dramatically from one end of this commons, a large wood-clad amphitheater stair connects the entry level to floors above and provides an ideal amenity for large group presentations. Large, flexible project spaces overlook the student commons and provide a multitude of functions.

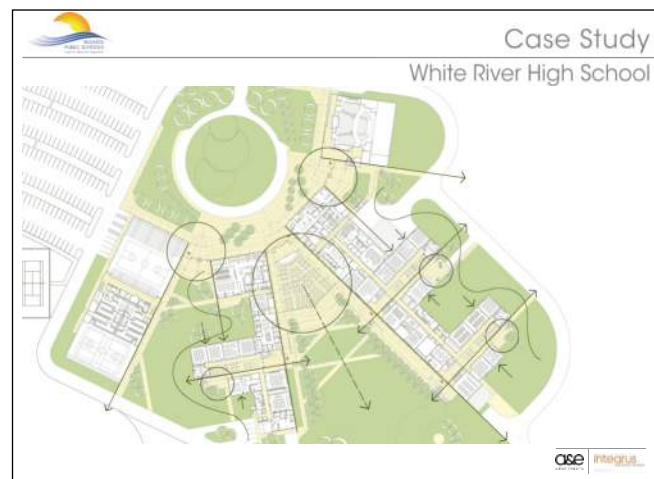


#### White River High School

##### Comments from Leadership Group

- Like the organization of academic clusters
- Difficulty with cross collaboration of programs
- Like the organization of instructional classrooms and labs around shared break-out areas

White River High School near Buckley, Washington, is a 227,000 square-foot public educational facility for 1600 students in grades nine through twelve. The educational program is based on an innovative Career Path model that offers students opportunities to explore a wide variety of career studies in specialized learning settings, including those related to specific amenities of the site and surrounding natural environment. The facility itself is organized as a series of ‘schools within a school’, with eight academic clusters – three for general studies at the ninth and tenth grade levels, and five for specialized career path studies at the eleventh and twelfth grade levels. At the heart of the school, student services are organized around a central commons and courtyard that bring students in close association with the site and surrounding natural environment.



## Virtual Tours

### Canby High School

Comments from Leadership Group

- Like the open space and flexible walls
- Represents good opportunities for cross-collaboration

The Canby Applied Technology Center (ATC) represents the initial phase of transformation from an Industrial Arts Program into an integrated academic and technical learning using rigorous project-based curriculum. The physical environment provides a strong framework for the educational program with its industrial feel and exposed infrastructure that serves as a learning tool with its mechanical, electrical, and structural systems exposed and labeled.



The ATC program design integrates academic and technical learning around a rigorous project-based curriculum. The curriculum is aligned to state content and performance standards, and technical proficiency defined by business and industry. Students interact with teachers of multiple disciplines using resources that encourage learning as an active endeavor. Personalized learning plans are achieved through dynamic and relevant academic and career pathways where students explore essential questions and issues in a variety of pursuits: scientific, mathematical, literary, historical, artistic, and aesthetic. Learning in the ATC relates to the community and includes high technology, engineering, design, natural resources, and manufacturing. Career programs are interrelated and supported by core academic curriculum and higher education and business partnerships.

### Essex Technical High School

Comments from Leadership Group

- Flexibility is highly desirable, concerns about noise / Acoustics
- Overhead roll-up doors allow for flexibility / open space
- Arrival / Gathering is welcoming and creates sense of identity, doesn't feel like the "big white box"
- Multiple Entries is a safety concern
- Avoid specific-to-curriculum signage at entries
- Distributed dining is a custodial concerns but creates niches for different personality types

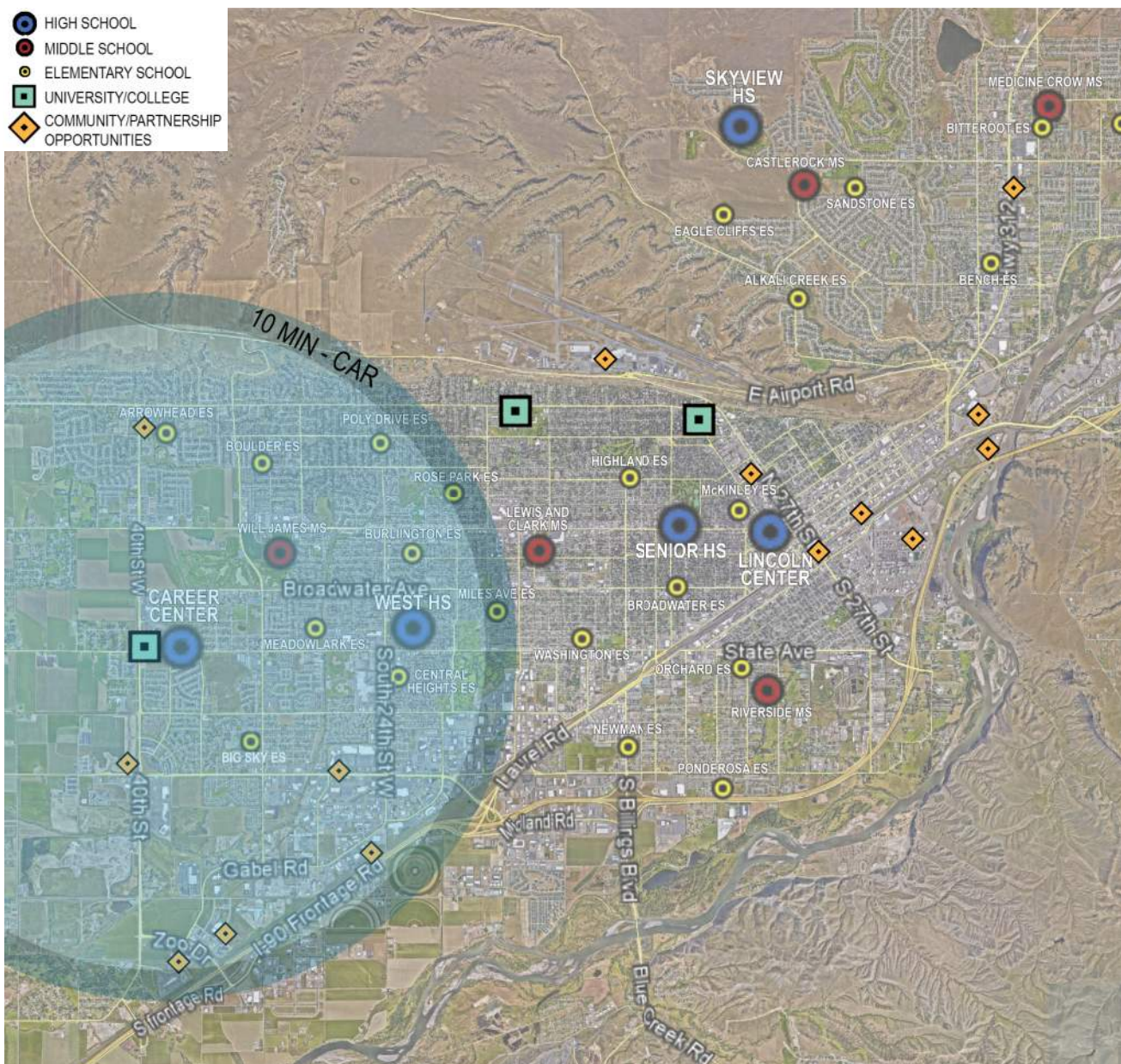


The Career, Technical and Agricultural education experience at Essex Technical High School is comprised of 24 program offerings. The programs are clustered in an Academy Model to better serve students needs. These academies have merged into two academies designated as East & West. The East Academy houses; Animal & Plant Science; Companion Animals, Equine Science, Natural Resource Management, Sustainable Horticulture, Veterinary Science. Technology and Service; Advanced Manufacturing, Culinary Arts, Information Technology Services, Automotive Collision Repair & Refinishing, Design & Visual Communications, Automotive Technology, Graphic Communications. The West Academy houses; Life & Natural Science; Biotechnology, Cosmetology, Dental Assisting, Environmental Technology, Health Assisting. Construction Technology; Arboriculture, Carpentry, Electricity, HVAC, Landscape & Turf Management, Masonry & Tile Setting, Plumbing

## Visioning Exercise: Asset Mapping

Community Asset Mapping is a proven process towards identifying existing and deficient assets. We must leverage existing assets instead of replicating them and get our students out into the community. Leveraging nearby and adjacent amenities not only saves construction dollars and frees up potential program space, it reinforces the importance of our community partners within the neighborhood. Examples include adjacent playgrounds, parks, play fields, recreational facilities, libraries, churches, galleries, and performance spaces.

At the same time, deficient assets create opportunities for the school to become a real community amenity. Our goal is giving our partners and the greater community unprecedented access to what is typically the largest civic investment in the neighborhood, our schools.



## Asset Mapping - Identified Opportunities

- Medical Corridor
  - Both west end and downtown growing medical campuses
  - St. John's Hospital
- Downtown:
  - Strong business connections: Northern Hotel; Stockman Bank, etc.
  - Legal / Courts
  - Other Downtown business partners
  - General retail & hospitality
  - Lincoln Center
- MSU-B
  - Working on a 3+3 program for students to start their law degree at MSU-B
- Rocky Mountain College
  - Shared Programs: Ex. Cadaver lab
- City College
  - Currently (2) programs sharing resources
  - Construction Technology pad sharing for house building projects
  - Culinary Program at the Career Center is using the cafeteria at City College
  - Northern Hotel is a strong partner - discussed a potential west-end restaurant that the students could work
  - Healthcare pathways: Career Center > City College > hospitals
- Transportation:
  - BNSF
  - Airport
- Refineries
  - Currently offer internships and work-force development programs
- Hospitality
  - Hotel / Restaurant cores (Downtown, Zoo Drive, Assisted Living Facilities)
- News Stations:
  - Potential opportunity for internships with Channel 7 – broadcast journalism
- Entertainment
  - Metra
  - Riverfront Park
  - Four Dances Recreation Area

## Business Community Partnerships

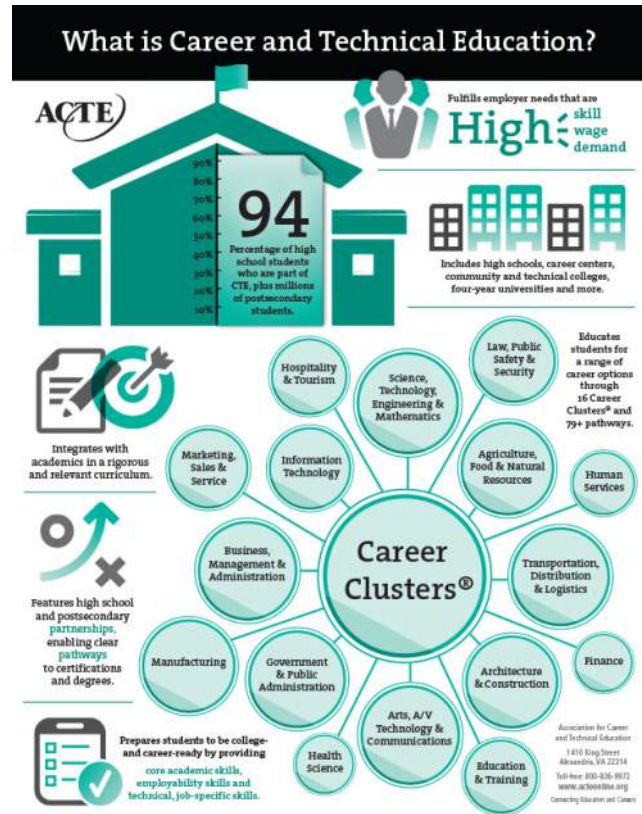
As part of the 2016 CTE Review Document, a CTE Advisory Board, with representatives from Billings Public Schools and local business and industry leaders, was created to establish work opportunities throughout the community. In conjunction with the Advisory Board, the district has examined all career offerings and identified high demand programs to align with career pathways. Programs such as Career Cruising and Inspire Billings were created to introduce students to local businesses and career partnerships. This CTE collaboration has established goals of engagement and accountability by engaging students, monitoring outcomes, and analyzing and reporting data. The Advisory Board plans to achieve it's goals by inviting employers and post-secondary partners to visit middle schools and high schools and building a sustainable community of volunteer mentors. Opportunities for these programs include educating students and families about scholarship possibilities, providing mentorship, resources, and encouragement to help students access education and training beyond high school.



## 2 CAREER TECHNICAL EDUCATION

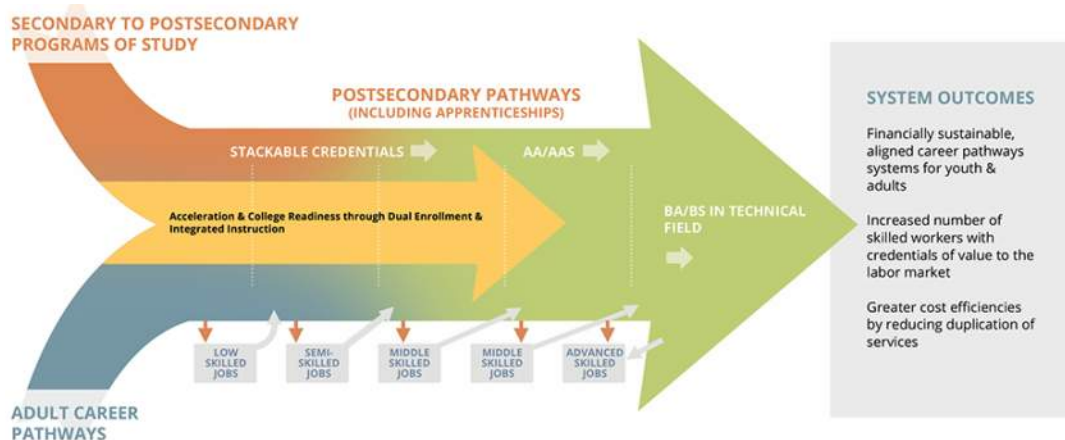
### National Career Pathway System

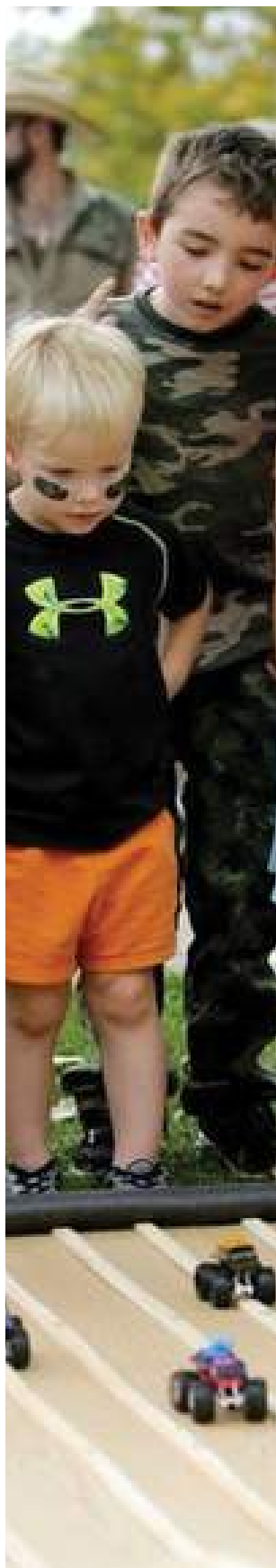
A career pathways system is about the coordination of people and resources both within and across education, workforce, and human services systems. Within education, this includes aligning the K-12 and postsecondary education systems and, in particular, the career and technical education programs and services provided within and across program providers. The Advancing Career Pathways project is a technical assistance initiative for implementing career pathways systems. Its purpose is to further integrate career and technical education (CTE) into the broader landscape of career pathways systems at the state and local level.



### National Career Clusters

- Agriculture, Food & Natural Resources
- Architecture & Construction
- Arts, A/V Technology & Communications
- Business Management & Administration
- Education & Training
- Finance
- Government & Public Administration
- Health Science
- Hospitality & Tourism
- Human Services
- Information Technology
- Law, Public Safety & Security
- Manufacturing
- Marketing, Sales & Service
- STEM
- Transportation, Distribution & Logistics





## Montana Career Pathways

Montana Career Pathways (MCP) is a college and career initiative was developed by the Montana Office of the Commissioner of Higher Education and the Montana Office of Public Instruction. Montana Career Pathways helps students transition successfully to postsecondary programs statewide by providing accessible, understandable information about postsecondary programs and building high-value accelerated learning options and experiences through collaboration between secondary, postsecondary, and industry.

Montana Career Pathways helps students make more informed choices about college and career by providing:

- **Clear, concise, labor market referenced information about career options in Montana**
- **Opportunities to engage in college courses that support a career pathway via dual enrollment**
- **Opportunities to explore and engage in careers prior to college via work-based learning and industry recognized credentials**

## Montana Career Pathways

- |   |                          |
|---|--------------------------|
| • Advanced Manufacturing                | • Health Professions     |
| • Agriculture, Food & Natural Resources | • Hospitality & Tourism  |
| • Agriculture Mechanics & Construction  | • Human Services         |
| • Business Management                   | • Information Technology |
| • Design & Construction                 | • Marketing              |
| • Education                             | • STEM                   |
| • Finance                               | • Transportation         |
|   | • Welding & Fabrication  |



Fabrication Labs

Specialized Labs

Flexible Labs

General Labs

Level 3

Level 2

Level 1

## CTE at Senior High School

The Master Planning Team interviewed Jeff Uhren, the principal at Senior, toured the facility, and led discussions with CTE staff. Additional information regarding deferred maintenance and facility recommendations are under section 5 of this document.

300 students utilize the Career Center, 57 full time and 236 part time junior and seniors. Currently no freshman and sophomores use the Career Center because there is no support for core curriculum classes. There is competition between high schools and the Career Center competing for the best and brightest students, this is being amplified by the Career Center focusing more on engineering and STEM programs.

In general, the CTE programs at Senior are limiting and constrained by traditional infrastructure that does not accommodate 21st century learning standards. CTE programs at Senior include; business, woodshop, tech ed, and family consumer sciences. Engineering and bio-med are the only programs available to top performing freshmen and sophomores.

Family Consumer Sciences at Senior have an average of 30 students per class. Culinary instruction classrooms have 6 kitchen stations, 5 students per station. The number of students per class/station creates a difficult learning environment. The size and quality of culinary classrooms is not equitable with Skyview and West, both schools have an additional classroom for textiles instruction. Teachers are concerned spatial and infrastructure needs do not align with the district's curriculum goals. Needs in classrooms include MEP upgrades and increased storage.

The wood shop classroom at Senior is inadequate to curriculum goals. There is no connection between digital design areas and fabrication spaces. The school would like to continue to grow and emphasize CNC machining opportunities. The current MEP and dust collection system need to be updated. The tech ed classroom adjacent to the wood shop has adequate space for curriculum needs. The classroom does need MEP and technology updates.



The business classrooms at Senior have been divided to accommodate additional core classroom space. The rearrangement of the space created spaces with no access to windows or climate and lighting controls.

While the carpet is relatively recent, smells and odors have been a distraction to teachers and students. MEP and technology updates are needed, as well as, furniture and storage needs. Small group instruction and breakout areas were removed as part of the rearrangement for core classroom space.

Staff at Senior see the Career Center as competition for gifted students. Teachers desire a clearly defined role of what the career center should be and how high schools relate to it, they are unclear if it is meant to be college prep or career prep.



Fabrication Labs

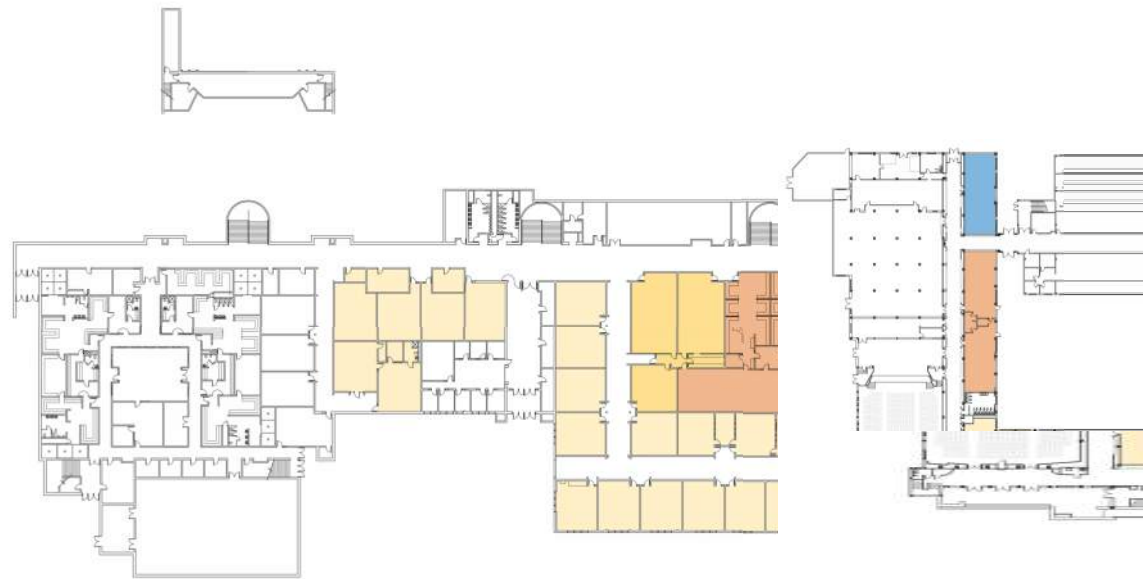
Specialized Labs

Flexible Labs

General Labs

Level 2

Level 1



## CTE at Skyview High School

The Master Planning Team interviewed Deb Black, the principal at Skyview, toured the facility, and led discussions with CTE staff. Additional information regarding deferred maintenance and facility recommendations are under section 5 of this document.

The travel distance to the Career Center is the largest impediment to successful collaboration between the two schools. Skyview has 250 full-time and part-time students that attend the Career Center. Athletes and students engaged in other extracurricular activities do not utilize the Career Center because of travel time. The CTE program at Skyview is strong and has more square feet allocated to CTE curriculum than Senior or West. There is a feeling among staff that they are in competition with programs offerings at the Career Center. Furniture and traditional classroom organization limit 21st century educational opportunities with limited to no breakout and shared spaces for student and teacher collaboration.

CTE programs offered at Skyview include; tech ed, robotics, metal shop, wood shop, business, finance, marketing, and family and consumer sciences. A repeated message between all CTE teachers included the need for additional and more functional storage, MEP upgrades, flexible furniture and flexible instructional spaces.

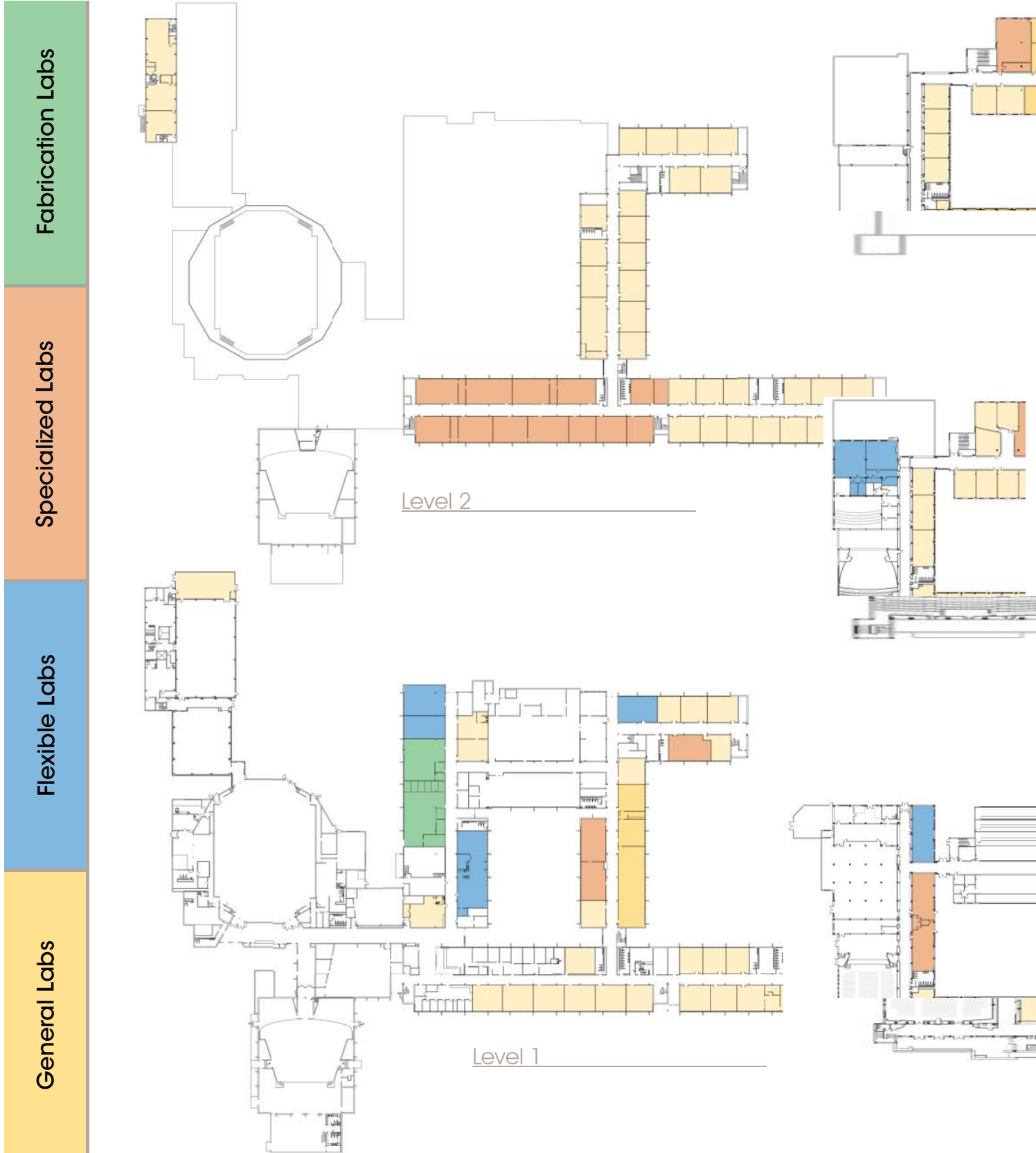
Family Consumer Science classrooms at Skyview were originally designed to accommodate 24 students but currently have an average of 30 students per class. Skyview participates in the Pro Start program and has Family Live and Consumer Development curriculum. Major concerns for FCS spaces include limited storage, mechanical and electrical needs, and ineffective lecture spaces. Proper ventilation is needed for individual kitchen stations and access to power needs to be increased, possibly adding power drops at ceilings. Storage solutions are needed for catering ventures, general pantry items, sewing machines, and large items such as chromebook carts.



Tech ed and shop classrooms at Skyview have great opportunity to enhance program offerings and accommodate more advanced curriculum such as advanced manufacturing, STEM, robotics, welding, and agriculture. Storage, general overview classrooms, and MEP upgrades are the most significant needs for the spaces. Current student project storage limits project possibilities. The dust collector system needs to be enhanced or replaced. Electrical and data systems need to be upgrades to increase capacity and access. Supervision and visual connection from offices and support spaces to fabrication areas need to be increased. Overall, teachers feel that additional overview instructional space and storage solutions can provide students with a wider array of curriculum choices to explore before pursuing a specific career pathway.

The business center at Skyview house accounting, finance, and business curriculum. The main needs of classrooms focus around opportunities to become more flexible. Current furniture is very limiting with regards to classroom and lecture space arrangements. Student workstation furniture needs to be updated with more flexible options. Desktops, not laptops are needed for curriculum and mobile labs do not work well for teachers and students.

All CTE teachers agree on the need for more robust program offerings at Skyview. The opportunity for students to use the Career Center is limited by transportation and scheduling difficulties. Modified block scheduling was proposed as a solution. Skyview teachers require more feedback about students from teachers at the Career Center.



## CTE at West High School

The Master Planning Team interviewed Dave Cobb, the principal at West, toured the facility, and led discussions with CTE staff. Additional information regarding deferred maintenance and facility recommendations are under section 5 of this document.

The proximity of the West and The Career Center allows for a stronger connection than Senior or Skyview. 355 part-time and 60 full-time students attend the Career Center from West. Leadership at West supports the Career Center expanding their curriculum offerings and becoming a stand-alone magnet high school that West students would still be able to utilize. The school sees tremendous opportunities to explore creative scheduling for West, Senior, and Skyview to better utilize the resources at the Career Center. Current programs at West are limited by 19th century teaching spaces that do not accommodate flexibility in teaching modalities or cross discipline collaboration.

CTE programs offered at West include; robotics, wood shop, tech ed, business, finance, marketing, and family and consumer sciences. There is a high demand of CTE programs, to expand offerings would require additional FTE and additional instructional spaces. A consistent message between all CTE teachers included the need for additional classrooms space, additional and more functional storage, MEP upgrades, and flexible furniture.

Tech ed and wood shop programs at West are limiting due to spatial constraints, lack of storage, and specialized work areas. The wood shop classroom does not have designated instructional space and clearances between machines is inadequate, causing safety concerns. There is no direct connection between digital training areas and fabrication spaces. MEP and dust collection systems need to be updated. The tech ed classroom has minimal storage and work space. There could be collaboration opportunities and space sharing strategies with adjacent art classrooms. Break out and small group teaching spaces are desirable for the program. Wood shop would introduce additional programs such as cabinet design and production if there were additional space and storage.

Family consumer sciences at West have an average of 30 students per class. Program offerings are limited by lack of space and equipment for more robust curriculum, limited storage, and spaces for students to display work or a student café to sell prepared food. The culinary arts spaces need industrial kitchen equipment for a pro-start program along with proper ventilation for kitchen stations. The textiles classroom needs additional storage and could benefit from more flexible furniture.



The business center at West provides instruction for business, finance, and marketing classes. It contains one of a few conference/small group instruction areas in the school and is heavily utilized. Current locations of power and data hinder the flexibility for classroom arrangements. Reorganization of the server room could provide opportunities to capture classroom or breakout space.

Staff at West see the Career Center as an asset and feel programs offered at West create a good introduction to pathways being developed at the Career Center. They feel the Career Center needs to be re-branded to be both college and career ready. Teachers are very engaged in building industry alliances and job shadowing opportunities in conjunction with the CTE Advisory Council.

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## Overview

The 2018 Master Plan has a core emphasis on CTE that directly relates to the vision of what the Career Center is and can become. Expanding on the 2016 CTE Review Document recommendations, the planning team; analyzed existing building infrastructure, diagrammed concepts for improving career pathway collaboration, developed an initial program document to increase student capacity, and explored potential building organizations on the site.

The existing building infrastructure needs significant improvements to mechanical, plumbing, electrical, and architectural systems to maintain adequate learning environments. The structural system of the building has created significant challenges to form physical connections to fabrication labs in the east portion of the building to the classrooms spaces in the west half of the building.

Students at the Career Center have access to course offerings that include; building a house, repairing automobiles, teaching pre-kindergarten children, and networking computers. Students also have the opportunity to learn and practice; digital photography, printing, welding, machining, web page design, interior decorating, culinary arts, broadcast media, video production, engineering, animation, urban agriculture, and applied medicine. The adjacency to City College allows opportunities for students to further research culinary arts and bio-med programs.

The Career Center offers multiple program options focusing on CTE curriculum that have traditionally been paired with core curriculum requirements at the three high schools. The Core Leadership Team explored planning concepts that would allow for flexibility of the Career Center to provide core curriculum requirements and provide the district the opportunity to accommodate multiple delivery options in the future

The Master Plan identifies two scenarios to meet the requirements of a 1000 student capacity facility at the Career Center site with the program developed through the master planning process:

\$ 51.1M	Renovation of high bay fabrication spaces, demolition and new construction of 21st century learning environments
\$ 60.5M	Construct a new CTE facility at the Career Center site

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## Program Explorations

During the Core Leadership Team meetings, a program for a future facility at the Career Center site was developed. The program is organized to provide opportunities for CTE curriculum as well as core classrooms and fitness requirements. The program corresponds to the 15 Montana Career Pathways and is organized with spaces that will support a 1,000 student capacity facility. The program was modeled for scenarios of 20 students per class and 25 students per class. Specialized spaces for CTE pathways include options for a restaurant/cafe space for the hospitality and tourism pathway as well as fabrication spaces, flexible labs, and general instruction labs. The program allows for future flexibility for the district to support a variety of delivery methods including the option to offer diplomas or become a comprehensive high school in the long term. This program should be used as a planning guide to be refined and vetted during future design phases.

Career Pathways						
Space Description		# of Spaces	Area (SF)	Net Area (SF)	# of T.S.	20 students 83.3% Utilization
Advanced Manufacturing	Fabrication Lab	1.0	4000	4000		
	Specialized Lab	1.0	1000	1000		
	Flexible Lab	1.0	1000	1000		
	General Lab	3.0	875	2625	3	50
	Tool/Material/Project Storage	1.0	800	800		62
9425						
Agriculture, Food & Natural Resources	Fabrication Lab					
	Specialized Lab (Green House)	1.0	2000	2000		
	Flexible Lab	1.0	1000	1000		
	General Lab	3.0	875	2625	3	50
	Tool/Material/Project Storage	1.0	800	800		62
6425						
Agriculture, Mechanics & Construction	Fabrication Lab (10 Bay Auto Lab, Shared with Auto Lab)	0.5	8000	4000		
	Specialized Lab					
	Flexible Lab (Open to Auto Lab)	1.0	1000	1000		
	General Lab	3.0	875	2625	3	50
	Tool/Material/Project Storage	1.0	800	800		62
8425						
Business Management	Fabrication Lab					
	Specialized Lab (Shared Lab)	0.5	1200	600		
	Flexible Lab (Office Lab Shared w/ Business and IT)	0.25	2000	500		
	General Lab	3.0	875	2625	3	50
	Offices / Storage	4.0	100	400		62
4125						
Design & Construction	Fabrication Lab	1.0	4000	4000		
	Specialized Lab (Drafting Lab)	1.0	1000	1000		
	Flexible Lab (Interior Library) (Maker Space)	2.0	1000	2000		
	General Lab	3.0	875	2625	3	50
	Tool/Material/Project Storage	1.0	800	800		62
10425						
Education	Fabrication Lab					
	Specialized Lab					
	Flexible Lab (Early Childhood Lab)	1.0	2000	2000		
	General Lab	3.0	875	2625	3	50
	Offices / Storage	3.0	300	900		62
5525						
Finance	Fabrication Lab					
	Specialized Lab					
	Flexible Lab (Shared Lab)	1.25	2000	2500		
	General Lab	3.0	875	2625	3	50
	Offices / Storage	4.0	100	400		62
5525						
Health Professions	Fabrication Lab					
	Specialized Lab (Practice Exam Lab 4-5 stations) (Pharmacy)	2.0	2000	4000		
	Flexible Lab	1.0	1200	1200		
	General Lab	3.0	875	2625	3	50
	Tool/Material/Project Storage	1.0	800	800		62
8625						

## Program Explorations

Hospitality & Tourism	Fabrication Lab						
	Specialized Lab (Culinary Arts Lab) (ProStart Lab)	2.0	2000	4000			
	Flexible Lab (Restaurant connected to Commons)	1.0	2000	2000			
	General Lab	3.0	875	2625	3	50	62
	Tool/Material/Project Storage	1.0	800	800			
9425							
Human Services	Fabrication Lab						
	Specialized Lab (Foods & Nutrition Lab)	1.0	1200	1200			
	Flexible Lab (Early Childhood Lab)	1.0	2000	2000			
	General Lab	3.0	875	2625	3	50	62
	Offices / Storage	4.0	100	400			
6225							
Information Technology	Fabrication Lab						
	Specialized Lab (Server Room) (Shared Lab)	1.5	1200	1800			
	Flexible Lab (Shared Lab)	0.25	2000	500			
	General Lab (Technology Labs)	3.0	875	2625	3	50	62
	Tool/Material/Project Storage	1.0	400	400			
5325							
Marketing	Fabrication Lab						
	Specialized Lab (Dark Room) (Specialized Comp Lab)	2.0	1000	2000			
	Flexible Lab (Maker Space)(Shared Lab)	1.25	2000	2500			
	General Lab	3.0	875	2625	3	50	62
	Tool/Material/Project Storage	1.0	400	400			
7525							
STEM	Fabrication Lab						
	Specialized Lab (Adv Science Lab/Engineering Lab)	1.0	2000	2000			
	Flexible Lab (Robotics / Maker Space)	1.0	2000	2000			
	General Lab	3.0	875	2625	3	50	62
	Tool/Material/Project Storage	2.0	400	800			
7425							
Transportation	Fabrication Lab (10 Bay Auto Lab, Shared w/ AG Mech)	0.5	8000	4000			
	Specialized Lab (Dyno Lab)	1.0	1000	1000			
	Flexible Lab	1.0	1000	1000			
	General Lab	3.0	875	2625	3	50	62
	Tool/Material/Project Storage	1.0	800	800			
9425							
Welding & Fabrication	Fabrication Lab (Metal Shop, 24 Welding Stations)	1.0	4000	4000			
	Specialized Lab						
	Flexible Lab	1.0	1000	1000			
	General Lab	3.0	875	2625	3	50	62
	Tool/Material/Project Storage	1.0	800	800			
8425							
				112275	750	937	

Core Curriculum Classrooms						
Space Description	# of Spaces	Area (SF)	Net Area (SF)	# of T.S.	83.3% Utilization	83.3% Utilization
English	2.0	875	1750	2	33	42
History / Psychology	2.0	875	1750	2	33	42
Math Room	2.0	875	1750	2	33	42
Science / Physics	2.0	1200	2400	2	33	42
Health	2.0	875	1750	2	33	42
				9400	167	208

Presentation Resources						
Space Description	# of Spaces	Area (SF)	Net Area (SF)	# of T.S.	83.3% Utilization	83.3% Utilization
Auditorium / Lecture / Presentation	1.0	2000	2000			
Distributed Presentation/Breakout/Shared	6.0	600	3600			
				5600	0	0

Special Services						
Space Description	# of Spaces	Area (SF)	Net Area (SF)	# of T.S.	83.3% Utilization	83.3% Utilization
Academics: Transitions & HiSet						
Transitions Classroom	1.0	600	600	1	8	12
HiSet Classroom	1.0	600	600	1	8	12
Office	2.0	100	200			
				1400	17	25

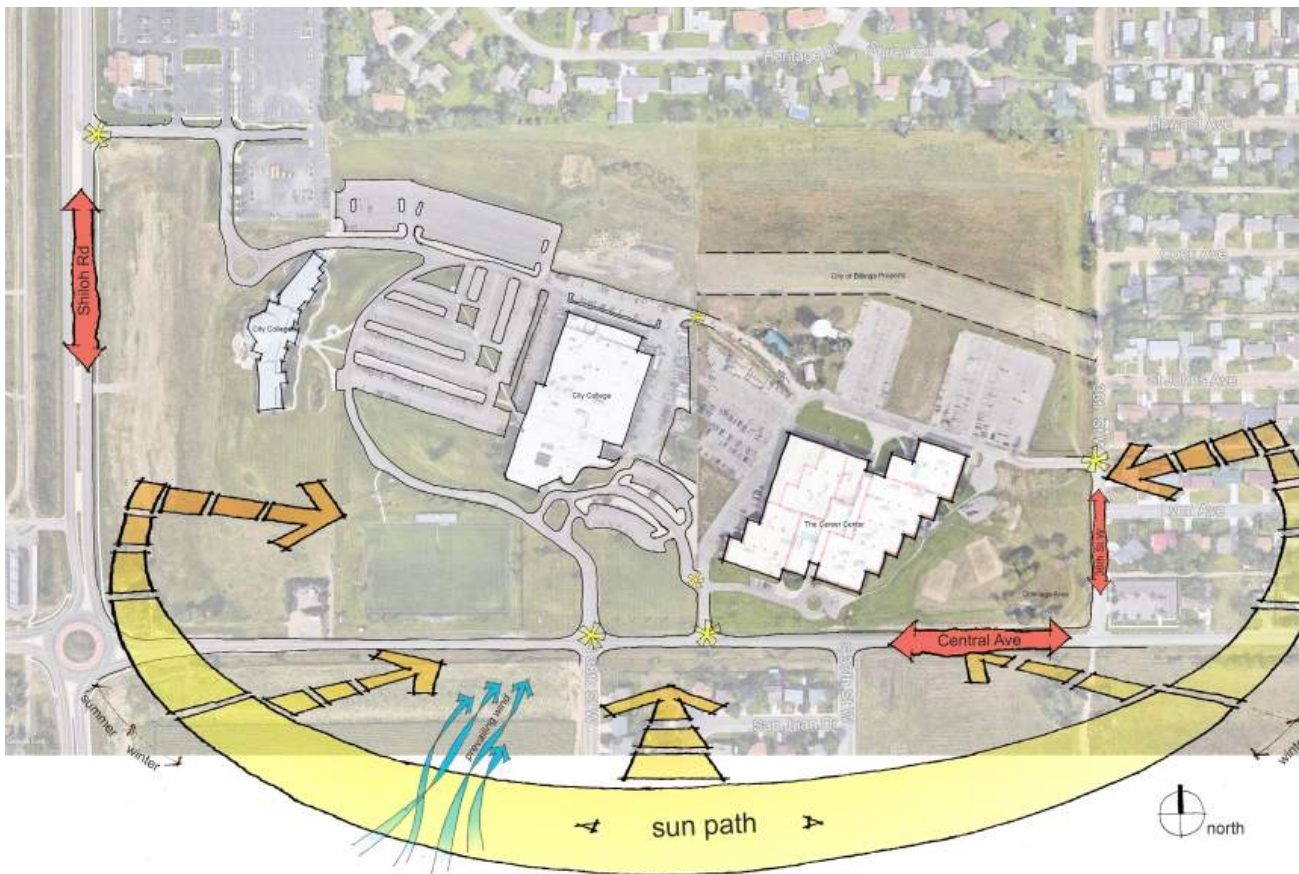
## Program Explorations

Administration						
Space Description	# of Spaces	Area (SF)	Net Area (SF)	# of T.S.	83.3% Utilization	83.3% Utilization
Public Reception	1.0	600	600			
Principals Office	1.0	220	220			
Assistant Principal Office	1.0	220	220			
Office Manager	1.0	200	200			
Attendance Office	1.0	200	200			
IT Manager Office	1.0	140	140			
SRO Office	1.0	140	140			
Itinerant Office	2.0	140	280			
Nurse Office	1.0	140	140			
Cot Room/Clinic	1.0	300	300			
Counselors Reception	1.0	200	200			
Counselors Office	4.0	140	560			
Conference Room Small	1.0	250	250			
Conference Room Large	1.0	600	600			
Admin Print / Workroom	1.0	500	500			
Student Records	1.0	200	200			
Staff Break	1.0	900	900			
Staff Toilets	2.0	80	160			
Storage	2.0	80	160			
			5970		0	0
Media Center						
Space Description	# of Spaces	Area (SF)	Net Area (SF)	# of T.S.	83.3% Utilization	83.3% Utilization
Reading Room / Stacks	1.0	3000	3000			
Class Lecture Space	1.0	1000	1000			
Computer Lab Space	1.0	875	875			
Workroom/Office/Storage	1.0	800	800			
			5675		0	0
Physical Education						
Space Description	# of Spaces	Area (SF)	Net Area (SF)	# of T.S.	83.3% Utilization	83.3% Utilization
Gymnasium (similar to middle schools)	1.0	10000	10000			
Locker Rooms (office, toilet, changing)	2.0	1500	3000			
Storage	1.0	1000	1000			
			14000		0	0
Commons / Cafeteria						
Space Description	# of Spaces	Area (SF)	Net Area (SF)	# of T.S.	83.3% Utilization	83.3% Utilization
Commons	1.0	8000	8000			
Storage	1.0	600	600			
Servery/Kichen/Office/Toilet/Storage	1.0	3500	3500			
			12100		0	0
Building Service						
Space Description	# of Spaces	Area (SF)	Net Area (SF)	# of T.S.	83.3% Utilization	83.3% Utilization
Building Support/Elec/Mech/IT/Toilet						
			10280		0	0
Programmed Total			176700			
General Building Areas						
Space Description	# of Spaces	Area (SF)	Net Area (SF)	# of T.S.	83.3% Utilization	83.3% Utilization
Circulation / Walls			31806			
		18%	31806	57	0	0
Total	Career Center Area				20 students per class	25 students per class
	208,506 SF				933 Students	1170 Students

### 3 CAREER CENTER

#### Site Analysis

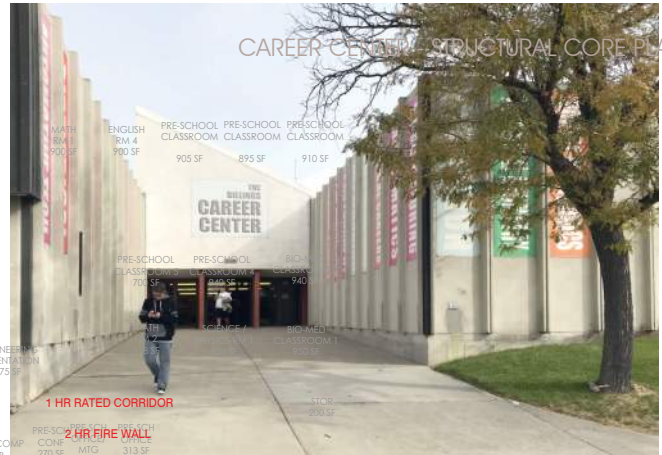
The Career Center site is 26.81 acres with 2.44 acres of city property running east/west across the site. The low topography has a minimal slope with the low point at the southeast corner of the site where there is natural drainage. City utilities are accessed from Central Avenue and fire loop extends around the building. An abandoned fire suppression holding tank is on-site, septic fields are also no longer needed due to connection to city sewer services. City College is directly adjacent and provides vehicular and pedestrian connections between both sites. Main vehicular access is off of Central Avenue with visitor parking to the south and main student and teacher parking to the east and north of the building. Future improvements along Central include a round about at 38th street and possibly 36th street and a metro bus stop at these locations. Development of 36th street could be a possibility if access to the site was emphasized along 36th street.



## Building Analysis

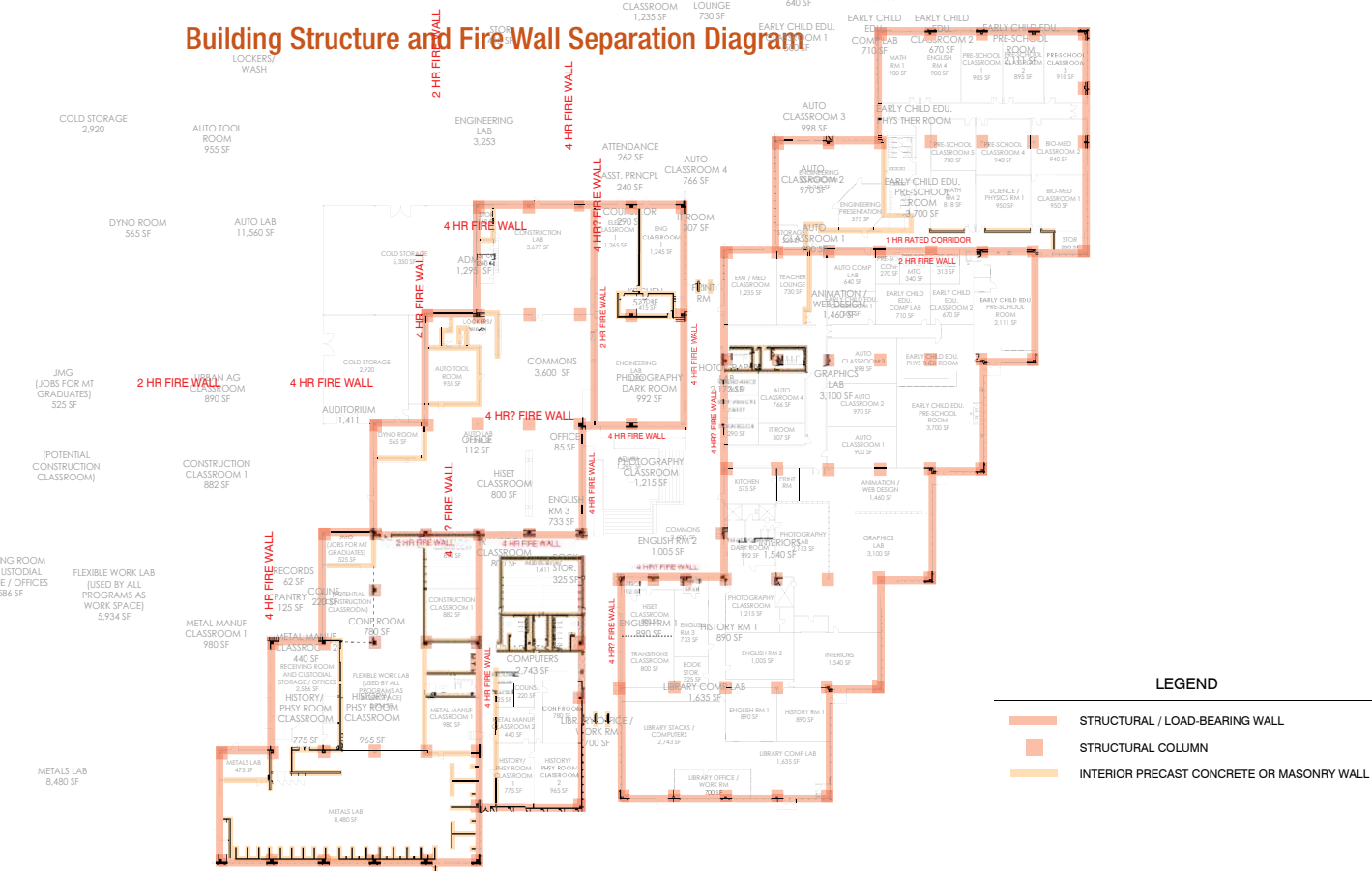
The Career Center is a one story precast concrete building with cast concrete features and insulated metal panels. The exterior structural system is precast concrete and cmu bearing walls. The interior structure is steel columns, cmu and concrete bearing walls. The floor structure is slab on grade and the roof structure is steel bar joists with metal decking. The roof drainage is formed by tapered rigid insulation. The floors are sealed concrete, some vinyl asbestos tile corridors and ceramic tile in the toilet rooms. The walls are painted concrete and cmu as well as movable wall systems. The ceilings are gypsum board on furring. There are aluminum frame windows and doors as well as hollow metal frame doors. The HVAC system is multiple roof top units.

The structural system of the building has created significant challenges to form physical connections between fabrication labs and classrooms spaces. The building is organized into 3 main areas; fabrication spaces to the east, commons space in the center, and classroom instruction to the west. Administration offices are located in the center of the building, using cameras and intercoms for building access security. Daylighting opportunities are not available to most of the spaces. Most instructional spaces are compartmentalized with minimal opportunities for small group breakout or collaboration areas.



CAREER CENTER STRUCTURAL CORE PLAN

## Building Structure and Fire-Wall Separation Diagram



## Program Adjacency Explorations and Site Diagramming

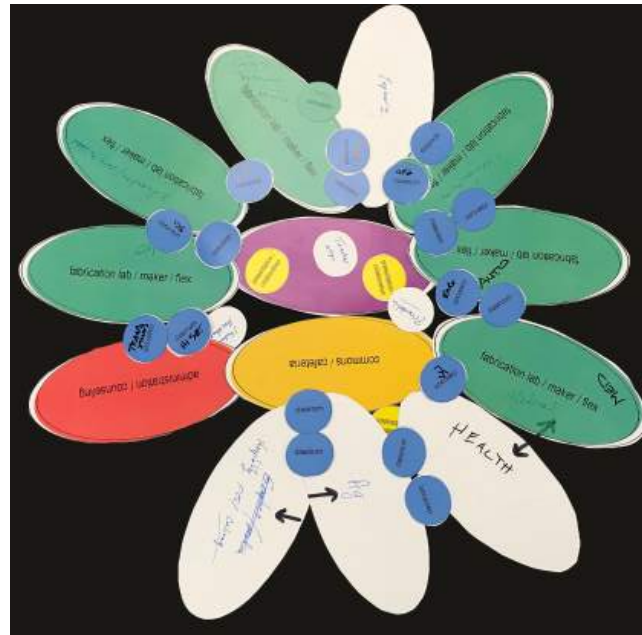
In a series of meetings and charrettes, the architects, and core design team members studied basic space adjacency relationships and organizational concepts and analyzed how the adjacencies would help or hinder collaboration among various career pathway curriculum. These organizational concepts considered reuse of the existing space, preferred program adjacencies, classroom organization, shared teaching areas, career center and city college relationships, common areas, circulation, school entry, and image and presence to the public.

The team explored key spatial relationships of various pathways including the relationship of fabrication and heavy equipment pathways, such as; design and construction, manufacturing, transportation, and welding among themselves and their relationship to general classroom instructional spaces. Spaces with similar equipment needs were located adjacent to each other to maximize flexibility and shared resources.

Pathway curriculum that requires specialized technology and equipment, such as; Health Professions, Marketing, and STEM were organized adjacent to each other. All pathway labs and classrooms were organized to have a direct connection to the more publicly used spaces of the commons and library.

Building program and adjacency studies looked at 3 considerations; renovation of existing spaces, addition of new instructional space to existing building, and a concept looking at the construction of a new facility. Advantages and drawbacks are analyzed in the next pages.

Site diagramming studies examined impacts any additions or new construction projects will have on the site. Key concepts for site development established by the core team leadership included; creating a campus feel with adjacent City College buildings, a strong public presence to the community, and an identified entry and identity for the Career Center.

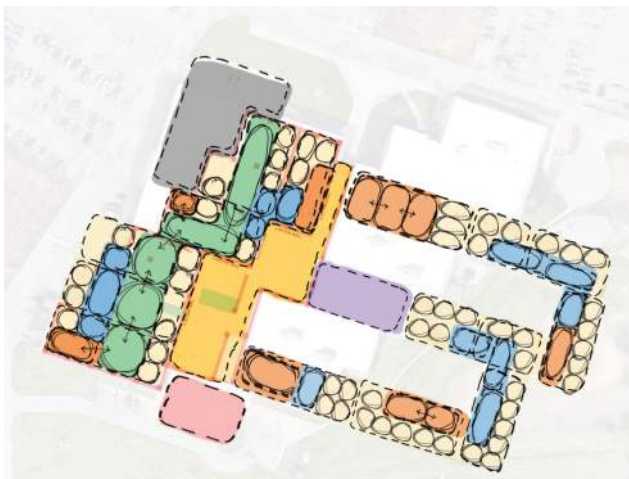




## Renovation and Addition

This concept renovates all existing spaces and creates additional classrooms, fabrication labs, and administration around the perimeter of the existing structure.

- Creates a new facade at the south and east for new visual presence on Central Ave
- One main entry at the south facade, difficult adjacency to parking
- Majority of spaces still have no access to daylight
- Existing 4hr fire walls and structure limit connection within the building for cross discipline collaboration
- Possible phasing options, but would disrupt use throughout school year



## Renovation / Demolition and Addition

This concept renovates the high bay fabrication spaces, demolishes the east half of the existing building, and creates new classrooms, labs, library, and administration.

- Creates a new entry and facade to the public along Central Ave
- New entry to south creates difficult adjacency to parking
- New classrooms and labs have access to daylight
- Minimal connection from fabrication labs to other classrooms
- Requires phasing that would not allow use of building throughout school year



## New Construction

This concept creates a new 2-story building north of the existing facility. Spaces are organized along a central spine for maximum access to daylight and ease of supervision. Parking is located south of the new building and allows options for campus connections to City College.

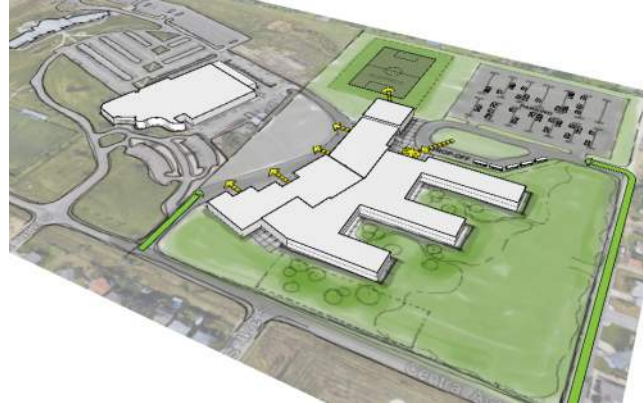
- Maximized daylight access to all spaces
- New facade to the public along Central Ave
- Creates strong adjacencies among career pathways
- Phasing would not disrupt school functions on-site
- Creates opportunities for pedestrian and vehicular connections to City College
- Preferred concept for circulation, safety, security, and 21st century learning opportunities

### 3 CAREER CENTER

## Site Diagramming Concept 'A'

### Organizing Concepts

- Renovation of existing fabrication spaces
- Demolish classrooms east of the existing commons
- Construct new classroom labs, library, and admin organized as wings.
- Wings allow for daylight to instructional spaces and into commons/cafeteria
- Creates a 'back of house' relationship with City College by creating outdoor working space between the buildings directly adjacent to fabrication labs
- New Entry to the north of the existing building and Commons central to the building
- Gymnasium located on north side of building adjacent to play fields
- New site entry along 36th



### Conceptual ROM

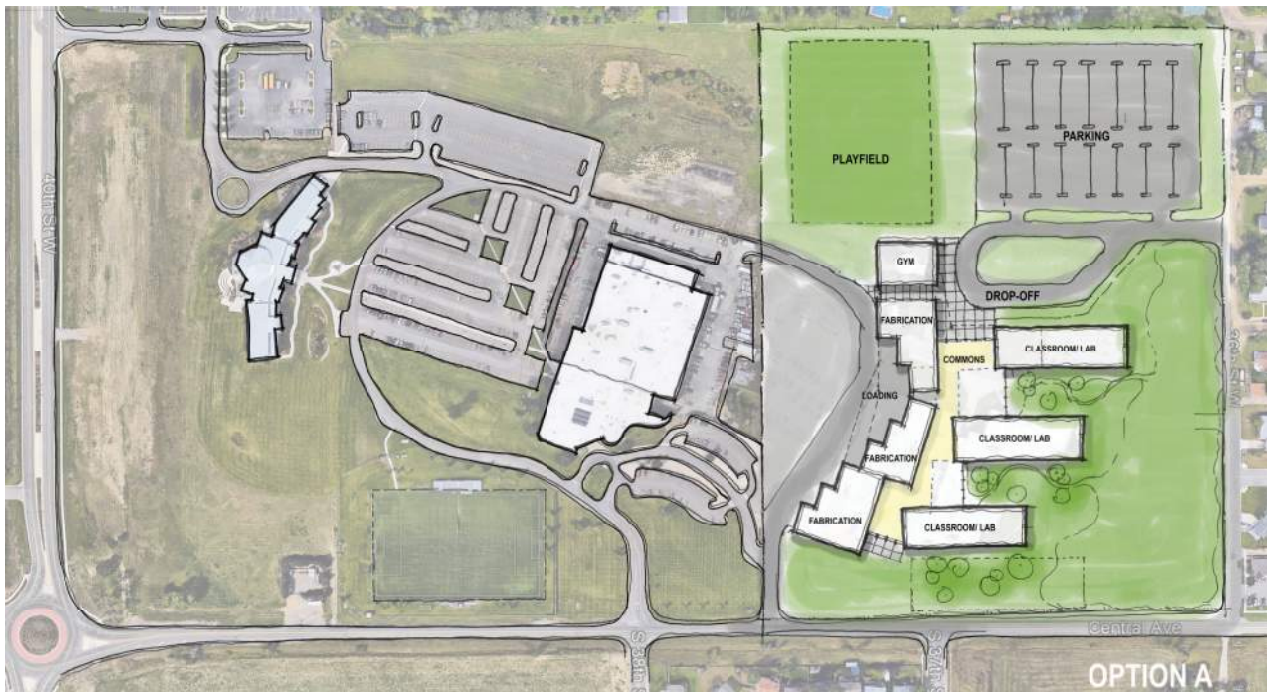
Scheme A - full program  
\$51.5M + portables and phasing costs

Scheme A - reduced program  
\$45.6M + portables and phasing costs

### Leadership Group Feedback

- Concern with consequences of phasing, student safety, and impact to instructional spaces
- Would require loss of instructional classrooms for academic year, would need to purchase portable classrooms
- Need to create a stronger campus feel with City College
- Main site entry along 36th would require city to extend right of way

This concept **not recommended** due to concern with student safety during a phased construction project and the loss of classroom space during the school year. Costs of adding portable classrooms and complexity of construction sequencing limit the district's ability to provide adequate learning environments during construction period.



## Site Diagramming Concept 'B'

### Organizing Concepts

- Renovation of existing fabrication spaces
- Construct new classroom labs, library, and admin organized as wings.
- Demolish existing classrooms commons
- Add classroom spaces directly adjacent to fabrication labs
- Creates a 'back of house' relationship with City College by creating outdoor working space between the buildings directly adjacent to fabrication labs
- New Entry to the east of the existing building and Commons central to the building
- Gymnasium located on north side of building adjacent to play fields
- Creates new facade visible from Central Ave



### Conceptual ROM

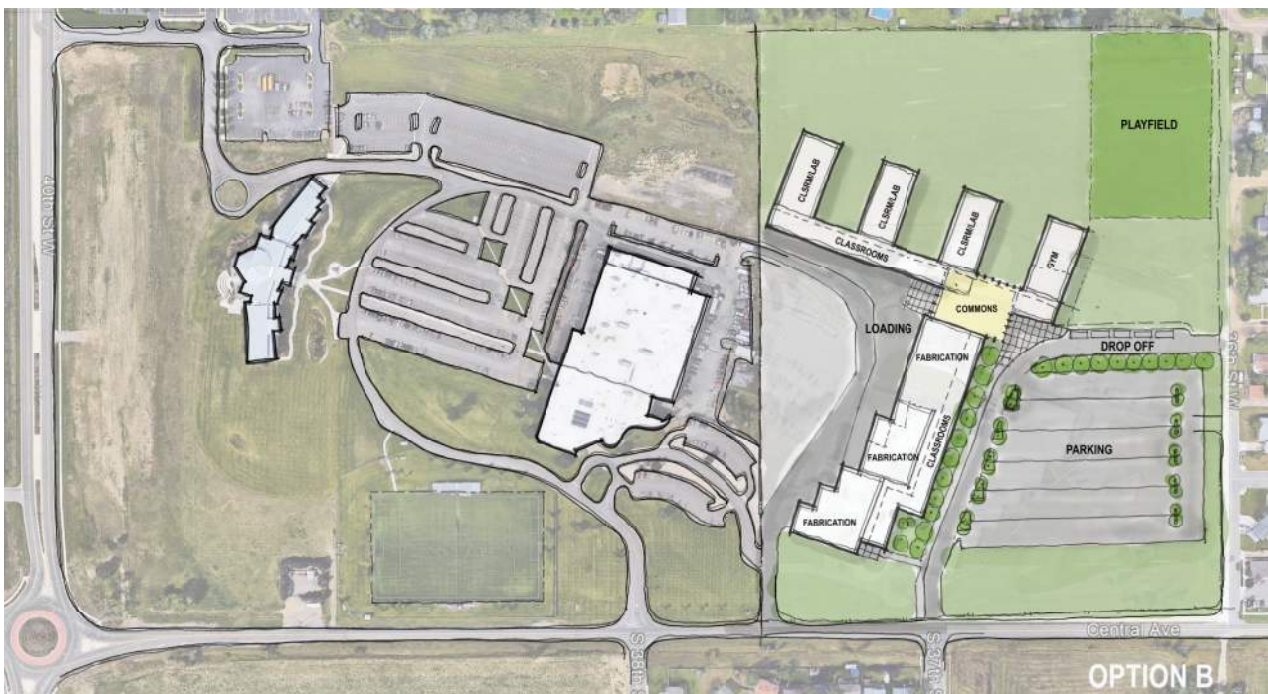
Scheme B - full program  
\$51.1M + phasing costs

Scheme B - reduced program  
\$45.1M + phasing costs

### Leadership Group Feedback

- Concern with consequences of phasing, student safety, and impact to instructional spaces
- Would require phasing while school is in session for fabrication labs renovations
- Need to create a stronger campus feel with City College
- Like one single point of arrival for safety and security
- Could create the perception of the "old" wing and the "new" wing for students

This concept **not recommended** due to concern with student safety during a phased construction project and the loss of fabrication spaces during the school year. Costs and complexity of construction sequencing limit the district's ability to provide adequate learning environments during construction period.



### 3 CAREER CENTER

## Site Diagramming Concept 'C'

### Organizing Concepts

- New construction north of existing building
- "Bar" building allows effective adjacency of programs, allowing for joint use and flexible spaces
- East/west organization allows maximized daylighting opportunities
- Strong identity and presence from Central Ave
- Creates a 'front of house' relationship with City College
- Entry, administration, commons/cafeteria, and library are central to the building
- Gymnasium located on the northeast side of building adjacent to play fields
- Creates outdoor work areas to the north, directly adjacent to fabrication labs
- Existing entrance along Central Avenue maintained
- Opportunities to create central parking and pedestrian circulation between City College and Career Center

### Leadership Group Feedback

- Creates an identifiable entry from Central and a strong community presence
- Construction sequencing can be easily phased while existing school is in use
- Additional storage building can be located to work area to the north and be screened from public by the building
- Need better public access to gymnasium
- Creates strong connections and beautification opportunities between Career Center and City College

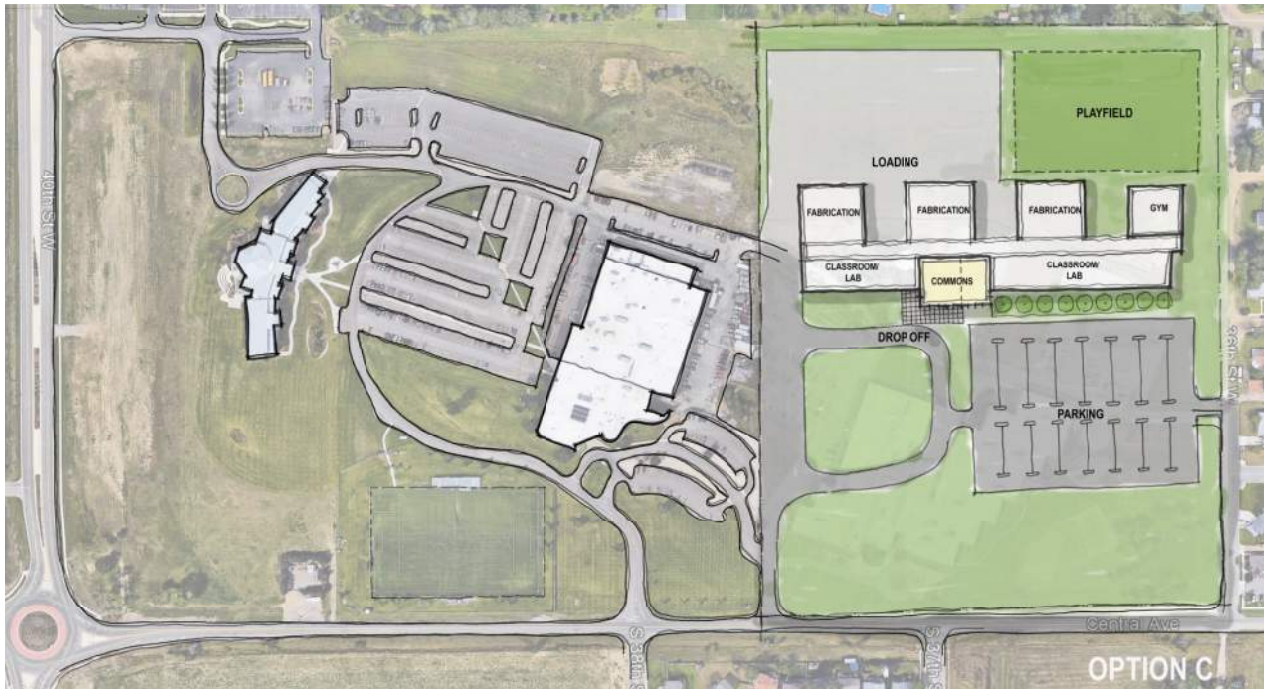


### Conceptual ROM

Scheme C - full program  
\$61.4M

Scheme C - reduced program  
\$55.5M

This concept **not recommended**. Concept 'D' allows for the organizational advantages of concept 'C', but creates a stronger campus feel and connection possibilities with City College, as well as creating easier access to the community assets of the play fields and gymnasium



## Site Diagramming Concept 'D'

### Organizing Concepts

- New construction north and east of existing building
- Creates a 'front of house' relationship with City College
- Identity and presence from Central Ave
- "Bar" building allows effective adjacency of programs, allowing for joint use and flexible spaces
- Break in the "bar" creates a stronger response to the site and creates edges that better define a campus feel with City College
- Entry, administration, commons/cafe/tergia, and library are central to the building
- Gymnasium located on the southeast side of building adjacent to play fields and parking
- Creates outdoor work areas to the north, directly adjacent to fabrication labs
- Opportunities to create parking and pedestrian circulation between City College and Career Center
- Exiting entrance along Central Ave is maintained



### Conceptual ROM

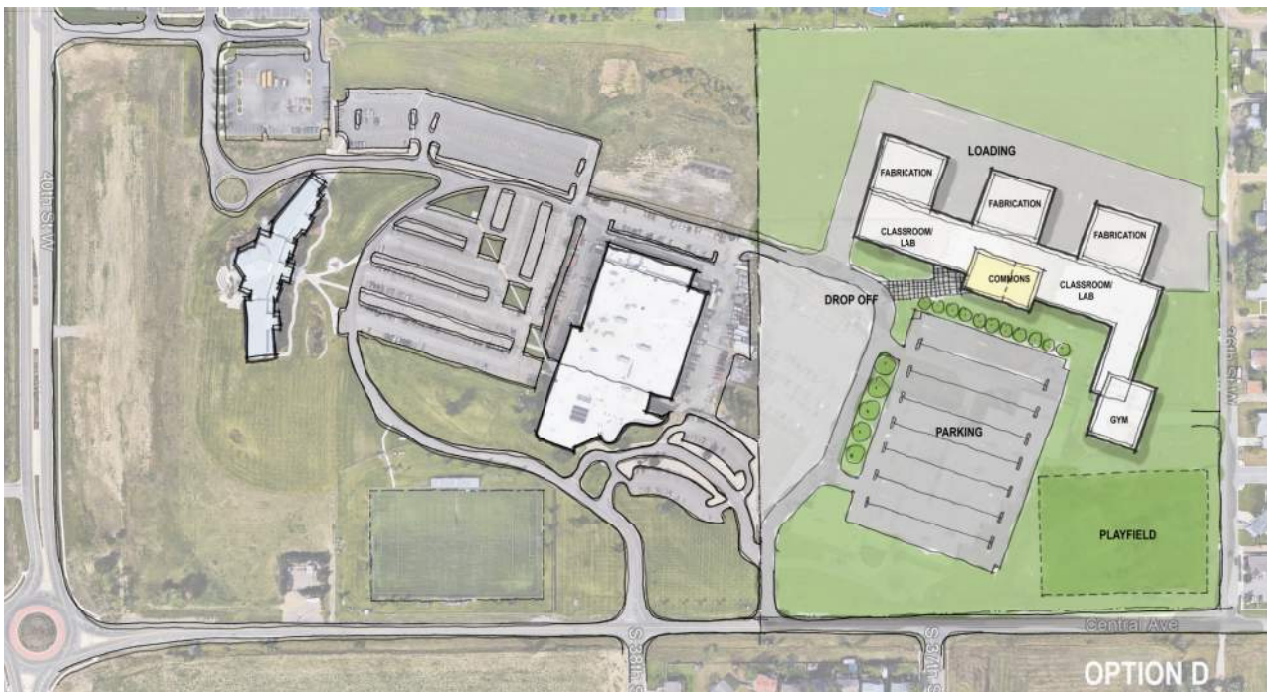
Scheme D - full program  
\$60.5M

Scheme D - reduced program  
\$54.6M

### Leadership Group Feedback

- Creates easy access for community to use gymnasium and playfields
- Creates a stronger campus feel with City College and helps define space between buildings
- Phasing and construction sequencing allows for existing school to be used during construction

This concept **recommended**. The ability to utilize the existing building for instruction while constructing a new building is a requirement for the district. This organization creates the strongest opportunities for a campus development with City College. After hour access to public amenities such as the gymnasium and play fields is strong and could be developed further.



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## Overview



Based upon the recommendations from the 2013 Master Plan, the district has transitioned to a K-5 elementary and 6-8 middle school model. This transition Provides an additional year for students to transition between elementary and high school, expanded the vision for innovative career and technical education and STEM for students, and expanded course offerings for all students. The new model allows the middle schools to prepare students for career and technical pathways and college preparation. 6th-grade students have the ability to take exploratory classes and are also integrated into many of the middle school extracurricular program offerings. In addition, 7th and 8th-grade students have more elective choices during the year.

Since the 2013 Master Plan, the district has built two new middle schools, Ben Steele and Medicine Crow, constructed major renovations and additions to Broadwater Elementary and Mckinley Elementary, and completed over \$38M worth of deferred maintenance at all of the district's facilities.

Recommendations for the 2018 Master Plan focus on capacity, equity, and deferred maintenance needs. Goals developed during the planning process include; eliminate all portable classrooms at elementaries, provide capacity needs based on 2017 projected demographics, pursue educational adequacy between all facilities by implementing strategies developed in the 2013 Master Plan, and implement deferred maintenance needs at all facilities.

To address educational adequacy and equity between all of the district's K-8 facilities and to align capacity with demographic enrollment projections, the Master Plan recommends the following projects:

\$ 16,329,600	Classroom additions to remove portable classrooms and account for enrollment projections at 6 elementary schools and multipurpose room additions to accommodate equity at 9 elementary schools (multi-purpose rooms identified in 2013 master plan)
\$ 3,685,500	Physical Education additions to accommodate equity at 2 middle schools (identified in 2013 master plan)
<b>\$ 20,015,100</b>	<b>Subtotal</b>

To address building, site, life cycle, deferred maintenance, and ADA compliance needs at all K-8 facilities the Master Plan recommends a variety of projects throughout the district:

\$ 3,193,491	Building, Site, Life Cycle, Deferred Maintenance, and ADA Compliance Costs at Elementary Schools
\$ 3,441,713	Building, Site, Life Cycle, Deferred Maintenance, and ADA Compliance Costs at Middle Schools
(\$ 5,445,000)	to be completed summer 2018 with 2013 bond funds
<b>\$ 1,190,204</b>	<b>Subtotal</b>

## 4 K-8 FACILITIES

### Overview (cont)

A summary for work to be completed at each facility is listed below. These items are expanded upon under the individual facilities heading. Multi-purpose additions are carried over from the 2013 Master Plan recommendations.

#### **Alkali Creek ES**

Deferred Maintenance.....	\$ 135,643
Multi-Purpose Room Addition .....	\$ 1,275,750

#### **Arrowhead ES**

Deferred Maintenance.....	\$ 259,318
Multi-Purpose Room Addition .....	\$ 1,275,750

#### **Beartooth ES**

Deferred Maintenance.....	\$ 136,650
Multi-purpose Room Addition .....	\$ 1,275,750

#### **Bench ES**

Deferred Maintenance.....	\$ 321,557
Multi-Purpose Room Addition	
Demolish Portable Classrooms	
4 Classroom Addition .....	\$ 2,296,350

#### **Big Sky ES**

Deferred Maintenance.....	\$ 107,696
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#### **Bitterroot ES**

Deferred Maintenance.....	\$ 127,777
Multi-Purpose Room Addition	
Demolish Portable Classrooms	
3 Classroom Addition .....	\$ 2,041,200

#### **Boulder ES**

Deferred Maintenance.....	\$ 36,134
Multi-Purpose Room Addition	
Demolish Portable Classrooms	
2 Classroom Addition .....	\$ 1,786,050

#### **Broadwater ES**

Deferred Maintenance.....	\$ 10,000
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#### **Burlington ES**

Deferred Maintenance.....	\$ 37,908
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#### **Central Heights ES**

Deferred Maintenance.....	\$ 64,810
Multi-Purpose Room Addition	
Demolish Portable Classrooms.....	\$ 1,275,750

#### **Eagle Cliffs ES**

Deferred Maintenance.....	\$ 173,877
Multi-Purpose Room Addition .....	\$ 1,275,750

#### **Highland ES**

Deferred Maintenance.....	\$ 53,018
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#### **McKinley ES**

Deferred Maintenance.....	\$ 60,000
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#### **Meadowlark ES**

Deferred Maintenance.....	\$ 175,836
Demolish Portable Classrooms	
6 Classroom Addition .....	\$ 1,530,900

#### **Miles Avenue ES**

Deferred Maintenance.....	\$ 119,021
Demolish Portable Classrooms	

#### **Newman ES**

Deferred Maintenance.....	\$ 62,971
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#### **Orchard ES**

Deferred Maintenance.....	\$ 32,500
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#### **Poly Drive ES**

Deferred Maintenance.....	\$ 160,114
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#### **Ponderosa ES**

Deferred Maintenance.....	\$ 68,000
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#### **Rose Park ES**

Deferred Maintenance.....	\$ 149,950
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#### **Sandstone ES**

Deferred Maintenance.....	\$ 856,394
Multi-Purpose Room Addition .....	\$ 1,275,750

#### **Washington ES**

Deferred Maintenance.....	\$ 44,317
4 Classroom Addition .....	\$ 1,020,600

#### **Ben Steele MS**

Deferred Maintenance.....	none
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#### **Castle Rock MS**

Deferred Maintenance.....	\$ 2,162,788
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#### **Lewis & Clark MS**

Deferred Maintenance.....	\$ 628,362
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#### **Medicine Crow MS**

Deferred Maintenance.....	none
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#### **Riverside MS**

Deferred Maintenance.....	\$ 475,563
Physical Education Addition .....	\$ 1,842,750

#### **Will James MS**

Deferred Maintenance.....	\$ 175,000
Physical Education Addition .....	\$ 1,842,750



## Educational Program

The master planning team developed a series of survey questions for elementary principals to gauge what impact/ effect, if any, 6th grade transition to middle schools has had on elementary school space and facility needs throughout the District. The team has analyzed comments and summarized the survey results below.

Since the transition to a K-5 model, about one quarter of the schools surveyed have developed teaching configurations, such as, looping and team teaching. Several elementaries had developed configurations prior to the transition. Overall the impact of the 6th grade transition has not impacted the schools's abilities to offer less traditional alignment and configuration models, the physical configuration of classrooms in the individual schools are what help or hinder the opportunities for different configuration models and teacher collaboration. Overall, the physical separation of classrooms makes collaboration difficult. Collaboration among teachers is harder in schools with portables and annexes.

Previous classrooms that housed 6th graders are being utilized for a variety of programs. Some schools needed the spaces for capacity increases at other grade levels, while some schools were able to use the classroom spaces for programs such as; gifted and talented, life skills and special education, intervention programs, music and art, and for district specialists.

The growth in kindergarten enrollment, and the corresponding elimination of 6th grade students, has impacted lunch service and has created less scheduling flexibility for PE in schools that do not have a dedicated cafeteria and gymnasium. With the growth of kindergarten enrollment, not all schools have age appropriate restrooms immediately adjacent to kindergarten classrooms.

Overall, the transition of 6th graders out of elementary schools has been beneficial and created space for other grade levels, art and music curriculum, and a variety of special ed and intervention resources. Some elementaries still have physical needs for counselors, psychologists, speech therapists, and CSCT workers due to increased enrollment. Two common difficulties of space among elementaries are the isolation of classrooms located in portables or annexes and schools that do not have separate gymnasium and dining spaces.

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## Alkali Creek Elementary School

### Overview

Alkali Creek Elementary is a K-5 elementary school. The original building consisted of 20 +/- classrooms in an “open planning” configuration. Original also included library, multi-purpose, specialty classrooms, administrative, kitchen, etc. There have been no additions. The building is a single story structure with small mechanical mezzanine. It has a concrete foundation system with slab on grade floor system. The structural system is steel columns with steel joists with metal decking. The perimeter walls are steel studs with some concrete masonry units (cmu) that are faced in brick with metal panel accents at doors and windows. The interior is formed by a moveable wall system that is comprised of interlocking wall panels and ceiling tiles. The lighting and HVAC system is also incorporated into this system. The system is unique, expensive to replace ceiling tiles and light fixtures or add outlets or data.

681 Alkali Creek Rd  
Billings MT 59105  
(406) 281-6200

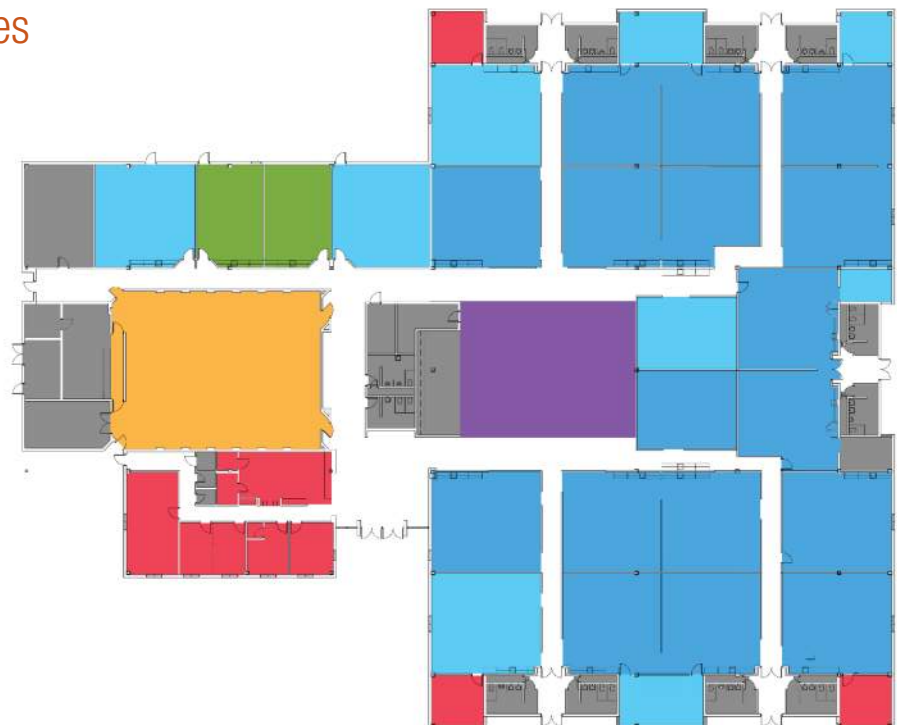
Year Built .....	1979
Renovations .....	0
Portables .....	0
Site Acres .....	10.10
Building SF .....	43,470
Current Enrollment .....	331
Capacity .....	394
Target Capacity .....	364



### Existing Program Spaces

#### PLAN LEGEND

CLASSROOM
SPECIAL SERVICES
LIBRARY
ADMINISTRATION
MEP/TOILET/KITCHEN
COMMONS/CAFE
GYMNASIUM
MUSIC/ART

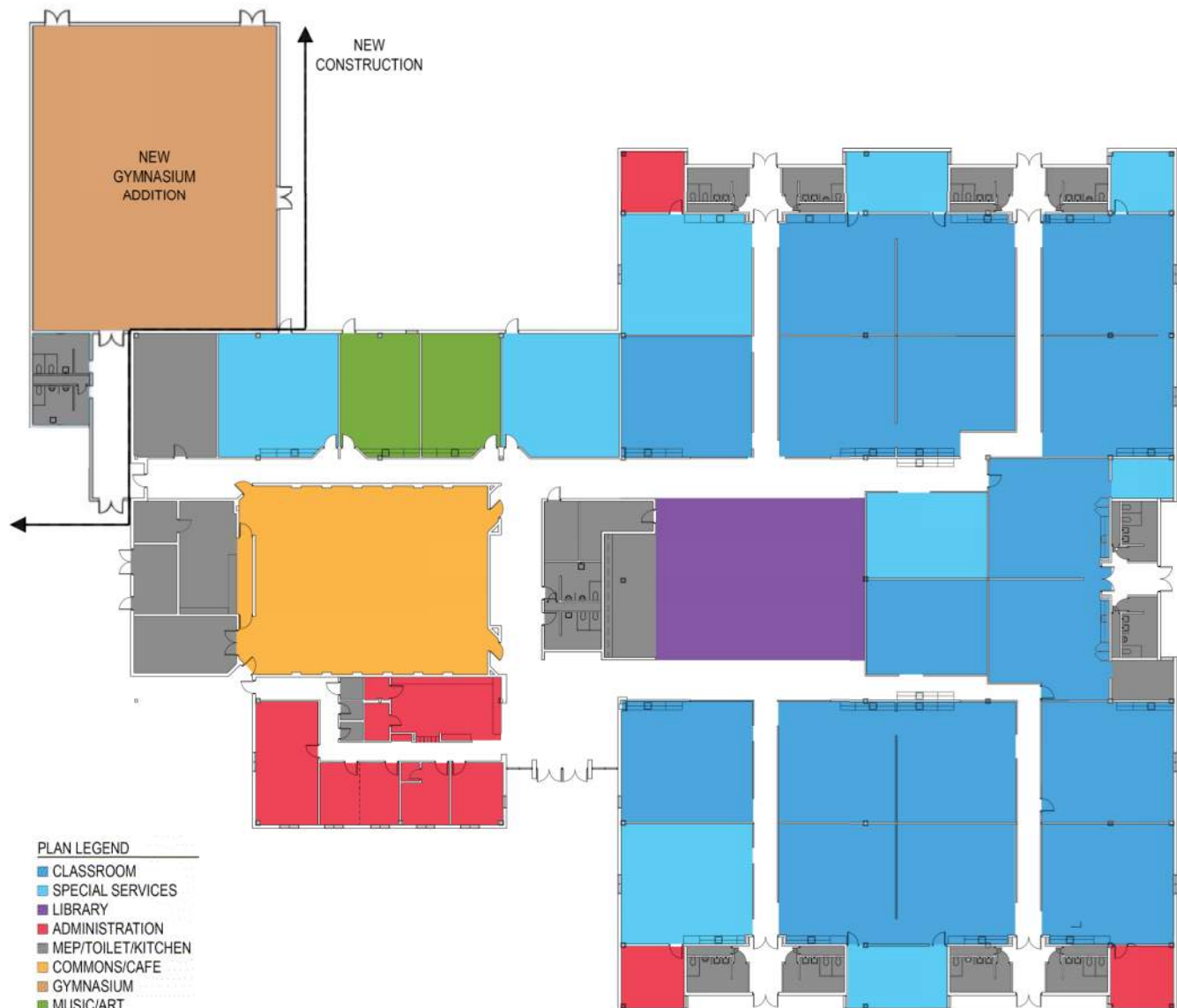


## Alkali Creek Elementary School

### Program Space Recommendations

Recommendations From 2013 master plan are being carried over for the 2018 master plan. The recommendations include:

- Repurpose existing gymnasium to Cafeteria.
- Create a multi-purpose room addition and associated restrooms.



### Potential Floor Plan Diagram

## Alkali Creek Elementary School

### Site Characteristics and Deferred Maintenance

Site Characteristics:			
Component		Cost	Priority
Lot Size	10 acres + Alkali Park .29 acres		
Building Area	41,710 sf		
Topography	Flat site surrounded by hills		
Drainage	Good. Drainage Upgraded in 2011 to handle heavy runoff. Repair storm drain into Alkali Creek on north side of the school. City's responsibility.		
Drop Off	Large drop off area adjacent to front doors		
Hardscape	Asphalt 76,000 sf		
Parking Surface	Asphalt 41,350 sf Priority is to finish asphalt repair in parking lot.	\$80,103	\$80,103
Stalls	56 Parking stalls + 3 HC stalls (2 unsigned)		
Paved Walks/Surfaces	Concrete walkways 10,900 Some work has been completed. Replace sidewalk path and grade the low spot to drain water into the lawn on the south side of the building.	\$7,040	\$7,040
Steps, ramps, retaining walls	Add ADA ramp to the sidewalk at the NW corner of the building	\$3,500	\$3,500
Paved Sports Courts	Large asphalt areas with several activities marked out – cracking in asphalt. Work has been completed.	\$0	
Playgrounds	Gravel areas at playground equip.		
Softscape	277,942 sf		
Play Fields	Large areas of grass around school		
Landscaping	Areas around school entrance landscaped		
Utilities	City services		
Fencing	Some fencing at property lines – Chain Link		

## Alkali Creek Elementary School

### Building Components and Deferred Maintenance

Building Components:			
Component	Sub-Component: Condition Observed and Action to Fix	Cost	Priority
<b>Structural Systems</b>			
Footings/Foundation Walls	Concrete spread footings & stem wall foundation		
Floor Systems	Concrete slab on grade		
	Concrete slab on steel deck and joists at mechanical mezzanine		
Columns and Bearing Walls	Steel columns with limited or no bearing walls		
Beams and Joists	Steel beams and joists with steel decking		
<b>Envelope</b>			
Roof	2014 - Roofing Replaced, need description of roofing system.	\$0	
	Insulation 5" of tapered at initial installation		
Walls	Brick exterior walls with metal panel accents		
Exterior Windows	2015 - Windows Replaced, Insulated Glazing, Low E, Double Pane	\$0	
Exterior Doors	2015 - Exterior Doors Replaced, Hollow Metal		
Thermal Systems	Insulation - 3 ½ " batt and 2" rigid in walls at initial installation		
<b>Interior Finishes</b>			
Interior Walls	Facility Typ - Partition walls: Majority of the facility is comprised of movable partition walls. The walls interlock with a special ceiling grid. The system is difficult to rearrange and difficult to add power and data to.		
	Admin./Aux. Classrooms/ Entryway/Exterior Walls -Steel stud framed gyp. Framed gypsum board walls are present in the Admin and Aux classroom portions of the building as well as at exterior walls.		
	Gym/Some perimeter rooms-Masonry: Interior masonry walls are in good condition throughout the facility.		
	Toilets- Framed Ceramic Tile: Student toilets have CT walls		
	Gym-Fabric Panels: Above brick on gym walls, panels wearing and need cleaning, age of panels is apparent.	\$40,000	
	Toilets - Glazed brick: Exterior walls in student toilets consist of glazed brick.		
Ceilings	Facility Typ.- ACT: Majority of facility ceilings are an ACT lay in system designed to function with moveable walls, the grid is larger than an average system, lights are recessed into ceiling to allow wall flexibility. The mechanical is tied into the system also.	\$10,978	
Doors/Hardware/Windows	Doors are SCW doors. Mortised locks are difficult to maintain.		
	Hardware is non ADA compliant with rounded knobs at each door.		
	2015 - Exterior hardware replaced	\$0	
	Frame are HM frames painted.		
	Relites / Interior Windows		
Floor Finishes	Facility Typ.- Carpet: Majority of floors are carpet in very poor condition, the carpet in poor condition is rippling and is very worn. The office/admin areas have received new carpet in excellent condition.		
	2015 - Replaced carpet and resilient flooring in hallways	\$0	
	Toilets/High Traffic/Gym/-Sheet Vinyl: Sheet vinyl is used throughout the facility in high traffic areas as well as the other spaces mentioned, all SV is in very poor condition bubbling and pulling apart at the seams.		
	2015 - Replaced Vinyl throughout	\$0	

## Alkali Creek Elementary School

### Building Components and Deferred Maintenance

Specialties			
Toilet Partitions	Metal/Other: Metal toilet partitions no visible damage		
Fixed Seating/Risers	Bleachers: N/A		
	Theater: N/A		
	Classroom/Lecture: N/A		
	Cafeteria: N/A		
Markerboards/ Cabinets	Chalkboard / Markerboard: All classrooms contained marker boards in good condition, some auxiliary spaces also had marker boards in good condition.		
	Cabinets: P-lam cabinets in facility are dated, but seem to function well. Cabinets in admin area are new and in excellent condition.		
	Countertops: P-lam countertops in facility are dated, but seem to function well. Counters in admin area are new and in excellent condition.		
HVAC System			
Heating	Controls: Building is connected to the district master controls.		
	BMS: Upgrade needed BMS System replaced Summer 2017		
	Boiler/Furnace: Central boiler has been updated. Air Handler Controls replaced 2017, Equipment remains original to building	\$265,000	
	Room Units: Ducted VAV supply, both ducted and plenum return. Some areas of fin tube radiation. Building constant volume multi-zone air handlers improved to VAV in 2017. All perimeter spaces equipped with fin tube radiation. Space controls improved in 2017		
	Hydronic Piping: 2 pipe heating Building 4 pipe hydronic system		
	Alternative Fuel: No		
Ventilating	Air Handler: Central ventilation Noted as a Priority in meeting w/ A&E and IA		
	Ductwork: Yes		
	Specialized Exhaust: Limited		
	Room Ventilators: No		
Cooling	Central AC: original to building, chiller in need of replacement - some repair in 2010. Building central chiller replaced in 2014		
	Room AC: No Entire building mechanically cooled with exception of gymnasium area by central equipment.		
	Hydronic Piping: Limited		
Plumbing System			
Fixtures	Sinks/Toilets/showers: Fixtures are original to building, showing signs of wear. Difficulty replacing parts.		
	Hot Water Generation: point of use – system is old. Central building water heater located in central equipment room.		
	Alternative Fuel: No		
Supply Piping	Piping: Copper		
	Pumps: No		
Waste Piping	Piping: Varies		
	Pumps: No		

## 4 K-8 FACILITIES

### Alkali Creek Elementary School

#### Building Components and Deferred Maintenance

Electrical System			
Building Service	600A, 277/480 3Ph		
	Meter Base: Ok		
	Generator: No		
	Alternative Source: No		
Lighting	Fixtures - PCB: No		
	Fixtures - Energy: Facility uses T-8 lamps through out. Ventilation diffusers integral portion of ceiling/light fixture assemblies. Diffusers out of date and in ill repair.	\$45,000	\$45,000
	Light Level Controls: Switching is awkward. Switching still awkward due to use of wall panels versus framed wall construction and limited switch locations available.		
	Occ/Daylight Sensor: Limited Occupancy sensor added to corridors.		
Distribution	Service Panels: Custodian report having no service upgrades.		
	Devices: power and data distribution upgrade needed.	\$271,115	
Voice/Data	Intercom: working properly: PA and fire alarm updates.		
	Clock: Working properly		
	Telephone: All phones upgraded		
	Data: No Computer Lab, 1 port in each classroom, wireless is poor/spotty. GPON added.	\$0	
Conveying & Vertical Circulation			
Elevators, lifts, stairs ramps	Not applicable		
Safety System			
Egress	Unclear paths of egress		
Extinguishing System	No Automatic Sprinkler	\$154,369	
	Cabinet Systems: No		
Exit/Emergency Lighting/Alarms	Exit Lights: Yes		
	Emergency Lighting: Upgraded		
	Smoke/Heat Detection: Upgraded		
	Fire Alarm System: Upgraded		

## Alkali Creek Elementary School

### Code Review / ADA

Code Review/Americans with Disabilities Act (ADA):			
	Description	Cost	Priority
Site	The site consists of large contiguous areas of asphalt paving with the area at the main entrance being concrete and landscaped. There is an accessible route to the front door from the drop off area however; the route is not very direct. Paved play areas surrounding the building lead to grass fields and a gravel area with playground equipment. The site boundaries are defined by a chain link fence in some areas. <b>Sidewalk and Asphalt repairs completed.</b>		
Parking	There are 3 Accessible parking spaces, only 2 of which are marked. <b>Parking has been restriped.</b>	\$0	
Approach, Entry & Exit	The school's main entrance (and other exterior doors) has a 1" height difference with the adjacent paved surface. The main entrance does have an automatic door opener. <b>Exterior Doors and Hardware updated 2015.</b>	\$0	
Ramps	No ramps on site.		
Stairs	N/A		
Elevator/lift	N/A		
Assembly Areas	All areas are accessible.		
Classroom Access	Doors have non-compliant 'knob' style hardware.	\$49,320	
Restroom Access	Access to restrooms meets ADA Guidelines		
Toilets/Restrooms	No stalls or toilet rooms in facility comply with ADA, some stalls did have grab bars, but none provide maneuverability required. Toilets could be modified to comply, this would require fixture removal in most cases. <b>ADA improvements have been made.</b>	\$0	
Drinking Fountains	No ADA drinking fountain was observed. <b>ADA drinking fountain and bottle filler installed.</b>	\$0	
Counter Access	Lunch and Library counter is 36" A.F.F.		
Signage per ADA	No signage observed. <b>Fire exit signage added.</b>		
Audio and Visual Alarms	ADA Guideline		
Obstacles	ADA Guideline		
	ADA Guideline		
Automatic Sprinkler System	No sprinkler observed.		
Exit Corridors	Per IBC Table 1018.1; Corridor Rating of E Occupancy (Educational) buildings shall be 1 hour without an Automatic Sprinkler System. Exit corridor rating is reduced to 0 (zero) hours with an Automatic Sprinkler System. No defined corridor.		
Other	Exit enclosures shall be enclosed per IBC 1022.		
Other	Per 1018.4; maximum length of dead end corridor shall be 20 feet in a non-sprinkled E occupancy and 50 feet in a sprinkled occupancy. Exit way passes through intervening space.		
<b>Notes:</b> 1. ADA – Compliance with ADA in the existing building is recommended if major construction is completed at this building. 2. Fire/Safety – Fire suppression system in the existing building is recommended if major work is done at this building.			
<b>Building Code Guidelines:</b> 2009 International Building Code; 2009 International Existing Building Code; 1020 ADA Standards for Accessible Design; Administrative Rules of Montana 24.301.351; 2000 NFPA 101 - Life Safety Code			

## Alkali Creek Elementary School

### Recommendations

This school is one of the schools with the open plan concept where rooms are created with movable partitions. The walls connect with the specialized ceiling system which includes an integrated HVAC. The overall system is difficult to modify and power. For the purpose of this study, replacing the movable wall system with permanent partitions was considered beyond of the scope of deferred maintenance. As part of a long range plan, modifications to the partition system should be considered.

Additional detail regarding scope and cost related to Educational Adequacy and Deferred Maintenance projects can be found in the following tables:

RECOMMENDED BUILDING COMPONENT (FAME) IMPROVEMENT DETAIL:		
Component	Comments	Estimated Cost
Building Envelope		
	No recommended improvements	\$0
Interiors & Specialties		
	Replace gym acoustic wall panels	\$0
Mechanical, Electrical & Plumbing		
	Update diffusers / integral light fixtures.	\$45,000
Fire/Life Safety		
	No recommended improvements	\$0
Site		
	Repair and replace damaged concrete walkways and cracked asphalt play areas	\$90,643
ADA		
	No recommended improvements	\$0
Does not include Soft Costs		Total \$ 135,643

RECOMMENDED EDUCATIONAL ADEQUACY IMPROVEMENT DETAIL:					
Component:	Item Description:	Qty	UOM	Unit Cost	Cost Estimate
Site Improvements					
Total Site:		0			\$0
Addition					
Multi-purpose Room Addition	New Multi-Purpose Room Addition, Existing Gym/Cafeteria to serve as Cafeteria space.	4500	SF	\$210	\$945,000
Subtotal:		4500	SF	\$210	\$945,000
Gross Area:		1575	SF	\$210	\$330,750
Total Addition:		6075	SF	\$210	\$1,275,750
Remodel					
Total Remodel:		0			\$0
Subtotal:					\$1,275,750
Estimated Cost *Does not include soft costs					\$1,275,750
TOTAL RECOMMENDED FACILITY IMPROVEMENT COST SUMMARY:					
Description:	Comments:				Cost Estimate
FAME					\$135,643
Educational Adequacy					\$1,275,750
Estimated Cost *Does not include soft costs					\$1,411,393

## Arrowhead Elementary School

### Overview

Arrowhead Elementary is a K-5 elementary school. The building consists of 20 +/- classrooms in an “open planning” configuration. Original also included library, multi-purpose, specialty classrooms, administrative, kitchen, etc. There have been no additions. The building is a single story structure w/ small mechanical mezzanine. It has a concrete foundation system with slab on grade floor system. The structural system is steel columns with steel joists with metal decking. The perimeter walls are steel studs with some concrete masonry units (cmu) that are faced in brick with metal panel accents at doors and windows. The current roof is Hypalon installed in 1994 & 96 with 5” minus of tapered insulation. The walls have 3 ½” batt insulation at metal studs and 2” rigid insulation at cmu. The interior is formed by a moveable wall system that is comprised of interlocking wall panels and ceiling tiles. The lighting and HVAC system is also incorporated into this system. The system is unique, expensive to replace ceiling tiles and light fixtures or add outlets or data.

2510 38th Street West  
Billings, MT 59102  
(406) 281-6201

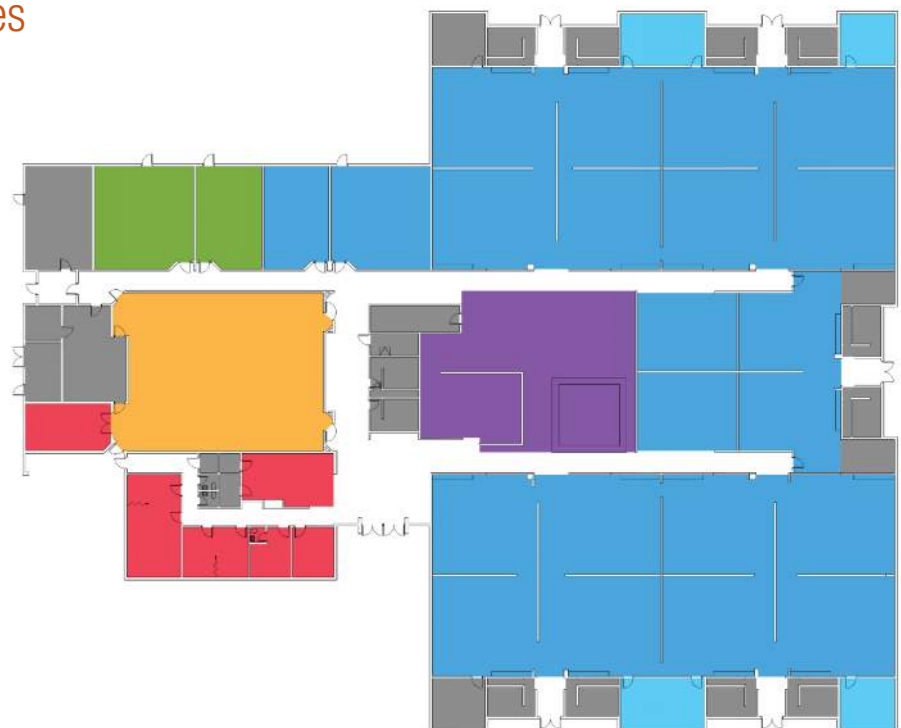
Year Built .....	1977
Renovations .....	0
Portables .....	0
Site Acres .....	18.75
Building SF .....	41,700
Current Enrollment .....	434
Capacity .....	460
Target Capacity .....	426



### Existing Program Spaces

#### PLAN LEGEND

CLASSROOM
SPECIAL SERVICES
LIBRARY
ADMINISTRATION
MEP/TOILET/KITCHEN
COMMONS/CAFE
GYMNASIUM
MUSIC/ART



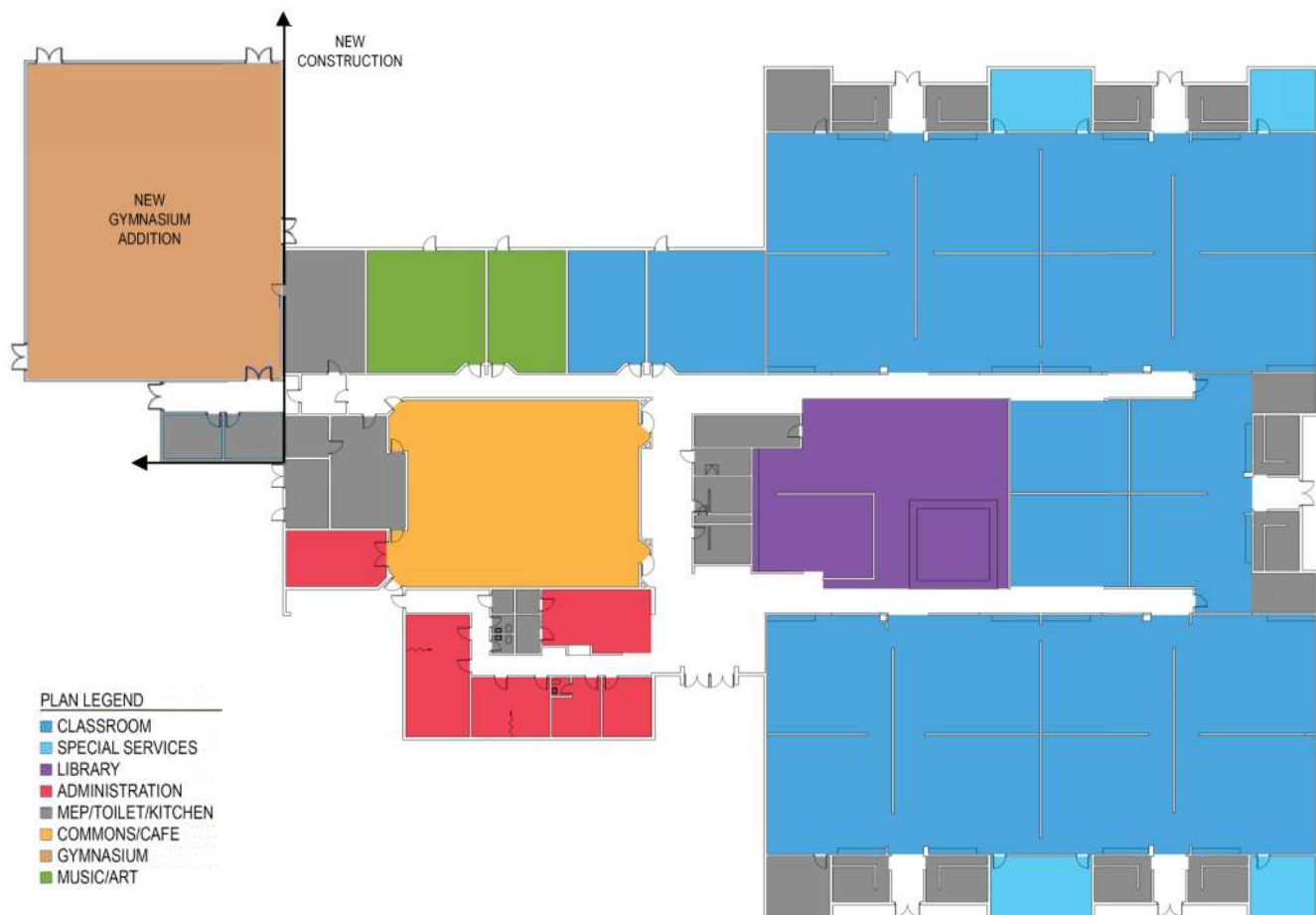
## Arrowhead Elementary School

### Program Space Recommendations

Recommendations From 2013 master plan are being carried over for the 2018 master plan. The recommendations include:

- Repurpose existing gymnasium to Cafeteria.
- Create a multi-purpose room addition and associated restrooms.

10



### Potential Floor Plan Diagram

## Arrowhead Elementary School

### Site Characteristics and Deferred Maintenance

Site Characteristics			
Component		Cost	Priority
Lot Size	18.83 acres		
Building Area	41,728 sf		
Topography	Sloped		
Drainage	Fair drainage with some water pooling back toward building. Culvert at entry requires attention. Grading revised at entry, new walkways.	\$0	\$0
Drop Off	Large drop off area adjacent to front doors however there is A blind spot on Poly Drive has caused two cars to strike the building and drop off is unusable due to traffic. This area needs study. City of Billings reconfigured exiting, and reduced crown for visibility. Not entirely resolved.	\$0	\$0
Hardscape	Asphalt 44,000 sf		
Parking Surface	Asphalt 42,000 sf	\$63,168	\$63,168
Stalls	58 Parking stalls – 2 HC stalls		
Paved Walks/Surfaces	Concrete 12,700 – significant settlement in paved walks. Priority is replace uneven sidewalk at front entry.	\$22,650	\$22,650
Steps, ramps, retaining walls	Priority is to add ADA ramp to the sidewalk in SE corner.	\$3,500	\$3,500
Paved Sports Courts	Large asphalt areas with several activities marked out – Cracking. Maintenance has taken place.	\$0	\$0
Playgrounds	Gravel areas at playground equip.		
Softscape	679,807 sf		
Play Fields	Large areas of grass around school – SD2 owns adjacent Baseball field. Near park with additional playfields		
Landscaping	Areas around school entrance landscaped		
Utilities	City services, 4" water line to site, 3" line to building		
Fencing	Some fencing at property lines – Chain Link		

## Arrowhead Elementary School

### Building Components and Deferred Maintenance

School: Arrowhead Elementary School			
<b>Building Components:</b>			
Component	Sub-Component: Condition Observed and Action to Fix	Cost	Priority
<b>Structural Systems</b>			
Footings/Foundation Walls	Concrete spread footings & stem wall foundation		
Floor Systems	Concrete slab on grade shows signs of settlement		
	Concrete slab on steel deck and joists at mechanical mezzanine		
Columns and Bearing Walls	Steel Columns with limited or no bearing walls		
Beams and Joists	Steel beams and joists with steel decking		
<b>Envelope</b>			
Roof	Hypalon – Installed 1994, 1996. Roof replaced.	\$0	
	5" Insulation tapering to roof drains		
Walls	Brick exterior walls – some areas show signs of settlement, bricks splitting and mortar cracking	\$17,239	
Exterior Windows	Material: Brick with metal panels. Exterior windows replaced.	\$0	
	Single Pane Glass		
Exterior Doors	Doors are HM with HM frame and weather stripping, some doors have 1" lip to adjacent concrete at perimeter. Doors replaced in 2011. Exterior doors replaced. Added vestibules.	\$0	
	Overhead Door: N/A		
Thermal Systems	Insulation - 3 ½" batt and 2" Rigid		
<b>Interior Finishes</b>			
Interior Walls	Facility Typ – Partition walls: Majority of the facility is comprised of movable partition walls. The walls interlock with a special ceiling grid. The system is difficult to rearrange and difficult to add power and data to.		
	Admin./Aux. Classrooms/Entryway/Exterior Walls -Framed gypsum board walls are present in the Admin and Aux classroom portions of the building as well as at exterior walls.		
	Gym/Some perimeter rooms-Masonry: Interior masonry walls are in good condition throughout the facility. Replace wall covering and add sound panels in the gym.	\$40,000	
	Toilets - Framed Ceramic Tile: Student toilets have CT walls , Ceramic tiles in these areas are worn with some grout staining.		
	Gym-Fabric Panels: Above brick on gym walls, panels wearing and need cleaning, age of panels is apparent.		
	Toilets – Glazed brick: Exterior walls in student toilets consist of glazed brick.		
	Toilets – 2 toilets, and the entry area have been refinished with a Plam wall panel behind fixtures, replacing the CT.		
Ceilings	Facility Typ.- ACT: Majority of facility ceilings are an ACT lay in system designed to function with moveable walls, the grid is larger than an average system, lights are recessed into ceiling to allow wall flexibility. The mechanical is tied into the system also. ACT throughout the facility is water stained and shows signs of minor damage from frequent removal.	\$36,242	
Doors/Hardware/Windows	Doors are SCW doors		
	Hardware is non ADA compliant with rounded knobs at each door. Mortised locks are difficult to maintain. Exterior doors replaced.	\$0	
	Frame are HM frames painted.		
	Relites / Interior Windows		

## Arrowhead Elementary School

### Building Components and Deferred Maintenance

Floor Finishes	Facility Typ.- Carpet:: Carpet varies throughout facility. Carpets vary from extremely worn with rippling and separating seams to new in excellent condition. <b>Floors have been replaced.</b>	\$0	
	Toilets/High Traffic/Gym/-Sheet Vinyl: Sheet vinyl in 90% of the facility is new and in excellent condition. Non renovated student toilets are the only areas remaining that contain poor sheet vinyl. SV in these areas is in poor condition due to wear/age and patching. <b>Deficient flooring replaced.</b>	\$0	
<b>Specialties</b>			
Toilet Partitions	Metal/Other: Metal toilet partitions no visible damage		
Fixed Seating/Risers	Bleachers: N/A		
	Theater: N/A		
	Classroom/Lecture: N/A		
	Cafeteria: N/A		
Markerboards /Cabinets	Chalkboard/Markerboard: All classrooms contained marker boards in good condition, some auxiliary spaces also had marker boards in good condition.		
	Cabinets: Plastic laminate cabinets in facility are dated, but seem to function well. Cabinets in admin area are new and in excellent condition.		
	Countertops: Plastic laminate countertops in facility are dated, but seem to function well. Counters in admin area are new and in excellent condition. Counters in Teacher's lounge are new and in good condition.		
<b>HVAC System</b>			
Heating	Controls: Building is connected to the district master controls. <b>Controls updated.</b>		
	BMS: acceptable <b>BMS System upgraded summer 2017. Front end improved to district standard</b>		
	Boiler/Furnace: Trane rooftop DX units installed 1999 Units revised ventilation from constant volume to variable volume derivative.		
	Room Units: ducted supply, both ducted and plenum return. <b>Perimeter spaces equipped with hydronic heating coils to provide additional space zoning.</b>		
	Hydronic Piping: <b>Building perimeter electric heating system replaced with hydronic system summer 2017</b>		
	Alternative Fuel: No		
Ventilating	Air Handler: Roof top		
	Ductwork: Yes		
	Specialized Exhaust: Limited		
	Room Ventilators: No		
Cooling	Central AC: Trane rooftop DX units installed 1999		
	Room AC: Ducted		
	Hydronic Piping: No		
<b>Plumbing System</b>			
Fixtures	Sinks/Toilets/Shower: Fixtures appear original to building, showing signs of wear. Difficulty replacing parts	\$25,000	\$25,000
	Hot Water Generation: Central water heater installed in receiving room.		
	Alternative Fuel: No		
Supply Piping	Piping: Copper		
	Pumps: No		
Waste Piping	Piping: Varies		
	Pumps: No		

## Arrowhead Elementary School

### Building Components and Deferred Maintenance

Electrical System			
Building Service	800A, 277/480 3 Phase		
	Meter Base: OK		
	Generator: No		
	Alternative Source: No		
Lighting	Fixtures - PCB: No		
	Fixtures - Energy: Facility uses T-8 lamps through out. Ventilation diffusers integral portion of ceiling/light fixture assemblies. Diffusers out of date and in ill repair.	\$45,000	\$45,000
	Light Level Controls: switching is awkward Switching still awkward due to use of wall panels versus framed wall construction and limited switch locations available.		
	Occ/Daylight Sensor: limited Occupancy sensor added to corridors		
Distribution	Service Panels: Custodian report having no service upgrades, possible service problems in the future are a possibility. Added boiler room panel.		
	Devices: power & data distribution upgrade needed. Additional panel space created as portion of the heating upgrade.	\$318,697	
Voice/Data	Added head end to intercom system.		
	Clock: Working properly		
	Telephone: All phones upgraded. Replaced in 2017, district-wide.		
	Data: No computer lab, 1 port per classroom, wireless is spotty. GPON added.	\$0	
Conveying & Vertical Circulation			
Elevators, lifts, stairs ramps	Not applicable		
Safety System			
Egress	Paths of Egress are unclear		
Extinguishing System	No Automatic Sprinkler	\$154,445	
	Cabinet Systems: No		
Exit/Emergency Lighting/Alarms	Exit Lights: Yes		
	Emergency Lighting: Updated		
	Smoke/Heat Detection: Updated		
	Fire Alarm System: Updated. Replace fire alarm system is a priority.	\$100,000	\$100,000

## Arrowhead Elementary School

### Code Review / ADA

Code Review/Americans with Disabilities Act (ADA):			
	Description	Cost	Priority
Site	The site consists of large contiguous areas of asphalt paving with the area at the main entrance being concrete and landscaped. There is an accessible route to the front door from the drop off area; however the route is not very direct. Paved play areas surrounding the building lead to grass fields and a gravel area with playground equipment. The site boundaries are defined by a chain link fence in some areas.		
Parking	There are 2 Accessible parking spaces.		
Approach, Entry & Exit	The school's main entrance (and other exterior doors) has a 1" height difference with the adjacent paved surface. The main entrance does have an automatic door opener. <i>This work has been completed.</i>	\$0	
Ramps	No ramps on site.		
Stairs	N/A		
Elevator/lift	N/A		
Assembly Areas	All areas are accessible.		
Classroom Access	Door Hardware is "knob-style" and not accessible. <i>Exterior hardware replaced, and vestibule added. Remainder of interior door hardware remains.</i>	\$23,500	\$0
Restroom Access	Access to restrooms meets ADA Guidelines		
Toilets/Restrooms	No stalls or toilet rooms in facility comply with ADA, some stalls did have grab bars, but none provide maneuverability required. Toilets could be modified to comply, this would require fixture removal in most cases. <i>ADA improvements have been made.</i>	\$0	
Drinking Fountains	One dual height drinking fountain was observed. <i>An ADA-compliant drinking fountain was added.</i>	\$0	
Counter Access	Lunch counter is 36" A.F.F.		
Signage per ADA	No signage observed.		
Audio and Visual Alarms			
Obstacles			
Automatic Sprinkler System	No sprinkler observed.		
Exit Corridors	Per IBC Table 1018.1; Corridor Rating of E Occupancy (Educational) buildings shall be 1 hour without an Automatic Sprinkler System. Exit corridor rating is reduced to 0 (zero) hours with an Automatic Sprinkler System. No defined corridor.		
Other	Exit enclosures shall be enclosed per IBC 1022.		
Other	Per 1018.4; maximum length of dead end corridor shall be 20 feet in a non-sprinklered E occupancy and 50 feet in a sprinklered occupancy. Exit way passes through intervening spaces.		
Notes:			
1. ADA – Compliance with ADA in the existing building is recommended if major construction is completed at this building.			
2. Fire/Safety – Fire suppression system in the existing building is recommended if major work is done at this building.			
Building Code Guidelines:			
2009 International Building Code; 2009 International Existing Building Code; 1020 ADA Standards for Accessible Design; Administrative Rules of Montana 24.301.351; 2000 NFPA 101 - Life Safety Code			

## Arrowhead Elementary School

### Recommendations

This school is one of the schools with the open plan concept where rooms are created with movable partitions. The walls connect with the specialized ceiling system which includes an integrated HVAC. The overall system is difficult to modify and power. For the purpose of this study, replacing the movable wall system with permanent partitions was considered beyond of the scope of deferred maintenance. As part of a long range plan, modifications to the partition system should be considered.

Additional detail regarding scope and cost related to Educational Adequacy and Deferred Maintenance projects can be found in the following tables:

RECOMMENDED BUILDING COMPONENT (FAME) IMPROVEMENT DETAIL:		
Component	Comments	Estimated Cost
Building Envelope		
	No recommended improvements	\$0
Interiors & Specialties		
	No recommended improvements	\$0
Mechanical, Electrical & Plumbing		
	Sinks/Toilets/Showers need updating, Ventillation diffusers need updating	\$70,000
Safety System		
	Replace fire alarm system	\$100,000
Site		
	Pave parking lot, replace sidewalk at front entry, add ADA ramps	\$89,318
ADA		
	No recommended improvements	\$0
Does not include Soft Costs		Total \$ 259,318

RECOMMENDED EDUCATIONAL ADEQUACY IMPROVEMENT DETAIL:					
Component:	Item Description:	Qty	UOM	Unit Cost	Cost Estimate
Site Improvements					
Total Site:		0			\$0
Addition					
Multi-purpose Room Addition	New Multi-purpose Room Addition, Existing Gym/Cafeteria to serve as Cafeteria space.	4500	SF	\$210	\$945,000
Subtotal:		4500	SF	\$210	\$945,000
Gross Area:		1575	SF	\$210	\$330,750
Total Addition:		6075	SF	\$210	\$1,275,750
Remodel					
Total Remodel:		0			\$0
Subtotal:		6075	SF	\$210	\$1,275,750
Estimated Cost *Does not include soft costs					\$1,275,750
TOTAL RECOMMENDED FACILITY IMPROVEMENT COST SUMMARY:					
Description:	Comments:	Cost Estimate			
FAME		\$259,318			
Educational Adequacy		\$1,275,750			
Estimated Cost *Does not include soft costs					\$1,535,068

## Beartooth Elementary School

### Overview

Beartooth is a K-5 elementary school. It was the original design for the open concept prototype. The original building consisted of 12 +/- classrooms in an “open planning” configuration as well as a library, multi-purpose, specialty classrooms, administrative, kitchen, etc. In 1980 8 classrooms were added. The building is a single story structure w/ small mechanical mezzanine. It has a concrete foundation system with slab on grade floor system. The structural system is steel columns with steel joists with metal decking. The perimeter walls are steel studs with some concrete masonry units (cmu) that are faced in brick with metal panel accents at doors and windows. The current roof is Hypalon installed in 1990-92 with 5” minus of tapered insulation. The walls have 3 ½” batt insulation at metal studs and 2” rigid insulation at cmu. The interior is formed by a moveable wall system that is comprised of interlocking wall panels and ceiling tiles. The lighting and HVAC system is also incorporated into this system. The system is unique, expensive to replace ceiling tiles and light fixtures or add outlets or data.

1345 Elaine Street  
Billings, MT 59105  
(406) 281-6200

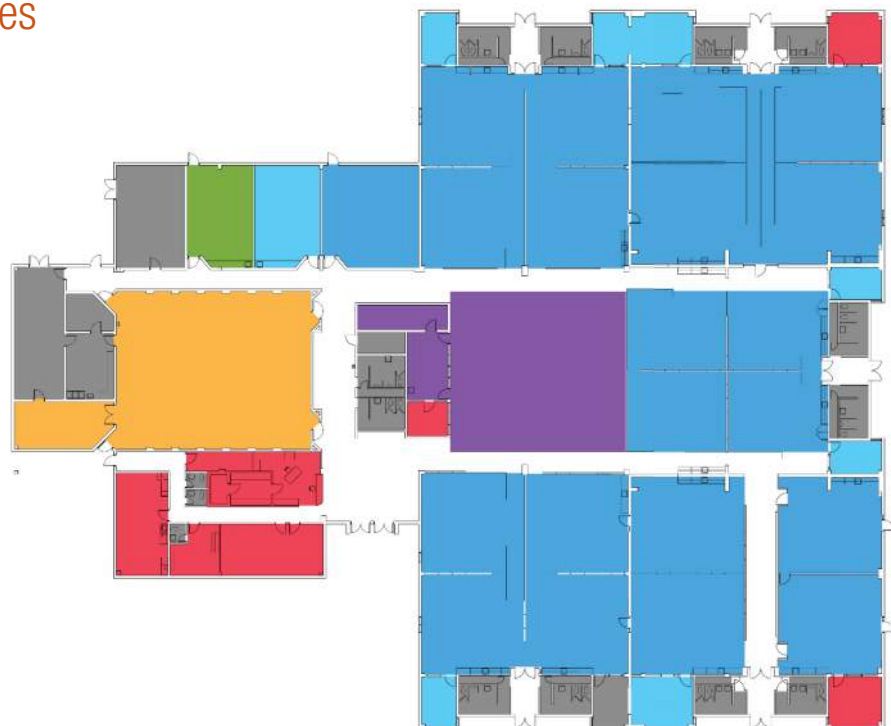
Year Built .....	1974
Renovations .....	Addition 1980
Portables .....	0
Site Acres .....	8.68
Building SF .....	41,600
Current Enrollment .....	385
Capacity .....	416
Target Capacity .....	385



### Existing Program Spaces

#### PLAN LEGEND

CLASSROOM
SPECIAL SERVICES
LIBRARY
ADMINISTRATION
MEP/TOILET/KITCHEN
COMMONS/CAFE
GYMNASIUM
MUSIC/ART

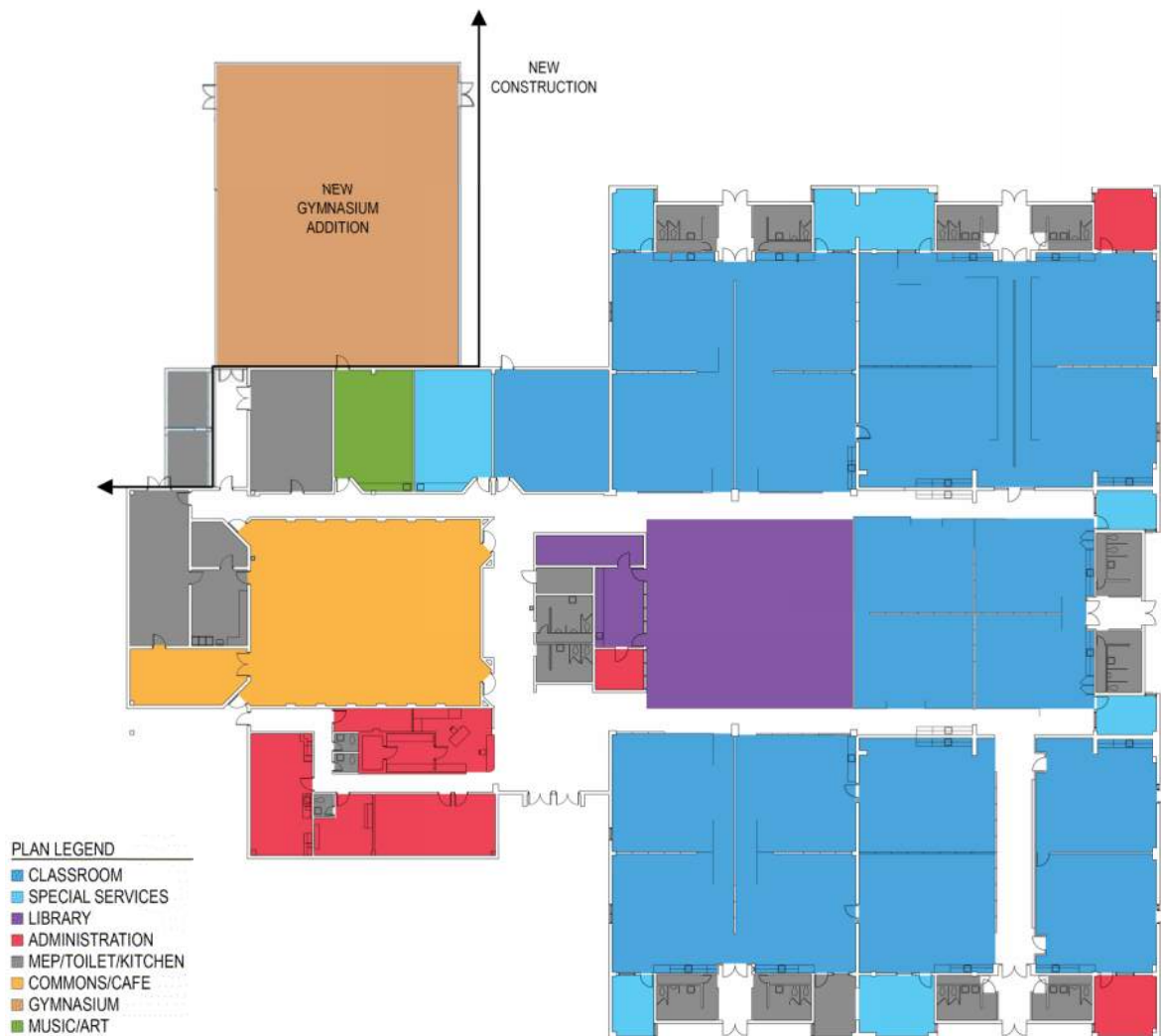


## Beartooth Elementary School

### Program Space Recommendations

Recommendations From 2013 master plan are being carried over for the 2018 master plan. The recommendations include:

- Repurpose existing gymnasium to Cafeteria.
- Create a multi-purpose room addition and associated restrooms.



### Potential Floor Plan Diagram

## Beartooth Elementary School

### Site Characteristics and Deferred Maintenance

Site Characteristics:			
Component		Cost	Priority
Lot Size	8.68 acres		
Building Area	40,834 sf		
Topography	Flat		
Drainage	Fair with some problem areas	\$49,938	
Drop Off	Large drop off area adjacent to front doors		
Hardscape	Asphalt 54,440 sf		
Parking Surface	Asphalt 31,100 sf		
Stalls	45 Parking stalls – 2 HC stall		
Paved Walks/Surfaces	Concrete 10,820 sf – settlement in paved walks. Priority is to replace back sidewalk.	\$22,650	\$22,650
Steps, ramps, retaining walls	None		
Paved Sports Courts	Large areas of asphalt with several activities marked out		
Playgrounds	Gravel areas with playground equip. Priority is to remove and replace asphalt in back playground. Priority is to seal coat back playground	\$30,000 \$9,000	\$30,000 \$9,000
Softscape	235,330 sf		
Play Fields	Large areas of grass around school – adjacent baseball fields		
Landscaping	Areas around school entrance landscaped		
Utilities	City services		
Fencing	Some fencing at property lines –appear to be property of adjacent property owners		

## Beartooth Elementary School

### Building Components and Deferred Maintenance

Building Components:			
Component	Sub-Component: Condition Observed and Action to Fix	Cost	Priority
<b>Structural Systems</b>			
Footings/Foundation Walls	Concrete spread footings and stem wall foundation		
Floor Systems	Concrete slab on grade		
	Concrete slab on steel deck and joists at mechanical mezzanine		
Columns and Bearing Walls	Steel columns with limited or no bearing walls		
Beams and Joists	Steel beams and joists with steel decking		
<b>Envelope</b>			
Roof	Hypalon Installed 1990,91,92. Roof has been replaced.	\$0	
	Insulation: 5" Rigid tapering to drains		
Walls	Brick exterior walls – some areas show signs of settlement, bricks splitting and mortar cracking.		
Exterior Windows	Material: Aluminum. Exterior windows have been replaced.	\$0	
	Single Pane Glass		
Exterior Doors	Doors are HM with HM frame and weather stripping, some doors have 1" lip to adjacent concrete at perimeter. Exterior doors have been replaced.	\$0	
	Overhead Door: N/A		
Thermal Systems	Insulation: 3 ½" batt and 2" rigid		
<b>Interior Finishes</b>			
Interior Walls	Facility Typ – Partition walls: Majority of the facility is comprised of movable partition walls. The walls interlock with a special ceiling grid. The system is difficult to rearrange and difficult to add power and data to.		
	Admin./Aux. Classrooms/ Entryway/Exterior Walls -Framed Gyp.: Framed gypsum board walls are present in the Admin and Aux classroom portions of the building as well as at exterior walls.		
	Gym/Some perimeter rooms-Masonry: Interior masonry walls are in good condition throughout the facility.		
	Toilets- Framed Ceramic Tile: Student toilets have CT walls, Ceramic tiles in these areas are worn with some grout staining.		
	Gym-Fabric Panels: Above brick on gym walls, panels wearing and need cleaning, age of panels is apparent. Replace wall covering and add sound panels in gym.	\$40,000	
	Toilets – Glazed brick: Exterior walls in student toilets consist of glazed brick.		
Ceilings	Facility Typ.- ACT: Majority of facility ceilings are an ACT lay in system designed to function with moveable walls, the grid is larger than an average system, lights are recessed into ceiling to allow wall flexibility. The mechanical is tied into the system also. ACT throughout the facility is water stained and showing signs of minor damage from frequent removal. Replaced some ACT.	\$10,747	
Doors/Hardware/Windows	Doors are SCW doors		
	Hardware is non ADA compliant with rounded knobs at each door.		
	Mortised locks are difficult to maintain.		
	Frame are HM frames painted.		
	Relites / Interior Windows		

## Beartooth Elementary School

### Building Components and Deferred Maintenance

Floor Finishes	Facility Typ.- Carpet: Carpet varies throughout facility approximately 50% of the facility has new carpet and 50% is aging/rippling/stained. <b>Replaced carpet, and vinyl flooring in hallways</b>	\$0	
	Gym/-Sheet Vinyl: Poor throughout aging/wear. <b>Sheet vinyl in gym has been replaced.</b>	\$0	
	Entry Area/Toilets: Quarry Tile		
<b>Specialties</b>			
Toilet Partitions	Metal/Other: Metal toilet partitions no visible damage		
Fixed Seating/Risers	Bleachers: N/A		
	Theater: N/A		
	Classroom/Lecture: N/A		
	Cafeteria: N/A		
Markerboards / Cabinets	Chalkboard/Markerboard: All classrooms contained marker boards in good condition, some auxiliary spaces also had marker boards in good condition.		
	Cabinets: Plam cabinets in facility are dated, but seem to function well. Cabinets in admin area are new and in excellent condition.		
	Countertops: Plam countertops in facility are dated, but seem to function well. Counters in admin area are new and in excellent condition. Counters in Teacher's lounge are new and in good condition.		
<b>HVAC System</b>			
Heating	Controls: Building is connected to the district master controls.		
	<b>BMS: Acceptable BMS System upgraded summer 2017. Front end improved to district standard.</b>		
	Boiler/Furnace: Trane rooftop DX units installed 1999 Units revised ventilation from constant volume to variable volume derivative. <b>Replaced (2) of the unit with QZAB Grant 2010.</b>		
	Room Units: Ducted supply, both ducted and plenum return. <b>Perimeter spaces equipped with hydronic heating coils to provide additional space zoning.</b>		
	<b>Hydronic Piping: Building perimeter electric heating system replaced with hydronis system summer 2017.</b>		
	Alternative Fuel: No		
Ventilating	Roof top air handler		
	Ductwork: Yes		
	Specialized Exhaust: Limited		
	Room Ventilators: No		
Cooling	<b>Central AC: Trane rooftop DX units installed in 2006. Replaced (2) of the unit with QZAB Grant 2010</b>		
	Room AC: Ducted		
	Hydronic Piping: No		

# 4 K-8 FACILITIES

## Beartooth Elementary School

### Building Components and Deferred Maintenance

Plumbing System			
Fixtures	Sinks/Toilets/Shower: Fixtures appear original to building, showing signs of wear. Difficulty replacing parts. <b>Kitchen 3-comp sink needs revision.</b>	\$30,000	\$30,000
	Hot Water Generation: point of use. <b>Central water heater system added summer 2017.</b>		
	Alternative Fuel: No		
Supply Piping	Piping: Copper		
	Pumps: No		
Waste Piping	Piping: Varies		
	Pumps: No		
Electrical System			
Building Service	800A, 277/480 3 Phase		
	Meter Base: OK		
	Generator: No		
	Alternative Source: No		
Lighting	Fixtures - PCB: No		
	Fixtures - Energy: Facility uses T-8 lamps through out. <b>Ventilation diffusers integral portion of ceiling/light fixture assemblies. Diffusers out of date and in ill repair.</b>	\$45,000	\$45,000
	Light Level Controls: Switching is awkward. <b>Switching still awkward due to use of wall panels versus framed wall construction and limited switch locations available. T8 lamps replaced.</b>		
	Occ/Daylight Sensor: Limited. <b>Occupancy sensor added as portion of building lighting upgrade.</b>		
Distribution	Service Panels: During high use in adequate service is an issue more outlets desired as well as outlet relocation. <b>Devices: Power &amp; data distribution upgrade needed.</b>	\$233,902	
Voice/Data	Intercom: Functional		
	Clock: Functional		
	Telephone: All phones upgraded. <b>Replaced phones.</b>		
	Data: Computers (lab) in Library, 4 ports per classroom, wireless is updated and performs better than other sister schools. <b>Added GPON system.</b>	\$0	
Conveying & Vertical Circulation			
Elevators, lifts, stairs ramps	Not applicable		
Safety System			
Egress	Paths of Egress are unclear		
Extinguishing System	<b>Sprinkler: No fire sprinklers</b>	\$151,136	
	Cabinet Systems: No		
Exit/Emergency Lighting/Alarms	Exit Lights: Yes		
	Emergency Lighting: Updated		
	Smoke/Heat Detection: Updated		
	Fire Alarm System: Updated (Not audible outside). <b>Fire alarm system updated.</b>	\$0	

## Beartooth Elementary School

### Code Review / ADA

Code Review/Americans with Disabilities Act (ADA):			
	Description	Cost	Priority
Site	The site consists of large contiguous areas of asphalt paving with the area at the main entrance being concrete and landscaped. There is an accessible route to the front door from the drop off area, however the route is not very direct. Paved play areas surrounding the building lead to grass fields and a gravel area with playground equipment. A lip (1-2") at each exterior door prohibits the building access to be truly accessible.		
Parking	There are 2 accessible parking spaces.		
Approach, Entry & Exit	The school's main entrance (and other exterior doors) has a 1" height difference with the adjacent paved surface. The main entrance does have an automatic door opener. <span style="color: red;">Revised main entry and added new vestibule.</span>	\$0	
Ramps	No ramps on site.		
Stairs	N/A		
Elevator/lift	N/A		
Assembly Areas	All areas are accessible.		
Classroom Access	Doors have "knob-style" hardware and are not accessible. <span style="color: red;">Exterior doors updated.</span>	\$23,500	
Restroom Access	Access to restrooms meets ADA Guidelines		
Toilets/Restrooms	No stalls or toilet rooms in facility comply with ADA, some stalls did have grab bars, but none provide maneuverability required. Toilets could be modified to comply, this would require fixture removal in most cases. <span style="color: red;">ADA restroom accommodations have been made.</span>	\$0	
Drinking Fountains	No dual height drinking fountain was observed. <span style="color: red;">ADA-compliant bottle filling station added.</span>	\$0	
Counter Access	Lunch counter is 36" A.F.F.		
Signage per ADA	No signage observed.		
Audio and Visual Alarms	Upgraded		
Obstacles	As noted		
Automatic Sprinkler System	No sprinkler observed.		
Exit Corridors	Per IBC Table 1018.1; Corridor Rating of E Occupancy (Educational) buildings shall be 1 hour without an Automatic Sprinkler System. Exit corridor rating is reduced to 0 (zero) hours with an Automatic Sprinkler System. No defined corridor.		
Other	Exit enclosures shall be enclosed per IBC 1022.		
Other	Per 1018.4; maximum length of dead end corridor shall be 20 feet in a non-sprinklered E occupancy and 50 feet in a sprinklered occupancy. Exit way passes through intervening space.		
<b>Notes:</b> 1. ADA – Compliance with ADA in the existing building is recommended if major construction is completed at this building. 2. Fire/Safety – Fire suppression system in the existing building is recommended if major work is done at this building.			
<b>Building Code Guidelines:</b> 2009 International Building Code; 2009 International Existing Building Code; 1020 ADA Standards for Accessible Design; Administrative Rules of Montana 24.301.351; 2000 NFPA 101 - Life Safety Code			

## Beartooth Elementary School

### Recommendations

This school is one of the schools with the open plan concept where rooms are created with movable partitions. When the building was closed, many of the partitions were removed and installed the other open plan schools. Office furniture systems and the remaining partitions are used to define the classrooms. Adequate power and data distribution is a problem at this school. For the purpose of this study, replacing the existing system with permanent partitions was considered beyond of the scope of deferred maintenance. As part of a long range plan, new partitions should be considered.

Additional detail regarding scope and cost related to Educational Adequacy and Deferred Maintenance projects can be found in the following tables:

RECOMMENDED BUILDING COMPONENT (FAME) IMPROVEMENT DETAIL:		
Component	Comments	Estimated Cost
Building Envelope	No recommended improvements	\$0
Interiors & Specialties	No recommended improvements	\$0
Mechanical, Electrical & Plumbing	Sinks/Toilets/Showers need updating, Ventilation diffusers need updating	\$75,000
Fire/Life Safety	No recommended improvements	\$0
Site	Replace back sidewalk, remove/replace/seal coat back asphalt on playground	\$61,650
ADA	No recommended improvements	\$0
Does not include Soft Costs		Total \$ 136,650

RECOMMENDED EDUCATIONAL ADEQUACY IMPROVEMENT DETAIL:					
Component:	Item Description:	Qty	UOM	Unit Cost	Cost Estimate
Site Improvements					
Total Site:		0			\$0
Addition					
Multi-purpose Room Addition	New Multi-purpose Room Addition, Existing Gym/Cafeteria to serve as Cafeteria space	4500	SF	\$210	\$945,000
Subtotal:		4500	SF	\$210	\$945,000
Gross Area:		1575	SF	\$210	\$330,750
Total Addition:		6075	SF	\$210	\$1,275,750
Remodel					
Total Remodel:		0	SF		\$0
Subtotal:					\$1,275,750
Estimated Cost *Does not include soft costs					\$1,275,750
TOTAL RECOMMENDED FACILITY IMPROVEMENT COST SUMMARY:					
Description:	Comments:	Cost Estimate			
FAME		\$136,650			
Educational Adequacy		\$1,275,750			
Estimated Cost *Does not include soft costs					\$1,412,400

## Bench Elementary School

### Overview

Bench is a K-5 elementary school. The original 1955 building had 16 classrooms, multi-purpose/cafeateria, kitchen, administrative offices, work room and toilets. In 1976 4 classrooms and a library were added. 1974 brought in a portable building with 4 class rooms. Bench is a single story structure. It has a concrete foundation system with slab on joists over crawl space floor system. The structural system is steel & wood columns with wood beams and wood decking. See below for portable construction. The perimeter walls are brick / masonry with a panel system at windows. The current roof is PVC installed in 2008 with 5" minus of tapered insulation. The walls have 1" batt insulation or none.

505 Milton Road  
Billings, MT 59105  
(406) 281-6203

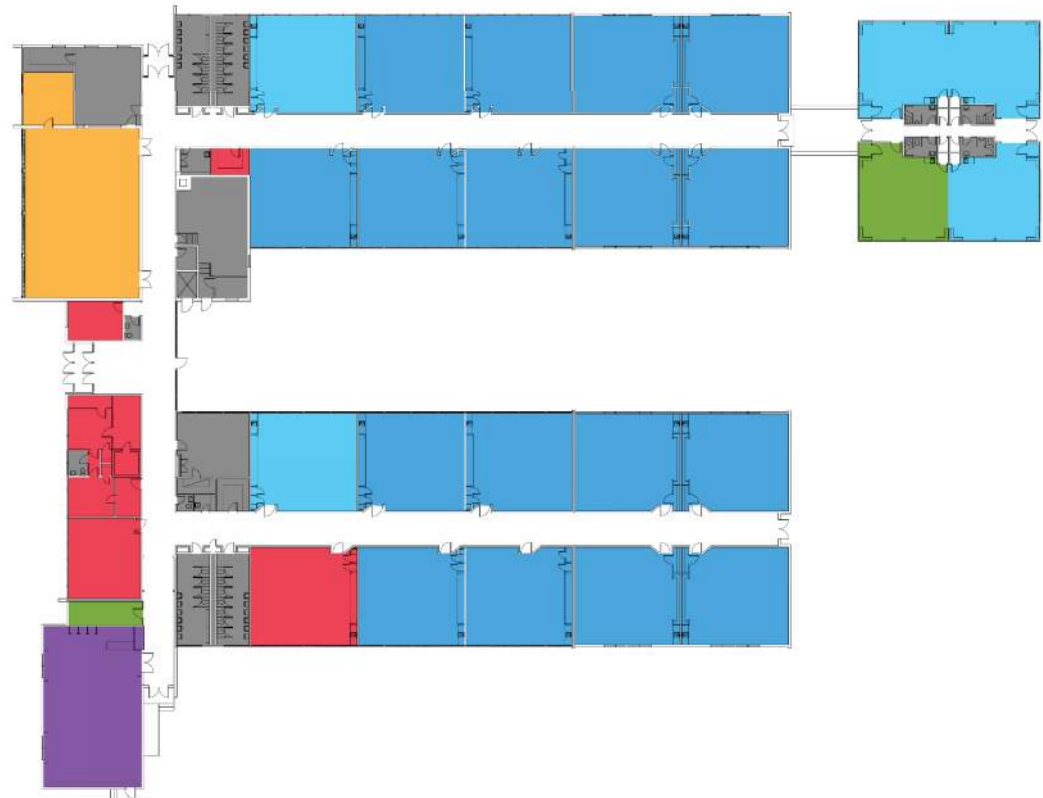
Year Built .....	1955
Renovations .....	Additions 1976, 1986
Portables .....	4
Site Acres .....	6.62
Building SF .....	39,930
Current Enrollment .....	385
Capacity .....	394
Target Capacity .....	364



### Existing Program Spaces

PLAN LEGEND

CLASSROOM
SPECIAL SERVICES
LIBRARY
ADMINISTRATION
MEP/TOILET/KITCHEN
COMMONS/CAFE
GYMNASIUM
MUSIC/ART

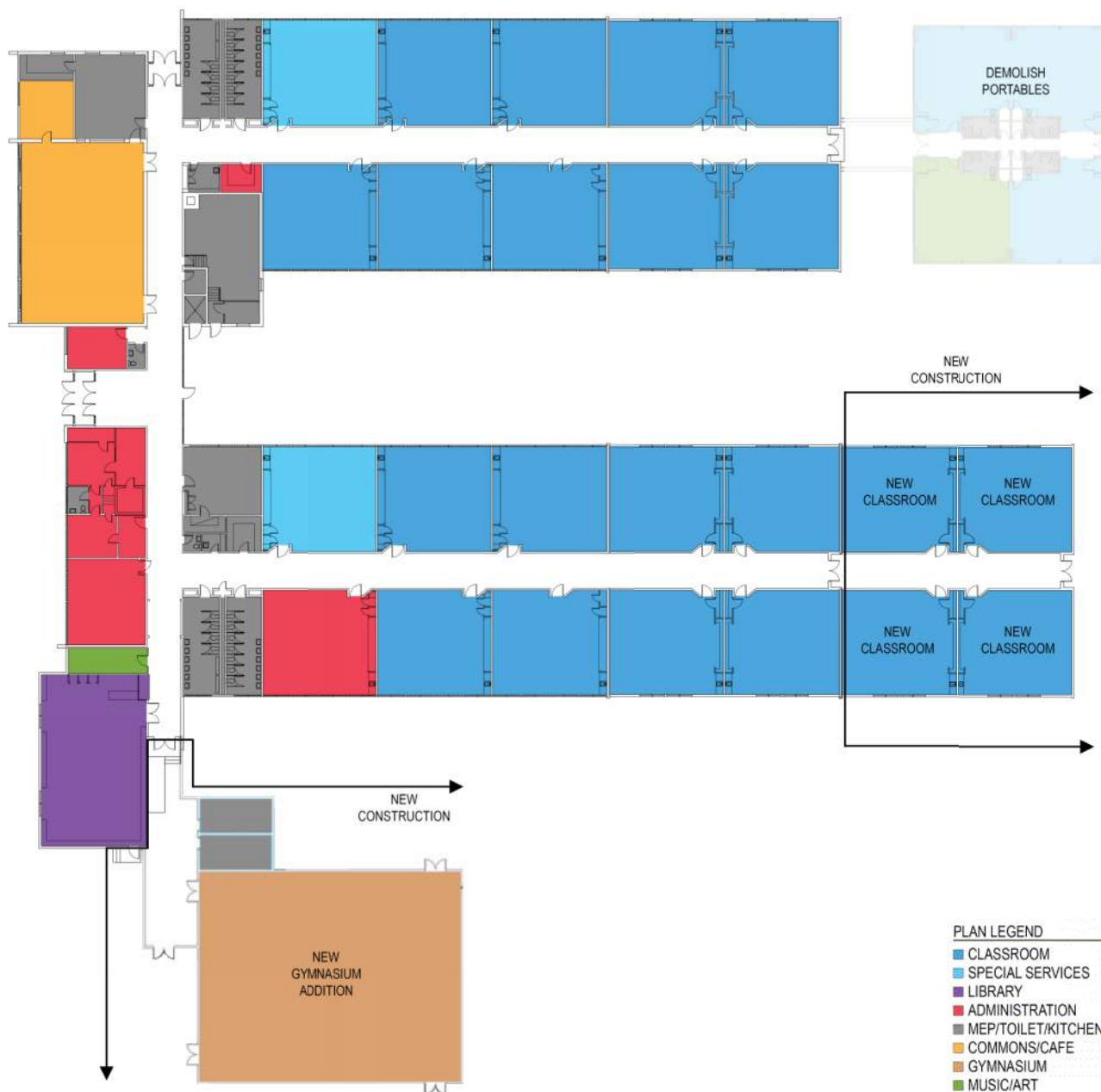


## Bench Elementary School

### Program Space Recommendations

Recommendations From 2013 master plan are being carried over for the 2018 master plan for a multi-purpose room. The district's goal of eliminating portable classrooms requires the addition of four classroom spaces based upon 2017 demographic projections. The recommendations include:

- Repurpose existing gymnasium to Cafeteria.
- Create a multi-purpose room addition and associated restrooms.
- Demolish existing portable classrooms and an addition of 4 new classrooms



Potential Floor Plan Diagram

## Bench Elementary School

### Site Characteristics and Deferred Maintenance

Site Characteristics:			
Component		Cost	Priority
Lot Size	6.62 acres		
Building Area	36426 Main Building 3751 Annex		
Topography	Flat		
Drainage	Fair – water drains back to building at annex. Exterior grading has been revised, but still needs to be addressed / needs positive drainage.	\$25,000	
Drop Off	Designated drop off area at front of school		
Hardscape	Asphalt 39,000 sf		
Parking Surface	Asphalt 21,500 sf. Priority is to seal coat parking lot.	\$5,775	\$5,775
Stalls	46 Stalls 2 Accessible stalls		
Paved Walks/Surfaces	Concrete 1,500 sf. Added ramp from vestibule to annex, added ramp to front door.		
Steps, ramps, retaining walls	Yes, concrete see ADA. Added ramp from vestibule to annex, added ramp to front door.		
Paved Sports Courts	Large asphalt areas with many activities marked out. Priority is to seal coat playground on regular basis (5 year cycle).	\$12,080	\$12,080
Playgrounds	Gravel play areas with play equipment.		
Softscape	189,236 sf		
Play Fields	Large grass areas around school		
Landscaping	Several trees planted around the building – Courtyard is fully landscaped with an abundance of trees and other plants landscaping maintained by community		
Utilities	City services		
Fencing	Some chain link- poor condition		

## Bench Elementary School

### Building Components and Deferred Maintenance

School: Bench Elementary School			
<b>Building Components (Main Building):</b>			
Component	Sub-Component: Condition Observed and Action to Fix	Cost	Priority
<b>Structural Systems</b>			
Footings/Foundation Walls	Concrete spread footings & stem wall foundation		
Floor Systems	Concrete slab on steel deck and joists (slab on grade at addition)		
	Crawl space (perimeter pipe tunnel at addition)		
Columns and Bearing Walls	Wood & steel columns with limited areas of bearing walls		
Beams and Joists	Wood glu-lams with structural wood decking. TJ's & plywood at addition		
<b>Envelope</b>			
Roof	PVC - 2008.		
	Roof replaced		
	5" rigid		
Walls	Brick and Panel		
Exterior Windows	Aluminum.		
	Exterior windows replaced.		
	Double Glazed.		
	Exterior windows replaced.		
Exterior Doors	HM with Panic hardware.		
	Exterior doors replaced.		
	Overhead Door: N/A		
Thermal Systems	1" batt		
<b>Interior Finishes</b>			
Interior Walls	Facility Typ – Framed Gyp: Majority of interior partition walls are painted gyp in good condition		
	Facility Typ. – Painted CMU: Some interior walls painted CMU in good condition		
	Front Hallway – Brick: Area in front hall is brick in good condition		
	Corridors – Painted Wood T&G – Wood T&G painted in good condition		
Ceilings	Facility Typ – Glued on tile – coming loose in areas	\$23,301	
Doors/Hardware/Windows	Non ADA "knob-style"		
	Solid Core Wood Doors	\$5,816	
	Wood Frames		
	Wood Relites		
Floor Finishes	Typical Classroom - Carpet.		
	Carpeting replaced.		
	Typical Hallway – VCT: Newer.		
	VCT replaced.		
	Typical Toilet – Ceramic Tile: Age/wear.		
	Tile replaced.		
<b>Specialties</b>			
Toilet Partitions	Metal Good Condition.		
	Various bathroom upgrades have been made.		
Fixed Seating/Risers	Bleachers: N/A		
	Theater: N/A		
	Classroom/Lecture: N/A		
	Cafeteria: N/A		
Markerboards /Cabinets	All Rooms have marker boards		
	Plastic laminate counters and cabinets in Admin area - new		
	Wood Cabinets with plastic laminate counters in classrooms are aging and wearing	\$31,725	

## Bench Elementary School

### Building Components and Deferred Maintenance

HVAC System			
Heating	Controls: Building is connected to the district master controls. Replace obsolete temperature controls on boiler? (or was this done when boiler & pumps were replaced summer 2017?)	\$14,350	\$50,000
	BMS: Acceptable.		
	System upgraded to district standard 2018.		
	New Boiler 2008.		
	Boiler/pumps replaced with district standard summer 2017.		
	Room Units: Unit ventilators		
Ventilating	Hydronic Piping: 4 pipe		
	Alternative Fuel: No		
	Unit ventilators w/ central exhaust		
	Ductwork: Ducted central exhaust		
	Specialized Exhaust: Limited.		
Cooling	Crawlspace moisture issue-ventilation required.		
	New Univents in 2008		
	A/C upgraded in 2008.	\$82,500	\$82,500
	Chiller has refrigerant leak needs replacement.		
Plumbing System	Room AC: No		
	Hydronic Piping: 4 pipe		
Plumbing System			
Fixtures	Sinks/Toilets/Shower: Many fixtures original to building. Showing wear, difficulty replacing parts.		
	Central Toilet rooms rebuilt to ADA standards, Classroom fixtures still need revision. Modify Kitchen 3-comp sink.	\$24,000	\$24,000
	Hot Water Generation: Central water heaters		
	Alternative Fuel: No		
Supply Piping	Piping: Copper / varies		
	Pumps: Circulating		
Waste Piping	Piping: Varies		
	Pump: No		
Electrical System			
Building Service	1000A, 120/208 3 Phase		
	Meter Base: OK		
	Generator: No		
	Alternative Source: No		
Lighting	Fixtures - PCB: No		
	T-8 fixtures throughout		
	Light Level Controls: Limited	\$205,359	
Distribution	Occ/Daylight Sensor: No		
	Devices: Power & data distribution upgrade needed.		
	GPON system added (\$70,000), but 135,000 of power upgrades still needed.	\$135,000	
Voice/Data	Intercom: Adequate.		
	PA system added.		
	Clock: Adequate		
	Telephone: Adequate.		
	Telephones upgraded.		
	Data: Computer lab in library, 1 port per room, wiring recently redone in office, wireless is spotty.		
	GPON system added.	\$0	

## 4 K-8 FACILITIES

### Bench Elementary School

#### Building Components and Deferred Maintenance

Conveying & Vertical Circulation			
Elevators, lifts	Not applicable		
Safety System			
Egress	Exit Systems: Clear paths of egress		
Extinguishing System	No Automatic Sprinkler system	\$117,188	
	Cabinet Systems: No		
Exit/Emergency Lighting/Alarms	Exit Lights: Yes		
	Emergency Lighting: Yes		
	Smoke/Heat Detection: Updated		
	Fire Alarm System: Updated.		
	Fire alarm system replaced, but no voice evac.		

# Bench Elementary School

# Elementary School

## Building Components and Deferred Maintenance - Portables

School: Bench Elementary School			
<b>Building Components (Portable):</b>			
Portables can best be described as residential quality construction designed to be trucked to the site and set on a foundation. Roofs, walls and floors are wood joists / trusses and studs with residential grade finishes at least some of which were selected to allow the portable unit to be moved without cracking, etc. Heating is via a small residential forced air furnace for each classroom. Restrooms are very small and, again, of residential quality. Gas, electricity, water and sewer were typically extended from the existing school building. The portable serving Bench Elementary has an independent septic system which is no longer allowed within the city limits.			
Condition of these portable units ranges from fair to very poor. This is in part due to the minimized initial investment and also related to light weight construction being used for heavy traffic functions. In addition to the above most of the units are virtually inaccessible with regards to ADA requirements.			
Component	Sub-Component: Condition Observed and Action to Fix	Cost	Priority
<b>Structural Systems</b>			
Footings/Foundation Walls	Footings: Concrete Piers		
	Foundations: Precast Concrete		
Floor Systems	2x10 modular housing		
	Crawl space		
Columns and Bearing Walls	Modular housing		
Beams and Joists	Wood & TJL's & plywood		
<b>Envelope</b>			
Roof	PVC - 2008. Roof replaced. 6" batt	\$0	
Walls	Mineral faced plywood in very poor condition. Replacing annex siding is a priority.	\$25,000	\$25,000
Exterior Windows	Metal Replacing exterior windows is a priority. Single Glazed	\$77,000	\$77,000
Exterior Doors	Metal doors & frames w/ single pane glazing. Exterior doors replaced. Overhead Door: N/A		
Thermal Systems	3 1/2" batt		
<b>Interior Finishes</b>			
Interior Walls	Framed - GWB / paneling		
Ceilings	Lay-In		
Doors/Hardware/Windows	Non ADA compliant hardware - poor quality		
Wall Finishes	Paneling & Paint		
Floor Finishes	Carpet & vinyl tile. Flooring has been replaced.	\$0	
<b>Specialties</b>			
Toilet Partitions	N/A		
Fixed Seating/Risers	N/A		
Chalkboards/Tackboards/Cabinets	Markerboard		
	Cabinets		
	Countertops		
<b>HVAC System</b>			
	Gas fired forced air furnaces - located such that children can tamper with them. Hydronic System installed with classroom fan coils and fintube heaters		
	Windows Ventilation added to classroom fan coils		
	N/A Classroom fan coils equipped with DX cooling		

## Elementary School

## Bench Elementary School

### Building Components and Deferred Maintenance - Portables

Plumbing System			
Fixtures	Sinks/Toilets/Showers: Original to building. Residential quality fixtures	\$17,202	\$17,202
Water Heater	Hot Water Generation: Point of use- with constant maintenance needs		
Supply Piping	Piping: Copper/varies Pumps: No		
Waste Piping	Portable on separate septic system originally System connected to city sewer Piping varies, no pump		
Electrical System			
Building Service	From main building 100A Service Upgraded to 400A Panel with 250A overcurrent protection		
Lighting	original fluorescent/ incandescent	\$18,500	\$18,500
Distribution	Inadequate	\$9,500	\$9,500
Voice/Data	Inadequate - only one feed to building - cabling and distribution needed. GPON system added.	\$0	
Conveying & Vertical Circulation			
Elevators, lifts	Not applicable		
Safety System			
Egress	Exit Systems: Appear to be marginally compliant		
Extinguishing System	None	\$117,188	
Exit/Emergency Lighting/Alarms	Exit Lights: Yes		
	Emergency Lighting: No	\$10,577	
	Smoke/Heat Detection: Yes		
	Fire Alarm System: No. Fire alarm system added, but no voice evac.	\$0	

# Bench Elementary School

# Elementary School

## Code Review / ADA

Code Review/Americans with Disabilities Act (ADA):			
	Description	Cost	Priority
Site	Site near entry consists of parking and sidewalks off of street to front door. Playgrounds are mostly asphalt with some areas of concrete. There is an accessible route to the front door. Rear of building is above grade requiring steps. One rear entry has a compliant ramp, the other does not. Portable classroom is not accessible.		
Parking	There are 2 designated accessible parking spaces.		
Approach, Entry & Exit	Portable is non-accessible.		
Ramps	Ramps at rear of building vary from fully compliant to totally non-compliant. Added ramp from vestibule to annex.	\$0	
Stairs	Stairs at exterior of building do not appear to meet code.		
Elevator/lift			
Assembly Areas			
Classroom Access	Doors have "knob-style" hardware and are not accessible. Still needs to be replaced.	\$9,458	
Restroom Access	Access to restrooms is non-compliant		
Toilets/Restrooms	No ADA stalls in annex		
Drinking Fountains	Non-compliant. ADA drinking fountains remain to be installed.	\$2,490	
Counter Access	Non-compliant		
Signage per ADA	Non-compliant		
Audio and Visual Alarms	Yes		
Obstacles	None other than noted		
Automatic Sprinkler System	Per IBC Section 903, an automatic sprinkler system shall be provided in all Group E (Educational) facilities.		
Exit Corridors	Per IBC Table 1018.1; Corridor Rating of E Occupancy (Educational) buildings shall be 1 hour without an Automatic Sprinkler System. Exit corridor rating is reduced to 0 (zero) hours with an Automatic Sprinkler System.		
Other	Exit enclosures shall be enclosed per IBC 1022.		
<b>Notes:</b> 1. ADA – Compliance with ADA in the existing building is recommended if major construction is completed at this building. 2. Fire/Safety – Fire suppression system in the existing building is recommended if major work is done at this building.			
<b>Guidelines:</b> 2009 International Building Code; 2009 International Existing Building Code; 1020 ADA Standards for Accessible Design; Administrative Rules of Montana 24.301.351; 2000 NFPA 101 - Life Safety Code			

## Elementary School

## Bench Elementary School

### Code Review / ADA - Portables

Code Review/Americans with Disabilities Act (ADA):			
	Description	Cost	Priority
Site	Site near entry consists of parking and sidewalks off of street to front door. Playgrounds are mostly asphalt with some areas of concrete. There is an accessible route to the front door. Rear of building is above grade requiring steps. One rear entry has a compliant ramp, the other does not. Portable classroom is not accessible.		
Parking	There are 2 designated accessible parking spaces.		
Approach, Entry & Exit	Portable is non-accessible.		
Ramps	Ramps at rear of building vary from fully compliant to totally non-compliant. Added ramp from vestibule to annex.	\$0	
Stairs	Stairs at exterior of building do not appear to meet code.		
Elevator/lift			
Assembly Areas			
Classroom Access	Doors have "knob-style" hardware and are not accessible. Still needs to be replaced.	\$9,458	
Restroom Access	Access to restrooms is non-compliant		
Toilets/Restrooms	No ADA stalls in annex		
Drinking Fountains	Non-compliant. ADA drinking fountains remain to be installed.	\$2,490	
Counter Access	Non-compliant		
Signage per ADA	Non-compliant		
Audio and Visual Alarms	Yes		
Obstacles	None other than noted		
Automatic Sprinkler System	Per IBC Section 903, an automatic sprinkler system shall be provided in all Group E (Educational) facilities.		
Exit Corridors	Per IBC Table 1018.1; Corridor Rating of E Occupancy (Educational) buildings shall be 1 hour without an Automatic Sprinkler System. Exit corridor rating is reduced to 0 (zero) hours with an Automatic Sprinkler System.		
Other	Exit enclosures shall be enclosed per IBC 1022.		
<b>Notes:</b> 1. ADA – Compliance with ADA in the existing building is recommended if major construction is completed at this building. 2. Fire/Safety – Fire suppression system in the existing building is recommended if major work is done at this building.			
<b>Guidelines:</b> 2009 International Building Code; 2009 International Existing Building Code; 1020 ADA Standards for Accessible Design; Administrative Rules of Montana 24.301.351; 2000 NFPA 101 - Life Safety Code			

## Bench Elementary School

### Recommendations

Overall, the main building at Bench is in good condition with a unique courtyard. There is a 4 classroom portable annex building at this school in poor physical condition.

Additional detail regarding scope and cost related to Educational Adequacy and Deferred Maintenance projects can be found in the following tables:

RECOMMENDED BUILDING COMPONENT (FAME) IMPROVEMENT DETAIL:		
Component	Comments	Estimated Cost
Building Envelope		
	Replace Annex siding and exterior windows	\$102,000
Interiors & Specialties		
	No recommended improvements	\$0
Mechanical, Electrical & Plumbing		
	Replacing plumbing fixtures, lighting fixtures in Annex; replace temp controls on boiler, replace chiller, upgrade plumbing to ADA standards, modify 3-comp sink	\$201,702
Fire/Life Safety		
	No recommended improvements	\$0
Site		
	Seal coat parking lot & playground	\$17,855
ADA		
	No recommended improvements	\$0
Does not include Soft Costs	Total	\$321,557

RECOMMENDED EDUCATIONAL ADEQUACY IMPROVEMENT DETAIL:					
Component:	Item Description:	Qty	UOM	Unit Cost	Cost Estimate
Site Improvements					
Total Site:		0			\$0
Addition					
Multi-purpose Room Addition	New Multi-Purpose Addition, Existing Gym/Cafeteria to serve as Cafeteria space.	4500	SF	\$210	\$945,000
Four (4) Classroom Addition	Demolish** Portable Classrooms, Construct four (4) Classroom Addition	3600	SF	\$210	\$756,000
Subtotal:		8100	SF	\$210	\$1,701,000
Gross Area:		2835	SF	\$210	\$595,350
Total Addition:		10935	SF	\$210	\$2,296,350
Remodel					
Total Remodel:		0	SF		\$0
Subtotal:					\$0
Estimated Cost *Does not include soft costs ** Does not include demolition costs					\$2,296,350
TOTAL RECOMMENDED FACILITY IMPROVEMENT COST SUMMARY:					
Description:	Comments:	Cost Estimate			
FAME		\$321,557			
Educational Adequacy		\$2,296,350			
Estimated Cost *Does not include soft costs ** Does not include demolition costs					\$2,617,907

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## Big Sky Elementary School

### Overview

Big Sky is a K-5 elementary school. It ranks among the newest elementary schools in the city. Constructed in 1985 it houses 22 classrooms, gymnasium/cafeteria, kitchen, library, administrative offices, workroom, toilets. The building is a single story structure with no additions. It has a concrete foundation system with slab on grade floor system. The structural system is steel columns / some bearing walls with engineered wood joists with wood decking. The perimeter walls are wood studs that are faced in brick. There are also areas of metals studs and CMU. The current roof is sloping metal installed in 1986 with 12" batt insulation. The walls have 6" batt insulation predominantly.

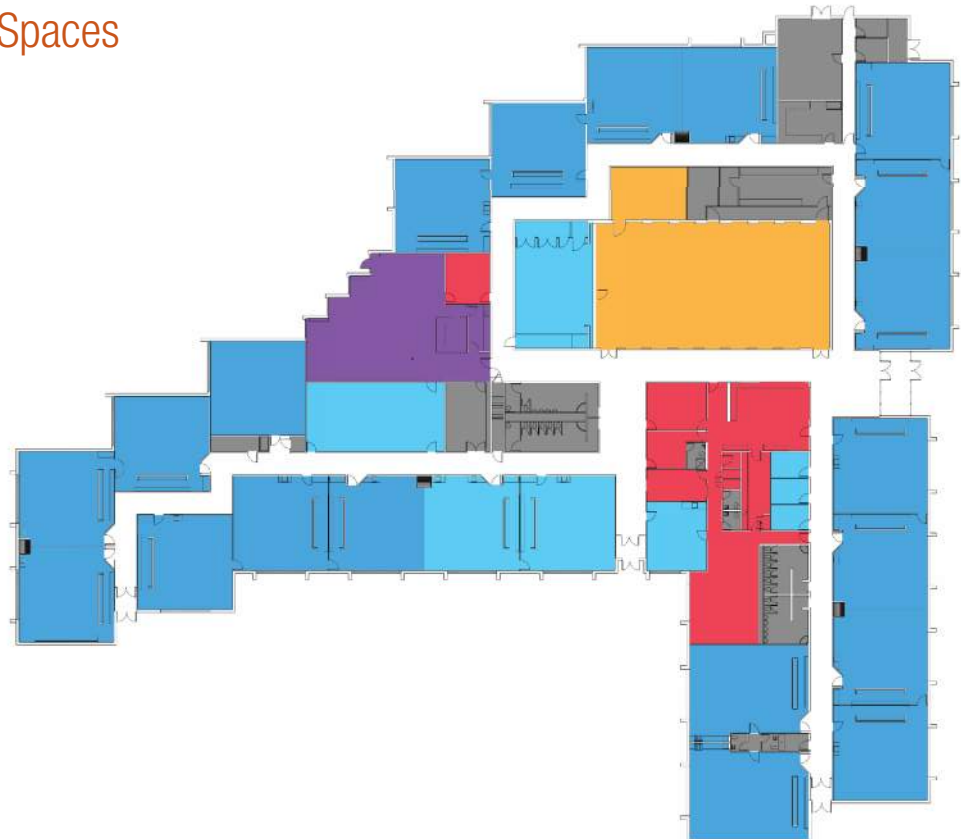
3231 Granger Avenue E  
Billings, MT 59102  
(406) 281-6204

Year Built .....	1985
Renovations .....	1986
Portables .....	0
Site Acres .....	3.24
Building SF .....	43,505
Current Enrollment .....	407
Capacity .....	394
Target Capacity .....	364



### Existing Program Spaces

PLAN LEGEND	
CLASSROOM	
SPECIAL SERVICES	
LIBRARY	
ADMINISTRATION	
MEP/TOILET/KITCHEN	
COMMONS/CAFE	
GYMNASIUM	
MUSIC/ART	



## 4 K-8 FACILITIES

### Big Sky Elementary School

#### Site Characteristics and Deferred Maintenance

Site Characteristics:			
Component		Cost	Priority
Lot Size	3.24 Acres		
Building Area	42,853 sf		
Topography	Flat		
Drainage	Fair to poor drainage with water running back toward building. Front of building and play area downspouts collected and tied to city, graded entry for improved drainage.	\$0	
Drop Off	Large drop off area adjacent to front doors		
Hardscape	Asphalt 29,530 sf - areas of cracking		
Parking Surface	Asphalt 37,500 sf – areas of cracking. Priority is to seal coat parking lot.	\$9,644	\$9,644
Stalls	73 Parking stalls – 2 HC stalls(van)		
Paved Walks/Surfaces	Concrete 1,530 sf. Priority is to replace uneven & broken sidewalks.	\$24,376	\$24,376
Steps, ramps, retaining walls	None		
Paved Sports Courts	Asphalt, several activities marked out, Cracking. Priority is to seal coat playground.	\$8,156	\$8,156
Playgrounds	Gravel areas at playground equip. Priority is to add sidewalk at each playground entrance.	\$3,520	\$3,520
Softscape	35,050 sf		
Play Fields	School is adjacent to a park with large open grass areas.		
Landscaping	Areas of grass surround the perimeter of the school		
Utilities	City services		
Fencing	Some fencing at property lines – Chain Link		

## Big Sky Elementary School

### Building Components and Deferred Maintenance

School: Big Sky Elementary School			
<b>Building Components:</b>			
Component	Sub-Component: Condition Observed and Action to Fix	Cost	Priority
<b>Structural Systems</b>			
Footings/Foundation Walls	Concrete spread footings & stem wall foundation		
	waterproofing at perimeter earth berm is beginning to fail		
Floor Systems	Concrete slab on grade		
Columns and Bearing Walls	Steel columns with areas of bearing walls		
Beams and Joists	Glu-lams with engineered wood joists & plywood deck		
<b>Envelope</b>			
Roof	Metal Roof Installed in 1986 – Gutter System not functioning well, water freezing in gutters and creating ice dams. Roof drain transition to site drains function poorly. <i>Vestibule roof replaced, but metal roof/gutters have not been.</i>	\$764,222	
	EPDM Roof at mechanical mezzanine. <i>Roof replaced.</i>		
	Insulation 12" batt		
Walls	Brick walls on 2 x 6 wood studs – areas of brick are dirty and filmy, Sloping masonry window sills beginning to fail. Waterproofing at perimeter earth berm beginning to fail. Berm beginning to direct water toward building.		
Exterior Windows	Aluminum with some failure of finish. <i>Exterior windows replaced.</i>	\$0	
	Double Glazed		
Exterior Doors	HM Exterior Doors. <i>Exterior doors replaced.</i>		
Thermal Systems	Insulation 6" batt		
<b>Interior Finishes</b>			
Interior Walls	Facility Typical- Framed Gyp.; Gyp walls on steel studs in good condition throughout facility – walls in music room showed damage Gym-Ceramic Faced Concrete block: Tables store into wall. Faculty Toilets- Framed Ceramic Tile: wearing/aging Student Toilets-Glazed/Painted Block: Combination of both materials in similar condition		
Ceilings	Facility Typical- ACT: Student Restrooms showing stains and damage – damage and staining in Gym	\$11,278	
Doors/Hardware/Windows	Non ADA knob type door hardware, some classrooms have panic hardware into hallway HM doors showing some wear HM frames Relites / Interior Windows: HM		
Floor Finishes	Facility Typical- Carpet: 90% in poor condition rippling and staining. <i>Replaced carpet with tile, in some areas.</i>	\$0	
	Toilets (students)- Ceramic tile: wearing/age. <i>Floor tile replaced.</i>	\$0	
	Nurse/Fac.Toilet- Vinyl: In poor condition very worn/aging. <i>Vinyl flooring replaced.</i>	\$0	
	Gym- Vinyl: Newer than other vinyl floors in building. <i>Vinyl flooring replaced.</i>	\$0	

## Big Sky Elementary School

### Building Components and Deferred Maintenance

Specialties			
Toilet Partitions	Metal Stalls: No disfunction observed		
Fixed Seating/Risers	Bleachers: N/A		
	Theater: N/A		
	Classroom/Lecture: N/A		
	Cafeteria: Folding from wall		
Markerboards/Cabinets	Markerboards throughout in good condition.		
	Plastic Laminate Cabinets: Good condition overall, casework in toilets and kitchen shows wear/age.		
	Plastic Laminate Counters: Same as cabinets.		
HVAC System			
Heating	Controls: Building is connected to District master controls.		
	BMS: Needs improvements System replaced in 2016		
	Boiler/Furnace: Recent maintenance- 3 new drivers and motors Boilers/Pumps replaced 2016		
	Room Units: Few or none Classrooms equipped with fintube radiation, controls replaced 2016		
	Hydronic Piping: 4 pipe		
	Alternative Fuel: No		
Ventilating	Air Handler: Central Units revised to variable air colume from constant volume in 2012		
	Ductwork: Ducted Supply/Return. Office Variable air units replaced 2016 added reheat coils		
	Specialized Exhaust: Limited		
	Room Ventilators: Limited or none		
Cooling	Central Air, new chiller installed in 2012.		
	Room AC: No		
	Hydronic Piping: 4 pipe		
Plumbing System			
Fixtures	Plumbing Fixtures appear original to building, no problems reported by custodian		
	Flush valves need repalcement	\$9,000	\$9,000
	Hot Water Generation: Central Electric Unit Updated to gas in 2016		
	Alternative Fuel: No		
	Priority is to modify 3-compartment sink in kitchen	\$1,000	\$1,000
Supply Piping	Piping: Copper		
	Pumps: No		
Waste Piping	Piping: pvc		
	Pumps: No		
Electrical System			
Building Service	1600A, 120/208 3Ph		
	Generator: No		
	Alternative Source: No		
Lighting	Fixtures - PCB: No		
	Fixtures – T-8's throughout facility Upgraded to T8 Floursecent fixtures in classrooms, LED exterior and storage areas		
	Light Level Controls: Adequate- gym lights are inefficient		
	Occupancy sensors addad as portion of building lighting upgrade		
	Occ/Daylight Sensor: Limited		
	Occupancy sensor added as portion of building lighting upgrade.		
	Devices: Power & data distribution upgrade needed Data distribution updated	\$52,000	\$52,000

## Big Sky Elementary School

### Building Components and Deferred Maintenance

Voice/Data	Intercom: Functions properly		
	Clock: Functions properly		
	Telephone: Recently updated. Telephones updated.		
	Data: Computer lab – Mobile and in Library, 2 ports per classroom, Wireless only in portions of the building. Data distribution upgraded to GPON	\$0	
<b>Conveying &amp; Vertical Circulation</b>			
Elevators, lifts	Not applicable		
<b>Safety System</b>			
Egress	Exit Systems: Adequate		
Extinguishing System	Fire Sprinkler installed		
	Cabinet Systems: No		
Exit/Emergency Lighting/Alarms	Exit Lights: Yes		
	Emergency Lighting: Yes		
	Smoke/Heat Detection: Upgraded		
	Fire Alarm System: Recently upgraded. Fire alarm updated with voice evac.		

## Big Sky Elementary School

### Code Review / ADA

Code Review/Americans with Disabilities Act (ADA):			
	Description	Cost	Priority
Site	The site consists of a large asphalt parking area adjacent to the main entrance, this parking makes up all of the parking for the building, and provides a drop off area at the front door. The site also contains an asphalt play area with various activity areas marked out including two basketball courts. Along portions of the paved play area perimeter are gravel play areas containing play equipment. The remaining areas of the site are planted with grass, and the school playground abuts a large park. <b>Front of building and play area downspouts collected and tied to city, graded entry for improved drainage</b>		
Parking	<b>2 Handicap Stalls (Van) – needs one stall added</b>	<b>\$176</b>	
Approach, Entry & Exit	All Accessible		
Ramps	N/A		
Stairs	N/A		
Elevator/lift	N/A		
Assembly Areas	All areas are accessible.		
Classroom Access	Doors have "knob-style" hardware and are not accessible. <b>Hardware still needs replacing.</b>	<b>\$37,835</b>	
Restroom Access	Restroom Access requirements met		
Toilets/Restrooms	Stalls in each restroom had grab bars – dated ADA stalls in 2 toilet rooms		
Drinking Fountains	No dual height fountains were observed, there were drinking fountains mounted low enough for access. <b>ADA fountain added</b>		
Counter Access	Counter in the Cafeteria did not comply with ADA		
Signage per ADA	No compliant signage		
Audio and Visual Alarms	New Fire Alarm system in place		
Obstacles	ADA Guideline		
	ADA Guideline		
Automatic Sprinkler System	Sprinkler installed		
Exit Corridors	Per IBC Table 1018.1; Corridor Rating of E Occupancy (Educational) buildings shall be 1 hour without an Automatic Sprinkler System. Exit corridor rating is reduced to 0 (zero) hours with an Automatic Sprinkler System.		
Other	Exit enclosures shall be enclosed per IBC 1022.		
Other	Per 1018.4; maximum length of dead end corridor shall be 20 feet in a non-sprinklered E occupancy and 50 feet in a sprinklered occupancy.		
<b>Notes:</b> 1. ADA – Compliance with ADA in the existing building is recommended if major construction is completed at this building. 2. Fire/Safety – Fire suppression system in the existing building is recommended if major work is done at this building.			
<b>Building Code Guidelines:</b> 2009 International Building Code; 2009 International Existing Building Code; 1020 ADA Standards for Accessible Design; Administrative Rules of Montana 24.301.351; 2000 NFPA 101 - Life Safety Code			

## Big Sky Elementary School

### Recommendations

Additional detail regarding scope and cost related to Educational Adequacy and Deferred Maintenance projects can be found in the following tables:

RECOMMENDED BUILDING COMPONENT (FAME) IMPROVEMENT DETAIL:		
Component	Comments	Estimated Cost
Building Envelope		
	No recommended improvements	\$0
Interiors & Specialties		
	No recommended improvements	\$0
Mechanical, Electrical & Plumbing		
	Replace flush valves (plumbing), update 3-comp sink in kitchen (plumbing), update power & data distribution (lighting)	\$62,000
Fire/Life Safety		
	No recommended improvements	\$0
Site		
	Seal coat parking lot & playground, replace sidewalks, add sidewalks around playground	\$45,696
ADA		
	No recommended improvements	\$0
Does not include Soft Costs		Total \$107,696

RECOMMENDED EDUCATIONAL ADEQUACY IMPROVEMENT DETAIL:					
Component:	Item Description:	Qty	UOM	Unit Cost	Cost Estimate
Site Improvements					
Total Site:					\$0
Addition					
Subtotal:					\$0
Gross Area:					\$0
Total Addition:					\$0
Remodel					
Total Remodel:					\$0
Subtotal:					\$0
Estimated Cost *Does not include soft costs					\$0
TOTAL RECOMMENDED FACILITY IMPROVEMENT COST SUMMARY:					
Description:					
FAME	Comments:				\$107,696
Educational Adequacy					\$0
Estimated Cost *Does not include soft costs					\$107,696

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## Bitterroot Elementary School

### Overview

Bitterroot School is a K-5 elementary school. The original 1964 building consisted of 8 classrooms and toilets. One year later a planned addition added 8 more classrooms, with a gymnasium/cafeteria, kitchen, office area, workroom, teachers' lounge and toilet rooms. In 1970 a portable building added 4 more classrooms. The site is generally flat. The building is a single story structure. It has a concrete foundation system with concrete slab floor on steel joists over a crawl space. The structural system is steel columns with wood beams and wood joists. The perimeter walls are brick on CMU w/ some panel finish. The current roof is Hypalon installed in 1996. Roof insulation is believed to be 5" rigid and the walls have 2" rigid insulation.

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Billings, MT 59105  
(406) 281-6205

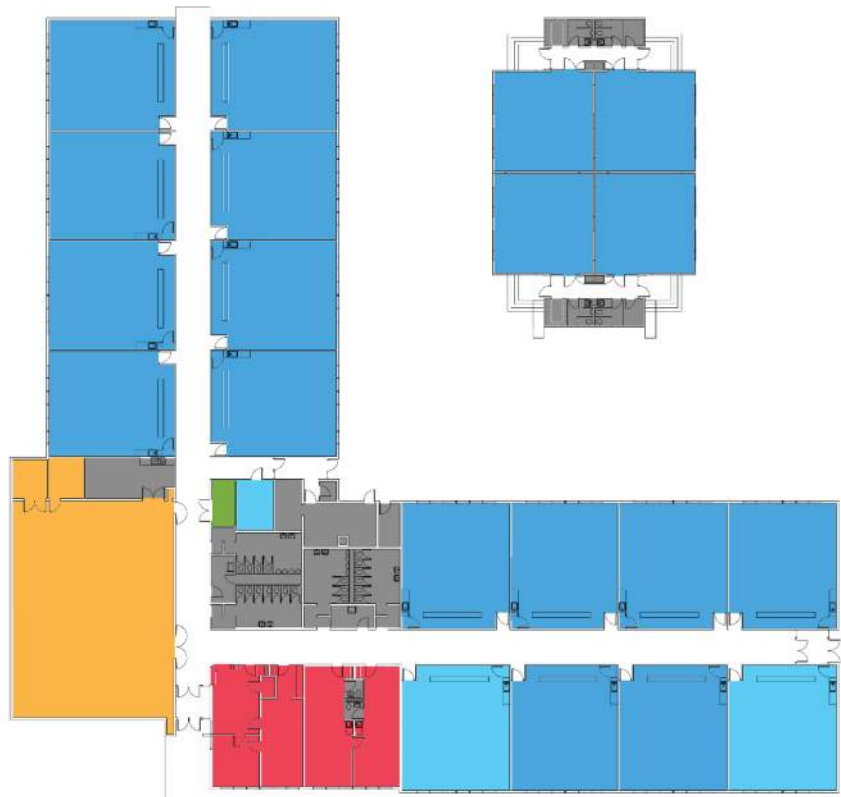
Year Built .....	1964
Renovations .....	Addition 1965
Portables .....	4
Site Acres .....	19.24
Building SF .....	30,734
Current Enrollment .....	369
Capacity .....	350
Target Capacity .....	324



### Existing Program Spaces

#### PLAN LEGEND

- CLASSROOM
- SPECIAL SERVICES
- LIBRARY
- ADMINISTRATION
- MEP/TOILET/KITCHEN
- COMMONS/CAFE
- GYMNASIUM
- MUSIC/ART

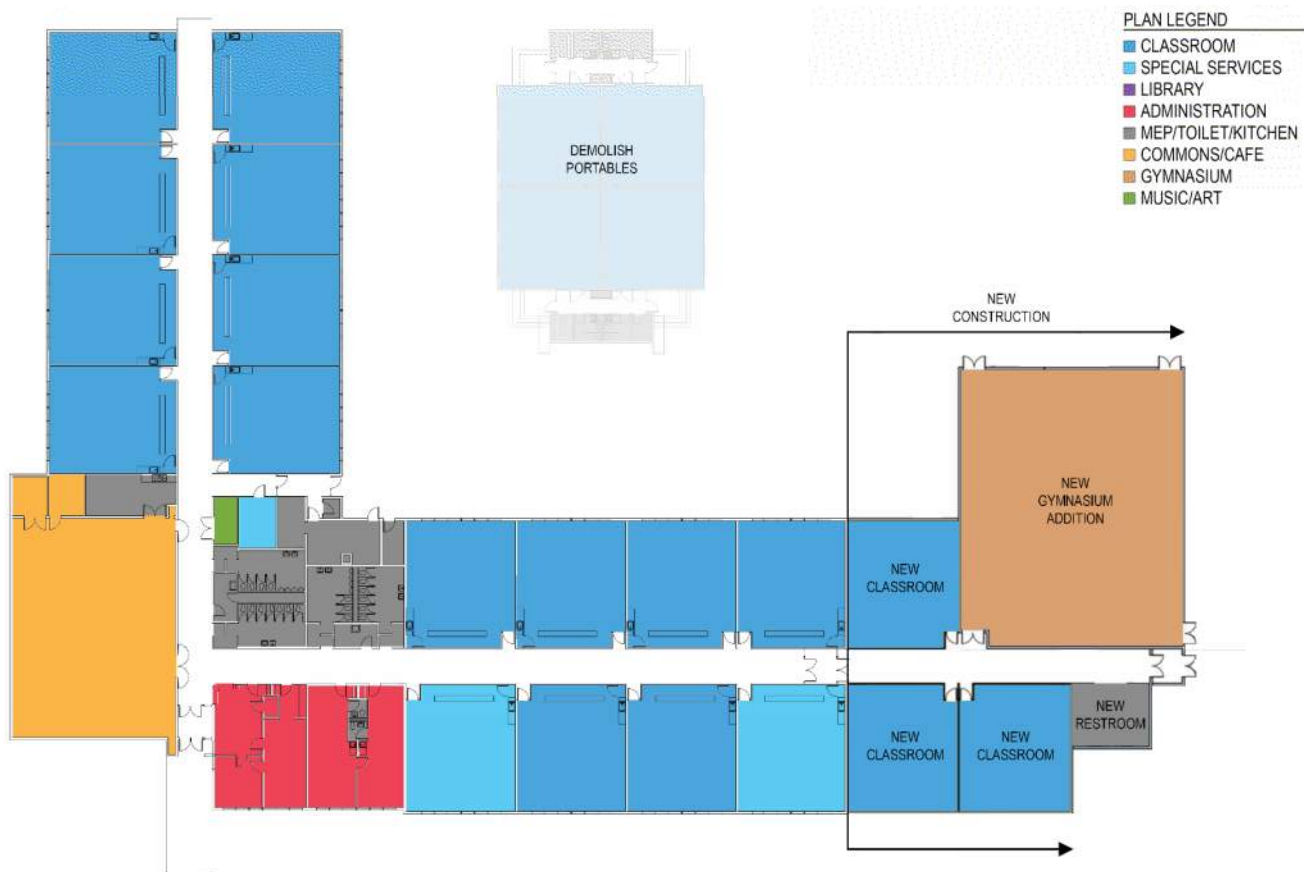


## Bitterroot Elementary School

### Program Space Recommendations

Recommendations From 2013 master plan are being carried over for the 2018 master plan for a multi-purpose room. The district's goal of eliminating portable classrooms requires the addition of three classroom spaces based upon 2017 demographic projections. The recommendations include:

- Repurpose existing gymnasium to Cafeteria.
- Create a multi-purpose room addition and associated restrooms.
- Demolish existing portable classrooms and an addition of 3 new classrooms



Potential Floor Plan Diagram

## Bitterroot Elementary School

### Site Characteristics and Deferred Maintenance

Site Characteristics:			
Component		Cost	Priority
Lot Size	19.24 acres		
Building Area	27,772 Main Building. 3938 Annex		
Topography	Flat		
Drainage	Fair to poor – Water is draining towards the building in some areas. Grading, asphalt, concrete updates and tied into walking path.		
Drop Off	Designated drop off area at front of school		
Hardscape	Asphalt 41,720 sf – some areas of cracking	\$0	
Parking Surface	Asphalt 15,000 sf – areas of cracking. Priority is to seal coat parking lot.	\$3,285	\$3,285
Stalls	47 Stalls 2 Accessible stalls		
Paved Walks/Surfaces	Concrete 5000 sf – Sidewalks and stairs in poor condition. Priority is to replace sidewalk between annex & main building	\$6,000	\$6,000
Steps, ramps, retaining walls	Concrete & wood. Priority is to replace steps at annex entries	\$8,000	\$8,000
Paved Sports Courts	Large asphalt areas with activities marked out - Cracking. Priority is to seal coat playground.	\$8,672	\$8,672
Playgrounds	Gravel play areas with play equipment		
Softscape	781,770 - Possible corrosive soils		
Play Fields	Large grass areas around school – District owns four adjacent baseball fields. Fields updated per Medicine Crow Middle School developments.		
Landscaping	Several trees planted around the building		
Utilities	City services		
Fencing	Some chain link		

## Bitterroot Elementary School

### Building Components and Deferred Maintenance

School: Bitterroot Elementary School

#### Building Components (Main Building):

Component	Sub-Component: Condition Observed and Action to Fix	Cost	Priority
<b>Structural Systems</b>			
Footings/Foundation Walls	Concrete spread footings & stem wall foundation		
Floor Systems	Concrete slab on grade		
Columns and Bearing Walls	Steel columns with limited bearing walls		
Beams and Joists	Glulam beams, 2 x 10 joists at classrooms, structural decking @ multi purpose		
<b>Envelope</b>			
Roof	Hypalon 1996- scheduled for replacement in 2014 – South side of building sheets ice. <b>Roof replaced.</b>		
	Insulation assumed 5" rigid		
Walls	Brick and panel		
Exterior Windows	Aluminum – Window hardware needs replacement. <b>Replaced exterior windows.</b>	\$0	
	Single Glazed		
Exterior Doors	HM Exterior Doors. <b>Exterior doors replaced.</b>		
Thermal Systems	2" batt		
<b>Interior Finishes</b>			
Interior Walls	Framed - GWB		
	Brick - CMU		
Ceilings	Interlocking acoustical tile – Ceilings are beginning to fail, repair is difficult. <b>Replaced ceilings at corridors.</b>		
	Wood		
Doors/Hardware/Windows	Hardware: Round knob non ADA compliant		
	Doors: Solid core wood and hollow metal		
	Frame: Wood and hollow metal		
	Relites: Minimal or none		
Floor Finishes	Carpet in classrooms / offices, fair to poor condition. <b>Carpet replaced.</b>	\$0	
	Vinyl tile (VAT) at corridors, original to building, well maintained but failing. <b>Vinyl flooring replaced.</b>	\$0	
<b>Specialties</b>			
Toilet Partitions	Metal Older, Partitions in one toilet very low creating privacy issues. <b>Complete remodel of bathrooms.</b>		
Fixed Seating/Risers	Bleachers: N/A		
	Theater: N/A		
	Classroom/Lecture: N/A		
	Cafeteria: N/A		
Markerboards//Cabinets	Dry Erase Boards in Classrooms		
	Wood Cabinets aging and wearing		
	Laminate countertops wearing and aging		
<b>HVAC System</b>			
Heating	Controls: Building is connected to district master controls. <b>Priority is to update DDC front end.</b>	\$10,000	\$10,000
	BMS: improvements needed <b>System updated summer 2018</b>		
	Boiler/Furnace: Central <b>Boilers replaced 2013</b>		
	Room Units: Unit ventilators –Unit ventilators are noisy due to system type <b>Unit ventilators replaced summer 2015</b>		
	Hydronic Piping: 2 pipe		

## Bitterroot Elementary School

### Building Components and Deferred Maintenance

Ventilating	Alternative Fuel: No		
	Air Handler: Limited Gymnasium		
	Ductwork: Limited		
	Specialized Exhaust: Limited		
	Room Ventilators: unit ventilators Unit Ventilators replaced Install building relief exhaust fan.	\$16,500	
Cooling	Central AC: No		
	Room AC: Some @ Admin		
<b>Plumbing System</b>			
Fixtures	Sinks/Toilets/showers: Original to building, difficulty replacing parts Toilet rooms updated to ADA standard 2015		
	Hot Water Generation: Central		
	Alternative Fuel: No		
	Priority is to modify 3-compartment sink and install a hand wash sink in kitchen.	\$4,000	\$4,000
Supply Piping	Piping: Copper, varies		
	Pumps: Circulating		
Waste Piping	Piping: Varies		
	Pump: No		
	Corrosive soils deteriorating underground piping Central Waste Line replaced 2012		
<b>Electrical System</b>			
Building Service	400A, 120/208 1 Ph, service needs to be upgraded Upgraded to 800A, 120/208, 3P		
	Meter Base: Coordinate with service upgrade		
	Generator: No		
	Alternative Source: No		
Lighting	Fixtures - PCB: No		
	T-8's throughout Lighting updated to LED		
	Occ/Daylight Sensor: Limited Occupancy sensor added as portion of building lighting upgrade.		
	Occ/Daylight Sensor: No Occupancy sensor added as portion of building lighting upgrade.		
Distribution	Devices: Power & data distribution upgrade needed Additional devices added with lighting upgrade		
Voice/Data	Intercom: Not functioning properly		
	Clock: Works well		
	Telephone: New system		
	Data: 2 ports in each classroom, Wireless coverage is good. GPON system installed throughout.	\$0	
<b>Conveying &amp; Vertical Circulation</b>			
Elevators, lifts, stairs ramps	Not applicable		
<b>Safety System</b>			
Egress	Exit Systems: Clear paths of egress		
Extinguishing System	Sprinkler: No Automatic Sprinkler	\$117,367	
	Cabinet Systems: No		
Exit/Emergency Lighting/Alarms	Exit Lights: Yes		
	Emergency Lighting: Yes		
	Smoke/Heat Detection: Upgraded		
	Fire Alarm System: Upgraded. Fire alarm system updated with voice evac.		

## Bitterroot Elementary School

### Building Components and Deferred Maintenance - Portables

School: Bitterroot Elementary School			
<b>Portable Building Description:</b>			
Portables can best be described as residential quality construction designed to be trucked to the site and set on a foundation. Roofs, walls and floors are wood joists / trusses and studs with residential grade finishes at least some of which were selected to allow the portable unit to be moved without cracking, etc. Heating is via a small residential forced air furnace for each classroom. Restrooms are very small and, again, of residential quality. Gas, electricity, water and sewer were typically extended from the existing school building. The portable serving Bench Elementary has an independent septic system which is no longer allowed within the city limits.			
Condition of these portable units ranges from fair to very poor. This is in part due to the minimized initial investment and also related to light weight construction being used for heavy traffic functions. In addition to the above most of the units are virtually inaccessible with regards to ADA requirements.			
<b>Building Components (Portable):</b>			
Component	Sub-Component: Condition Observed and Action to Fix	Cost	Priority
<b>Structural Systems</b>			
Footings/Foundation Walls	Concrete Foundation walls visible above grade		
Floor Systems	Wood framed floor system		
	Crawl space		
Columns and Bearing Walls	Modular housing construction		
Beams and Joists	Engineered wood joists		
<b>Envelope</b>			
Roof	Hypalon installed 1989- scheduled for replacement in 2014. Roof replaced.		
	Insulation unknown		
Walls	Metal faced plywood siding – deteriorating. Priority is to replace annex siding.	\$87,820	\$87,820
Exterior Windows	Metal windows. Exterior windows replaced.	\$0	
	Single Glazed		
Exterior Doors/Hatches	Metal doors and frames with single glazing - doors are narrow and do not meet minimum widths required by ADA		
	Overhead Door: N/A		
Thermal Systems	3 ½" batt insulation		
<b>Interior Finishes</b>			
Interior Walls	Framed - GWB		
Ceilings	Lay-In		
Doors/Hardware/Windows	Non ADA compliant hardware- low quality		
Floor Finishes	90% carpet, 10% vinyl tile – needs replacement. Flooring replaced and subfloor added.	\$0	
Wall Finishes	Paneling and paint		
<b>Specialties</b>			
Toilet Partitions	Metal		
Fixed Seating/Risers	N/A		
Markerboards/Cabinets	Markerboard		
	Cabinets		
	Countertops		
<b>HVAC System</b>			
Heating	Gas fired forced air furnaces - located such that children can tamper with them Hydronic System installed with classroom fan coils and fintube heaters		
	Building is not connected to district master controls District DDC System extended to building		
Ventilating	Windows Ventilation added to classroom fan coils		
Cooling	N/A		
<b>Plumbing System</b>			

## Bitterroot Elementary School

### Building Components and Deferred Maintenance - Portables

Fixtures	Sinks/Toilets: Original to building, Residential quality fixtures	\$17,202	
	Hot Water Generation: point of use water heater		
	Alternative Fuel: No		
Supply Piping	Piping: Copper, varies		
	Pumps: No		
Waste Piping	Originally on septic system, now on city sewer		
	Piping varies, no pump		
<b>Electrical System</b>			
Building Service	From main building – needs replacement Service upgraded and revised from overhead to below grade		
Lighting	Original fluorescent, incandescent Lighting revised to LED		
Distribution	Devices: Inadequate Additional distribution provided with HVAC revisions		
Voice/Data	Data: Only one feed to Annex. GPON installed throughout.	\$0	
<b>Conveying &amp; Vertical Circulation</b>			
Elevators, lifts, stairs ramps	N/A		
<b>Safety System</b>			
Egress	Exit Systems: Clear paths of egress		
Extinguishing System	Sprinkler: No automatic Sprinkler system		
Exit/Emergency Lighting/Alarms	Exit Lights: Yes		
	Emergency Lighting: Yes		
	Smoke/Heat Detection: Upgraded		
	Fire Alarm System: Upgraded. Fire alarm system updated with voice evac.		

## Bitterroot Elementary School

### Code Review / ADA

Code Review/Americans with Disabilities Act (ADA):			
	Description	Cost	Priority
Site	Accessible routes link the site. The main entrance to the building is accessible.		
Parking	Handicap Parking is adequate		
Approach, Entry & Exit	The main entrance is accessible with automatic door opener		
Ramps			
Stairs			
Elevator/lift			
Assembly Areas	All assembly areas accessible		
Classroom Access	Doors have "knob-style" hardware and are not accessible, Door widths are not compliant. Work remains to be completed.	\$59,772	
Restroom Access	Access to restrooms is compliant.		
Toilets/Restrooms	No toilets are accessible. ADA improvements to restrooms have been made.	\$0	
Drinking Fountains	Non compliant. ADA-compliant drinking fountain has been installed.	\$0	
Counter Access	Non-compliant		
Signage per ADA	Non compliant		
Audio and Visual Alarms			
Obstacles			
Automatic Sprinkler System	Per IBC Section 903, an automatic sprinkler system shall be provided in all Group E (Educational) facilities.		
Exit Corridors	Per IBC Table 1018.1; Corridor Rating of E Occupancy (Educational) buildings shall be 1 hour without an Automatic Sprinkler System. Exit corridor rating is reduced to 0 (zero) hours with an Automatic Sprinkler System.		
Other	Exit enclosures shall be enclosed per IBC 1022.		
Other	Per 1018.4; maximum length of corridor shall be 20 feet in a non-sprinklered E occupancy and 50 feet in a sprinklered occupancy.		
<b>Notes:</b> 1. ADA – Compliance with ADA in the existing building is recommended if major construction is completed at this building. 2. Fire/Safety – Fire suppression system in the existing building is recommended if major work is done at this building.			
<b>Building Code Guidelines:</b> 2009 International Building Code; 2009 International Existing Building Code; 1020 ADA Standards for Accessible Design; Administrative Rules of Montana 24.301.351; 2000 NFPA 101 - Life Safety Code			

## Bitterroot Elementary School

### Code Review / ADA - Portables

Code Review/Americans with Disabilities Act (ADA):			
	Description	Cost	Priority
Site	Accessible routes link the site. The main entrance to the building is accessible. The annex is completely non accessible.		
Parking	Handicap Parking is adequate		
Approach, Entry & Exit	The main entrance is accessible with automatic door opener		
Ramps	Ramp work remains to be completed.	\$78,960	
Stairs	Stairs at the annex building are accessible. Handrails fail to meet code due to extensions and placement.		
Elevator/lift			
Assembly Areas	All assembly areas accessible		
Classroom Access	Doors have "knob-style" hardware and are not accessible, Door widths are not compliant. Work remains to be completed.	\$8,107	
Restroom Access	Access to restrooms is compliant.		
Toilets/Restrooms	No toilets are accessible.	\$59,925	
Drinking Fountains	Non compliant. Work remains to be completed	\$2,491	
Counter Access	Non-compliant		
Signage per ADA	Non compliant		
Audio and Visual Alarms			
Obstacles			
Automatic Sprinkler System	Per IBC Section 903, an automatic sprinkler system shall be provided in all Group E (Educational) facilities.		
Exit Corridors	Per IBC Table 1018.1; Corridor Rating of E Occupancy (Educational) buildings shall be 1 hour without an Automatic Sprinkler System. Exit corridor rating is reduced to 0 (zero) hours with an Automatic Sprinkler System.		
Other	Exit enclosures shall be enclosed per IBC 1022.		
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<b>Notes:</b> 1. ADA – Compliance with ADA in the existing building is recommended if major construction is completed at this building. 2. Fire/Safety – Fire suppression system in the existing building is recommended if major work is done at this building.			
<b>Building Code Guidelines:</b> 2009 International Building Code; 2009 International Existing Building Code; 1020 ADA Standards for Accessible Design; Administrative Rules of Montana 24.301.351; 2000 NFPA 101 - Life Safety Code			

# 4 K-8 FACILITIES

## Bitterroot Elementary School

### Recommendations

Bitterroot has a 4 room annex that is in poor condition and not ADA accessible.

Additional detail regarding scope and cost related to Educational Adequacy and Deferred Maintenance projects can be found in the following tables:

RECOMMENDED BUILDING COMPONENT (FAME) IMPROVEMENT DETAIL:		
Component	Comments	Estimated Cost
Building Envelope	Replace siding of Annex	\$87,820
Interiors & Specialties	No recommended improvements	\$0
Mechanical, Electrical & Plumbing	Update DDC front end (heating), modify 3-comp sink, add hand wash sink in kitchen	\$14,000
Fire/Life Safety	No recommended improvements	\$0
Site	Seal coat parking lot & playground, replace sidewalk & steps	\$25,957
ADA	No recommended improvements	\$0
Does not include Soft Costs	Total	\$127,777

RECOMMENDED EDUCATIONAL ADEQUACY IMPROVEMENT DETAIL:					
Component:	Item Description:	Qty	UOM	Unit Cost	Cost Estimate
Site Improvements					
Total Site:		\$0			\$0
Addition					
Multi-purpose Room Addition	New Multi-Purpose Addition, Existing Gym/Cafeteria to serve as Cafeteria space.	4500	SF	\$210	\$945,000
Three (3) Classroom Addition	Demolish** Portable Classrooms, Construct four (4) Classroom Addition	2700	SF	\$210	\$567,000
Subtotal:		7200	SF	\$210	\$1,512,000
Gross Area:		2520	SF	\$210	\$529,200
Total Addition:		9720	SF	\$210	\$2,041,200
Remodel					
Total Remodel:		\$0	SF		\$0
Subtotal:					\$0
Estimated Cost *Does not include soft costs ** Does not include demolition costs					\$2,041,200
TOTAL RECOMMENDED FACILITY IMPROVEMENT COST SUMMARY:					Cost Estimate
Description:					
FAME					\$127,777
Educational Adequacy					\$2,041,200
Estimated Cost *Does not include soft costs					\$2,168,977

## Boulder Elementary School

### Overview

Boulder is a K-5 elementary school. The 1962 original building is a single story structure with 18 classrooms. In 2005 it received a library addition and two additional classrooms. Another project brought in a portable building with 4 additional classrooms. It has a concrete foundation system with slab on grade floor. The structural system is steel & wood columns with wood beams, 2 x 6 joists and wood decking. See below for portable construction. The perimeter walls are brick / concrete. The current roof is PVC / EPDM installed in 2006. The walls have 1" rigid insulation or none. Description of portable building is included later.

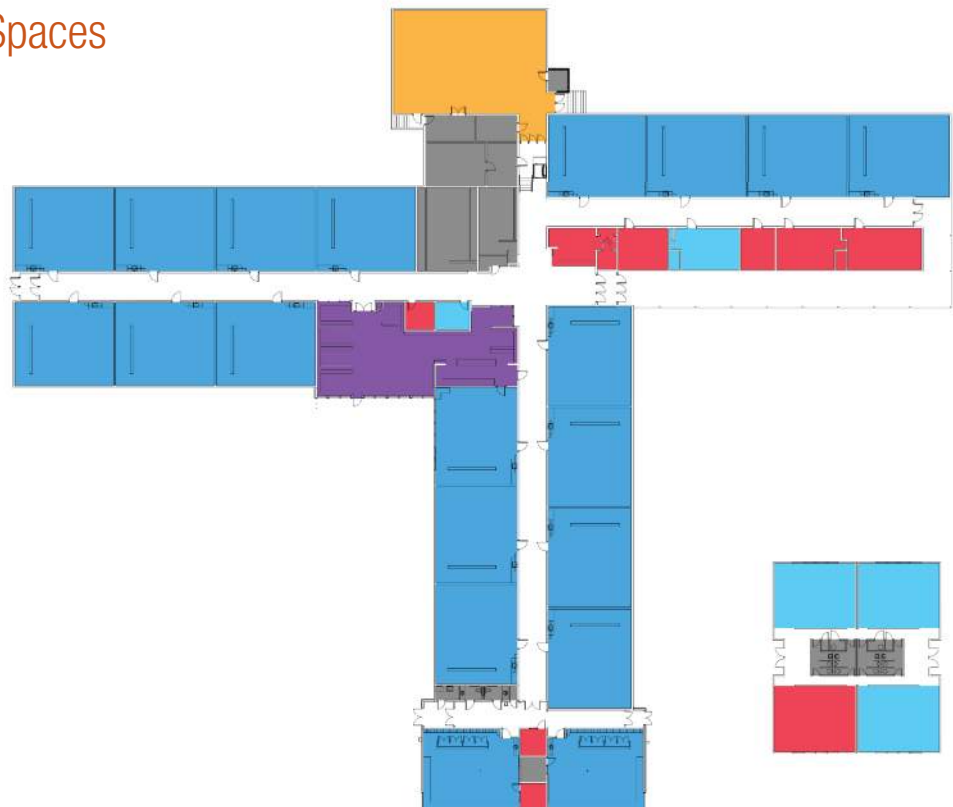
2202 32nd St. W  
Billings, MT 59102  
(406) 281-6206

Year Built .....	1962
Renovations .....	Addition 2006
Portables .....	4
Site Acres .....	4.48
Building SF .....	40,185
Current Enrollment .....	428
Capacity .....	416
Target Capacity .....	385



### Existing Program Spaces

PLAN LEGEND	
CLASSROOM	
SPECIAL SERVICES	
LIBRARY	
ADMINISTRATION	
MEP/TOILET/KITCHEN	
COMMONS/CAFE	
GYMNASIUM	
MUSIC/ART	



## Boulder Elementary School

### Program Space Recommendations

Recommendations From 2013 master plan are being carried over for the 2018 master plan for a multi-purpose room. The district's goal of eliminating portable classrooms requires the addition of four classroom spaces based upon 2017 demographic projections. The recommendations include:

- Repurpose existing gymnasium to Cafeteria.
- Create a multi-purpose room addition and associated restrooms.
- Demolish existing portable classrooms and an addition of 2 new classrooms



### Potential Floor Plan Diagram

## Boulder Elementary School

### Site Characteristics and Deferred Maintenance

Site Characteristics:			
Component		Cost	Priority
Lot Size	4.48 acres		
Building Area	34,454 sf Annex (4009)		
Topography	Gentle Slope		
Drainage	Drainage is poor around portions of the building allowing water to infiltrate the building, multipurpose is a major area of concern. Grading & drainage improved: Roof drains connected to french drains, and stormwater inlet added to parking lot, connecting to city storm system. Verify costs of any remaining improvements needed.	\$0	
Drop Off	Isolated drop off with access to front doors via accessible path		
Hardscape	Asphalt 35,000 sf		
Parking Surface	Asphalt 18,350 sf parking lot at north of building. Priority is seal coating parking lot.	\$5,733	\$5,733
Stalls	33 Stall 1 HC Stall		
Paved Walks/Surfaces	880 sf Concrete walkways around building. Priority is replacing broken & uneven sidewalk.	\$16,401	\$16,401
Steps, ramps, retaining walls	Steps/ramps to Annex and down to gym		
Paved Sports Courts	Large Asphalt Play Areas with sports courts marked out. Work remains to be completed.	\$52,640	
Playgrounds	Gravel areas with playground equipment		
Softscape	122,203 sf		
Play Fields	School is adjacent to a park containing baseball fields		
Landscaping	School grounds are landscaped		
Utilities	City services		
Fencing	Chain Link fences separate the property from adjacent streets Etc.		

## Boulder Elementary School

### Building Components and Deferred Maintenance

School: Boulder Elementary School			
<b>Building Components (Main Building):</b>			
Component	Sub-Component: Condition Observed and Action to Fix	Cost	Priority
<b>Structural Systems</b>			
Footings/Foundation Walls	Concrete spread footings & stem wall foundation:		
Floor Systems	Concrete slab on grade		
Columns and Bearing Walls	Combination of wood columns and bearing wall construction		
Beams and Joists	Glu Lams w 2x6's, structural decking at multi-purpose. TJ's & bearing walls at additions.		
<b>Envelope</b>			
Roof	PVC – Installed 2006 – at original building area. <b>Roof replaced.</b>		
	EPDM – Installed 2006 – add addition. <b>Roof replaced</b>		
	Insulation 5" rigid @ original and at addition. Reroof re-directed roof run off to area of negative drainage.		
Walls	Brick and Concrete exterior walls – at areas around gym signs of water infiltration present. Storage room at gym shows signs of infiltration.		
Exterior Windows	Single pane metal framed windows in original building. <b>Exterior windows replaced.</b>	\$0	
	Double pane aluminum windows in addition		
Exterior Doors	Aluminum storefront at addition, HM doors at egress, few wood doors remain. <b>Exterior doors replaced.</b>	\$0	
Thermal Systems	Insulation 2" batt @ original, 6" batt @ addition		
<b>Interior Finishes</b>			
Interior Walls	Facility Typical – Framed Gyp: Good condition throughout with addition walls being new and in excellent condition.		
	Facility Typical – Brick: Many interior spaces have exposed brick with wear and minor damage		
	Toilets – Framed Ceramic Tile: Worn (new in addition). <b>Complete restroom remodel.</b>		
Ceilings	Facility Typical – Glued On Tile: Original building ceiling is glued on tile, tiles aging and failing some being secured with screws, minor staining	\$99,171	
	Kitchen- Gyp: Worn, stained, damaged		
	Addition – Gyp: Excellent, new		
Doors/Hardware/Windows	Facility Typical – SCW Doors original to building		
	Addition – SCW Doors with plastic laminate covering		
	Frames – 90% Wood, 10% HM		
	Hardware – 90% Non ADA 10% ADA compliant levers		
	Relites located high in classrooms – good condition		
Floor Finishes	Facility Typical – Carpet: Carpet in facility varies in age and condition		
	Nurse/Work/Hall- Asbestos Floor Tile: Tiles are showing wear and age in hallways, areas of less traffic flooring in better condition. <b>Flooring replaced throughout the school.</b>	\$0	
	Kitchen/Gym/Addition Hallway/Toilet – VCT: toilet VCT is in poor condition, all other areas new.		
	Student Toilets – Ceramic Tile: Aging and wearing overall poor condition		

## Boulder Elementary School

### Building Components and Deferred Maintenance

Specialties			
Toilet Partitions	Metal – aging		
Fixed Seating/Risers	Bleachers: N/A		
	Theater: N/A		
	Classroom/Lecture: N/A		
	Cafeteria: N/A		
Markerboards/Cabinets	Markerboards throughout		
	Tackboard		
	Facility Typical – Wood Base Cabinets: age wear		
	Addition/Library/Office – Plam Base Cabinets		
	Facility Typical – Plam Counters: Varying conditions of counter, counters in remodeled areas (Office, Library, Addition) are new		
HVAC System			
Heating	Building is connected to the District master controls. Priority is to replace building temp control front end.	\$10,000	\$10,000
	BMS: needs upgrades BMS up to district standard	\$0	
	Central boiler has been upgraded recently Boilers updated to district standard 2015	\$0	
	Room Units: Unit ventilators - Ventilators are located close to the ground causing issues with moisture infiltration Unit ventilators replaced summer 2015		
	All hydronic piping is now surface mounted down hallways and through rooms due to failure of original piping slab. Piping revised to be routed outside corridors		
	Alternative Fuel: No		
	Air Handler: Gymnasium unit installed and building relief added Library ventilation system improved		
	Ductwork: No Specialized Exhaust: Limited		
Ventilation	Room Ventilators: Unit ventilators – Ventilators are located close to the ground. Ventilator openings raised to improve grade clearance.		
Cooling	Central AC: No		
	Room AC: No		
	Hydronic Piping: No		
Plumbing System			
Fixtures	Plumbing throughout the building is dated and is repaired on an as needed basis. Central toilet rooms revised to meet ADA requirements 2015. Classroom fixtures need replacement.	\$6,000	
	Hot Water Generation: Central		
	Alternative Fuel: No		
	ADA Drinking fountains added. Priority is to modify 3 compartment sink in kitchen and install a hand wash sink in kitchen.	\$4,000	\$4,000
Supply Piping	Piping: Copper, varies		
	Pumps: Circulating		
Waste Piping	Piping: varies – Drain lines are regularly congested. Central toilet drainage revised to remove obstruction.	\$0	
	Pump: No		

## 4 K-8 FACILITIES

### Boulder Elementary School

#### Building Components and Deferred Maintenance

<b>Electrical System</b>			
Building Service	400A, 120/240 1 Ph, needs upgrade <b>Service upgraded to 800A 120/208 3P</b>	\$0	
	Meter Base: coordinate with service upgrade		
	Generator: No		
Lighting	Fixtures - PCB: No		
	T-8 Lamps used throughout <b>Fixtures replaced with LED</b>		
	Light Level Controls: Limited <b>Occupancy controls and dimming controls added</b>	\$0	
	Occ/Daylight Sensor: No <b>Occupancy controls added</b>		
Distribution	Building is in need of more service. <b>Service replaced and updated</b>		
	Devices: Power and data distribution upgrade needed. <b>Additional classroom data and outlets added with Lighting upgrade</b>	\$0	
Voice/Data	Intercom functions properly		
	Central clock system is dated and dysfunctional		
	Telephones have been updated		
	Data: No Computer Lab, 1 port per room, cabling is old, wireless is achieved. <b>GPON system installed throughout</b>	\$0	
<b>Conveying &amp; Vertical Circulation</b>			
Elevators, lifts, stairs ramps	An ADA wheelchair lift serves the sunken gym floor		
	A 2 way radio is used for communication from the area of refuge in gym. Area of refuge door observed to have no smoke-gasketing.		
<b>Safety System</b>			
Egress	Exit Systems: Clear paths of egress		
Extinguishing System	<b>No Sprinkler Observed</b>	\$139,459	
	Cabinet Systems		
Exit/Emergency Lighting/Alarms	Exit Lights: Yes		
	Emergency Lighting: Yes		
	Smoke/Heat Detection: Upgraded		
	<b>Fire Alarm: Upgraded. Fire alarm updated with voice evac.</b>		

## Boulder Elementary School

### Building Components and Deferred Maintenance - Portables

School: Bitterroot Elementary School			
<b>Portable Building Description:</b>			
Portables can best be described as residential quality construction designed to be trucked to the site and set on a foundation. Roofs, walls and floors are wood joists / trusses and studs with residential grade finishes at least some of which were selected to allow the portable unit to be moved without cracking, etc. Heating is via a small residential forced air furnace for each classroom. Restrooms are very small and, again, of residential quality. Gas, electricity, water and sewer were typically extended from the existing school building. The portable serving Bench Elementary has an independent septic system which is no longer allowed within the city limits.			
Condition of these portable units ranges from fair to very poor. This is in part due to the minimized initial investment and also related to light weight construction being used for heavy traffic functions. In addition to the above most of the units are virtually inaccessible with regards to ADA requirements.			
<b>Building Components (Portable):</b>			
Component	Sub-Component: Condition Observed and Action to Fix	Cost	Priority
<b>Structural Systems</b>			
Footings/Foundation Walls	Concrete Foundation walls visible above grade		
Floor Systems	Wood framed floor system		
	Crawl space		
Columns and Bearing Walls	Modular housing construction		
Beams and Joists	Engineered wood joists		
<b>Envelope</b>			
Roof	Hypalon installed 1989- scheduled for replacement in 2014. Roof replaced.		
	Insulation unknown		
Walls	Metal faced plywood siding – deteriorating. Priority is to replace annex siding.	\$87,820	\$87,820
Exterior Windows	Metal windows. Exterior windows replaced.	\$0	
	Single Glazed		
Exterior Doors/Hatches	Metal doors and frames with single glazing - doors are narrow and do not meet minimum widths required by ADA		
	Overhead Door: N/A		
Thermal Systems	3 ½" batt insulation		
<b>Interior Finishes</b>			
Interior Walls	Framed - GWB		
Ceilings	Lay-In		
Doors/Hardware/Windows	Non ADA compliant hardware- low quality		
Floor Finishes	90% carpet, 10% vinyl tile – needs replacement. Flooring replaced and subfloor added.	\$0	
Wall Finishes	Paneling and paint		
<b>Specialties</b>			
Toilet Partitions	Metal		
Fixed Seating/Risers	N/A		
Markerboards/Cabinets	Markerboard		
	Cabinets		
	Countertops		
<b>HVAC System</b>			
Heating	Gas fired forced air furnaces - located such that children can tamper with them Hydronic System installed with classroom fan coils and fintube heaters		
	Building is not connected to district master controls District DDC System extended to building		
Ventilating	Windows Ventilation added to classroom fan coils		
Cooling	N/A		
<b>Plumbing System</b>			

## 4 K-8 FACILITIES

### Boulder Elementary School

#### Building Components and Deferred Maintenance - Portables

Fixtures	Sinks/Toilets: Original to building, Residential quality fixtures	\$17,202	
	Hot Water Generation: point of use water heater		
	Alternative Fuel: No		
Supply Piping	Piping: Copper, varies		
	Pumps: No		
Waste Piping	Originally on septic system, now on city sewer		
	Piping varies, no pump		
<b>Electrical System</b>			
Building Service	From main building – needs replacement Service upgraded and revised from overhead to below grade		
Lighting	Original fluorescent, incandescent Lighting revised to LED		
Distribution	Devices: Inadequate Additional distribution provided with HVAC revisions		
Voice/Data	Data: Only one feed to Annex. GPON installed throughout.	\$0	
<b>Conveying &amp; Vertical Circulation</b>			
Elevators, lifts, stairs ramps	N/A		
<b>Safety System</b>			
Egress	Exit Systems: Clear paths of egress		
Extinguishing System	Sprinkler: No automatic Sprinkler system		
Exit/Emergency Lighting/Alarms	Exit Lights: Yes		
	Emergency Lighting: Yes		
	Smoke/Heat Detection: Upgraded		
	Fire Alarm System: Upgraded. Fire alarm system updated with voice evac.		

## Boulder Elementary School

### Code Review / ADA

Code Review/Americans with Disabilities Act (ADA):			
	Description	Cost	Priority
Site	There is an accessible route to the main entrance from the drop off area. Paved play areas and sidewalks provide some access to some secondary building entrances.		
Parking	1 Accessible Parking spot ( not van compatible)		
Approach, Entry & Exit	Approach and entry are accessible, no signage observed.		
Ramps			
Stairs	Stairs around gym observed to be compliant.		
Elevator/lift	Lift installed at Gym area provides access to lower level.		
Assembly Areas	All accessible		
Classroom Access	90% of Doors have "knob-style" hardware and are non-accessible. Work remains to be completed.	\$31,649	
Restroom Access	Two accessible toilet rooms in recent addition.		
Toilets/Restrooms	Two accessible toilet rooms in recent addition. Full restroom remodel. Code/ADA issues addressed.		
Drinking Fountains	No dual height fountain, however there are drinking fountains mounted at different heights to meet requirement. ADA fountain with bottle filler added.		
Counter Access	ADA Guideline		
Signage per ADA	No signage observed.		
Audio and Visual Alarms	ADA Guideline		
Obstacles	ADA Guideline		
Area of Refuge	Area of refuge adjacent to gym area does not have weather strip on door, and has no permanent communication system, or signage.		
Automatic Sprinkler System	No sprinkler system observed.		
Exit Corridors	Per IBC Table 1018.1; Corridor Rating of E Occupancy (Educational) buildings shall be 1 hour without an Automatic Sprinkler System. Exit corridor rating is reduced to 0 (zero) hours with an Automatic Sprinkler System.		
Other	Exit enclosures shall be enclosed per IBC 1022.		
Other	Per 1018.4; maximum length of corridor shall be 20 feet in a non-sprinkled E occupancy and 50 feet in a sprinkled occupancy.		
<b>Notes:</b> 1. ADA – Compliance with ADA in the existing building is recommended if major construction is completed at this building. 2. Fire/Safety – Fire suppression system in the existing building is recommended if major work is done at this building.			
<b>Building Code Guidelines:</b> 2009 International Building Code; 2009 International Existing Building Code; 1020 ADA Standards for Accessible Design; Administrative Rules of Montana 24.301.351; 2000 NFPA 101 - Life Safety Code			

## Boulder Elementary School

### Code Review / ADA - Portables

Code Review/Americans with Disabilities Act (ADA):			
	Description	Cost	Priority
Site	Accessible routes link the site. The main entrance to the building is accessible. The annex is completely non accessible.		
Parking	Handicap Parking is adequate		
Approach, Entry & Exit	The main entrance is accessible with automatic door opener		
Ramps	Ramp work remains to be completed.	\$78,960	
Stairs	Stairs at the annex building are accessible. Handrails fail to meet code due to extensions and placement.		
Elevator/lift			
Assembly Areas	All assembly areas accessible		
Classroom Access	Doors have "knob-style" hardware and are not accessible, Door widths are not compliant. Work remains to be completed.	\$8,107	
Restroom Access	Access to restrooms is compliant.		
Toilets/Restrooms	No toilets are accessible.	\$59,925	
Drinking Fountains	Non compliant. Work remains to be completed	\$2,491	
Counter Access	Non-compliant		
Signage per ADA	Non compliant		
Audio and Visual Alarms			
Obstacles			
Automatic Sprinkler System	Per IBC Section 903, an automatic sprinkler system shall be provided in all Group E (Educational) facilities.		
Exit Corridors	Per IBC Table 1018.1; Corridor Rating of E Occupancy (Educational) buildings shall be 1 hour without an Automatic Sprinkler System. Exit corridor rating is reduced to 0 (zero) hours with an Automatic Sprinkler System.		
Other	Exit enclosures shall be enclosed per IBC 1022.		
Other	Per 1018.4; maximum length of corridor shall be 20 feet in a non-sprinklered E occupancy and 50 feet in a sprinklered occupancy.		
<b>Notes:</b> 1. ADA – Compliance with ADA in the existing building is recommended if major construction is completed at this building. 2. Fire/Safety – Fire suppression system in the existing building is recommended if major work is done at this building.			
<b>Building Code Guidelines:</b> 2009 International Building Code; 2009 International Existing Building Code; 1020 ADA Standards for Accessible Design; Administrative Rules of Montana 24.301.351; 2000 NFPA 101 - Life Safety Code			

## Boulder Elementary School

### Recommendations

Boulder is located at a low spot on the site. Heavy rains, usually occurring during summer months, repeatedly cause flooding in the building. Measures should be taken to redirect storm water.

Additional detail regarding scope and cost related to Educational Adequacy and Deferred Maintenance projects can be found in the following tables:

RECOMMENDED BUILDING COMPONENT (FAME) IMPROVEMENT DETAIL:		
Component	Comments	Estimated Cost
Building Envelope	No recommended improvements	\$0
Interiors & Specialties	No recommended improvements	\$0
Mechanical, Electrical & Plumbing	Replace building front end temp control, modify 3-comp sink, add hand wash station to kitchen	\$14,000
Fire/Life Safety	No recommended improvements	\$0
Site	Seal coat parking lot, replace uneven/broken sidewalk	\$22,134
ADA	No recommended improvements	\$0
Does not include Soft Costs	Total	\$36,134

RECOMMENDED EDUCATIONAL ADEQUACY IMPROVEMENT DETAIL:					
Component:	Item Description:	Qty	UOM	Unit Cost	Cost Estimate
Site Improvements					
Total Site:		0			\$0
Addition					
Multi-purpose Room Addition	New Multi-Purpose Addition, Existing Gym/Cafeteria to serve as Cafeteria space.	4500	SF	\$210	\$945,000
Two (2) Classroom Addition	Demolish** Portable Classrooms, Construct two (2) Classroom Addition	1800	SF	\$210	\$378,000
Subtotal:		6300	SF	\$210	\$1,323,000
Gross Area:		2205	SF	\$210	\$463,050
Total Addition:		8505	SF	\$210	\$1,786,050
Remodel					
Total Remodel:		0			\$0
Subtotal:					\$1,786,050
Estimated Cost	*Does not include soft costs ** Does not include demolition costs				\$1,786,050
TOTAL RECOMMENDED FACILITY IMPROVEMENT COST SUMMARY:					
Description:	Comments:	Cost Estimate			
FAME		\$36,134			
Educational Adequacy		\$1,822,184			
Estimated Cost	*Does not include soft costs				\$1,858,318

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## Broadwater Elementary School

### Overview

Broadwater School is a K-5 elementary school located on a small site in a historic neighborhood. Work done in 2015 included a 3 story addition and demolition of an annex building. All of the buildings mechanical systems were replaced along with windows and roofing systems. The original building was constructed in 1910 as a two story structure with full basement for 3 full levels. The first and second floors contained 2 classrooms each (4 total) and the basement contained bathrooms and smaller spaces. The first addition in 1916, added 2 more classrooms on each of the first and second floors as well as more toilet rooms and the lunchroom in the basement. Four years later it was added onto again with 3 classrooms on each of three floors, bringing the total number of classrooms in the building to 17. In 1956, Broadwater received a detached one story brick annex that added four classrooms, multi-purpose/cafeteria, administration and restrooms. The 2015 addition added 16 classrooms and removed the annex. The original building has a stone and concrete foundation system with slab on grade at basement. The structural system is load bearing masonry walls with wood framing. Floor and roof structures are wood joists and decking. The perimeter walls are brick and stone with historic significance. The addition has a concrete foundation, the structural system is a steel framed with metal framing. The perimeter walls are brick and stone.

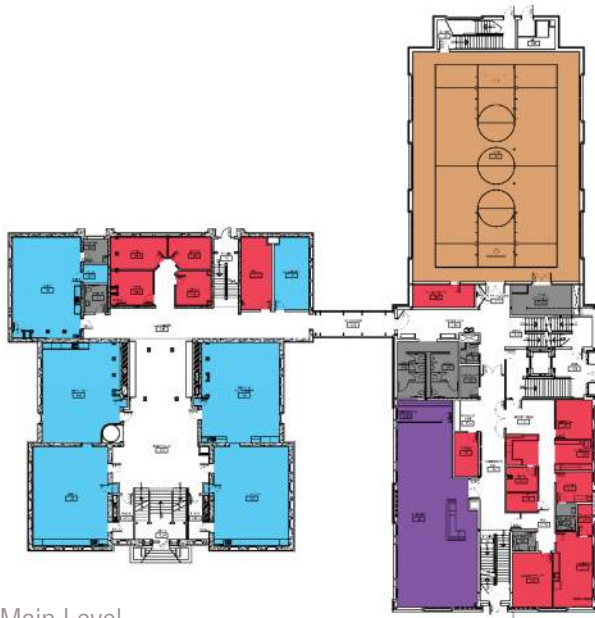
415 Broadwater  
Billings, MT 59101  
(406) 281-6207

Year Built .....	1909
Renovations .....	Addition 1956, 2015
Portables .....	0
Site Acres .....	2.74
Building SF .....	56,301
Current Enrollment .....	373
Capacity .....	400
Target Capacity .....	370

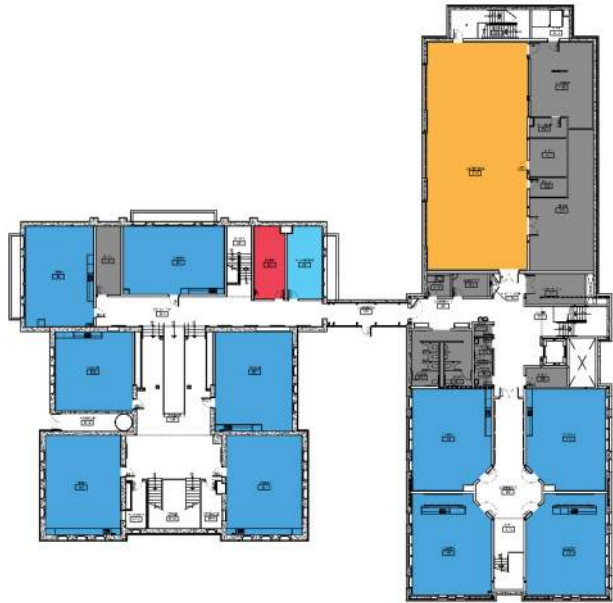


## Broadwater Elementary School

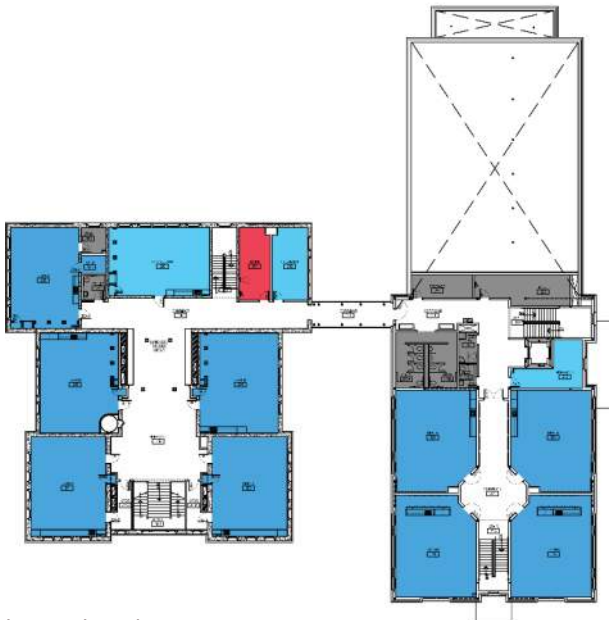
### Existing Program Spaces



Main Level



Upper Level



Lower Level

PLAN LEGEND	
<span style="color: blue;">■</span>	CLASSROOM
<span style="color: lightblue;">■</span>	SPECIAL SERVICES
<span style="color: purple;">■</span>	LIBRARY
<span style="color: red;">■</span>	ADMINISTRATION
<span style="color: gray;">■</span>	MEP/TOILET/KITCHEN
<span style="color: orange;">■</span>	COMMONS/CAFE
<span style="color: brown;">■</span>	GYMNASIUM
<span style="color: green;">■</span>	MUSIC/ART

## Broadwater Elementary School

### Site Characteristics and Deferred Maintenance

Site Characteristics:			
Component	All site characteristics have been updated, per 2016 renovation/expansion/site developments. No known deficiencies.	Cost	Priority
Lot Size	2.74 acres		
Building Area	26628 sf		
Topography	Flat		
Drainage	Fair to good drainage. Area drains tie into city stormwater.		
Drop Off	Bus drop-off at main entrance.		
Hardscape	Asphalt 30,700 sf		
Parking Surface	Asphalt paved parking lot off of Wyoming Ave.		
Stalls	36 paved parking stalls + 3 HC, on-street curb parking		
Paved Walks/Surfaces	Paved sidewalks link the building to sidewalks on neighborhood streets adjacent to the school		
Steps, ramps, retaining walls	ADA ramps at entrances, few steps and retaining walls on-site, completed as part of 2016 site improvements		
Paved Sports Courts	Some asphalt paved sports courts on west end of building.		
Playgrounds	Two playground areas, 1 woodchip surface, 1 pea gravel surface.		
Softscape	37,021 sf		
Play Fields	Grass areas line the paved play areas separating them from The adjacent street and sidewalk.		
Landscaping	Areas of grass and some landscaping, planter beds.		
Utilities	City services		
Fencing	Wrought iron fencing encloses the playground.		

## Broadwater Elementary School

### Building Components and Deferred Maintenance

School: Broadwater Elementary School

<b>Building Components (Main Building):</b>	All building components have been updated per 2016 renovation/expansion/site developments. Only 1-2 significant current deficiencies.		
<b>Component</b>	<b>Sub-Component: Condition Observed and Action to Fix</b>	<b>Costs</b>	<b>Priority</b>
<b>Structural Systems</b>			
Footings/Foundation Walls	Stone & concrete footings Combination of stone and concrete foundation shows excessive cracking Concrete Retaining walls at window wells; some in very poor condition with signs of settlement. Spread footings & concrete foundation walls at new addition.		
Floor Systems	Concrete slab on grade basement. New basement slab as part of renovations. Wood joist w/ wood floor system. 2016 addition is steel bar joists & concrete on steel decking.		
Columns and Bearing Walls	Wood columns wrapped in wood, areas of bearing walls. Steel columns & beams in new addition		
Beams and Joists	Wood beams wrapped in plaster. Steel beams in 2016 addition.		
<b>Envelope</b>			
Roof	Hypalon installed on main bldg. in 1990-1991-replacement is planned. New roof on addition, existing roof remained as-is. Hypalon installed at perimeter of main bldg. in 1995 Existing building insulation Unknown. New building is R-30 rigid insulation.		
Walls	Brick with excessive cracking and spalling. Brick repaired as portion of remodel. Stone and concrete, repaired as part of renovations. 2016 addition is CMU block & brick exterior walls. Wood trim and moldings. Original building wood trim removed & replaced with vinyl, at windows, as part of 2016 improvements.	\$0	
Exterior Windows	Wood. Windows replaced as part of remodel Double Glazing added with new hardware	\$0	
Exterior Doors	HM Doors/Frames, with some aluminum storefronts at 2016 addition.		
<b>Interior Finishes</b>			
Interior Walls	Historic facility typical – Framed with plaster finish: all three floors good condition. New addition - Framed and finished with sheetrock. Basement - Concrete sheeted with drywall		
Ceilings	Facility Typical – Plaster: Good condition normal wear Library/Basement Classrooms/Toilets – ACT Lay-In: Admin – ACT Lay-In		
Doors/Hardware/Windows	Hardware ADA compliant with lever-style fixtures Newer solid core wood doors Wood frames – Historic, well maintained		
Floor Finishes	Facility Typical – Carpet: Admin/classrooms/basement areas all have carpeting in good conditions. Classrooms without carpet all have VCT tile flooring in good condition Student Toilets – Restrooms on each floor have been remodeled and are ADA accessible. Circulation and main spaces upper floors – Wood: Historic wood floors well maintained – noisy due to age.	\$0	
Wall Finishes	Paint is good Wood wainscot in places throughout building: Historic and well maintained		

## Broadwater Elementary School

### Building Components and Deferred Maintenance

Specialties			
Toilet Partitions	New partitions added throughout in 2015		
Fixed Seating/Risers	Bleachers: N/A		
	Theater: N/A		
	Classroom/Lecture: N/A		
	Cafeteria: Dedicated cafeteria and kitchen on main level		
Markerboards/Cabinets	All rooms have marker boards		
	Historic Wood Casework – well maintained		
	Other casework mix of wood and laminates are in good repair		
HVAC System			
Heating	Controls: Need improvements. Controls upgraded to district standard. Replace building temp control front end and use at Bench Elementary.	\$10,000	\$10,000
	BMS: Upgrades needed BMS upgraded to district standard		
	Boiler: Central steam from annex boiler room Building not equipped with boiler but heat provided with gas fired heating equipment in the central air handler		
	Room Units: Radiators Variable air volume boxes with reheat coils		
	Hydronic Piping: 2 pipe		
	Alternative Fuel: No		
	Air Handler: No Central Unit Rooftop Unit		
	Ductwork: No		
Ventilating	Specialized Exhaust: No		
	Room Ventilators: Windows Provided through central air handler		
	Central AC: No Air handler equipped with DX cooling		
Cooling	Room AC: No		
	Hydronic Piping: No		
Plumbing System			
Fixtures	Plumbing fixtures in fair to good condition. Fixtures replaced as portion of the remodel		
	Hot Water Generation: Central		
	Alternative Fuel: No		
Supply Piping	Piping: Varies		
	Pumps: No		
Waste Piping	Problems with some drains, plumbing under building is aging and creating issues with drainage Drainage issues resolved as portion of the remodel		
Electrical System			
Building Service	600A, 120/240 1 Phase- needs upgrades Service upgraded to 800A-3P		
	Meter Base: Coordinate with service upgrade Upgraded		
	Generator: No		
	Alternative Source: No		

## Broadwater Elementary School

### Building Components and Deferred Maintenance

Lighting	Fixtures - PCB: None noted		
	T-8 Lamps throughout		
	Light Level Controls: Limited, poor Room controls meet 2012 Code requirements		
	Occ/Daylight Sensor: No All spaces equipped with Occupancy sensors		
	Wiring: Needs to be verified		
Distribution	Switchgear: Outdated & inadequate Switchgear replaced as portion fo remodel		
	Building has problems with service, requires upgrade for more panel space Distribution issues resolved as portion of remodel		
	Devices: Power & data distribution upgrade needed Issues resolved as portion of remodel		
	Wiring: Needs to be verified		
	Winring upgraded as a portion of the remodel		
Voice/Data	Intercom functions properly		
	No clock system		
	Upgraded phone system		
	Data drops observed throughout school - Surface mounted data cables observed. Computer lab has been moved to temporary location, reused cabling. Stairs prohibit use of carts. Cabling is old and there are limited ports (1) in each classroom.		\$0
<b>Conveying &amp; Vertical Circulation</b>			
Elevators, lifts, stairs ramps	All stairs comply with ADA, handrails and guardrails comply with IBC, stair enclosures comply		
	Exterior exit stair looked to be in compliance		
	Exterior exit stair looked to be in compliance		
	Non-compliant fire escape slide has been removed.		
<b>Safety System</b>			
Egress	Exit Systems: Clear paths of egress. Basement has exit light wells		
Extinguishing System	Building equipped with fire suppression (wet) throughout new and original buildings.		
	Cabinet Systems: No		
Exit/Emergency Lighting/Alarms	Exit Lights: Yes		
	Emergency Lighting: Yes		
	Smoke/Heat Detection: Yes		
	Fire Alarm System: Fire Alarm updated to current standards including voice evac.		

## Broadwater Elementary School

### Code Review / ADA

Code Review/Americans with Disabilities Act (ADA):			
Code/ADA characteristics have been updated per 2016 renovation/expansion/site developments. No deficiencies.			
	Description	Cost	Priority
Site	Entire building is accessible		
Parking	4 handicap parking stalls		
Approach, Entry & Exit	All portions of the building are accessible, all entries except south entry are accessible	\$0	
Ramps	N/A		
Stairs	Stairs all compliant, handrails comply with ADA	\$0	
Elevator/lift	Elevator installed in 2016 remodel		
Assembly Areas	Accessible		
Classroom Access	All areas of the building are accessible. Lever style hardware throughout original building	\$0	
Door Hardware	Door hardware is accessible per 2016 remodel/addition	\$0	
Restroom Access	All restrooms are ADA accessible		
Toilets/Restrooms	Restrooms have ADA accessible stalls in each restroom		
Drinking Fountains	ADA fountains throughout building		
Counter Access	Compliant		
Signage per ADA	Compliant		
Audio and Visual Alarms	Yes		
Obstacles	none other than noted		
Automatic Sprinkler System	Entire building		
Exit Corridors	Per IBC Table 1018.1; Corridor Rating of E Occupancy (Educational) buildings shall be 1 hour without an Automatic Sprinkler System. Exit corridor rating is reduced to 0 (zero) hours with an Automatic Sprinkler System.		
Other	Exit enclosures shall be enclosed per IBC 1022.		
Other	Per 1018.4; maximum length of dead end corridor shall be 20 feet in a non-sprinklered E occupancy and 50 feet in a sprinklered occupancy.		
<b>Notes:</b> 1. ADA – Compliance with ADA in the existing building is recommended if major construction is completed at this building. 2. Fire/Safety – Fire suppression system in the existing building is recommended if major work is done at this building.			
<b>Building Code Guidelines:</b> 2009 International Building Code; 2009 International Existing Building Code; 1020 ADA Standards for Accessible Design; Administrative Rules of Montana 24.301.351; 2000 NFPA 101 - Life Safety Code			

## Broadwater Elementary School

### Recommendations

Broadwater has undergone through an extensive renovation and addition in 2015.

Additional detail regarding scope and cost related to Educational Adequacy and Deferred Maintenance projects can be found in the following tables:

RECOMMENDED BUILDING COMPONENT (FAME) IMPROVEMENT DETAIL:		
Component	Comments	Estimated Cost
Building Envelope	No recommended improvements	\$0
Interiors & Specialties	No recommended improvements	\$0
Mechanical, Electrical & Plumbing	Upgrade heating controls to district standard	\$10,000
Fire/Life Safety	No recommended improvements	\$0
Site	No recommended improvements	\$0
ADA	No recommended improvements	\$0
Does not include Soft Costs	<b>Total</b>	<b>\$ 10,000</b>

RECOMMENDED EDUCATIONAL ADEQUACY IMPROVEMENT DETAIL:					
Component:	Item Description:	Qty	UOM	Unit Cost	Cost Estimate
Addition & Remodel per Previous Study		0	SF	\$210	\$0
<b>Estimated Cost</b> *Does not include soft costs					<b>\$0</b>
TOTAL RECOMMENDED FACILITY IMPROVEMENT COST SUMMARY:					
Description:	Comments:	Cost Estimate			
FAME		\$10,000			
Educational Adequacy		\$0			
<b>Estimated Cost</b> *Does not include soft costs					<b>\$10,000</b>

## Burlington Elementary School

### Overview

Burlington School is a K-5 Elementary building on a site adjacent to a park. The original 1956 building had 15 classrooms, multi-purpose/cafeteria, kitchen, administrative offices, workroom and toilet rooms. The following year, 3 more classrooms and a library were added. The building is a single story structure with concrete foundation system and concrete slab on grade floor. The structural system is steel & wood columns with wood beams and wood decking. The perimeter walls are predominantly masonry and panel. The roof is EPDM or Hypalon scheduled for replacement. The walls have 4" batt insulation or none.

2135 Lewis  
Billings, MT 59105  
(406) 281-6208

Year Built .....	1956
Renovations .....	Addition 1957
Portables .....	0
Site Acres .....	3.2
Building SF .....	32,190
Current Enrollment .....	227
Capacity .....	263
Target Capacity .....	243



### Existing Program Spaces

PLAN LEGEND	
<span style="color: blue;">■</span>	CLASSROOM
<span style="color: lightblue;">■</span>	SPECIAL SERVICES
<span style="color: purple;">■</span>	LIBRARY
<span style="color: red;">■</span>	ADMINISTRATION
<span style="color: grey;">■</span>	MEP/TOILET/KITCHEN
<span style="color: orange;">■</span>	COMMONS/CAFE
<span style="color: yellow;">■</span>	GYMNASIUM
<span style="color: green;">■</span>	MUSIC/ART



## Burlington Elementary School

### Site Characteristics and Deferred Maintenance

Site Characteristics:			
Component		Cost	Priority
Lot Size	3.2 acres		
Building Area	33,368 s.f.		
Topography	Flat		
Drainage	Poor. Mitigated some drainage issues, but most still remain. Priority is to grade planting area by front entrance, to drain away from building.	\$91,618	\$4,500
Drop Off	No Drop Off area observed		
Hardscape	Asphalt 26,180 s.f., some cracking		
Parking Surface	Asphalt 8,350 s.f., some cracking & deterioration		
Stalls	15 Parking Stalls, 1 HC		
Paved Walks/Surfaces	Concrete 3,500 s.f. Priority is to replace uneven and broken sidewalk.	\$11,560	\$11,560
Steps, ramps, retaining walls	N/A		
Paved Sports Courts	Asphalt play areas around school are marked for a variety of sports. Priority is to seal coat playground.	\$7,848	\$7,848
Playgrounds	Gravel area with playground equipment		
Softscape	87,347 s.f., large areas of grass adjacent to the school		
Play Fields	School is adjacent to a park with a baseball field		
Landscaping	Property is landscaped		
Utilities	City services		
Fencing	Some property lines are marked with a chain link fence		

## Burlington Elementary School

### Building Components and Deferred Maintenance

Building Components:			
Component	Sub-Component: Condition Observed and Action to Fix	Cost	Priority
<b>Structural Systems</b>			
Footings/Foundation Walls	Concrete spread footings & stem wall foundation		
Floor Systems	Concrete Slab on Grade		
Columns and Bearing Walls	Steel and wood columns with some areas of bearing wall		
Beams and Joists	Glu Lam Beams w/ structural decking.		
<b>Envelope</b>			
Roof	Planned replacement of North wing and multi-purpose areas with EPDM roof in 2013. Roof replaced.		
	The south wing has EPDM Installed 2004. Roof replaced.	\$0	
	Insulation assumed to be R-20		
Walls	Concrete Masonry Unit and Metal Panel – Metal Panels need attention		
Exterior Windows	Wood. Windows replaced.	\$0	
	Single Glazing		
Exterior Doors	Wood doors & Frames. Exterior doors replaced.		
	Overhead Door: No		
Thermal Systems	0" – 4" batt		
<b>Interior Finishes</b>			
Interior Walls	Facility Typical – Framed Wood: Typical throughout (mixed with Painted Block)		
	Facility Typical – Concrete Block Painted: Typ. Throughout (mixed with Wood)		
	Student Toilets – Framed w/ Ceramic Tile: Tile is worn		
	Admin/Work – Framed Gyp: admin contains some paneling as well		
	Gymnasium requires sound dampening	\$15,000	
Ceilings	Facility Typical – Glued on Tile: Staining/ Failing	\$21,956	
	Work Room – Gyp: good condition		
Doors/Hardware/Windows	Non ADA knob style hardware		
	Solid Core Wood Doors and Wood frames		
	Wood Relites high on walls from corridor to classrooms and to exterior		
Floor Finishes	Facility Typ – Asbestos: Main flooring throughout school, wearing but intact. Flooring replaced.	\$0	
	Student Toilets – Ceramic Tile: Wearing/age/patching. Tile replaced.		
	Admin/Library/Aux Offices- Carpet: Wearing/age. Carpet replaced.	\$0	
	Gym – Wood: Wood gym floor in good condition well maintained, aging		
Wall Finishes	Paint is in good condition throughout facility		
<b>Specialties</b>			
Toilet Partitions	Metal: wear/aging. Restrooms remodeled.		
Fixed Seating/Risers	Bleachers: N/A		
	Theater: N/A		
	Classroom/Lecture: N/A		
	Cafeteria: N/A		
Markerboards/Cabinets	All rooms equipped with markerboards		
	Wood Cabinets throughout facility: Wear/age		
	Plastic laminate countertops typical: Wear/age		

## Burlington Elementary School

### Building Components and Deferred Maintenance

HVAC System			
Heating	Building is not connected to Facility Master Controls Building controls upgraded to district standard. Priority is to replace building temp control front end.	\$10,000	\$10,000
	BMS: scheduled for upgrades Upgrades completed		
	Boiler/Furnace: No central unit- replacement scheduled Central boiler added for building heating		
	Room Units: Individual furnaces Classroom furnace replaces with multi-position fan coils		
	Hydronic Piping: No 2-pipe system installed with classroom fin tube radiation		
	Alternative Fuel: No		
Ventilating	Air Handler: No Classroom air handlers equipped with outside air and economizer cooling		
	Ductwork: Under floor duct work Ductwork cleaned and sanitized but metal failing		
	Specialized Exhaust: Limited Individual classrooms equipped with roof mounted exhaust to insure ventilation		
	Room Ventilators: No		
Cooling	Central AC: No Economizer cooling only		
	Room AC: No		
	Hydronic Piping: No		
Plumbing System			
Fixtures	Plumbing fixtures are aging but operational Toilets rooms upgraded to ADA compliance. Priority is to modify 3 compartment sink and install a hand wash sink in kitchen.	\$4,000	\$4,000
	Hot Water Generation: central		
	Alternative Fuel: No		
Supply Piping	Piping: Copper, varies		
	Pumps: Circulating		
Waste Piping	Piping: Varies in slab piping difficult to replace/repair Classroom sink drains flushed and found in fair condition		
	Pump: No		
Electrical System			
Building Service	600A, 120/240 1 Phase: Upgrade needed Service upgraded to 800A 120/208V-3P		
	Meter Base: Coordinate with service upgrade Completed as portion of service upgrade		
	Generator: No		
	Alternative Source: No		
Lighting	Fixtures - PCB: No		
	Fixtures – T-8 lamps throughout T5 Fluorescent in the classroom, LED lighting in the corridors		
	Light Level Controls: Limited Controls improved - dimming		
	Occ/Daylight Sensor: No Room equipped with occupancy sensor and dimming		
Distribution	Devices: Power & data distribution upgrade needed Classroom distribution improved as portion of remodel		

## Burlington Elementary School

### Building Components and Deferred Maintenance

Voice/Data	Intercom: Working Properly		
	Clock: Working Properly		
	Telephone: Upgraded		
	Data: Cabling is newer and surface mounted, exposed in the corridors. There are 2 ports per classroom. There is not a computer lab. GPON was replaced throughout.	\$0	
Conveying & Vertical Circulation			
Elevators, lifts, stairs ramps	Not applicable		
Safety System			
Egress	Exit Systems: Clear paths of egress		
Extinguishing System	No Automatic Sprinkler Observed	\$123,503	
	Cabinet Systems: No		
Exit/Emergency Lighting/Alarms	Exit Lights: Yes		
	Emergency Lighting: Yes		
	Smoke/Heat Detection: Upgraded		
	Fire Alarm Recently Upgraded. Fire alarm upgraded to addressable, but no voice evac.		

## 4 K-8 FACILITIES

### Burlington Elementary School

#### Code Review / ADA

Code Review/Americans with Disabilities Act (ADA):			
	Description	Cost	Priority
Site	Site offers a curb cut at 22 <sup>nd</sup> West to front of building, concrete paths make the site accessible to a degree.		
Parking	1 Accessible Parking Spot		
Approach, Entry & Exit	Building entrance is accessible, building has several doors exiting at grade		
Ramps	N/A		
Stairs			
Elevator/lift	N/A		
Assembly Areas	All Assembly areas accessible		
Classroom Access	Door hardware is non ADA compliant. Door hardware replaced.	\$0	
Restroom Access	Access available to all restrooms		
Toilets/Restrooms	One girls toilet stall is ADA compliant. Restrooms remodeled to be ADA compliant.	\$0	
Drinking Fountains	Non-compliant		
Counter Access	Non-compliant		
Signage per ADA	Non-compliant		
Audio and Visual Alarms	Yes		
Obstacles	None other than noted		
Automatic Sprinkler System	No. Per IBC Section 903, an automatic sprinkler system shall be provided in all Group E (Educational) facilities.		
Exit Corridors	Per IBC Table 1018.1; Corridor Rating of E Occupancy (Educational) buildings shall be 1 hour without an Automatic Sprinkler System. Exit corridor rating is reduced to 0 (zero) hours with an Automatic Sprinkler System.		
Other	Exit enclosures shall be enclosed per IBC 1022.		
Other	Per 1018.4; maximum length of corridor shall be 20 feet in a non-sprinklered E occupancy and 50 feet in a sprinklered occupancy.		
<b>Notes:</b> 1. ADA – Compliance with ADA in the existing building is recommended if major construction is completed at this building. 2. Fire/Safety – Fire suppression system in the existing building is recommended if major work is done at this building.			
<b>Building Code Guidelines:</b> 2009 International Building Code; 2009 International Existing Building Code; 1020 ADA Standards for Accessible Design; Administrative Rules of Montana 24.301.351; 2000 NFPA 101 - Life Safety Code			

## Burlington Elementary School

### Recommendations

Additional detail regarding scope and cost related to Educational Adequacy and Deferred Maintenance projects can be found in the following tables:

RECOMMENDED BUILDING COMPONENT (FAME) IMPROVEMENT DETAIL:		
Component	Comments	Estimated Cost
Building Envelope		
	No recommended improvements	\$0
Interiors & Specialties		
	No recommended improvements	\$0
Mechanical, Electrical & Plumbing		
	Replace front end building temp control, modify 3-comp sink, add hand wash station to kitchen	\$14,000
Fire/Life Safety		
	No recommended improvements	\$0
Site		
	Grade planting area by front entrance to drain away from building, replace uneven/broken sidewalk, seal coat playground	\$23,908
ADA		
	No recommended improvements	\$0
Does not include Soft Costs	Total	\$ 37,908

RECOMMENDED EDUCATIONAL ADEQUACY IMPROVEMENT DETAIL:					
Component:	Item Description:	Qty	UOM	Unit Cost	Cost Estimate
Site Improvements					
Total Site:		0			\$0
Addition					
Subtotal:		0	SF	\$210	\$0
Gross Area:		0	SF	\$210	\$0
Total Addition:		0	SF	\$210	\$0
Remodel					
Total Remodel:		0			\$0
Subtotal:					\$0
Estimated Cost *Does not include soft costs					
TOTAL RECOMMENDED FACILITY IMPROVEMENT COST SUMMARY:					
Description:	Comments:				Cost Estimate
FAME					\$37,908
Educational Adequacy					\$0
Estimated Cost *Does not include soft costs					
					\$37,908

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## Central Heights Elementary School

### Overview

Central Heights is a K-5 elementary school. The 1961 original building is a single story structure with 18 classrooms. In 1979 it received a library addition. Another project brought in a portable building with 2 additional classrooms. The original building has a concrete foundation system with slab on grade floor. The structural system is steel & wood columns with wood glu lam beams, 2 x 6 joists and wood decking. The perimeter walls are brick / concrete. The current roof is PVC / EPDM installed in 2003. The walls have 1" rigid insulation or none. .

120 Lexington  
Billings, MT 59102  
(406) 281-6209

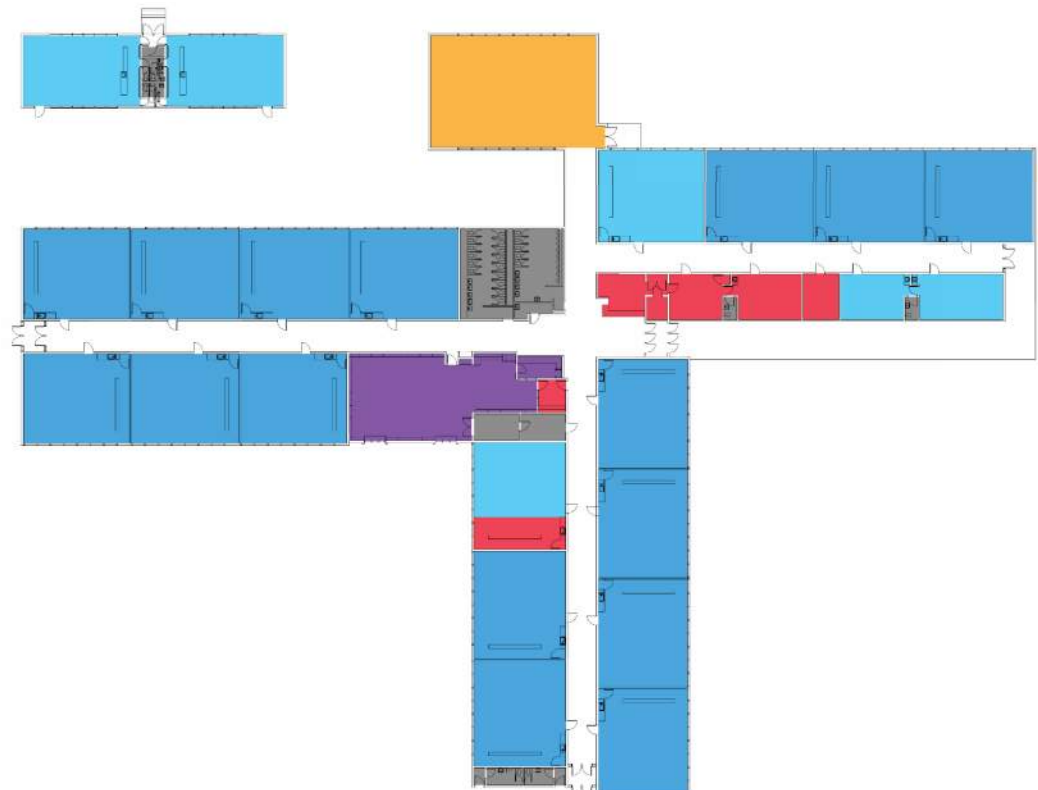
Year Built .....	1962
Renovations .....	Addition 1979
Portables .....	2
Site Acres .....	7.73
Building SF .....	36,400
Current Enrollment .....	267
Capacity .....	329
Target Capacity .....	304



### Existing Program Spaces

#### PLAN LEGEND

- CLASSROOM
- SPECIAL SERVICES
- LIBRARY
- ADMINISTRATION
- MEP/TOILET/KITCHEN
- COMMONS/CAFE
- GYMNASIUM
- MUSIC/ART

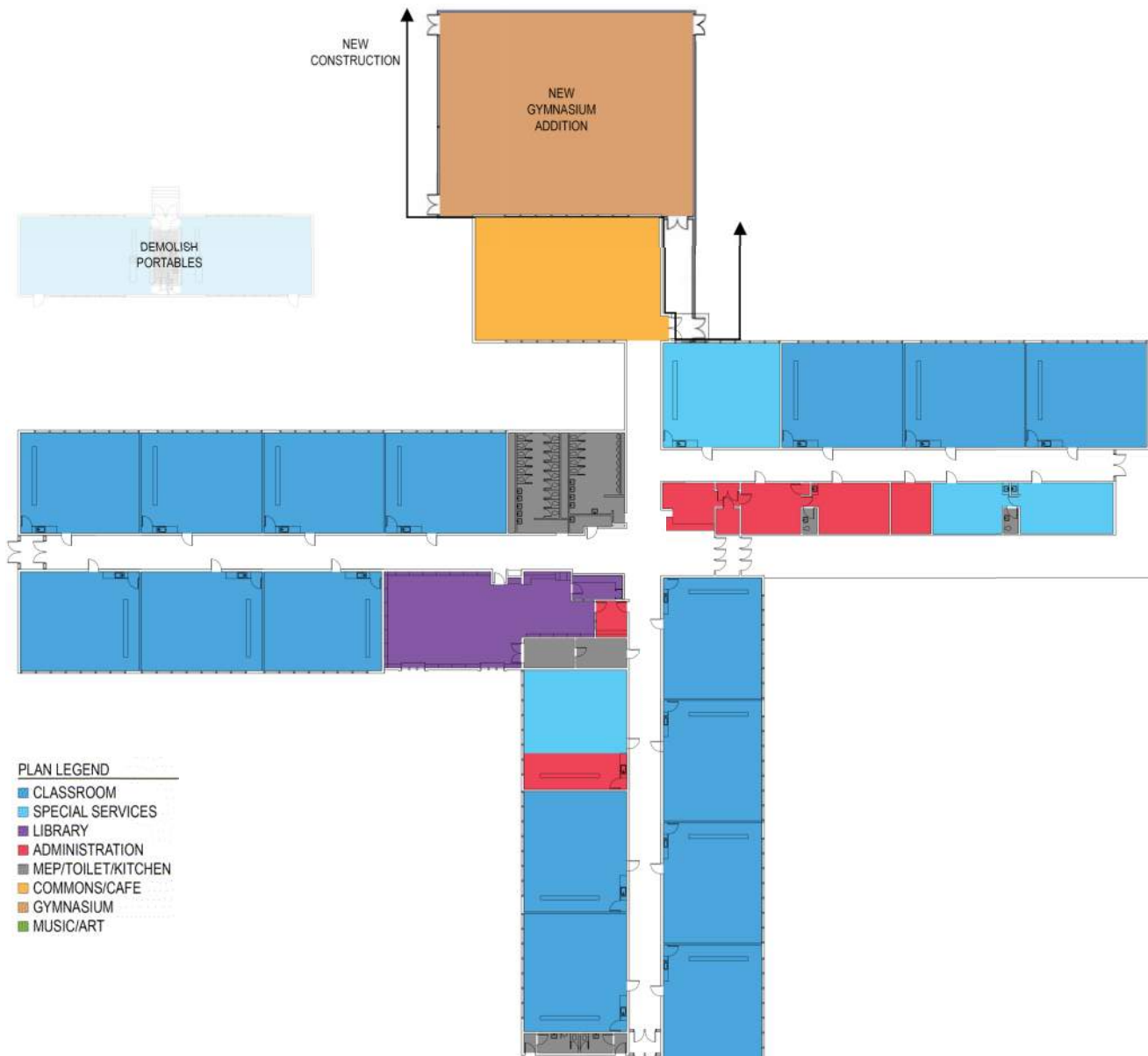


## Central Heights Elementary School

### Program Space Recommendations

Recommendations From 2013 master plan are being carried over for the 2018 master plan for a multi-purpose room. The district's goal of eliminating portable classrooms are shown below. The recommendations include:

- Repurpose existing gymnasium to Cafeteria.
- Create a multi-purpose room addition and associated restrooms.
- Demolish existing portable classrooms



### Potential Floor Plan Diagram

## Central Heights Elementary School

### Site Characteristics and Deferred Maintenance

Site Characteristics:			
Component		Cost	Priority
Lot Size	7.73 acres		
Building Area	34,350sf (Portable 2,050 sf)		
Topography	Flat		
Drainage	Poor Drainage, parking lot is a major area of concern – Numerous Issues. Added french drain at gym entrance, needs further improvement. Verify estimated cost of remaining required repairs. Drainage very likely will have to remain as is, due to extent of costs & rework required.	\$396,668	
Drop Off	Drop Off @ Street minimal space, no defined pull out		
Hardscape	Asphalt 38,720		
Parking Surface	Asphalt 14,900 sf. Priority is to seal coat parking lot.	\$5,320	\$5,340
Stalls	33 Parking Stalls, 2 HC		
Paved Walks/Surfaces	Concrete. Priority is to replace uneven & broken sidewalk.	\$25,970	\$25,970
Steps, ramps, retaining walls	Concrete steps at gymnasium		
Paved Sports Courts	Asphalt	\$59,235	
Playgrounds	Gravel		
Softscape	Large areas of grass		
Play Fields	Grass in good condition – reseed some areas. Grass is acceptable.	\$0	
Landscaping	Landscaping around the building. Remove bushes in the SE corner of the lot and replace with concrete.	\$16,896	
Utilities	City services		
Fencing	Chain Link partial around perimeter		

## Central Heights Elementary School

### Building Components and Deferred Maintenance

Building Components (Main Building):			
Component	Sub-Component: Condition Observed and Action to Fix	Cost	Priority
<b>Structural Systems</b>			
Footings/Foundation Walls	Concrete spread footing & stem wall foundation Priority is to repair foundation leaks in gym safe room.	\$15,000	\$15,000
Floor Systems	Concrete slab on grade		
Columns and Bearing Walls	Combination of wood columns and bearing wall construction		
Beams and Joists	Glu Lams & wood joists w/ 2x6's structural decking at multi-purpose.		
<b>Envelope</b>			
Roof	PVC installed 2003. Roof replaced. Insulation unknown, recent changes to roof drainage contribute to site drainage issues.		
Walls	Brick and Concrete exterior walls, signs of water infiltration around gym		
Exterior Windows	Aluminum – windows need new hardware. Windows replaced. Single Pane Glass	\$0	
Exterior Doors	Wood Exterior Doors, original to building. Doors replaced.		
Thermal Systems	1" rigid		
<b>Interior Finishes</b>			
Interior Walls	Facility Typical – Masonry: most abundant material throughout Lounge/Library/Couns./Principal/Nurse/Framed – Plaster Hall/Main Entry/Main Office – Wood Board and Batten: Painted Toilets – Framed Ceramic Tile: grout stained, tiles worn /aging. Complete remodel of restrooms. Paint throughout is in good condition		
Ceilings	Facility Typ – Glued on Tile: Minimal Failure and Staining Library - Lay-In: Aging	\$8,807	
Doors/Hardware/Windows	Door Hardware knob style non ADA compliant Solid Core Wood Doors Wood trim Clearstory Windows into hall and other classrooms		
Floor Finishes	Facility Typical- Carpet: Aging/wearing/some rippling. Carpet & flooring replaced. Halls/Lounge/Nurse- Asbestos Tiles: Wearing/ no major deterioration. Asbestos tiles have been replaced at all locations that needed it. Toilets- Ceramic Tile: Wearing/Aging Gym- VCT: Wearing/aging	\$0 \$0	
<b>Specialties</b>			
Toilet Partitions	Metal: Older but seem functional		
Fixed Seating/Risers	Bleachers: N/A Theater: N/A Classroom/Lecture: N/A Cafeteria: N/A		
Markerboards/Cabinets	All Rooms have a dry erase board Plastic Laminate Base Cabinets: New Wood Base Cabinets: Aging but functional Plastic Laminate Counters: Mix of newer and older		

## Central Heights Elementary School

### Building Components and Deferred Maintenance

HVAC System			
Heating	Building is tied into District master controls		
	Controls upgraded to district standard		
	BMS: Upgrades needed		
	BMS upgraded to district standard		
	Scheduled for Boiler Replacement		
	Boilers/pumps replaced - high efficiency		
	Room Units: Unit ventilators		
Ventilating	Unit ventilators replaced		
	Hydronic piping has been replaced- runs surface mounted down hallways and through some rooms		
	Alternative Fuel: No		
	Air Handler: No		
	Gymnasium unit replaced		
	Ductwork: No		
	Specialized Exhaust: Limited		
Cooling	Room Ventilators: Unit ventilators		
	Central AC: No		
	Room AC: No		
	Hydronic Piping: No		
Plumbing System			
Fixtures	Plumbing fixtures appear very dated, but are reported to be operational –toilet and urinals need replacing.		
	Central toilet rooms renovated to ADA standards		
	Classroom fixtures need to be revised.	\$4,500	\$4,500
	Priority is to modify 3 compartment sink and install a hand sink in kitchen.	\$4,000	\$4,000
Supply Piping	Hot Water Generation: Central		
	Alternative Fuel: No		
	Piping: Copper, varies		
Waste Piping	Pumps: Circulating		
	Piping: Varies – Drains congest regularly		
	Building service line revised during renovation		
	Pump: No		
Electrical System			
Building Service	400A, 120/240 1 Phase, needs upgrade		
	Service upgraded to 1600A-3P 120/208V		
	Meter Base: Coordinate with service upgrade		
	Metering system upgraded		
	Generator: No		
Lighting	Alternative Source: No		
	Fixtures - PCB: No		
	Facility has been retrofitted with T-8's throughout		
	Light Level Controls: Limited		
	Original building lighting controls maintained		
Distribution	Occ/Daylight Sensor: No		
	Occupancy sensors added to classroom spaces		
Distribution	No problems reported with service by custodian		
	Devices: Power & data distribution upgrade needed.		
	GPON & power system upgrades completed.	\$0	

## 4 K-8 FACILITIES

### Central Heights Elementary School

#### Building Components and Deferred Maintenance

Voice/Data	Intercom: Works well – recently upgraded		
	Clock: Functioning intermittently		
	Telephone: Recently upgraded		
	Data: data lines observed surface mounted and running down corridors. 2 ports per classroom. Some wireless but not full coverage. GPON system upgrades completed.	\$0	
<b>Conveying &amp; Vertical Circulation</b>			
Elevators, lifts, stairs ramps	ADA wheelchair lift serves sunken gym floor		
	Communication: Area of refuge in gym has no permanent communications system, and no smoke strip @ door		
<b>Safety System</b>			
Egress	Clear paths of egress		
Extinguishing System	Sprinkler: No Automatic Sprinkler	\$123,859	
	Cabinet Systems: No		
Exit/Emergency Lighting/Alarms	Exit Lights: Yes		
	Emergency Lighting: Yes		
	Smoke/Heat Detection: Not Updated		
	Fire Alarm System: Not Updated Fire alarm updated to current Voice Evac standard		

## Central Heights Elementary School

### Building Components and Deferred Maintenance - Portables

Building Components (Portable):			
There is a 2 classroom portable building which holds 2 classrooms and toilet rooms. It is constructed of wood and set on an elevated foundation of concrete or light weight concrete masonry units. It is designed to be lifted from the foundation in 2 or 3 sections and relocated to another site by conventional house moving equipment. It is connected by expansion joints and clips. The roof is engineered trusses with batt insulation. The walls are 2x4 wood construction with batt insulation, 5/8" plywood and cedar siding. The floors are plywood on 2x12 wood floor joists. The ceilings are gypsum board. The walls are gypsum board and wood paneling. The flooring is VAT and sheet vinyl.			
Component	Sub-Component: Condition Observed and Action to Fix	Cost	Priority
<b>Structural Systems</b>			
Footings/Foundation Walls	Concrete footings and foundations walls		
Floor Systems	Plywood decking on 2x12 floor joists		
	Crawl space		
Columns and Bearing Walls	2x4 exterior bearing walls		
Beams and Joists	Engineered wood truss roof framing system		
<b>Envelope</b>			
Roof	Rolled Roofing installed in 1990 – planned replacement 2013		
	Batt insulation in attic space – 8"		
Walls	Wood Siding (cedar)	\$10,376	
Exterior Windows	Wood	\$20,049	
	Single Glazed		
Exterior Doors	Wood		
Thermal Systems	3 1/2" batt insulation		
<b>Interior Finishes</b>			
Interior Walls	Toilet – Gyp bd		
	Classroom – Wood Paneling and gyp bd: aging	\$16,753	
Ceilings	Facility Typical - Gyp		
Doors/Hardware/Windows	Non ADA knob style hardware		
	Wood		
Floor Finishes	Classroom – Carpet: Rippling/worn.		
	Flooring has been replaced where needed.	\$0	
	Toilet – Vinyl: Worn/stained.		
	Flooring has been replaced where needed.	\$0	
Wall Finishes	Paint throughout is good		
<b>Specialties</b>			
Toilet Partitions	Metal: Failing	\$4,230	
Markerboards /Cabinets	Marker Boards in classrooms		
	Wood Cabinets: Wearing	\$3,327	
	Countertops: Plastic laminate; wearing		
<b>HVAC System</b>			
Heating	Gas fired forced air furnace		
	Furnaces replaced with hydronic fan coils		
Ventilating	Operable windows		
	Fan coils equipped with outside air and economizer cooling		
Cooling	N/A		
<b>Plumbing System</b>			
Fixtures	Fixtures old and failing – observed one urinal continuously running and leaking down wall causing staining	\$10,000	\$10,000
	Hot Water Generation: point of use water heater		
	Water heater replaced		
Supply Piping	Piping: Copper		
	Pumps No		
Waste Piping	Piping varies		

## Central Heights Elementary School

### Building Components and Deferred Maintenance - Portables

Electrical System			
Building Service	From main building Panel replaced overcurrent increased from 50A-3P to 60A-3P		
Lighting	Original fluorescent Updated to LED lighting with occupancy sensors and diming		
Distribution	Inadequate Additional receptacles added as portion of HVAC improvements		
Voice/Data	Intercom: OK		
	Clock: OK		
	Telephones updated		
	Data: limited – only one feed to building. GPON system upgrades completed.	\$0	
Conveying & Vertical Circulation			
Elevators, lifts, stairs ramps	Ramps to building have non-compliant handrails		
Safety System			
Egress	Exit Systems: Clear paths of egress		
Extinguishing System	Sprinkler: No automatic sprinkler		
Exit/Emergency Lighting/Alarms	Exit Lights: Yes		
	Emergency Lighting: Yes		
	Smoke/Heat Detection: Upgraded		
	Fire Alarm System: Fire alarm updated to current Voice Evac standard	\$0	

## Central Heights Elementary School

### Code Review / ADA

Code Review/Americans with Disabilities Act (ADA):			
	Description	Cost	Priority
Site	The site is bordered on all sides by asphalt streets. A system of concrete sidewalks on the site connects to concrete sidewalks wrapping the perimeter of the site. A small parking lot containing two handicapped accessible spaces is adjacent to the gym and somewhat removed from the main entry. There is no designated drop off area, and no designated pull out for cars/buses. There are several paved play areas connected to the facility by sidewalks.		
Parking	2 accessible spaces		
Approach, Entry & Exit	Entrance is connected to street and sidewalk by a long covered out door concrete walk.		
Ramps			
Stairs	Stairs down into Gym have non-compliant railing. Work remains to be completed	\$1,601	
Elevator/lift	Lift is provided to carry students from hallway @ main level down to gym		
Assembly Areas	All Accessible.		
Classroom Access	Door hardware is knob style. Work remains to be completed	\$31,078	
Restroom Access	Restroom access is compliant in main building and non in Portable		
Toilets/Restrooms	All toilets/restrooms are non-compliant – Nurse's restroom retrofitted with some grab bars. Central toilet rooms renovated to ADA standards	\$0	
Drinking Fountains	None Observed. ADA-accessible drinking fountain has been installed.	\$0	
Counter Access			
Signage per ADA	No signage observed		
Audio and Visual Alarms			
Obstacles			
Automatic Sprinkler System	No automatic sprinkler observed.		
Exit Corridors	Per IBC Table 1018.1; Corridor Rating of E Occupancy (Educational) buildings shall be 1 hour without an Automatic Sprinkler System. Exit corridor rating is reduced to 0 (zero) hours with an Automatic Sprinkler System.		
Other	Exit enclosures shall be enclosed per IBC 1022.		
Other	Per 1018.4; maximum length of corridor shall be 20 feet in a non-sprinklered E occupancy and 50 feet in a sprinklered occupancy.		
<b>Notes:</b> 1. ADA – Compliance with ADA in the existing building is recommended if major construction is completed at this building. 2. Fire/Safety – Fire suppression system in the existing building is recommended if major work is done at this building.			
<b>Building Code Guidelines:</b> 2009 International Building Code; 2009 International Existing Building Code; 1020 ADA Standards for Accessible Design; Administrative Rules of Montana 24.301.351; 2000 NFPA 101 - Life Safety Code			

## Central Heights Elementary School

### Code Review / ADA - Portables

Code Review/Americans with Disabilities Act (ADA):			
	Description	Cost	Priority
Site	The site is bordered on all sides by asphalt streets. A system of concrete sidewalks on the site connects to concrete sidewalks wrapping the perimeter of the site. A small parking lot containing two handicapped accessible spaces is adjacent to the gym and somewhat removed from the main entry. There is no designated drop off area, and no designated pull out for cars/buses. There are several paved play areas connected to the facility by sidewalks.		
Parking	2 accessible spaces		
Approach, Entry & Exit	Entrance is connected to street and sidewalk by a long covered out door concrete walk.		
Ramps	Ramps to Annex have non-compliant railing. Exterior ramps only.	\$13,982	
Stairs	Work remains to be completed	\$1,066	
Elevator/lift	Lift is provided to carry students from hallway @ main level down to gym		
Assembly Areas	All Accessible.		
Classroom Access	Door hardware is knob style. Work remains to be completed	\$8,107	
Restroom Access	Restroom access is non-compliant in Portable		
Toilets/Restrooms	All toilets/restrooms are non-compliant. Work remains to be completed. Only restroom flooring has been updated.	\$59,925	
Drinking Fountains	None Observed. Work remains to be completed.	\$2,491	
Counter Access			
Signage per ADA	No signage observed		
Audio and Visual Alarms			
Obstacles			
Automatic Sprinkler System	No automatic sprinkler observed.		
Exit Corridors	Per IBC Table 1018.1; Corridor Rating of E Occupancy (Educational) buildings shall be 1 hour without an Automatic Sprinkler System. Exit corridor rating is reduced to 0 (zero) hours with an Automatic Sprinkler System.		
Other	Exit enclosures shall be enclosed per IBC 1022.		
Other	Per 1018.4; maximum length of corridor shall be 20 feet in a non-sprinklered E occupancy and 50 feet in a sprinklered occupancy.		
<b>Notes:</b> 1. ADA – Compliance with ADA in the existing building is recommended if major construction is completed at this building. 2. Fire/Safety – Fire suppression system in the existing building is recommended if major work is done at this building.			
<b>Building Code Guidelines:</b> 2009 International Building Code; 2009 International Existing Building Code; 1020 ADA Standards for Accessible Design; Administrative Rules of Montana 24.301.351; 2000 NFPA 101 - Life Safety Code			

## Central Heights Elementary School

### Recommendations

Central Heights is located at a low spot on the site. Heavy rains, usually occurring during summer months, repeatedly cause flooding in the building. Measures should be taken to redirect storm water.

Additional detail regarding scope and cost related to Educational Adequacy and Deferred Maintenance projects can be found in the following tables:

RECOMMENDED BUILDING COMPONENT (FAME) IMPROVEMENT DETAIL:		
Component	Comments	Estimated Cost
Building Envelope	Repair foundation leaks in gymnasium safe room	\$15,000
Interiors & Specialties	No recommended improvements	\$0
Mechanical, Electrical & Plumbing	Repair leaking urinal in Annex; renovate toilet rooms to ADA standards, modify 3-comp sink, add hand wash station in kitchen	\$18,500
Fire/Life Safety	No recommended improvements	\$0
Site	Seal coat parking lot, replace uneven/broken sidewalks	\$31,310
ADA	No recommended improvements	\$0
Does not include Soft Costs		Total \$ 64,810

RECOMMENDED EDUCATIONAL ADEQUACY IMPROVEMENT DETAIL:					
Component:	Item Description:	Qty	UOM	Unit Cost	Cost Estimate
Site Improvements					
Total Site:		0			\$0
Addition					
Multi-purpose Room Addition	New Multi-purpose Room Addition, Existing Gym/Cafeteria to serve as Cafeteria space.	4500	SF	\$210	\$945,000
Subtotal:		4500	SF	\$210	\$945,000
Gross Area:		1575	SF	\$210	\$330,750
Total Addition:		10935			\$1,275,750
Remodel					
Total Remodel:		0			\$0
Subtotal:					\$0
Estimated Cost *Does not include soft costs					\$1,275,750
TOTAL RECOMMENDED FACILITY IMPROVEMENT COST SUMMARY:					
Description:	Comments:	Cost Estimate			
FAME		\$64,810			
Educational Adequacy		\$1,275,750			
Estimated Cost *Does not include soft costs					\$1,340,560

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## Eagle Cliffs Elementary School

### Overview

Eagle Cliffs is a K-5 elementary school and is the newest free standing elementary building in Billings. The 1986 building consists of 21 classrooms, with a gymnasium/cafeteria, kitchen, library, office area, workroom, teachers' lounge and toilet rooms. The site is generally sloping. The building is a single story structure. It has a concrete foundation system with concrete slab on grade floor. The structural system is steel columns with steel and wood beams, wood trusses / joists and wood decking. The perimeter walls are brick / plaster on wood frame. The current roof is Hypalon installed in 1986 with 5" rigid insulation. The walls have 6" batt insulation.

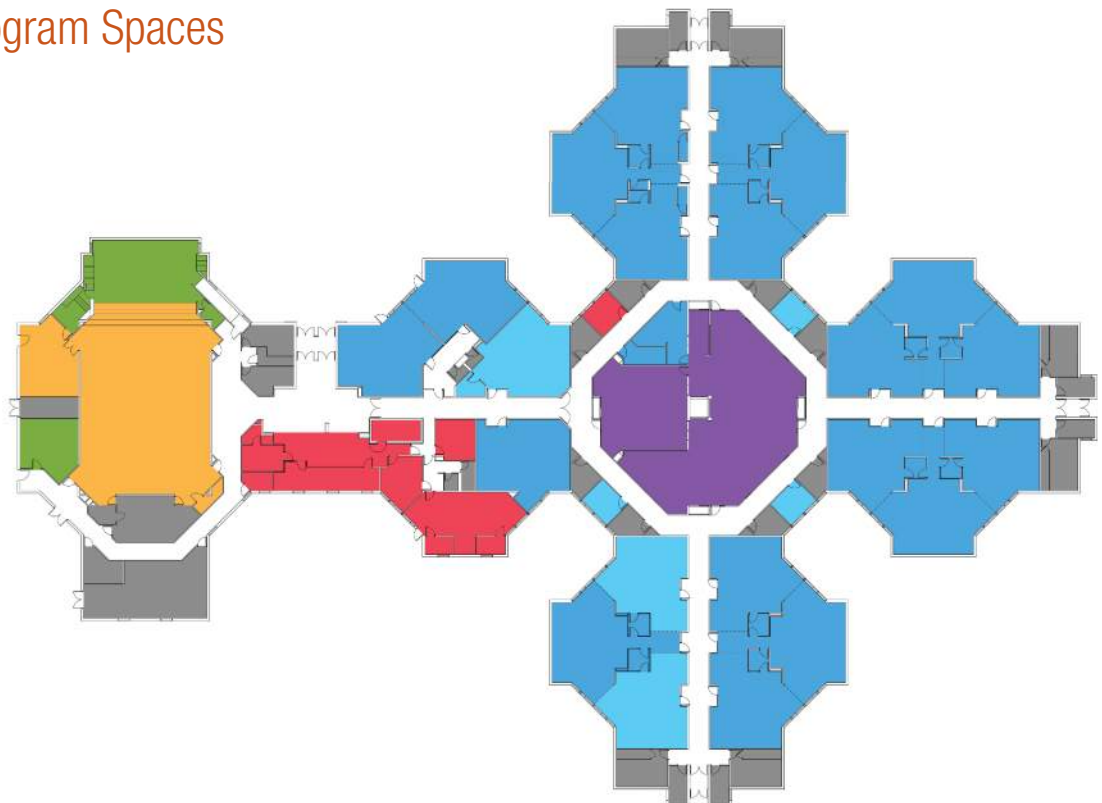
1201 Kootenai  
Billings, MT 59105  
(406) 281-6210

Year Built .....	1986
Renovations .....	0
Portables .....	0
Site Acres .....	8.00
Building SF .....	44,000
Current Enrollment .....	374
Capacity .....	460
Target Capacity .....	426



### Existing Program Spaces

PLAN LEGEND	
<span style="color: blue;">■</span>	CLASSROOM
<span style="color: lightblue;">■</span>	SPECIAL SERVICES
<span style="color: purple;">■</span>	LIBRARY
<span style="color: red;">■</span>	ADMINISTRATION
<span style="color: grey;">■</span>	MEP/TOILET/KITCHEN
<span style="color: orange;">■</span>	COMMONS/CAFE
<span style="color: brown;">■</span>	GYMNASIUM
<span style="color: green;">■</span>	MUSIC/ART

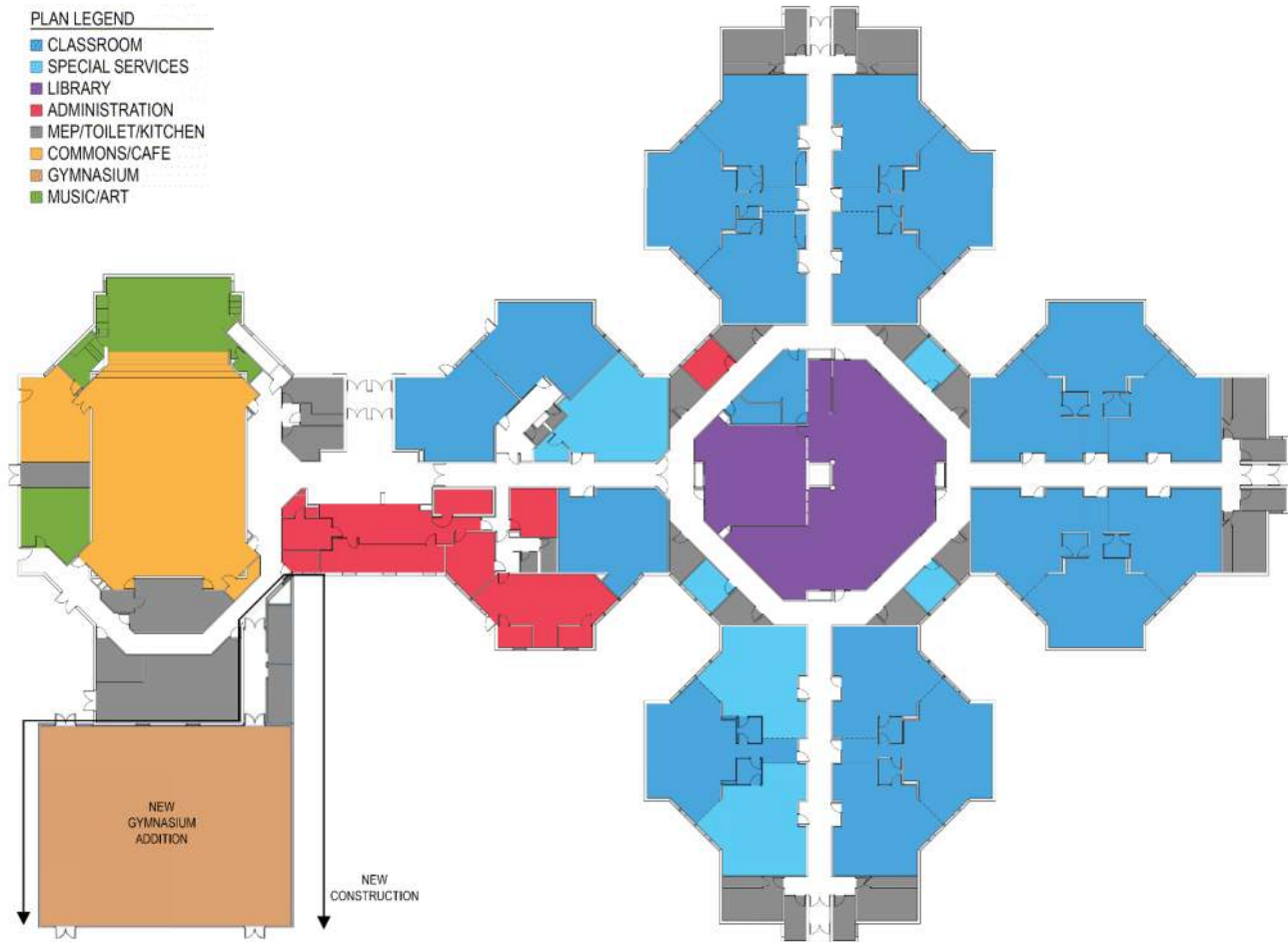


## Eagle Cliffs Elementary School

### Program Space Recommendations

Recommendations From 2013 master plan are being carried over for the 2018 master plan. The recommendations include:

- Repurpose existing gymnasium to Cafeteria.
- Create a multi-purpose room addition and associated restrooms.



Potential Floor Plan Diagram

## Eagle Cliffs Elementary School

### Site Characteristics and Deferred Maintenance

Site Characteristics:			
Component		Cost	Priority
Lot Size	11.13 acres		
Building Area	44000		
Topography	Generally sloping		
Drainage	Poor due to ground water and geological conditions (bath tub).	\$196,327	
Drop Off	Two large drop off areas		
Hardscape	Asphalt 37,000 sf		
Parking Surface	Asphalt 39,800 sf	\$59,859	\$59,859
Stalls	47 stalls 2 HC		
Paved Walks/Surfaces	Concrete 3,750 sf – concrete heaves at entrances. Priority is to replace broken and uneven sidewalks.	\$21,189	\$21,189
Steps, ramps, retaining walls	None		
Paved Sports Courts	Asphalt – Several sports marked out	\$55,648	\$55,648
Playgrounds	Gravel areas with playground equipment		
Softscape	706,903 sf		
Play Fields	Grass fields surrounding school adjacent to playgrounds		
Landscaping	There are landscaped areas – grass is difficult to grow due to poor soil conditions. Remove grassy berm against the building, and pour concrete in place of berms.	\$17,628	
Utilities	City services		
Fencing	Minimal Fencing		

## Eagle Cliffs Elementary School

### Building Components and Deferred Maintenance

Building Components:			
Component	Sub-Component: Condition Observed and Action to Fix	Cost	Priority
<b>Structural Systems</b>			
Footings/Foundation Walls	Concrete spread footings and stem wall foundation		
Floor Systems	Concrete slab on grade. Ongoing water migration issues due to geologic formation beneath building.		
Columns and Bearing Walls	Steel columns, limited bearing walls		
Beams and Joists	Steel and wood beams with wood trusses, joist & decking		
<b>Envelope</b>			
Roof	Hypalon installed 1986. Roof replaced.	\$0	
	5" rigid		
	Gutters improperly installed, water drains to middle and leaks down wall. Gutters replaced		
Walls	Brick and plaster – water infiltration issues in several areas: HVAC closet 112 has water entering through wall. Boiler room has leak in north wall at base. Earth is bermed up against concrete exterior wall all around, some areas of leakage. No leaks currently.		
Exterior Windows	Aluminum. Exterior windows replaced.	\$0	
	Double Glazed		
Exterior Doors	HM doors original to the building. Exterior doors replaced.		
Thermal Systems	6" batt insulation		
<b>Interior Finishes</b>			
Interior Walls	Facility typical – Gyp: Good condition throughout		
	Gym- Fabric Panels		
	Halls and Main Entry (small areas) - Brick		
	Toilets – Ceramic Tile		
Ceilings	Facility Typical – ACT		
	Library/Assembly- Glued on Tile: Aging. Work remains to be completed	\$6,137	
	Hallways/Computer Lab (small areas) – Gyp.		
Doors/Hardware/Windows	Hardware: Knob type non-ADA		
	Solid Core Wood doors		
	Frame - HM		
	HM Interior windows		
Floor Finishes	Facility Typical – Carpet: Aging/Wearing. Flooring replaced and carpet revised to VCT. Priority is to complete flooring replacement phase 2, in summer 2018.	\$26,181	\$26,181
	Assembly/Kitchen/Misc. smaller areas- Sheet Vinyl. Sheet vinyl flooring replaced.	\$0	
	Toilets – Ceramic Tile. Floor tile replaced.		
Wall Finishes	Paint throughout in good condition.	\$0	
	FRP: @ kitchen - wearing		

## Eagle Cliffs Elementary School

### Building Components and Deferred Maintenance

Specialties			
Toilet Partitions	Metal: Older but functioning. Restrooms remodeled, ADA-compliant.		
Fixed Seating/Risers	Bleachers: N/A		
	Theater: N/A		
	Classroom/Lecture: N/A		
	Cafeteria: N/A		
Markerboards/Cabinets	All rooms contain a dry erase board		
	Plastic laminate cabinets and countertops – worn/aging		
	Countertops		
HVAC System			
Heating	Building is connected to District master controls. Priority is to replace building temperature control front end.	\$10,000	\$10,000
	BMS: additional work needed BMS controls upgraded to district standard	\$0	
	Custodian reports equipment is older Air handling equipment replaced as portion of upgrade.	\$0	
	Room Units: Air handlers w/ exposed duct work. Room ductwork revised to fabric duct to improve distribution.		
	Existing system is very efficient. Top school for energy performance. Constant volume air handlers revised to variable volume.		
	Hydronic Piping: 2 pipe System revised to 2-pipe change over		
	Alternative Fuel: No		
	Air Handler: Yes – work is needed on ventilation Dampers replaced and demand controlled ventilation added		
	Specialized Exhaust: Limited		
	Room Ventilators: No		
Cooling	Central AC: No Central chiller with change over dry-cooler to replace unit mounted dx equipment		
	Room AC: No		
	Hydronic Piping: No 2-pipe change-over system		
Plumbing System			
Fixtures	Original fixtures to building no problems reported at custodian interview. Priority is to modify 3 compartment sink in kitchen.	\$1,000	\$1,000
	Hot Water Generation: multiple, 1 per quadrant		
	Alternative Fuel: No		
Supply Piping	Piping: Copper		
	Pumps: No		
Waste Piping	Piping: pvc, varies		
	Pumps: No		

## Eagle Cliffs Elementary School

### Building Components and Deferred Maintenance

Electrical System			
Building Service	1800A, 120/208 3Ph		
	Distribution panel revised to create space		
	Meter Base: Adequate		
	Generator: No		
Lighting	Alternative Source: No		
	Fixtures - PCB: No		
	LED fixtures		
	Building is retrofitted with T-8's		
	Lighting revised to LED		
	Light Level Controls: Adequate		
	Occupancy controls and imming added		\$0
	Occ/Daylight Sensor: No		
Voice/Data	Occupancy sensors added		
	Outlets added periodically, no reports of service problems at custodian meeting		
	Devices: Power and data upgrade needed		
	Intercom: functioning properly		
	Clock: Poor system not wired to master		
Conveying & Vertical Circulation	Telephone: Recently updated functioning properly		
	Data: Newer cabling, 2 ports per classroom, wireless coverage is good.		
	GPON fiber optic data system added to the building.		\$0
Safety System			
Elevators, lifts, stairs ramps	Has ramps to stage and music room		
Egress	Exit Systems: Clear Paths of Egress, Has fire doors		
Extinguishing System	Sprinkler: No automatic sprinkler system		\$172,603
Exit/Emergency Lighting/Alarms	Cabinet Systems		
	Exit Lights: Yes		
	Emergency Lighting: Yes		
	Smoke/Heat Detection: Updated		
Fire Alarm System: Updated.			
Fire alarm system replaced, with voice evac.			

## Eagle Cliffs Elementary School

### Code Review / ADA

Code Review/Americans with Disabilities Act (ADA):			
	Description	Cost	Priority
Site	Site is accessible, and offers concrete paths connecting all hardscaped areas. Two areas exist for drop offs both with a designated pull out area. Building is connected to adjacent sidewalk with concrete paths.		
Parking	2 ADA Parking stalls		
Approach, Entry & Exit	Approach is accessible and entry/exit		
Ramps			
Stairs			
Elevator/lift			
Assembly Areas	All assembly areas are accessible		
Classroom Access	Door hardware is knob style. Work remains to be completed.	\$58,779	
Restroom Access	Access to restrooms meets ADA Guidelines		
Toilets/Restrooms	No ADA stalls present in building, none large enough, some grab bars are installed. ADA accessibility has been made at the toilet / restrooms.	\$0	
Drinking Fountains	One dual height fountain		
Counter Access	Lunch and Library have low counters		
Signage per ADA	None observed		
Audio and Visual Alarms	Yes		
Obstacles	None other than those noted		
Automatic Sprinkler System	No Sprinkler Observed		
Exit Corridors	Adequate		
<b>Notes:</b> 1. ADA – Compliance with ADA in the existing building is recommended if major construction is completed at this building. 2. Fire/Safety – Fire suppression system in the existing building is recommended if major work is done at this building.			
<b>Building Code Guidelines:</b> 2009 International Building Code; 2009 International Existing Building Code; 1020 ADA Standards for Accessible Design; Administrative Rules of Montana 24.301.351; 2000 NFPA 101 - Life Safety Code			

## Elementary School

## Eagle Cliffs Elementary School

### Recommendations

Eagle Cliffs is the district's newest elementary school at 32 years old. The building systems are at the end of their useful life and plans for replacement should be made.

Additional detail regarding scope and cost related to Educational Adequacy and Deferred Maintenance projects can be found in the following tables:

RECOMMENDED BUILDING COMPONENT (FAME) IMPROVEMENT DETAIL:		
Component	Comments	Estimated Cost
Building Envelope	No recommended improvements	\$0
Interiors & Specialties	Replace carpet	\$26,181
Mechanical, Electrical & Plumbing	Replace building temperature control front end, modify 3-comp sink	\$11,000
Fire/Life Safety	No recommended improvements	\$0
Site	Replace/repair asphalt, replace uneven/broken sidewalks	\$136,696
ADA	No recommended improvements	\$0
Does not include Soft Costs		Total \$173,877

RECOMMENDED EDUCATIONAL ADEQUACY IMPROVEMENT DETAIL:					
Component:	Item Description:	Qty	UOM	Unit Cost	Cost Estimate
Site Improvements					
Total Site:		0			\$0
Addition					
Multi-purpose Room Addition	New Multi-purpose Room Addition, Existing Gym/Cafeteria to serve as Cafeteria space.	4500	SF	\$210	\$945,000
Subtotal:		4500	SF	\$210	\$945,000
Gross Area:		1575	SF	\$210	\$330,750
Total Addition:		6075	SF	\$210	\$1,275,750
Remodel					
Total Remodel:		0			\$0
Subtotal:					\$1,275,750
Estimated Cost *Does not include soft costs					\$1,275,750
TOTAL RECOMMENDED FACILITY IMPROVEMENT COST SUMMARY:					
Description:	Comments:	Cost Estimate			
FAME		\$173,877			
Educational Adequacy		\$1,275,750			
Estimated Cost *Does not include soft costs					\$1,449,627

## Highland Elementary School

### Overview

Highland School is a K-5 elementary school. The original 1947 building consisted of 12 classrooms, with a gymnasium/cafeteria, kitchen, office area, workroom, teachers' lounge and toilet rooms. In 1956 a 4 classroom annex was constructed. The site is generally flat. The building is a single story structure. It has a concrete foundation system with concrete slab floor on steel joists over a crawl space. The structural system is steel columns with wood beams and wood joists. The perimeter walls are predominantly brick on CMU. The current roof is recently installed EPDM with R-20 insulation. The walls have 2" rigid insulation.

729 Parkhill Drive  
Billings, MT 59102  
(406) 281-6211

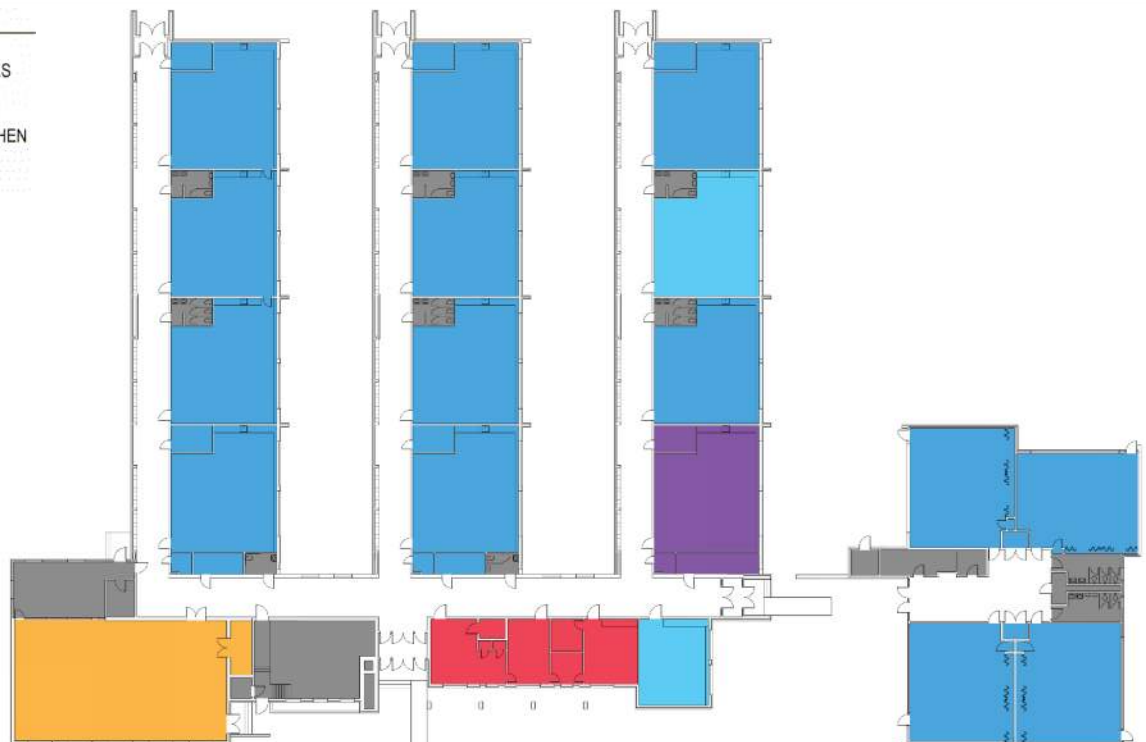
Year Built .....	1947
Renovations .....	0
Portables .....	0
Site Acres .....	4.8
Building SF .....	30,420
Current Enrollment .....	292
Capacity .....	285
Target Capacity .....	264



### Existing Program Spaces

PLAN LEGEND

CLASSROOM
SPECIAL SERVICES
LIBRARY
ADMINISTRATION
MEP/TOILET/KITCHEN
COMMONS/CAFE
GYMNASIUM
MUSIC/ART



# 4 K-8 FACILITIES

## Highland Elementary School

### Site Characteristics and Deferred Maintenance

Site Characteristics:			
Component		Cost	Priority
Lot Size	4.8 acres		
Building Area	27,088 sf (5,615 sf Annex)		
Topography	Flat		
Drainage	Fair to good Drainage – Poor drainage between classroom wings causes water to pool and seep into crawl spaces		
Drop Off	A sidewalk connects the street to the front entry, there is a designated separate drop off area. ADA walkway enclosure to annex was added.		
Hardscape	Asphalt 25,350 sf		
Parking Surface	Asphalt 12,550 sf. Priority is to seal coat parking lot.	\$4,071	\$4,071
Stalls	26 Stalls, 2 Accessible (van)		
Paved Walks/Surfaces	Concrete 3,150 sf. Priority is to replace uneven and broken sidewalks.	\$9,856	\$9,856
Steps, ramps, retaining walls	Ramps leading to both buildings have non-compliant handrails		
Paved Sports Courts	There are several paved play areas with a variety of activities marked out. Priority is to seal coat playground.	\$7,091	\$7,091
Playgrounds	Gravel areas with playground equipment		
Softscape	114,855 sf		
Play Fields	There are large grass fields around the school and adjacent to paved play areas.		
Landscaping	There is landscaping around building		
Utilities	City services		
Fencing	Chain Link		

## Highland Elementary School

### Building Components and Deferred Maintenance

Building Components (Main Building):			
Component	Sub-Component: Condition Observed and Action to Fix	Cost	Priority
<b>Structural Systems</b>			
Footings/Foundation Walls	Concrete spread footings & stem wall foundation		
Floor Systems	Concrete slab floor on steel joists over a crawl space		
Columns and Bearing Walls	Steel columns with some areas of bearing walls		
Beams and Joists	Steel and wood beams / trusses and wood joists		
<b>Envelope</b>			
Roof	Hypalon – Installed in 1992,1993,1994. Roof replaced.		
	Insulation unknown		
Walls	Brick on concrete masonry. Re-point brick on building.	\$20,000	
Windows	Single pane glass in steel windows. Windows replaced		
	Aluminum framed windows in classrooms. Windows replaced		
	Doubled pane glass @ classrooms. Windows replaced		
Exterior Doors	HM Exterior Doors, most with panic hardware. Exterior doors replaced	\$0	
Thermal Systems	2" rigid		
<b>Interior Finishes</b>			
Interior Walls	Facility Typical – Framed Plaster: minor damage. Work remains to be completed.	\$2,079	
	Gym/Entry – Brick: Small area of entry, gym brick painted		
	Hallway - Wood: Halls have wood slats one side - painted		
Ceilings	Facility Typical – Glued on: failing/minor staining. Work remains to be completed.	\$35,648	
	Kitchen/Toilets - Gyp		
	Admin – ACT: Worn/minor damage		
Doors/Hardware/Windows	Solid Core Wood Doors: Aging/wear		
	Door Hardware – 90% of hardware is ADA compliant lever style hardware		
Floor Finishes	Facility Typical – Carpet: wearing/ripping/staining. Carpet flooring updated / replaced.	\$0	
	Hallway/Kitchen – VCT: minor wear/some cracking. VCT flooring replaced.		
	Toilets/Main Entry – Ceramic Tile: wear. Tile floors replaced as part of restroom remodel.		
	Gym - Wood		
Wall Finishes	Paint throughout in good condition		
	FRP: In kitch, staining and failing		
<b>Specialties</b>			
Toilet Partitions	Metal Partitions aging but functional. Restrooms underwent slight remodel, some fixtures added, staff restroom was given ADA-improvements.		
Fixed Seating/Risers	Bleachers: N/A		
	Theater: N/A		
	Classroom/Lecture: N/A		
	Cafeteria: N/A		
Markerboards/Cabinets	All Rooms Contain a markerboard		
	Cabinets: Wood base cabinets aging but functional		
	Countertops: Plastic laminate counters aging, but functional Reception desks replaced.		

## Highland Elementary School

### Site Characteristics and Deferred Maintenance

HVAC System			
Heating	Controls: Building is connected to district master controls		
	BMS: Acceptable BMS system upgraded		
	Boiler/Furnace: new boilers main building, furnaces in annex – Die Electric unions leaking glycol and require replacement Boilers/Pumps upgraded to district standard.		
	Room Units: Ventilating fin tube		
	Hydronic Piping: 4 pipe		
	Alternative Fuel: No		
Ventilating	Air Handler: At multi purpose Roof mounted gas fired unit - gym		
	Ductwork: Exhaust system		
	Air Handler: At multi purpose Roof mounted gas fired unit - gym		
	Air Handler: At multi purpose Roof mounted gas fired unit - gym		
Cooling	Central AC: Yes		
	Room AC: No		
	Hydronic Piping: 4 pipe		
Plumbing System			
Fixtures	Sinks/Toilets/Shower: Original to building, replacement parts difficult Flush valves replaced, ADA toilet room created. Priority is to modify 3 compartment sink and install hand sink in kitchen.	\$4,000	\$4,000
	Hot Water Generation: Central		
	Alternative Fuel: No		
Supply Piping	Piping: varies – Regular replacement of piping in crawl spaces		
	Pumps: Circulating		
Waste Piping	Piping: varies - Regular replacement of piping in crawl spaces		
	Pumps: No		
Electrical System			
Building Service	1000A, 120/208 3Phase		
	Meter Base: Adequate		
	Generator: No		
	Alternative Source: No		
Lighting	Fixtures - PCB: No		
	Fixtures - Energy: T-8's		
	Light Level Controls: Limited		
	Occ/Daylight Sensor: No		
Distribution	Service Panels: Need to be verified		
	Devices: Power & data distribution upgrade needed Classroom receptacles needed	\$28,000	\$28,000
Voice/Data	Intercom: Functional		
	Clock: Functional		
Conveying & Vertical Circulation			
Elevators, lifts, stairs ramps	Not applicable		
Safety System			
Egress	Exit Systems: Clear Paths of egress		
Extinguishing System	Sprinkler: No automatic sprinkler	\$121,041	
	Cabinet Systems: No		
Exit/Emergency Lighting/Alarms	Exit Lights: Yes		
	Emergency Lighting: Yes		
	Smoke/Heat Detection: Updated		
	Fire Alarm System: Updated. Fire alarm system upgraded, with voice evac.		

## Highland Elementary School

### Building Components and Deferred Maintenance - Annex

The Annex is a detached permanent structure providing 4 additional classrooms, each with their own separate exit. There are 2 toilet rooms, storage and mechanical rooms. The roof structure is glu lam beams and wood joists bearing on glu lam or wood post or block walls. The walls are brick faced wood or concrete masonry walls. It has a concrete slab on grade floor with concrete foundation and footings. The heating system is gas forced air furnace with under slab ducts.

#### Building Components (Annex):

Component	Sub-Component: Condition Observed and Action to Fix	Cost	Priority
<b>Structural Systems</b>			
Footings/Foundation Walls	Concrete spread footings & stem wall foundation		
Floor Systems	Concrete slab on grade		
Columns and Bearing Walls	Glu lam and wood columns		
Beams and Joists	2 x 4 joists on wood glu lams		
<b>Envelope</b>			
Roof	New EPDM- to be installed in 2013. Annex roof replaced. Insulation – standard R-20		
Walls	Brick on wood frame		
Exterior Windows	Single pane glass in steel windows. Windows replaced		
Exterior Doors	HM Exterior Doors, most with panic hardware- hardware is difficult to operate. Exterior doors replaced.		
Thermal Systems	Insulation: 4" batt		
<b>Interior Finishes</b>			
Interior Walls	Facility Typical – Wood Framed w/ Wood Paneling Toilets –Plaster or Ceramic Tile: Age/wear		
Ceilings	Glued on acoustical tile: Failing/minor staining		
Doors/Hardware/Windows	Solid Core Wood Doors: Aging/wear Door Hardware – Non ADA compliant hardware		
Floor Finishes	Facility Typical – Carpet: wearing/rippling/staining. Flooring updated / replaced. Hallway- Asphalt Tile: minor wear Toilets – Ceramic Tile: wear	\$0	
<b>Specialties</b>			
Toilet Partitions	Metal Partitions aging but functional		
Markerboards/Cabinets	All Rooms contain a marker board Cabinets: Wood base cabinets aging but functional Countertops: Plastic laminate counters aging, but functional		
<b>HVAC System</b>			
Heating	Controls: Not connected to district master controls Building connected to district BMS BMS: No BMS added Boiler/Furnace: Individual gas fired furnaces w/ under-floor ducts Central boiler provided and classroom furnaces replaced with fan coils Room Units: No Classroom fin tube radiation added Hydronic Piping: No Copper piping Alternative Fuel: No	\$0	

## Highland Elementary School

### Site Characteristics and Deferred Maintenance - Annex

Ventilating	Air Handler: No		
	Classroom fan coils equipped with economizer cooling		
	Ductwork: Under floor w/ roof top fresh air		
	Specialized Exhaust: Limited		
Cooling	Room Ventilators: No		
	Classroom fan coils equipped with outside air		
	Central AC: No		
	Room AC: No		
Plumbing System	Hydronic Piping: No		
Fixtures	Sinks/Toilets/Shower: Original, difficulty getting parts		
	Toilet room upgrade completed to revise to ADA compliance	\$0	
	Hot Water Generation: Water heater		
Supply Piping	Piping: varies – Regular replacement of piping in crawl spaces		
Waste Piping	Piping: varies – Regular replacement of piping in crawl spaces		
<b>Electrical System</b>			
Building Service	From main building		
Lighting	Fixtures - PCB: No		
	Fixtures - Energy: T-8's		
	LED light fixtures		
	Light Level Controls: Limited		
Distribution	Fixtures dimmable		
	Occ/Daylight Sensor: No		
	Spaces equipped with occupancy sensors		
Voice/Data	Devices: Power & data distribution upgrade needed		
	Dedicated circuit provided per classroom, Panel updated to create additional space	\$0	
Conveying & Vertical Circulation	Intercom: Annex intercom is aging and failing		
	Clock: See main building		
	Telephone: See main building		
	Data: Power supply inadequate, only one data feed to annex, 1 port per class. GPON was installed in annexes.	\$0	
<b>Safety System</b>			
Elevators, lifts, stairs ramps	Not applicable		
<b>Egress</b>			
Extinguishing System	Exit Systems: Clear paths of egress		
	Sprinkler: No automatic sprinkler		
	Cabinet Systems: No		
Exit/Emergency Lighting/Alarms	Exit Lights: Yes		
	Emergency Lighting: Yes		
	Smoke/Heat Detection: Updated		
	Fire Alarm System: Updated.		
	Fire alarm system upgraded, with voice evac.		

## Highland Elementary School

### Code Review / ADA

Code Review/Americans with Disabilities Act (ADA):			
	Description	Cost	Priority
Site	Paved walks provide access to the building from the street and from the parking lot. A paved walk also provides access to the paved play area. A contiguous paved play area adjacent to the building provides access to all sides of the building that paved walks do not. There are ramps providing access to the front entrance of the building.		
Parking	2 Handicap accessible spots (van)		
Approach, Entry & Exit	The building has at least two accessible entrances		
Ramps	Ramps at two different entrances have non-compliant handrails. Work remains to be completed.	\$2,133	
Stairs	Stairs at entrances have non-compliant handrails		
Elevator/lift	NA		
Assembly Areas	Assembly areas are accessible		
Classroom Access	90% of classrooms are accessible with "lever style" door hardware, annex doors are non-accessible. Work remains to be completed.	\$3,490	
Restroom Access	Access to restrooms meets ADA Guidelines		
Toilets/Restrooms	One toilet is modified to comply with ADA guidelines and is unisex. Both boys' and girls' restrooms at Highland still require ADA improvements. Verify with Facilities.		
Drinking Fountains	One dual height		
Counter Access	Not in compliance		
Signage per ADA	Not in compliance		
Audio and Visual Alarms	Yes		
Obstacles	None other than noted		
Automatic Sprinkler System	No		
Exit Corridors	Per IBC Table 1018.1; Corridor Rating of E Occupancy (Educational) buildings shall be 1 hour without an Automatic Sprinkler System. Exit corridor rating is reduced to 0 (zero) hours with an Automatic Sprinkler System.		
Other	Exit enclosures shall be enclosed per IBC 1022.		
Other	Per 1018.4; maximum length of dead end corridor shall be 20 feet in a non-sprinkled E occupancy and 50 feet in a sprinkled occupancy. Exit way passes through intervening space.		
<b>Notes:</b> 1. ADA – Compliance with ADA in the existing building is recommended if major construction is completed at this building. 2. Fire/Safety – Fire suppression system in the existing building is recommended if major work is done at this building.			
<b>Building Code Guidelines:</b> 2009 International Building Code; 2009 International Existing Building Code; 1020 ADA Standards for Accessible Design; Administrative Rules of Montana 24.301.351; 2000 NFPA 101 - Life Safety Code			

## Highland Elementary School

### Code Review / ADA - Annex

Code Review/Americans with Disabilities Act (ADA):			
	Description	Cost	Priority
Site	Paved walks provide access to the building from the street and from the parking lot. A paved walk also provides access to the paved play area. A contiguous paved play area adjacent to the building provides access to all sides of the building that paved walks do not. There are ramps providing access to the front entrance of the building and the entrance adjacent to the annex.		
Parking	2 Handicap accessible spots (van)		
Approach, Entry & Exit	The building has at least two accessible entrances		
Ramps			
Stairs	Stairs at entrances have non-compliant handrails		
Elevator/lift	N/A		
Assembly Areas			
Classroom Access	90% of classrooms are accessible with "lever style" door hardware, annex doors are non-accessible. Work still needs to be completed.	\$31,407	
Restroom Access	Access to restrooms meets ADA Guidelines		
Toilets/Restrooms	One toilet is modified to comply with ADA guidelines and is unisex. Both boys and girls restrooms at Highland still need ADA stalls.	\$14,805	
Drinking Fountains	One dual height		
Counter Access	Not in compliance		
Signage per ADA	Not in compliance		
Audio and Visual Alarms	Yes		
Obstacles	None other than noted		
Automatic Sprinkler System	No		
Exit Corridors	Per IBC Table 1018.1; Corridor Rating of E Occupancy (Educational) buildings shall be 1 hour without an Automatic Sprinkler System. Exit corridor rating is reduced to 0 (zero) hours with an Automatic Sprinkler System.		
Other	Exit enclosures shall be enclosed per IBC 1022.		
Other	Per 1018.4; maximum length of dead end corridor shall be 20 feet in a non-sprinkled E occupancy and 50 feet in a sprinkled occupancy. Exit way passes through intervening space.		
<b>Notes:</b> 1. ADA – Compliance with ADA in the existing building is recommended if major construction is completed at this building. 2. Fire/Safety – Fire suppression system in the existing building is recommended if major work is done at this building.			
<b>Building Code Guidelines:</b> 2009 International Building Code; 2009 International Existing Building Code; 1020 ADA Standards for Accessible Design; Administrative Rules of Montana 24.301.351; 2000 NFPA 101 - Life Safety Code			

## Highland Elementary School

### Recommendations

Additional detail regarding scope and cost related to Educational Adequacy and Deferred Maintenance projects can be found in the following tables:

RECOMMENDED BUILDING COMPONENT (FAME) IMPROVEMENT DETAIL:		
Component	Comments	Estimated Cost
Building Envelope		
	No recommended improvements	\$0
Interiors & Specialties		
	No recommended improvements	\$0
Mechanical, Electrical & Plumbing		
	Modify 3-comp sink, add hand wash station in kitchen, add electrical receptacles to classrooms	\$32,000
Fire/Life Safety		
	No recommended improvements	\$0
Site		
	Seal coat parking lot & playground, replace uneven/broken sidewalk	\$21,018
ADA		
	No recommended improvements	\$0
Does not include Soft Costs		Total \$53,018

RECOMMENDED EDUCATIONAL ADEQUACY IMPROVEMENT DETAIL:					
Component:	Item Description:	Qty	UOM	Unit Cost	Cost Estimate
Site Improvements					
Total Site:		0			\$0
Addition					
Subtotal:		0			\$0
Gross Area:		0			\$0
Total Addition:		0			\$0
Remodel					
Total Remodel:		0			\$0
Subtotal:					\$0
Estimated Cost *Does not include soft costs					\$0
TOTAL RECOMMENDED FACILITY IMPROVEMENT COST SUMMARY:					
Description:	Comments:				Cost Estimate
FAME					\$53,018
Educational Adequacy					\$0
Estimated Cost *Does not include soft costs					\$53,018

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## McKinley Elementary School

### Overview

McKinley School is a K-5 elementary school located on a small site in a historic neighborhood. Work done in 2015 included a 3 story addition and demolition of an annex building. All of the buildings mechanical systems were replaced along with windows and roofing systems. The original building was constructed in 1906 as a two story structure with full basement for a full 3 levels. The first and second floors contained four classrooms each (8 total) and the basement contained 2 more classrooms and toilet rooms. In 1918 there was an addition that added 3 classrooms (6 total) on two floors above the basement plus four more rooms in the basement. Then, in 1958, McKinley received an attached one story brick annex that added two classrooms, multi-purpose/cafeteria and restrooms. The 2015 addition added 16 classrooms and removed the annex. The original building has a stone and concrete foundation system with slab on grade at basement. The structural system is load bearing masonry with wood columns, wood beams and wood decking. The perimeter walls are brick & stone masonry with considerable historic significance. The addition has a concrete foundation, the structural system is a steel framed with metal framing. The perimeter walls are brick and stone.

820 North 31st Street  
Billings, MT 59101  
(406) 281-6212

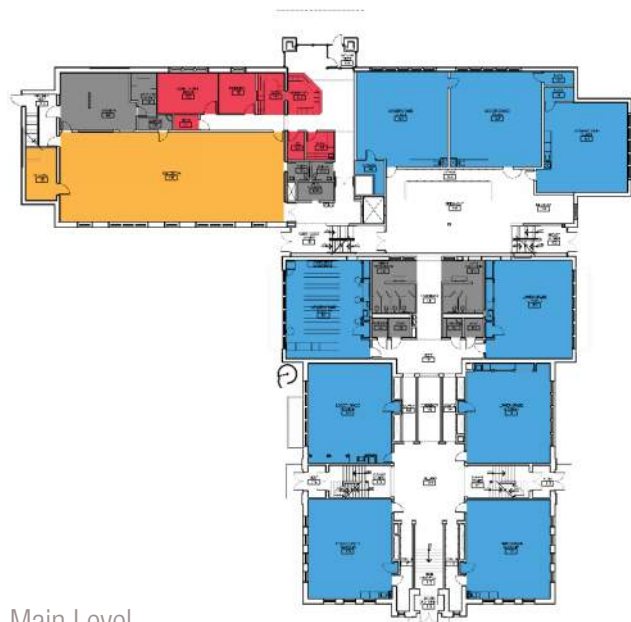
Year Built .....	1906
Renovations .....	Addition 1918, 2015
Portables .....	0
Site Acres .....	2.15
Building SF .....	54,391
Current Enrollment .....	263
Capacity .....	400
Target Capacity .....	370



# 4 K-8 FACILITIES

## McKinley Elementary School

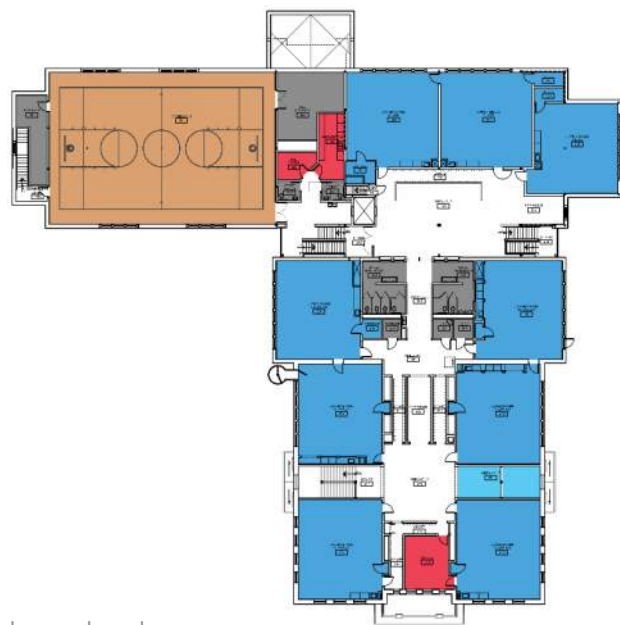
### Existing Program Spaces



Main Level



Upper Level



Lower Level

PLAN LEGEND	
<span style="color: blue;">■</span>	CLASSROOM
<span style="color: lightblue;">■</span>	SPECIAL SERVICES
<span style="color: purple;">■</span>	LIBRARY
<span style="color: red;">■</span>	ADMINISTRATION
<span style="color: grey;">■</span>	MEP/TOILET/KITCHEN
<span style="color: orange;">■</span>	COMMONS/CAFE
<span style="color: brown;">■</span>	GYMNASIUM
<span style="color: green;">■</span>	MUSIC/ART

## McKinley Elementary School

### Site Characteristics and Deferred Maintenance

Site Characteristics:			
Component	All site characteristics have been updated, per 2016 renovation/expansion/site developments. No known deficiencies.	Cost	Priority
Lot Size	3.23 acres		
Building Area	54,391 sf		
Topography	Flat		
Drainage	Fair to good drainage		
Drop Off	Bus drop of on N. 32nd Street, Parent drop of on 9th Ave. N.		
Hardscape	Asphalt 9,200 sf		
Parking Surface	Angled street parking on N. 31st Street and 8th Ave. N.		
Stalls	35 + 4 handicap back in angle stalls, 4 2-hour parking stalls, all on street around perimeter of school.		
Paved Walks/Surfaces	Paved walks link building to sidewalks.	\$0	
Steps, ramps, retaining walls	Concrete walls in good shape	\$0	
Paved Sports Courts	Asphalt play area on south side of building	\$0	
Playgrounds	6,150 sf of wood chips below playground toys.		
Softscape	35,850 sf		
Play Fields	Areas of grass around school		
Landscaping	Well maintained landscape, grass, trees and shrubs.		
Utilities	City services		
Fencing	Wrought iron fencing encloses the playground.		

## McKinley Elementary School

### Building Components and Deferred Maintenance

School: McKinley Elementary School			
<b>Building Components (Main Building):</b>	All building components have been updated per 2016 renovation/expansion/site developments. Only 1-2 significant current deficiencies.		
<b>Component</b>	<b>Sub-Component: Condition Observed and Action to Fix</b>	<b>Cost</b>	<b>Priority</b>
<b>Structural Systems</b>			
Footings/Foundation Walls	Stone & concrete footings		
	Combination of stone and concrete foundations	\$0	
	Concrete retaining walls at window wells		
Floor Systems	Concrete slab on grade basement		
	Wood joists with wood deck floor system in historic building, steel in new addition		
Columns and Bearing Walls	Wood columns wrapped in wood, areas of bearing walls in historic building, steel in new addition		
Beams and Joists	Wood beams wrapped in plaster in historic building, steel in new addition		
<b>Envelope</b>			
Roof	EPDM at main building high roof area- Installed 2004, Malarkey asphalt shingles installed on new addition in 2015.		
	Priority is to heat trace and install gutters on original building.	\$50,000	\$50,000
	Asphalt Shingles Installed 2015		
	Blown in Insulation in attic – thickness not known		
Walls	Brick, reconditioned in 2015	\$0	
	Stone sills, etc – repaired in 2015	\$0	
	Wood trim and moldings in good condition	\$0	
Exterior Windows	Wood/Aluminum		
	Double Glazed with new hardware	\$0	
Exterior Doors	HM Doors/Frames		
Thermal Systems	None		
<b>Interior Finishes</b>			
Interior Walls	Historic facility typical – Framed with plaster finish: all three floors good condition.		
	New addition - Framed and finished with sheetrock.		
	Basement - Concrete sheeted with drywall		
Ceilings	Facility Typical – Plaster. Good condition normal wear		
	Library/Basement Classrooms/Toilets – ACT Lay-In:		
	Admin – ACT Lay-In		
Doors/Hardware/Windows	Hardware ADA compliant with lever-style fixtures		
	Newer solid core wood doors		
	Wood frames – Historic, well maintained		
Floor Finishes	Facility Typical – Carpet. Admin/classrooms/basement areas all have carpeting in good conditions. Classrooms without carpet all have VCT tile flooring in good condition	\$0	
	Student Toilets – Restrooms on each floor have been remodeled and are ADA accesible.		
	Circulation and main spaces upper floors – Wood: Historic wood floors well maintained – noisy due to age.		
Wall Finishes	Paint is good		
	Wood wainscot in places throughout building: Historic and well maintained		

## McKinley Elementary School

### Building Components and Deferred Maintenance

Specialties			
Toilet Partitions	New partitions added throughout in 2015		
Fixed Seating/Risers	Bleachers: N/A		
	Theater: N/A		
	Classroom/Lecture: N/A		
	Cafeteria: Dedicated cafeteria and kitchen on main level		
Markerboards/Cabinets	All rooms have marker boards		
	Historic Wood Casework – well maintained		
	Other casework mix of wood and laminates are in good repair		
HVAC System			
Heating	Building is partially connect to district master controls		
	Building fully integrated in district BMS system. Priority is to replace building temp control front end.	\$10,000	\$10,000
	BMS: Upgrades needed		
	Upgrades completed	\$0	
	Building is fed from boiler in annex – upgrades needed		
	Boiler system replaced. (2) 2500 MBH input	\$0	
	Room Units: Radiators		
	Radiators removed and system converted to VAV reheat		
Ventilating	Hydronic Piping: 2 pipe		
	Alternative Fuel: No		
	Air Handler: No		
	Building air handlers provide ventilation air. (2) interior units		
	Ductwork: No		
Cooling	Ductwork distribution throughout building. Air terminal units with hydronic reheat.		
	Specialized Exhaust: No		
	Room Ventilators: No		
Plumbing System	No air conditioning		
	Building equipped with mechanical cooling		
Fixtures	Plumbing fixtures appear to be new in boys. Both receiving new stalls, Girls fixtures not original, but older, custodian reports leaking bleeder valves		
	Toilet rooms completely replaced as portion of remodel	\$0	
	Hot Water Generation: Central		
Supply Piping	Water heaters replaced		
	Alternative Fuel: No		
Waste Piping	Piping: Varies		
	Pumps: No		
Electrical System	Piping: Varies		
	Pumps: No		
Building Service	600A, 120/240 1Ph needs upgrading- located in annex		
	Service upgraded 1200A 120/208V-3P	\$0	
	Meter Base: Coordinate with upgrade		
	System upgraded		
	Generator: No		
	Alternative Source: No		

# 4 K-8 FACILITIES

## McKinley Elementary School

### Code Review / ADA

Code Review/Americans with Disabilities Act (ADA):			
Code/ADA characteristics have been updated per 2016 renovation/expansion/site developments. No deficiencies.			
	Description	Cost	Priority
Site	Entire building is accesible		
Parking	4 handicap parking stalls		
Approach, Entry & Exit	All portions of the building are accesible, all entries except south entry are accesible		
Ramps			
Stairs	Stairs all compliant, handrails comply with ADA		
Elevator/lift	Elevator installed in 2015 remodel		
Assembly Areas	Accessible		
Classroom Access	All areas of the building are accesible. Lever style hardware throughout original building		
Restroom Access	All restrooms are ADA accesible		
Toilets/Restrooms	Restrooms have ADA accesible stalls in each restroom		
Drinking Fountains	ADA fountains throughout building		
Counter Access	Compliant		
Signage per ADA	Compliant		
Audio and Visual Alarms	Yes		
Obstacles	none other than noted		
Automatic Sprinkler System	Entire building		
Exit Corridors	Per IBC Table 1018.1; Corridor Rating of E Occupancy (Educational) buildings shall be 1 hour without an Automatic Sprinkler System. Exit corridor rating is reduced to 0 (zero) hours with an Automatic Sprinkler System.		
Other	Exit enclosures shall be enclosed per IBC 1022.		
Other	Per 1018.4; maximum length of dead end corridor shall be 20 feet in a non-sprinklered E occupancy and 50 feet in a sprinklered occupancy.		
<b>Notes:</b> 1. ADA – Compliance with ADA in the existing building is recommended if major construction is completed at this building. 2. Fire/Safety – Fire suppression system in the existing building is recommended if major work is done at this building.			
<b>Building Code Guidelines:</b> 2009 International Building Code; 2009 International Existing Building Code; 1020 ADA Standards for Accessible Design; Administrative Rules of Montana 24.301.351; 2000 NFPA 101 - Life Safety Code			

## McKinley Elementary School

### Recommendations

McKinley has undergone through an extensive renovation and addition in 2015.

Additional detail regarding scope and cost related to Educational Adequacy and Deferred Maintenance projects can be found in the following tables:

RECOMMENDED BUILDING COMPONENT (FAME) IMPROVEMENT DETAIL:		
Component	Comments	Estimated Cost
Building Envelope	Heat trace and install gutters	\$50,000
Interiors & Specialties	No recommended improvements	\$0
Mechanical, Electrical & Plumbing	Replace front end building temp control	\$10,000
Fire/Life Safety	No recommended improvements	\$0
Site	No recommended improvements	\$0
ADA	No recommended improvements	\$0
Does not include Soft Costs	Total	\$60,000

RECOMMENDED EDUCATIONAL ADEQUACY IMPROVEMENT DETAIL:					
Component:	Item Description:	Qty	UOM	Unit Cost	Cost Estimate
Addition & Remodel per Previous Study					
Estimated Cost *Does not include soft costs					\$0
TOTAL RECOMMENDED FACILITY IMPROVEMENT COST SUMMARY:					
Description:	Comments:				Cost Estimate
FAME					\$60,000
Educational Adequacy					\$0
Estimated Cost *Does not include soft costs					\$60,000

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## Meadowlark Elementary School

### Overview

Meadowlark School is a K-5 elementary school. The original 1965 building consisted of 17 classrooms, with a multi-purpose/cafeteria, library, kitchen, office area, workroom, teachers' lounge and toilet rooms. In 2005 4 more classrooms and a larger multi-purpose room were added. See below for portable construction. The site is generally flat. The building is a single story structure. It has a concrete foundation system with concrete slab on grade floor. The structural system is steel columns with wood beams, joists and decking in the original portion and steel beams and joists in the addition. The perimeter walls are mineral faced plywood on wood studs at original with block & metal on metal studs at the addition. The current roof on original portion is PVC w/ 5" rigid insulation installed in 2012. The roof on the addition is EPDM and metal w/ rigid insulation done in 2005. The walls have 2" batt insulation at older portion with 6" batt at addition.

221 29th St W  
Billings, MT 59102  
406) 281-6213

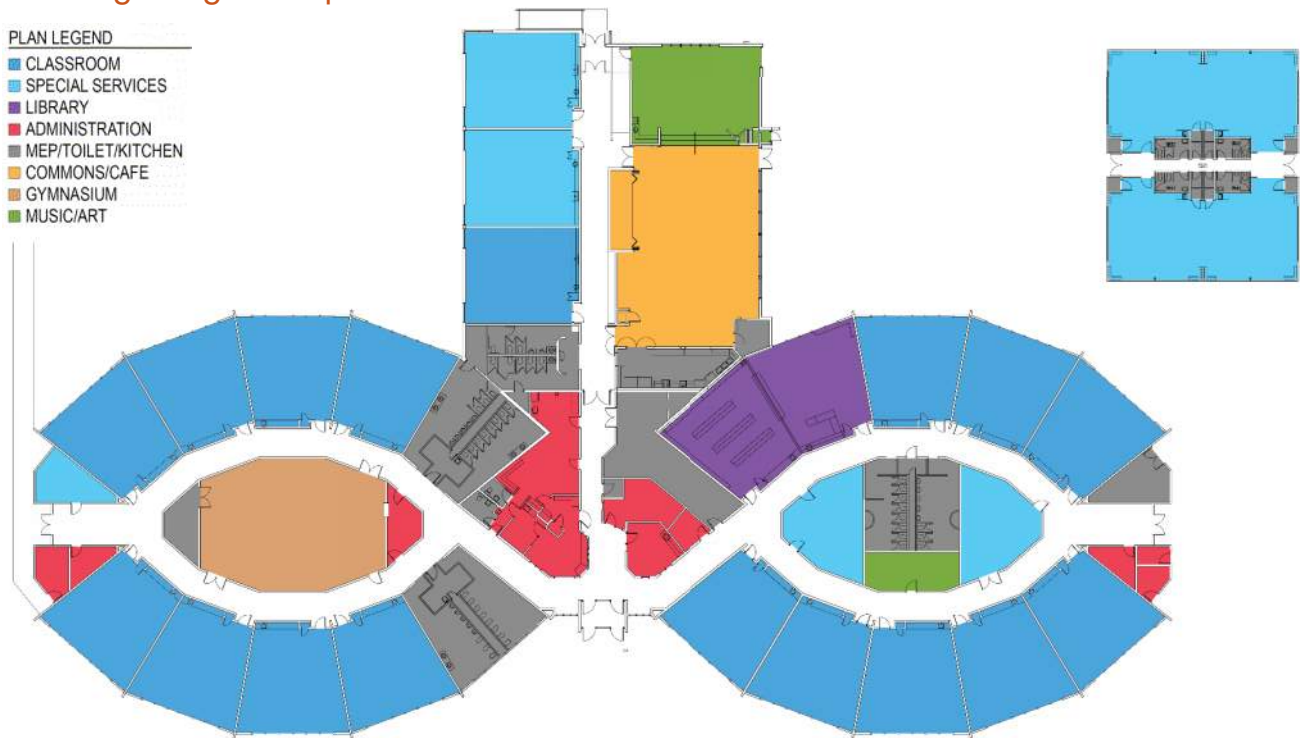
Year Built .....	1964
Renovations .....	Addition 2005
Portables .....	4
Site Acres .....	5.72
Building SF .....	44,200
Current Enrollment .....	480
Capacity .....	460
Target Capacity .....	426



### Existing Program Spaces

PLAN LEGEND

CLASSROOM
SPECIAL SERVICES
LIBRARY
ADMINISTRATION
MEP/TOILET/KITCHEN
COMMONS/CAFE
GYMNASIUM
MUSIC/ART

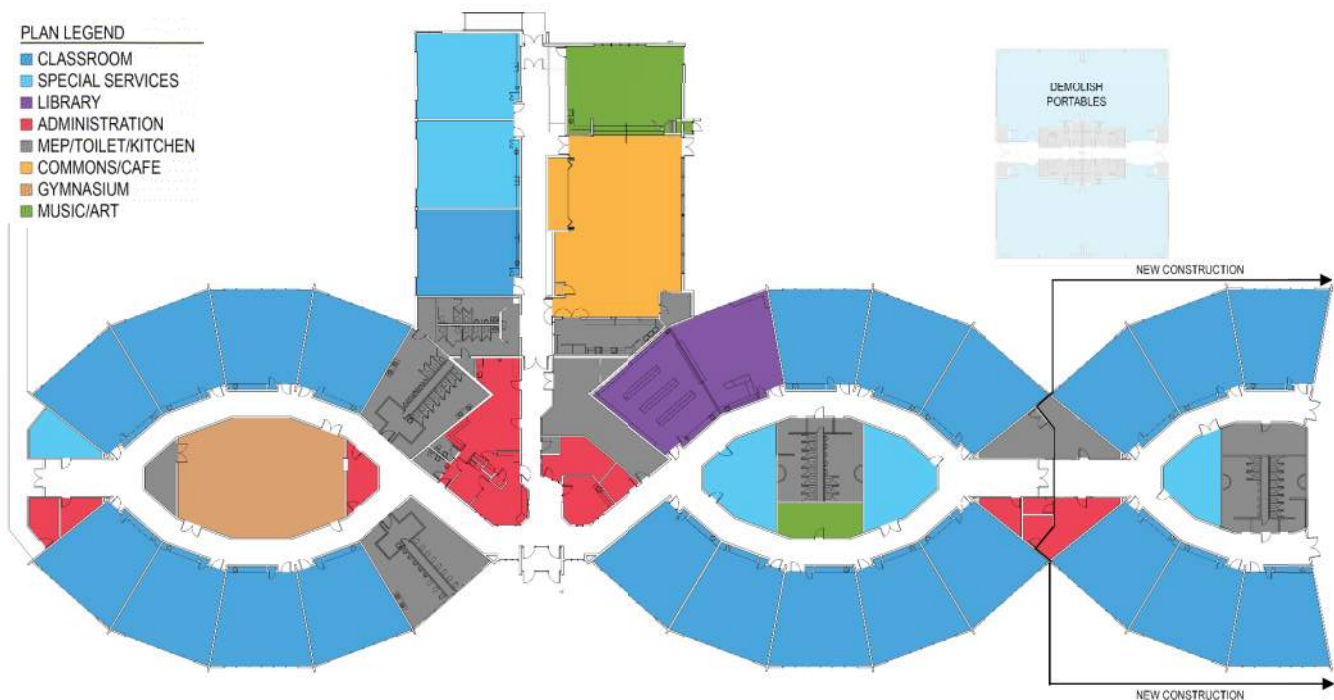


## Meadowlark Elementary School

### Program Space Recommendations

The district's goal of eliminating portable classrooms requires the addition of six classroom spaces based upon 2017 demographic projections. The recommendations include:

- Demolish existing portable classrooms and an addition of 6 new classrooms



Potential Floor Plan Diagram

## Meadowlark Elementary School

### Site Characteristics and Deferred Maintenance

Site Characteristics:			
Component		Cost	Priority
Lot Size	5.39 acres		
Building Area	41694 sf - 3751 sf Annex		
Topography	Flat		
Drainage	Fair		
Drop Off	Two large paved drop off areas with paved access to school		
Hardscape	Asphalt 63,680 sf		
Parking Surface	Priority is to seal coat bus lane.	\$4,395	\$4,395
	Asphalt 26,780 sf.	\$4,261	\$4,261
	Priority is to seal coat parking lot		
Stalls	53 stalls - 2 HC		
Paved Walks/Surfaces	Concrete 5,850 sf. Regraded drainage areas and replaced bad concrete.		
Steps, ramps, retaining walls	N/A		
Paved Sports Courts	Asphalt areas surrounding school with multiple activities marked out. Priority is to seal coat front playground.	\$8,884	\$8,884
Playgrounds	Priority is to add concrete valley to drain front playground.	\$2,400	\$2,400
	Gravel areas with playground equipment.	\$25,460	\$25,460
	Priority is to overlay back playground.		
Softscape	98,454 sf		
Play Fields	Smaller areas of grass adjoin the building and make up some portions of the site/ the school is adjacent to a large park with large grass fields. Added new playground toy / equipment.		
Landscaping	Some landscaping in addition to grass areas.		
Utilities	City services		
Fencing	Chain Link fencing separates the property from a drainage canal		

## Meadowlark Elementary School

### Building Components and Deferred Maintenance

School: Meadowlark Elementary School			
<b>Building Components (Main Building):</b>			
Component	Sub-Component: Condition Observed and Action to Fix	Cost	Priority
<b>Structural Systems</b>			
Footings/Foundation Walls	Concrete spread footings & stem wall foundation		
Floor Systems	Concrete Slab on grade		
Columns and Bearing Walls	Steel columns some areas of bearing walls		
Beams and Joists	Wood beams and joists w/ wood deck original, steel beams, trusses addition		
<b>Envelope</b>			
Roof	Original building area: PVC installed 2012. <b>Roof replaced.</b>		
	Mechanical room: EPDM installed 2005. <b>Roof replaced.</b>		
	New addition: Metal Installed 2005. <b>Roof replaced.</b>		
	Insulation 5" rigid @ 2012, 6" rigid @ addition		
Walls	Mineral Faced plywood at original building, Concrete block & metal at new portion of building		
Exterior Windows	Aluminum – Original Building. <b>Windows replaced.</b>	\$0	
	Single Glazed – Original building. <b>Windows replaced.</b>		
	Aluminum – Addition. <b>Windows replaced.</b>		
	Double Glazed – Addition. <b>Windows replaced.</b>		
Exterior Doors	Wood doors & wood frames original, metal at addition. <b>Exterior doors replaced with hollow metal doors.</b>		
Thermal Systems	2" original, 6" batt addition		
<b>Interior Finishes</b>			
Interior Walls	Facility Typical – Framed Gyp: Ranging from new in the addition to wearing and aging in original building		
	Original Building Classrooms/Faculty Toilets- misc. walls throughout original space – CMU (painted): good condition, suspect load bearing		
	Original building Typical – Framed Wall Wood Paneling: Painted in some locations very worn/aging. <b>Complete restroom remodel was done.</b>		
	Addition Hallways/Addition Toilets – Ceramic tile: New		
Ceilings	Addition Typical (student toilets original building) – ACT: New		
	Original Building Typical- Glue on Tile: Failing. <b>Work remains to be completed</b>	\$39,018	
	Classrooms/Multipurpose Addition – Exposed: New		
	Addition Hallway- Gyp: New		
Doors/Hardware/Windows	Addition – ADA compliant lever style – Original Building non ADA compliant knob style: wear/operational failures – Unit locks mortised into doors are difficult to replace		
	SCW throughout – ranging from new in addition to aging and worn in original building		
	HM – Same as above		

## Meadowlark Elementary School

### Building Components and Deferred Maintenance

Floor Finishes	Addition Typical – VCT: New		
	Original Building Typical – Carpet: aging/worn/ripping/stains (new in admin areas).		
	Various flooring upgrades/updates/replacements	\$0	
	Original Building Gym/Corridors/Misc small areas- Asbestos tile: Wearing/aging not deteriorating		
	Original Building Student Toilets- Ceramic Tile: Wear/age		
	Addition Toilets- Sheet Vinyl: New		
Wall Finishes	Paint good throughout		
<b>Specialties</b>			
Toilet Partitions	Metal in Original Building/Plastic in Addition		
Fixed Seating/Risers	Bleachers: N/A		
	Theater: N/A		
	Classroom/Lecture: N/A		
	Cafeteria: N/A		
Markerboards /Cabinets	All rooms have dry erase boards		
	Plastic laminate counters and cabinets in addition: New		
	Wood cabinets and laminate counters in original building: Aging/worn	\$41,947	
<b>HVAC System</b>			
Heating	Controls: Building is connected to district master controls.		
	Priority is to replace older DDC controls.	\$50,000	\$50,000
	BMS: Upgrade needed		
	Upgrade completed	\$0	
	Boiler/Furnace: Central boiler		
	Boilers/Pumps upgraded to district standard	\$0	
	Room Units: Unit ventilators w/ central exhaust orig., central air handlers / V.A.V. in addition		
	Unit ventilators replaced in original building		
Ventilating	Hydronic Piping: 4 pipe		
	Original building 2-pipe, addition 4-pipe		
	Alternative Fuel: No		
	Air Handler: At addition		
	Ductwork: Yes at addition and exhaust at original		
Cooling	Specialized Exhaust: Limited		
	Room Ventilators: Unit ventilators original		
	Fan coils provide ventilation interior rooms in original building		
Plumbing System	Central AC: Roof mounted chiller		
	Addition only		
	Room AC: No		
Fixtures	Hydronic Piping: 4 pipe		
	Sinks/Toilets/: New fixtures at addition, original fixtures at original building		
	Original building toilet rooms upgraded	\$0	
Supply Piping	Hot Water Generation: Central		
	Alternative Fuel: No		
	Piping: Varies		
Waste Piping	Pumps: Circulating		
	Piping: Varies		
	Pumps: No		

## Meadowlark Elementary School

### Building Components and Deferred Maintenance

Electrical System			
Building Service	400A, 120/208 3Ph upgrade needed Service Upgraded to 800A 120/208V-3P	\$0	
	Meter Base: coordinate with service upgrade Meter package upgraded		
	Generator: No		
	Alternative Source: No		
Lighting	Fixtures - PCB: No		
	Fixtures - Energy: T-8's T5's in the addition		
	Light Level Controls: Good @ new, limited at original Lighting controls acceptable per code	\$0	
	Occ/Daylight Sensor: Yes @ new Occupancy sensors added to all classrooms except addition	\$4,000	\$4,000
Distribution	Devices: In original, power & data upgrade is needed. Verify extent of power upgrades needed. Cost updated to reflect 2018 inflation.	\$226,444	
Voice/Data	Intercom: Adequate		
	Clock: Adequate		
	Telephone: Adequate		
	Data: New cabling installed in 2005 remodel, cables were spliced instead of home runs, Good wireless coverage, 2 ports per classroom. GPON system installed throughout.	\$0	
Conveying & Vertical Circulation			
Elevators, lifts, stairs ramps	Not applicable		
Safety System			
Egress	Exit Systems: Clear Paths of Egress		
Extinguishing System	Sprinkler: No automatic sprinkler. Work remains to be completed.	\$168,203	
	Cabinet Systems		
Exit/Emergency Lighting/Alarms	Exit Lights: Yes		
	Emergency Lighting: Yes		
	Smoke/Heat Detection: Updated		
	Fire Alarm System: Updated Original system components still in place but in conflict with current system. Need to add door magnet release to fire alarm system.	\$20,000	

## Meadowlark Elementary School

### Building Components and Deferred Maintenance - Portables

School: Meadowlark Elementary School			
The portable is a 4 classroom addition, which also includes 4 small toilet rooms. The building is of residential quality construction designed to be trucked to the site and set on a foundation. Roofs, walls and floors are wood joists / trusses and studs with residential grade finishes at least some of which were selected to allow the portable unit to be moved without cracking, etc. Heating is via a small residential forced air furnace for each classroom. Restrooms are very small and, again, of residential quality. Gas, electricity, water and sewer were typically extended from the existing school building.			
Building Components (Portable):		Cost	Priority
<b>Structural Systems</b>			
Footings/Foundation Walls	6" concrete perimeter foundation wall and center bearing wall with concrete pad spot footings		
Floor Systems	2 x 10 wood joists Minimal crawl space		
Columns and Bearing Walls	Exterior walls are 2 x 4 wood bearing walls. There is a double 2 x 4 bearing wall in the middle where the 2 units are joined. There is plywood sheathing.		
Beams and Joists	Roof system is 18" TJ's		
<b>Envelope</b>			
Roof	EPDM installed 1989. Needs reroof.	\$33,000	\$33,000
Walls	3/8" rock-faced plywood panels (Sanspray) over plywood		
Exterior Windows	Aluminum. Need to replace exterior windows. Single Glazed	\$43,436	\$43,436
Exterior Doors	HM Doors and Frames		
Thermal Systems	3 1/2" batt insulation at walls and 8" in roof		
<b>Interior Finishes</b>			
Interior Walls	1/4" Masonite wood panel over gyp bd: Poor Quality		
Ceilings	Glued on tile: Damage/failing/staining. Work remains to be completed.	\$9,872	
Doors/Hardware/Windows	Wood doors with non ADA hardware HM frames		
Floor Finishes	Toilets - VCT: Age/wear. Work remains to be completed. Classrooms - Carpet: Newer	\$2,507	
Wall Finishes	Paint		
<b>Specialties</b>			
Toilet Partitions	Metal		
Markerboards/Cabinets	All rooms have dry erase boards Plastic laminate counters aging/worn Wood cabinets aging/worn		
<b>HVAC Systems</b>			
Heating	Gas fired forced air furnaces with no master controls separate gas line from street. Work remains to be completed.	\$96,082	
Ventilating	Operable windows		
Cooling	N/A		
<b>Plumbing System</b>			
Fixtures	Fixtures are aging and in poor state of repair. Not ADA accessible. Work remains to be completed. Hot water generation - point of use Alternative fuel: No	\$25,803	
Supply Piping	Piping: copper - varies - supplied from main building Pumps: No		
Waste Piping	Piping varies - connected the main building sewer outside main building		

## Meadowlark Elementary School

### Building Components and Deferred Maintenance - Portables

<b>Electrical System</b>			
Building Service	From main building		
Lighting	T-8 lamps in annex.		
	Light Level Controls: Single switching. Work remains to be completed.	\$20,706	
Distribution	Inadequate.		
	Work remains to be completed.	\$28,648	
Voice/Data	Intercom: functioning properly		
	Clock		
	Telephone		
	Data: Annex has only one feed. Work remains to be completed.	\$29,122	
<b>Conveying &amp; Vertical Circulation</b>			
Elevators, lifts, stairs ramps	N/A		
<b>Safety System</b>			
Egress	Exit systems: Clear paths to egress		
Extinguishing System	Sprinkler: No automatic sprinkler system		
Exit/Emergency Lighting/ Alarms	Exit Lights: Yes		
	Emergency lighting: Yes		
	Smoke/Heat Detection: Upgraded		
	Fire Alarm System: Upgraded		

## Meadowlark Elementary School

### Code Review / ADA

Code Review/Americans with Disabilities Act (ADA): Main Building			
	Description	Cost	Priority
Site	Concrete walks connect both drop off areas to main entry of building. Paved play areas create accessible hardscape around the rear of school.		
Parking	2 Stalls		
Approach, Entry & Exit	Accessible approach and entrance		
Ramps	Interior ramp to stage area/classroom is accessible and meets code.		
Stairs	N/A		
Elevator/lift	N/A		
Assembly Areas	All Accessible		
Classroom Access	All classrooms are accessible, Original building doors have non-compliant "knob style" hardware. Work remains to be completed.	\$35,132	
Restroom Access	Toilets in addition are fully accessible		
Toilets/Restrooms	Toilets in addition are fully accessible		
Drinking Fountains	Addition has dual height fountains		
Counter Access	Accessible		
Signage per ADA	All signage in addition compliant		
Audio and Visual Alarms	ADA Guideline		
Obstacles	ADA Guideline		
Automatic Sprinkler System	None Observed		
Exit Corridors	Per IBC Table 1018.1; Corridor Rating of E Occupancy (Educational) buildings shall be 1 hour without an Automatic Sprinkler System. Exit corridor rating is reduced to 0 (zero) hours with an Automatic Sprinkler System.		
Other	Exit enclosures shall be enclosed per IBC 1022.		
Other	Per 1018.4; maximum length of corridor shall be 20 feet in a non- sprinklered E occupancy and 50 feet in a sprinklered occupancy.		
<b>Notes:</b> 1. ADA – Compliance with ADA in the existing building is recommended if major construction is completed at this building. 2. Fire/Safety – Fire suppression system in the existing building is recommended if major work is done at this building.			
<b>Building Code Guidelines:</b> 2009 International Building Code; 2009 International Existing Building Code; 1020 ADA Standards for Accessible Design; Administrative Rules of Montana 24.301.351; 2000 NFPA 101 - Life Safety Code			

## Meadowlark Elementary School

### Code Review / ADA - Portables

Code Review/Americans with Disabilities Act (ADA): Portable			
	Description	Cost	Priority
Site	Concrete walks connect both drop off areas to main entry of building. Paved play areas create accessible hardscape around the rear of school.		
Parking	2 Stalls		
Approach, Entry & Exit	Accessible approach and entrance		
Ramps	Interior ramp to stage area/classroom is accessible and meets code.		
Stairs	N/A		
Elevator/lift	N/A		
Assembly Areas	All Accessible		
Classroom Access	All classrooms are accessible, Non-compliant "knob style" hardware in portable.	\$6,756	
Restroom Access	Portable toilet rooms are inaccessible as is the corridor.	\$119,850	
Toilets/Restrooms	Toilets in addition are fully accessible		
Drinking Fountains	Addition has dual height fountains		
Counter Access	Accessible		
Signage per ADA	All signage in addition compliant		
Audio and Visual Alarms	ADA Guideline		
Obstacles	ADA Guideline		
Automatic Sprinkler System	None Observed		
Exit Corridors	Per IBC Table 1018.1; Corridor Rating of E Occupancy (Educational) buildings shall be 1 hour without an Automatic Sprinkler System. Exit corridor rating is reduced to 0 (zero) hours with an Automatic Sprinkler System.		
Other	Exit enclosures shall be enclosed per IBC 1022.		
Other	Per 1018.4; maximum length of corridor shall be 20 feet in a non- sprinklered E occupancy and 50 feet in a sprinklered occupancy.		
<b>Notes:</b> 1. ADA – Compliance with ADA in the existing building is recommended if major construction is completed at this building. 2. Fire/Safety – Fire suppression system in the existing building is recommended if major work is done at this building.			
<b>Building Code Guidelines:</b> 2009 International Building Code; 2009 International Existing Building Code; 1020 ADA Standards for Accessible Design; Administrative Rules of Montana 24.301.351; 2000 NFPA 101 - Life Safety Code			

## Meadowlark Elementary School

### Recommendations

Meadowlark received a large addition in 2005 which helped improve the heating plant and the technology in the building.

Additional detail regarding scope and cost related to Educational Adequacy and Deferred Maintenance projects can be found in the following tables:

RECOMMENDED BUILDING COMPONENT (FAME) IMPROVEMENT DETAIL:		
Component	Comments	Estimated Cost
Building Envelope		
	Replace roof and exterior windows in Annex	\$76,436
Interiors & Specialties		
	No recommended improvements	\$0
Mechanical, Electrical & Plumbing		
	Replace older DDC controls, install occ/light sensors in classrooms in original building	\$54,000
Fire/Life Safety		
	No recommended improvements	\$0
Site		
	Seal coat bus lane, parking lot and front playground, add concrete for playground drainage, overlay parking lot	\$45,400
ADA		
	No recommended improvements	\$0
Does not include Soft Costs	Total	\$175,836

RECOMMENDED EDUCATIONAL ADEQUACY IMPROVEMENT DETAIL:					
Component:	Item Description:	Qty	UOM	Unit Cost	Cost Estimate
Site Improvements					
Total Site:		0			\$0
Addition					
Six (6) Classroom Addition	Demolish** Portable Classrooms, Construct six (6) Classroom Addition	5400	SF	\$210	\$1,134,000
Subtotal:		5400	SF	\$210	\$1,134,000
Gross Area:		1890	SF	\$210	\$396,900
Total Addition:		7290	SF	\$210	\$1,530,900
Remodel					
Total Remodel:		0			\$0
Subtotal:					\$1,530,900
Estimated Cost *Does not include soft costs ** Does not include demolition costs					\$1,530,900
TOTAL RECOMMENDED FACILITY IMPROVEMENT COST SUMMARY:					
Description:	Comments:				Cost Estimate
FAME					\$175,836
Educational Adequacy					\$1,530,900
Estimated Cost *Does not include soft costs ** Does not include demolition costs					\$1,706,736

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## Miles Avenue Elementary School

### Overview

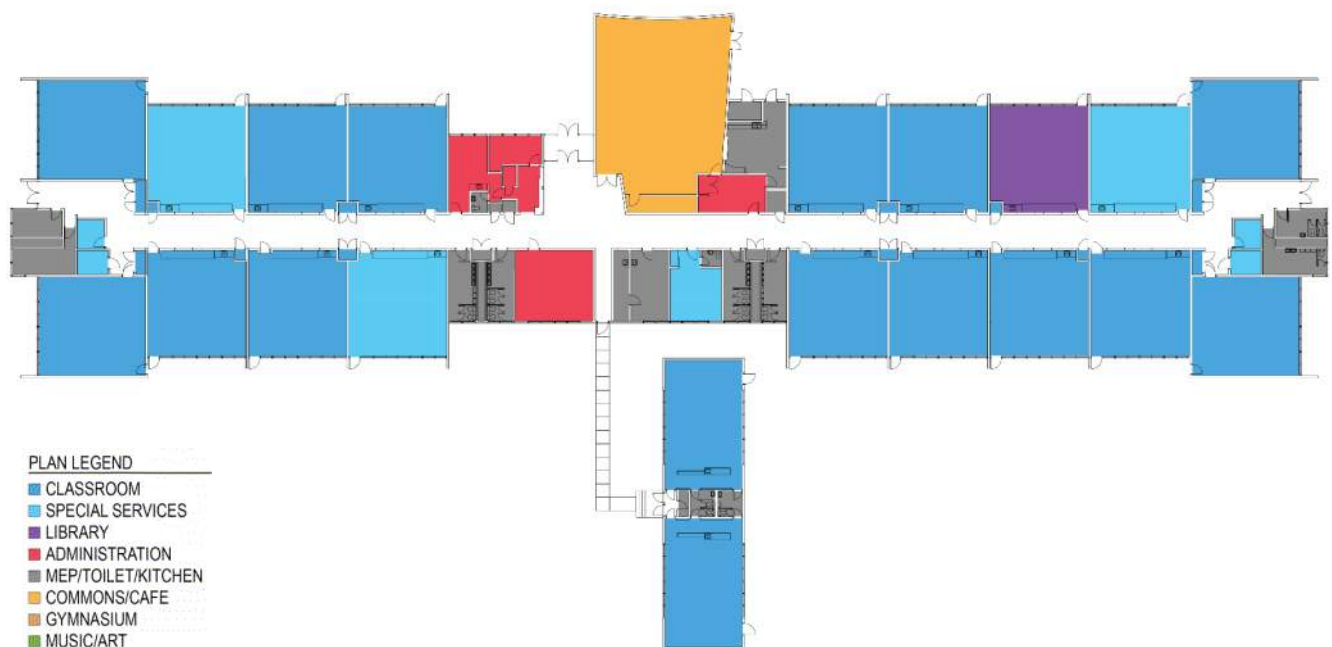
Miles Avenue School is a K-5 elementary school. The original building consisted of 14 classrooms, with a gymnasium/cafeteria, kitchen, office area, workroom, teachers' lounge and toilet rooms. Within 2 years, 4 more classrooms were added along with additional toilet rooms and storage areas. In 1965, a separate self-contained portable structure was added. It contains two additional classrooms, two restrooms and a mechanical room. The site is generally flat and located in an established neighborhood, close in.

1601 Miles Ave  
Billings, MT 59102  
(406) 281-6214

Year Built .....	1955
Renovations .....	Addition 1957
Portables .....	2
Site Acres .....	5.02
Building SF .....	30,081
Current Enrollment .....	267
Capacity .....	329
Target Capacity .....	304



### Existing Program Spaces

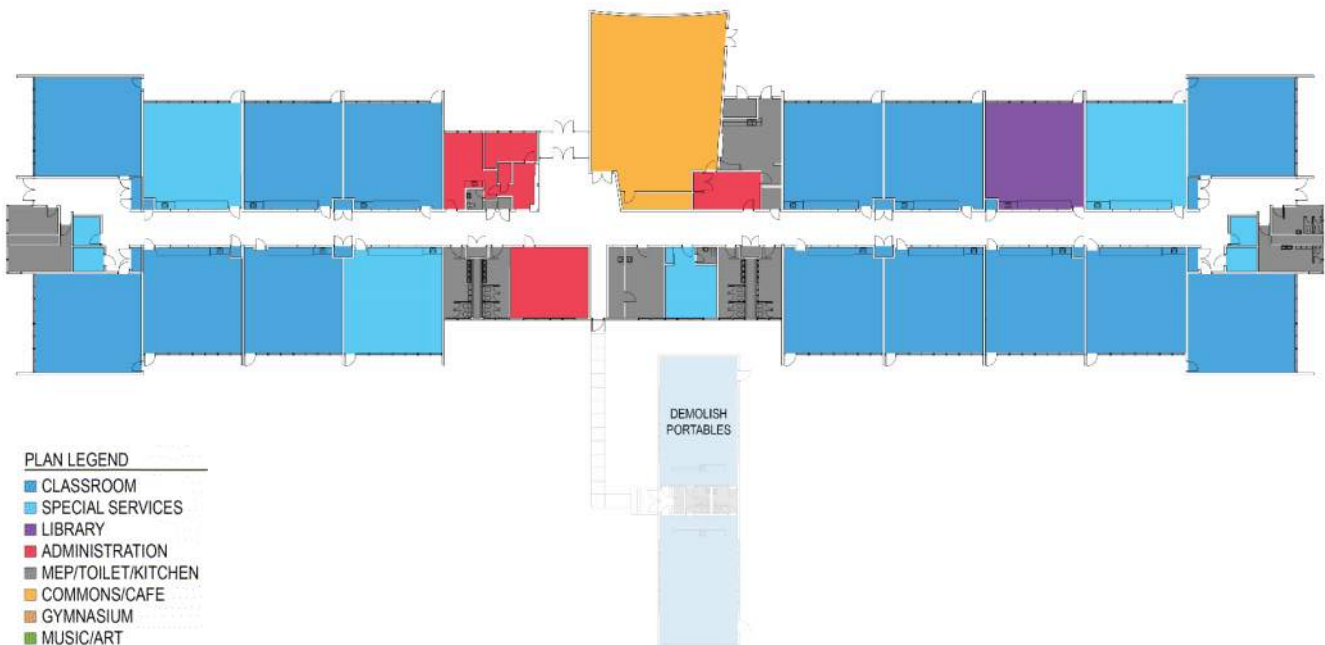


## Miles Avenue Elementary School

### Program Space Recommendations

The district's goal of eliminating portable classrooms is shown below. The recommendations include:

- Demolish existing portable classrooms



### Potential Floor Plan Diagram

## Miles Avenue Elementary School

### Site Characteristics and Deferred Maintenance

Site Characteristics:			
Component		Cost	Priority
Lot Size	5.02 Acres		
Building Area	29,315 sf plus portable		
Topography	Flat site		
Drainage	Poor Drainage. No drainage improvements made.		
Drop Off	Long area at the main entrance to the school serves as the Drop off point. A continuous curb limits accessibility.		
Hardscape	Asphalt 17,670 sf		
Parking Surface	Asphalt 19,270 sf. Parking lot was overlayed. Still needs seal coat & crack seal as part of life cycle maintenance.	\$6,000	\$6,000
Stalls	25 Total Stalls including 2 HC Stalls. Install bollards at kitchen delivery area.	\$2,000	
Paved Walks/Surfaces	Concrete 6,350 sf fair to poor – heaving at front of building needs attention. Replaced sidewalk, added ramp for delivery vehicles.	\$0	
Steps, ramps, retaining walls	An asphalt ramp provides access over the initial concrete curb at the edge of the parking area. An additional concrete ramp with metal edging and handrails provides access to the front door. Priority is to add ADA access for the annex.	\$20,000	\$20,000
	Priority is to replace broken & uneven sidewalk.	\$10,000	\$10,000
	Asphalt areas with limited activities marked out	\$26,576	\$26,576
Paved Sports Courts			
Playgrounds	Gravel		
Softscape	148,583 sf		
Play Fields	Grass		
Landscaping	Limited other than grass		
Utilities	City services		
Fencing	Limited chain link		

## Miles Avenue Elementary School

### Building Components and Deferred Maintenance

School: Miles Avenue Elementary School			
<b>Building Components:</b>			
Component	Sub-Component: Condition Observed and Action to Fix	Cost	Priority
<b>Structural Systems</b>			
Footings/Foundation Walls	Concrete spread footings & stem wall foundation		
Floor Systems	Concrete slab on grade with pipe tunnel @ perimeter		
Columns and Bearing Walls	Masonry & wood columns with areas of bearing walls		
Beams and Joists	Glu lams and wood joists		
<b>Envelope</b>			
Roof	Hypalon 23-21yrs old – replacement is planned by 2014. <b>Roof replaced.</b>		
	Built up Roof on Gym 33yrs old – replacement planned by 2014. <b>Roof replaced.</b>		
	Mansard roof. <b>Mansard roof replaced.</b>		
	Insulation type not known- 1" rigid if original		
Walls	<b>Brick walls showing some discoloration and spalling/sprinkler deposits</b>	<b>\$4,502</b>	
Exterior Windows	Steel. <b>Windows replaced.</b>	<b>\$0</b>	
	Single Pane Glass. <b>Windows replaced.</b>		
Exterior Doors	Door at Main Entry: Newer storefront with auto opener. <b>Exterior doors replaced.</b>		
	Ext. Doors in classrooms are HM in fair condition- wear/age. <b>Exterior doors replaced.</b>		
	Overhead Door		
Thermal Systems	Insulation: None, possible vermiculite		
<b>Interior Finishes</b>			
Interior Walls	Majority of Facility – Painted Block: Good condition		
	Kitchen – Assumed Plaster: Fair shape - worn		
	Toilets – Glazed Block : numerous holes from previous acces. Mounting. <b>Full remodel to toilet rooms.</b>		
	Office /Classroom– Wood Paneling on framed wall: Fair condition - worn		
Ceilings	<b>Majority of Building – Glued on Tile: Used throughout the building and is in varying states of failure most areas seem to be releasing and are held in place by screws – overall poor condition</b>	<b>\$57,867</b>	
	Library - Lay-In: Some ACT some Plastic below lights and skylights – very poor condition due to heavy wear and failing grid/tiles mainly below skylights		
	Corridor Ends -Wood / Specialty: Wood T&G in good condition. <b>Replaced ceiling in corridors.</b>		
	Toilets - Plaster / GWB: Good Condition		
	Kitchen/Work Room – Painted Wood: Wood painted white in fair condition (not T&G)		
Doors/Hardware	All Hardware is non ADA compliant – rounded knobs at each door		
	Interior Doors – SC Wood Doors: fair condition - worn		
	Frame –Wood door frames are in good condition		
Relites	Wood relites high on hallway walls in good conditioned, light transfer is blocked by location of storage on classroom side of wall in most locations.		

## Miles Avenue Elementary School

### Building Components and Deferred Maintenance

Floors	Hallways, Lounge, Kitchen. - Resilient tile (asbestos): All in poor condition, very worn. <b>Resilient tile floors replaced.</b>	\$0	
	Classrooms/Library/Office - Carpet: Very Poor – stained, rippling. <b>Carpet floors replaced.</b>	\$0	
	Toilets- Ceramic Tile: Poor Condition – wear, staining , poor seal		
	Multipurpose Room- Wood: Older wood floor in excellent condition		
	Aux spaces – Carpet: In several auxiliary spaces new carpet has been installed		
<b>Specialties</b>			
Toilet Partitions	Metal/Other: All toilet stalls are older very worn metal, except for one boys room which has all new toilet stalls (Composite). <b>Full remodel to toilet rooms.</b>		
Fixed Seating/Risers	Bleachers: N/A		
	Theater: N/A		
	Classroom/Lecture: N/A		
	Cafeteria: N/A		
Markerboards/Cabinets	Chalkboard/Markerboard: Markerboards throughout		
	Cabinets: Wood Base Cabinets all showing signs of wear/age		
	Countertops: Plam counters all showing signs of age/wear		
<b>HVAC System</b>			
Heating	Controls: Individual Controls for several small units with underground ducts – no centralized or computer controls for HVAC systems. <b>Classroom controls updated to DDC standards</b> <b>High efficiency boilers provided to replace gas fired heating</b> <b>Complete replacement of Trane controls desired.</b>	\$55,000	
	Hydronic Piping: no		
	Alternative Fuel: no		
Ventilating	Air Handler: No		
	Ductwork: Limited to underground supply		
	Specialized Exhaust: Limited		
	Room Ventilators: No		
Cooling	Central AC: No A/C		
	Room AC: No		
	Hydronic Piping: No		
<b>Plumbing System</b>			
Fixtures	Sinks/Toilets/showers: Fixtures are very worn showing signs of heavy use – some parts no longer readily available <b>Toilet rooms upgraded. Priority is to modify 3 compartment sink and install hand wash sink in kitchen.</b>	\$4,000	\$4,000
	Hot Water Generation: Central		
	Alternative Fuel: No		

## Miles Avenue Elementary School

### Building Components and Deferred Maintenance

Electrical System			
Building Service	400A, 120/240 1Ph upgrade needed Upgraded to 800A 120/208V-3P	\$0	
	Meter Base: Coordinate with service upgrade Upgraded		
	Generator: No		
	Alternative Source: No		
Lighting	Fixtures - PCB: No		
	Fixtures - Energy: Building uses T-8 lamps in all fixtures Building lighting upgraded to LED		
	Light Level Controls: Limited Lighting controls upgraded to dimming	\$0	
	Occ/Daylight Sensor: No Occupancy sensors added		
Distribution	Service Panels: Service is maxed out all panels are fully loaded, need for upgrade in service is present. Additional panels added		
	Devices: Power & data distribution upgrade needed Additional classroom receptacles provided	\$0	
Voice/Data	Intercom: Functioning without problem		
	Clock: Central Clock System does not work		
	Telephone: All phones upgraded		
	Data: Cabling is older, 1 port per classroom, Numerous power issues. GPON data system installed throughout.	\$0	
Conveying & Vertical Circulation			
Elevators, lifts, stairs ramps	No elevator or lifts.		
Safety System			
Egress	Exit Systems: clear paths of egress		
Extinguishing System	Sprinkler: No Automatic Sprinkler system	\$108,501	
	Cabinet Systems		
Exit/Emergency Lighting/Alarms	Exit Lights: Yes		
	Emergency Lighting: Yes		
	Smoke/Heat Detection: Upgraded		
	Fire Alarm System: Upgraded. Fire alarm system upgraded to addressable, but no voice evac. Verify.		

## Miles Avenue Elementary School

### Building Components and Deferred Maintenance - Portables

<b>Portable Building Description:</b>			
There is a small portable building providing 2 classrooms and toilet rooms. It is constructed of wood and set on an elevated foundation of concrete or light weight concrete masonry units. It is designed to be lifted from the foundation in 2 or 3 sections and relocated to another site by conventional house moving equipment. It is connected together by expansion joints and clips. The roof is comprised of engineered trusses with batt insulation. The walls are 2x4 construction with batt insulation, 5/8" plywood and cedar siding. The floors are plywood on 2x12 wood joists. The ceilings are gypsum board. The walls are gypsum board and wood paneling. The flooring is VAT and sheet vinyl.			
<b>Building Components: (Portable)</b>			
Component	Sub-Component: Condition Observed and Action to Fix	Cost	Priority
<b>Structural Systems</b>			
Footings/Foundation Walls	Concrete footings and foundation walls		
Floor Systems	Plywood decking on 2x12 floor joists		
	Crawl space		
Columns and Bearing Walls	2x4 exterior bearing walls		
Beams and Joists	Engineered wood truss roof framing system		
<b>Envelope</b>			
Roof	Rolled roofing installed in 1991 – replacement planned by 2014.		
	Annex roof replaced.		
	Batt insulation in attic space – 8"		
Walls	Wood siding (Cedar). Work still needs to be completed	\$10,376	
Exterior Windows	Wood.		
	Work still needs to be completed	\$20,049	
	Single glazed		
Exterior Doors	Wood		
Thermal Systems	3 1/2" batt insulation in walls and 8" batt insulation at roof		
<b>Interior Finishes</b>			
Interior Walls	Classroom has wood paneling and gyp bd: Aging		
	Toilet rooms have gyp board – non-durable		
Ceilings	Gypsum board typical throughout		
Doors/Hardware	Knob style hardware – non ADA		
	Wood doors		
Floor Finishes	Classroom areas – carpet- rippling and worn.		
	Carpet flooring replaced.	\$0	
	Toilets – vinyl: worn, stained		
<b>Specialties</b>			
Toilet Partitions	Metal: Poor condition		
Markerboards/Cabinets	Markerboards in both classrooms		
	Wood cabinets: Wearing		
	Countertop: Plastic laminate: Wearing		
<b>HVAC System</b>			
Heating	Gas fired forced air furnace, no energy management		
	Hydronic fan coils replace furnaces	\$0	
Ventilating	Operable windows		
	Ventilation air connected to room fan coils		
Cooling	NA		
<b>Plumbing System</b>			
Fixtures	Fixtures are old and failing	\$12,901	
	Hot water generation: Point of use		
Supply Piping	Piping: Copper Pumps: No		
Waste Piping	Piping varies		

## Miles Avenue Elementary School

### Building Components and Deferred Maintenance - Portables

Electrical System			
Building Service	From main building Feeder and service updated		
Lighting	Original fluorescent	\$13,802	
Distribution	Inadequate Additional classroom receptacles added	\$0	
Voice/Data	Data: Portable building has only one feed to building. GPON data system added to portable building.	\$0	
	Inadequate distribution		
Conveying & Vertical Circulation			
Elevators, lifts, stairs ramps	Stairs to building- non compliant handrails. Priority is to add ADA ramp to annex. See Site Characteristics.		
Safety System			
Egress	Clear path of egress, two exits from each classroom		
Extinguishing System	Sprinkler: No automatic sprinkler system		
Exit/Emergency Lighting/Alarms	Exit lights: Yes		
	Emergency lights: Yes		
	Smoke and heat detection: Upgraded		
	Fire alarm system. Fire alarm system upgraded to addressable, but no voice evac.		

## Miles Avenue Elementary School

### Code Review / ADA

Code Review/Americans with Disabilities Act (ADA): Main Building			
	Description	Cost	Priority
Site	Ramps leading from parking/drop off area to front door are inadequate and should be replaced. An asphalt ramp provides access over the initial concrete curb at the edge of the parking area. An additional concrete ramp with metal edging and handrails provides access to the front door.		
Parking	2 Handicap Parking Stalls. <i>Work still needs to be completed.</i>	\$528	
Approach, Entry & Exit	Exit doors at classrooms exit on to gravel. Concrete pads are needed.	\$2,274	\$2,274
Ramps	2 ramps leading to main entry are non-compliant – asphalt ramp has no detectable warnings and appears very crude – concrete ramp @ main entrance appears to be too narrow. <i>Work still needs to be completed.</i>	\$13,982	\$13,982
Stairs	Stair tread/riser heights, guardrails, handrails compliance with Building Code and ADA		
Elevator/lift	NA		
Assembly Areas	Assembly areas are accessible		
Classroom Areas	Main building classrooms accessible with non-compliant “knob style” hardware. <i>Work still needs to be completed.</i>	\$45,266	
Restroom Access	Restroom access at staff toilet is non-compliant and the room itself does not offer space for maneuverability. <i>Work still needs to be completed.</i>	\$7,402	\$7,402
Toilets/Restrooms	No doors on toilets, maneuverability and access are compliant. Only one ADA stall in entire building (boys). No accessible signage at any restroom. <i>ADA stalls have been added to both boys and girls bathrooms.</i>	\$0	
Drinking Fountains	One accessible drinking fountain was observed.		
Counter Access	No accessible counter in lunch area.		
Signage per ADA	None		
Audio and Visual Alarms			
Obstacles			
Automatic Sprinkler System	No sprinkler installed at time of assessment		
Exit Corridors	Per IBC Table 1018.1; Corridor Rating of E Occupancy (Educational) buildings shall be 1 hour without an Automatic Sprinkler System. Exit corridor rating is reduced to 0 (zero) hours with an Automatic Sprinkler System.		
Other	Exit enclosures shall be enclosed per IBC 1022.		
Other	Per 1018.4; maximum length of corridor shall be 20 feet in a non- sprinklered E occupancy and 50 feet in a sprinklered occupancy.		
<b>Notes:</b> 1. ADA – Compliance with ADA in the existing building is recommended if major construction is completed at this building. 2. Fire/Safety – Fire suppression system in the existing building is recommended if major work is done at this building.			
<b>Building Code Guidelines:</b> 2009 International Building Code; 2009 International Existing Building Code; 1020 ADA Standards for Accessible Design; Administrative Rules of Montana 24.301.351; 2000 NFPA 101 - Life Safety Code			

## Miles Avenue Elementary School

### Code Review / ADA - Portables

Code Review/Americans with Disabilities Act (ADA): Portable			
	Description	Cost	Priority
Site	Ramps leading from parking/drop off area to front door are inadequate and should be replaced. An asphalt ramp provides access over the initial concrete curb at the edge of the parking area. An additional concrete ramp with metal edging and handrails provides access to the front door.		
Parking	2 Handicap Parking Stalls.		
Approach, Entry & Exit	Portable entry is non-accessible (needs ADA access to annex).		
Ramps	2 ramps leading to main entry are non-compliant – asphalt ramp has no detectable warnings and appears very crude – concrete ramp @ main entrance appears to be too narrow. Work still needs to be completed.	\$28,787	\$28,787
Stairs	Stair tread/riser heights, guardrails, handrails compliance with Building Code and ADA		
Elevator/lift	NA		
Assembly Areas			
Classroom Areas	Portable classrooms are non-accessible and have “knob style” hardware. Work still needs to be completed.	\$13,101	
Restroom Access	Restroom access at staff toilet is non-compliant and the room itself does not offer space for maneuverability.		
Toilets/Restrooms	No doors on toilets, maneuverability and access are compliant. Only one ADA stall in entire building (boys). No Accessible signage at any restroom. ADA stalls have been added to both boys and girls bathrooms.	\$0	
Drinking Fountains	One accessible drinking fountain was observed.		
Counter Access			
Signage per ADA	None		
Audio and Visual Alarms			
Obstacles			
Automatic Sprinkler System	No sprinkler installed at time of assessment		
Exit Corridors	Per IBC Table 1018.1; Corridor Rating of E Occupancy (Educational) buildings shall be 1 hour without an Automatic Sprinkler System. Exit corridor rating is reduced to 0 (zero) hours with an Automatic Sprinkler System.		
Other	Exit enclosures shall be enclosed per IBC 1022.		
Other	Per 1018.4; maximum length of corridor shall be 20 feet in a non- sprinklered E occupancy and 50 feet in a sprinklered occupancy.		
<b>Notes:</b> 1. ADA – Compliance with ADA in the existing building is recommended if major construction is completed at this building. 2. Fire/Safety – Fire suppression system in the existing building is recommended if major work is done at this building.			
<b>Building Code Guidelines:</b> 2009 International Building Code; 2009 International Existing Building Code; 1020 ADA Standards for Accessible Design; Administrative Rules of Montana 24.301.351; 2000 NFPA 101 - Life Safety Code			

## Miles Avenue Elementary School

### Recommendations

Additional detail regarding scope and cost related to Educational Adequacy and Deferred Maintenance projects can be found in the following tables:

RECOMMENDED BUILDING COMPONENT (FAME) IMPROVEMENT DETAIL:		
Component	Comments	Estimated Cost
Building Envelope	No recommended improvements	\$0
Interiors & Specialties	No recommended improvements	\$0
Mechanical, Electrical & Plumbing	Modify 3-comp sink, add hand wash station to kitchen (main building)	\$4,000
Fire/Life Safety	No recommended improvements	\$0
Site	Add ADA access to Annex, replace uneven/broken sidewalks, pave sports courts	\$62,576
ADA	Add entry ramp to Annex, add concrete pads and ramps to entrances, staff restroom ADA compliant	\$52,445
Does not include Soft Costs	<b>Total</b>	<b>\$119,021</b>

RECOMMENDED EDUCATIONAL ADEQUACY IMPROVEMENT DETAIL:					
Component:	Item Description:	Qty	UOM	Unit Cost	Cost Estimate
Site Improvements					
Total Site:		0			\$0
Addition					
Subtotal:		0			\$0
Gross Area:		0			\$0
Total Addition:		0			\$0
Remodel					
Total Remodel:		0			\$0
Subtotal:					\$0
Estimated Cost *Does not include soft costs **Does not include demolition costs					\$0
TOTAL RECOMMENDED FACILITY IMPROVEMENT COST SUMMARY:					
Description:	Comments:				Cost Estimate
FAME					\$119,021
Educational Adequacy					\$0
Estimated Cost *Does not include soft costs					\$119,021

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## Newman Elementary School

### Overview

Newman School is a K-5 elementary school. The original 1953 building consisted of 12 classrooms, with a gymnasium/cafeteria, kitchen, office area, workroom, teachers' lounge and toilet rooms. Four years later 4 classrooms were added. The site is generally flat to slightly sloping. The building is a single story structure. It has a concrete foundation system with concrete slab floor on steel joists over a crawl space. The structural system is steel columns with wood beams and wood joists. The perimeter walls are brick on CMU w/ some panel finish. The current roof is EPDM installed in 2006. Roof insulation is believed to be 5" rigid and the walls have 2" rigid insulation.

605 S Billings Blvd.  
Billings, MT 59101  
(406) 281-6215

Year Built .....	1953
Renovations .....	Addition 1957
Portables .....	0
Site Acres .....	4.55
Building SF .....	28,130
Current Enrollment .....	222
Capacity .....	263
Target Capacity .....	243



### Existing Program Spaces

PLAN LEGEND	
<span style="color: blue;">■</span>	CLASSROOM
<span style="color: lightblue;">■</span>	SPECIAL SERVICES
<span style="color: purple;">■</span>	LIBRARY
<span style="color: red;">■</span>	ADMINISTRATION
<span style="color: grey;">■</span>	MEP/TOILET/KITCHEN
<span style="color: orange;">■</span>	COMMONS/CAFE
<span style="color: yellow;">■</span>	GYMNASIUM
<span style="color: green;">■</span>	MUSIC/ART



## Newman Elementary School

### Site Characteristics and Deferred Maintenance

Site Characteristics:			
Component		Cost	Priority
Lot Size	4.55 acres		
Building Area	30,040 sf		
Topography	Flat to slightly sloped		
Drainage	Fair		
Drop Off	Large drop off area adjacent to the front of the school, with designated pull out		
Hardscape	Asphalt 23,025 sf – cracking		
Parking Surface	Asphalt 30,780 sf – poor condition cracking & crumbling. Priority is to overlay parking lot.	\$32,450	\$32,450
Stalls	32 stalls 1 HC		
Paved Walks/Surfaces	Concrete 2,400 sf – fair to good	\$0	
Steps, ramps, retaining walls	All entrances to the building have steps, Main Entrance has non-compliant ramp to doors. Added ADA ramp to entry. Remodeled steps and railings to east.		
Paved Sports Courts	Asphalt play areas with multiple activities marked out. Asphalt is cracking and crumbling. Priority is to seal coat playground.	\$9,521	\$9,521
Playgrounds	One large gravel playground with equipment		
Softscape	50,972 sf		
Play Fields	Large grass fields adjacent to paved areas provide grass play areas		
Landscaping	Some landscaping exists around building		
Utilities	City services		
Fencing	Chain link fencing marks edges of property in some areas		

## Newman Elementary School

### Building Components and Deferred Maintenance

School: Newman Elementary School			
<b>Building Components:</b>			
Component	Sub-Component: Condition Observed and Action to Fix	Cost	Priority
<b>Structural Systems</b>			
Footings/Foundation Walls	Concrete spread footing and stem wall foundation		
Floor Systems	Concrete slab on steel joists over crawl space		
Columns and Bearing Walls	Steel columns with limited areas of bearing walls		
Beams and Joists	Wood glu lam beam with wood joists an / or structural decking		
<b>Envelope</b>			
Roof	EPDM Installed 2006		
	Insulation assumed 5" rigid		
Walls	Brick and Metal – minor masonry cracking		
Exterior Windows	Aluminum: New		
	Double glazed: New		
Exterior Doors	HM Doors, Panic hardware, exterior pulls non ADA		
Thermal Systems	Insulation 2" rigid		
<b>Interior Finishes</b>			
Interior Walls	Facility Typical- Concrete Block (painted): Good condition		
	Toilets/Offices (partial)/Misc - Framed - Plaster: Aging/normal wear		
Ceilings	Facility Typical – Glued on tile: Throughout. New ceilings in corridors.	\$0	
Doors/Hardware/Windows	SCW Doors – Aging/wear		
	Wood Frames – Aging/wear		
	Non-ADA knob style hardware – Mortised locks are difficult to replace		
	Clearstory glass blocks – gym and some classrooms: age/wear		
Floor Finishes	Facility Typical – Asbestos Tile: Very worn, in some areas tiles are worn through finish – low traffic areas in better condition. Asbestos tile replaced.	\$0	
	Classrooms/Library/Admin: Carpet: staining/wear, carpets in varying condition based on age and traffic. Stained and worn carpets replaced / updated.	\$0	
	Gym – Wood: Aging but maintained well		
	Wall Finishes		
Wall Finishes	Wood Wall Panels in some Admin and some classrooms aging but in good condition		
<b>Specialties</b>			
Toilet Partitions	Mixture of original and new composite. Toilet rooms remodeled and meet ADA standards		
Fixed Seating/Risers	Bleachers: N/A		
	Theater: N/A		
	Classroom/Lecture: N/A		
	Cafeteria: N/A		
Markerboards/Cabinets	All rooms have marker boards		
	Mix of age and material in cabinets, all functional but wearing and aging		
	New reception desk.		
<b>HVAC System</b>			
Heating	Controls: Building is connected to district master controls. Priority is to replace building temp control front end.	\$10,000	\$10,000
	BMS: Acceptable		
	Boiler/Furnace: Central boiler good condition Boiler system upgraded to district standards		
	Room Units: Unit ventilators – need new controls Unit controls upgraded		
	Hydronic Piping: 4 pipe		
	Alternative Fuel: No		

## Newman Elementary School

### Building Components and Deferred Maintenance

Ventilating	Air Handler: Air handler at multi-purpose		
	Ductwork: Limited		
	Specialized Exhaust: Limited		
	Room Ventilators: Yes		
Cooling	Central AC: Yes		
	Room AC: No		
	Hydronic Piping: 4 pipe		
<b>Plumbing System</b>			
Fixtures	Sinks/Toilets/Showers: Fixtures are original to building, showing signs of wear, difficulty replacing parts.		
	Toilet rooms updated and meet ADA standards.		
	Priority is to modify 3 compartment sink in kitchen.	\$1,000	\$1,000
	Hot Water Generation: Central		
	Alternative Fuel: No		
	Piping: Copper, varies		
Supply Piping	Pumps: No		
Waste Piping	Piping: varies		
	Pump: No		
	Generator: No		
	Alternative Source: No		
<b>Electrical System</b>			
Building Service	800A, 120/208 3Ph		
	Meter Base		
	Generator: No		
	Alternative Source: No		
Lighting	Fixtures - PCB: No		
	Fixtures - Energy: T-8's		
	Lighting has been upgraded to LED		
	Light Level Controls: Limited		
	Controls upgraded to dimmable with occupancy sensors	\$0	\$0
	Occ/Daylight Sensor: No		
	Sensors added		
Distribution	Devices: Power & data distribution upgrade needed		
	Additional receptacles added to classroom spaces.		
Voice/Data	Intercom: Acceptable		
	Clock: Acceptable		
	Telephone: Recently upgraded		
	Data: 1 Port per classroom, wireless is not consistent throughout building GPON installed throughout building.	\$0	\$0
<b>Conveying &amp; Vertical Circulation</b>			
Elevators, lifts, stairs ramps	Not applicable		
	Exterior stairs not in full compliance w/ ADA or IBC		
<b>Safety System</b>			
Egress	Exit Systems: Clear Paths of Egress		
Extinguishing System	No fire sprinklers	\$111,185	
	Cabinet Systems		
Exit/Emergency Lighting/Alarms	Exit Lights: Yes		
	Emergency Lighting: Yes		

Fire Alarm System: Upgraded.

Fire alarm system upgraded to addressable, but no voice evac.

## Newman Elementary School

### Code Review / ADA

Code Review/Americans with Disabilities Act (ADA):			
	Description	Cost	Priority
Site	There are no accessible routes into the building, all entrances require steps up and ramp at main entrance is non-compliant with ADA		
Parking	1 HC stall		
Approach, Entry & Exit	Entrance is not accessible – see above		
Ramps and Stairs	Ramp at entrance is not accessible. Front ramp is code compliant Stairs into building do not have code compliant railings Work still needs to be done.	\$10,000	\$10,000
Elevator/lift	N/A		
Assembly Areas	Area is accessible		
Classroom Access	Classrooms are not accessible due to width of classroom doorways. Doors also have non-compliant hardware. Work still needs to be done.	\$55,606	
Restroom Access	Access to restrooms meets ADA Guidelines		
Toilets/Restrooms	1 stall observed to be compliant. Restrooms were redone in 2015.	\$0	
Drinking Fountains	No dual height fountains observed but low mounted ADA fountains are in place		
Counter Access	36" high lunch counter		
Signage per ADA	None Observed		
Audio and Visual Alarms	Yes		
Obstacles	None other than noted		
Automatic Sprinkler System	Not fire sprinklered		
Exit Corridors	Per IBC Table 1018.1; Corridor Rating of E Occupancy (Educational) buildings shall be 1 hour without an Automatic Sprinkler System. Exit corridor rating is reduced to 0 (zero) hours with an Automatic Sprinkler System.		
Other	Exit enclosures shall be enclosed per IBC 1022.		
Other	Per 1018.4; maximum length of corridor shall be 20 feet in a non-sprinklered E occupancy and 50 feet in a sprinklered occupancy.		
Other	Exit enclosures shall be enclosed per IBC 1022.		
Other	Per 1018.4; maximum length of dead end corridor shall be 20 feet in a non-sprinkled E occupancy and 50 feet in a sprinkled occupancy. Exit way passes through intervening space.		
<b>Notes:</b> 1. ADA – Compliance with ADA in the existing building is recommended if major construction is completed at this building. 2. Fire/Safety – Fire suppression system in the existing building is recommended if major work is done at this building.			
<b>Building Code Guidelines:</b> 2009 International Building Code; 2009 International Existing Building Code; 1020 ADA Standards for Accessible Design; Administrative Rules of Montana 24.301.351; 2000 NFPA 101 - Life Safety Code			

# 4 K-8 FACILITIES

## Newman Elementary School

### Recommendations

Additional detail regarding scope and cost related to Educational Adequacy and Deferred Maintenance projects can be found in the following tables:

RECOMMENDED BUILDING COMPONENT (FAME) IMPROVEMENT DETAIL:		
Component	Comments	Estimated Cost
Building Envelope	No recommended improvements	\$0
Interiors & Specialties	No recommended improvements	\$0
Mechanical, Electrical & Plumbing	Replace front end building temp control, modify 3-comp sink	\$11,000
Fire/Life Safety	Install fire sprinklers	\$0
Site	Overlay parking lot, seal coat playground	\$41,971
ADA	Install code-compliant stair rails, code-compliant door hardware	\$10,000
Does not include Soft Costs	<b>Total</b>	<b>\$62,971</b>

RECOMMENDED EDUCATIONAL ADEQUACY IMPROVEMENT DETAIL:					
Component:	Item Description:	Qty	UOM	Unit Cost	Cost Estimate
Site Improvements					
Total Site:		0			\$0
Addition					
Subtotal:		0			\$0
Gross Area:		0			\$0
Total Addition:		0			\$0
Remodel					
Total Remodel:		0			\$0
Subtotal:					\$0
Estimated Cost <i>*Does not include soft costs</i>					\$0
TOTAL RECOMMENDED FACILITY IMPROVEMENT COST SUMMARY:					
Description:	Comments:				Cost Estimate
FAME					\$62,971
Educational Adequacy					\$0
Estimated Cost <i>*Does not include soft costs</i>					\$62,971

## Orchard Elementary School

### Overview

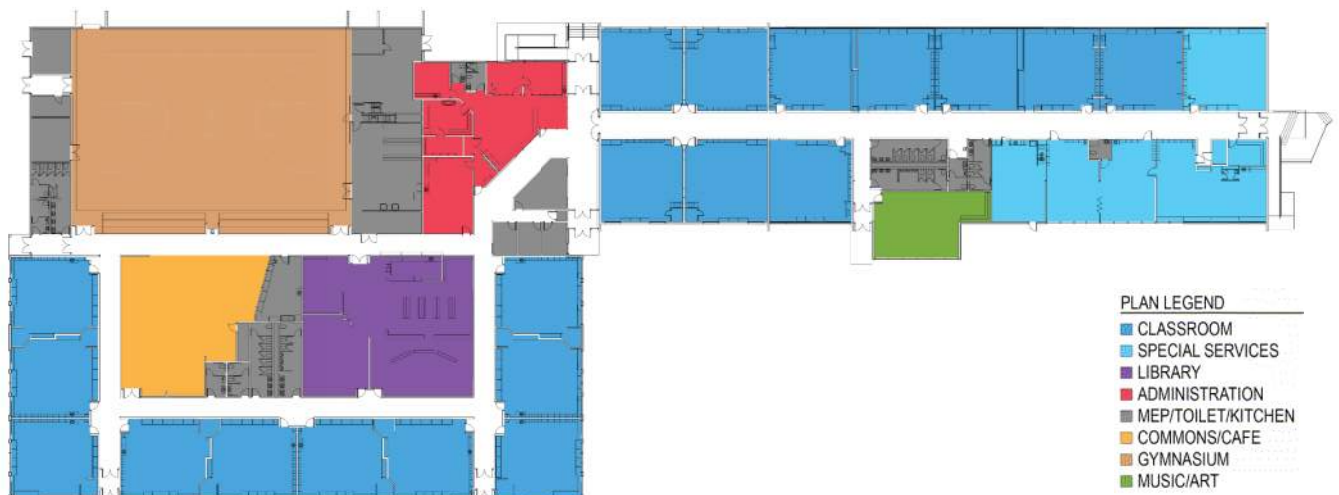
Orchard School is a K-5 elementary school. It is also designed to serve as a regional safety center. The original historic school building was demolished as part of the 2005 additions project. The oldest portion remaining was the original addition circa 1956 and consisted of 7 classrooms, and some office area, workroom, teachers' lounge and toilet rooms. 4 classrooms were added to the west end of this in 1986. In 2005 the original historic building was removed. Portions of the original addition were modified to add 3 class rooms and a music room. At this time a major addition was constructed adding 10 class rooms, computer lab, library, commons, gymnasium and administrative areas. The site is generally flat to slightly sloping. The building is a single story structure. It has a concrete foundation system. The older portion has a concrete slab floor on steel joists over a crawl space. The newer addition is slab on grade. The older structural system is steel columns with wood beams and wood joists. Additions are predominantly steel beams and joists. Older perimeter walls are brick on wood framing w/ some panel finish. Additions are brick and metal siding on metal studs. The current roof varies from 1992 hypalon on older portions to EPDM and metal circa 2005. Roof insulation is 6" rigid on newer portion. Walls have little or no insulation at older with 6" batt at newer.

120 Jackson St  
Billings, MT 59101  
(406) 281-6216

Year Built ..... 1956  
Renovations ..... Addition 1986, 2005  
Portables ..... 0  
Site Acres ..... 8.79  
Building SF ..... 58,100  
Current Enrollment ..... 367  
Capacity ..... 438  
Target Capacity ..... 405



### Existing Program Spaces



## Site Characteristics and Deferred Maintenance

Site Characteristics:			
Component		Cost	Priority
Lot Size	8.79 acres		
Building Area	61,502 sf		
Topography	Flat		
Drainage	Fair to Good		
Drop Off	Two Paved areas for drop off, each with designated pull out areas		
Hardscape	Minimal		
Parking Surface	Asphalt 31,470 sf good condition		
Stalls	49 stalls 1 HC		
Paved Walks/Surfaces	Concrete 33,320 sf good condition		
Steps, ramps, retaining walls			
Paved Sports Courts	Asphalt basketball courts		
Playgrounds	Gravel play areas with playground equipment		
Softscape	269,337 sf		
Play Fields	Large Grass Areas adjacent to the school extend to a large park – fields include soccer and baseball		
Landscaping	Extensive areas of landscaping surround the school, raised planters surround the school, southerly planter overgrow		
Utilities	City services		
Fencing	Some chain link fencing		

## Orchard Elementary School

### Building Components and Deferred Maintenance

School: Orchard Elementary School			
<b>Building Components:</b>			
Component	Sub-Component: Condition Observed and Action to Fix	Cost	Priority
<b>Structural Systems</b>			
Footings/Foundation Walls	Concrete spread footing and stem wall foundation		
Floor Systems	Concrete slab over crawl space at older portions with slab on grade at recent addition		
Columns and Bearing Walls	Steel columns with limited areas of bearing walls		
Beams and Joists	Older portion is glu lam and wood joists, newer is steel beam and joists.		
<b>Envelope</b>			
Roof	Hypalon – Installed 1992 (original portion of building). Roof replaced Metal – Installed 2004 (addition). EPDM – Installed 2004 (addition). EPDM roof updated in 2016. 6" rigid insulation at newer, unknown at older	\$0	
Walls	Older exterior walls are brick veneer and panel siding – newer is brick and metal siding. Older brick shows minor cracking in original portion of building		
Exterior Windows	Aluminum Double Glazed		
Exterior Doors	HM Exterior Doors in HM Frames		
Thermal Systems	Minimal or none at older, 6" batt at newer		
<b>Interior Finishes</b>			
Interior Walls	Facility Typ- Framed Gyp: New throughout Original Classrooms/Halls- Painted CMU: Good condition		
Ceilings	Facility Typical – ACT: New throughout Gym/Library Partial/Multi Purpose Partial/Classrooms Partial - Exposed: Painted white Original Building – Glue on Tile: Aging	\$3,237	
Doors/Hardware/Windows	Lever style ADA hardware on all doors – auto openers on older corridor doors not functioning SCW doors new Wood frames remain on doors in original building HM Frames new HM Relites new		
Flooring	Minimal flooring updates / replacements.		
<b>Specialties</b>			
Toilet Partitions	Metal New		
Fixed Seating/Risers	Bleachers: N/A Theater: N/A Classroom/Lecture: N/A Cafeteria: N/A		
Markerboards/Cabinets	Chalkboard/Markerboard: All rooms have markerboards All Casework is new plastic laminate		
<b>HVAC System</b>			
Heating	The Building is connected to the District master controls BMS: Acceptable New Central Plant in the addition serves both Classrooms utilize fan coil units in the crawlspace Hydronic Piping: 4 pipe. Boilers replaced. Alternative Fuel: No		

## Orchard Elementary School

### Building Components and Deferred Maintenance

Ventilating	Air Handler: New building equipped with central air handling units		
	Ductwork: 2004 building system variable air volume with reheat connected to central air handlers		
	Specialized Exhaust: Yes		
	Room Ventilators: Yes at older portion Classrooms equipped with crawlspace fan coils		
Cooling	Central AC: Yes		
	Room AC: No		
	Hydronic Piping: 4 pipe		
<b>Plumbing System</b>			
Fixtures	All fixtures new or upgraded		
	Hot Water Generation: Central		
	Alternative Fuel: No		
Supply Piping	Piping: Copper, varies		
	Pumps: Circulating		
Waste Piping	Piping pvc, varies		
	Pump: No		
<b>Electrical System</b>			
Building Service	1200A, 120/208 3 Ph		
	Meter Base: Acceptable		
	Generator: No		
	Alternative Source: No		
Lighting	Fixtures - PCB: No		
	Building uses all T8 fixtures		
	Light Level Controls: Acceptable		
	Occ/Daylight Sensor: Partial	\$7,500	\$7,500
Distribution	Devices: Power and data distribution upgrade needed in older portion	\$25,000	\$25,000
Voice/Data	Intercom: New		
	Clock: New		
	Telephone: New		
	Data: 4-8 ports per room, good wireless coverage, good power to computer lab GPON system added throughout building	\$0	
<b>Conveying &amp; Vertical Circulation</b>			
Elevators, lifts, stairs ramps	Not applicable		
<b>Safety System</b>			
Egress	Exit Systems: Clear paths of egress		
Extinguishing System	Sprinkler: Yes building is sprinkled		
	Cabinet Systems		
Exit/Emergency Lighting/Alarms	Exit Lights: Yes		
	Emergency Lighting: Yes		
	Smoke/Heat Detection: Upgraded		
	Fire Alarm System: Upgraded.		
	Fire alarm system upgraded to addressable, but not voice evac.		

## Orchard Elementary School

### Code Review / ADA

Code Review/Americans with Disabilities Act (ADA):			
	Description	Cost	Priority
Site	Access to the building is provided by a system of paved walks. Several entrances are above the grade plane, but are made accessible with concrete ramps all of which comply with ADA standards.		
Parking	1 HC Parking Stall		
Approach, Entry & Exit	Doors, Hardware, and signage all comply. Approaches are paved and several entries are made accessible with ramps.		
Ramps	Entries with concrete ramps and steel pipe handrails all comply with ADA		
Stairs	Stairs around building exterior were observed to be code compliant		
Elevator/lift	N/A		
Assembly Areas	All Accessible		
Classroom Access	All classrooms are accessible		
Restroom Access	Access is provided to restrooms		
Toilets/Restrooms	Restrooms in addition have fully compliant stalls etc.		
Drinking Fountains	Dual Height Fountain observed		
Counter Access	Counter Heights were compliant		
Signage per ADA	ADA signage observed in building		
Audio and Visual Alarms	Audio visual alarms were observed		
Obstacles	ADA Guideline		
	On some Classroom doors		
Automatic Sprinkler System	Building is fire sprinkled		
Exit Corridors	Acceptable.		
<b>Notes:</b> 1. ADA – Compliance with ADA in the existing building is recommended if major construction is completed at this building. 2. Fire/Safety – Fire suppression system in the existing building is recommended if major work is done at this building.			
<b>Building Code Guidelines:</b> 2009 International Building Code; 2009 International Existing Building Code; 1020 ADA Standards for Accessible Design; Administrative Rules of Montana 24.301.351; 2000 NFPA 101 - Life Safety Code			

## Orchard Elementary School

### Recommendations

Orchard received a large addition and was extensively remodeled in 2005. Major improvements were made to the building and the site.

Additional detail regarding scope and cost related to Educational Adequacy and Deferred Maintenance projects can be found in the following tables:

RECOMMENDED BUILDING COMPONENT (FAME) IMPROVEMENT DETAIL:		
Component	Comments	Estimated Cost
Building Envelope	No recommended improvements	\$0
Interiors & Specialties	No recommended improvements	\$0
Mechanical, Electrical & Plumbing	Update lighting sensors, update power & data distribution devices	\$32,500
Fire/Life Safety	No recommended improvements	\$0
Site	No recommended improvements	\$0
ADA	No recommended improvements	\$0
Does not include Soft Costs	Total	\$32,500

School: Orchard Elementary School					
RECOMMENDED EDUCATIONAL ADEQUACY IMPROVEMENT DETAIL:					
Component:	Item Description:	Qty	UOM	Unit Cost	Cost Estimate
Site Improvements					
Total Site:		0			\$0
Addition					
Subtotal:		0	SF	\$210	\$0
Gross Area:		0	SF	\$210	\$0
Total Addition:		0	SF	\$210	\$0
Remodel					
Total Remodel:		0			\$0
Subtotal:					\$0
Estimated Cost *Does not include soft costs					\$0
TOTAL RECOMMENDED FACILITY IMPROVEMENT COST SUMMARY:					
Description:	Comments:	Cost Estimate			
FAME		\$32,500			
Educational Adequacy		\$0			
Estimated Cost *Does not include soft costs					\$32,500

## Poly Drive Elementary School

### Overview

Poly Drive School is a K-5 elementary school. The original 1952 building consisted of 8 classrooms, with a gymnasium/cafeteria, kitchen, office area, workroom, teachers' lounge and toilet rooms. Three years later 5 classrooms were added. A second addition came in 1960 adding 6 more classrooms. The site is generally sloping. The building is a single story structure. It has a concrete foundation system. Floor is typically a concrete slab with areas of slab on grade, pipe tunnel and crawl space. The structural system is steel and wood columns with wood beams and wood joists. The perimeter walls are brick on CMU or wood framing w/ some plaster finish. The current roof is mineral surface install in 2002. Roof insulation is believed to be 5" rigid and the walls have 1" batt insulation

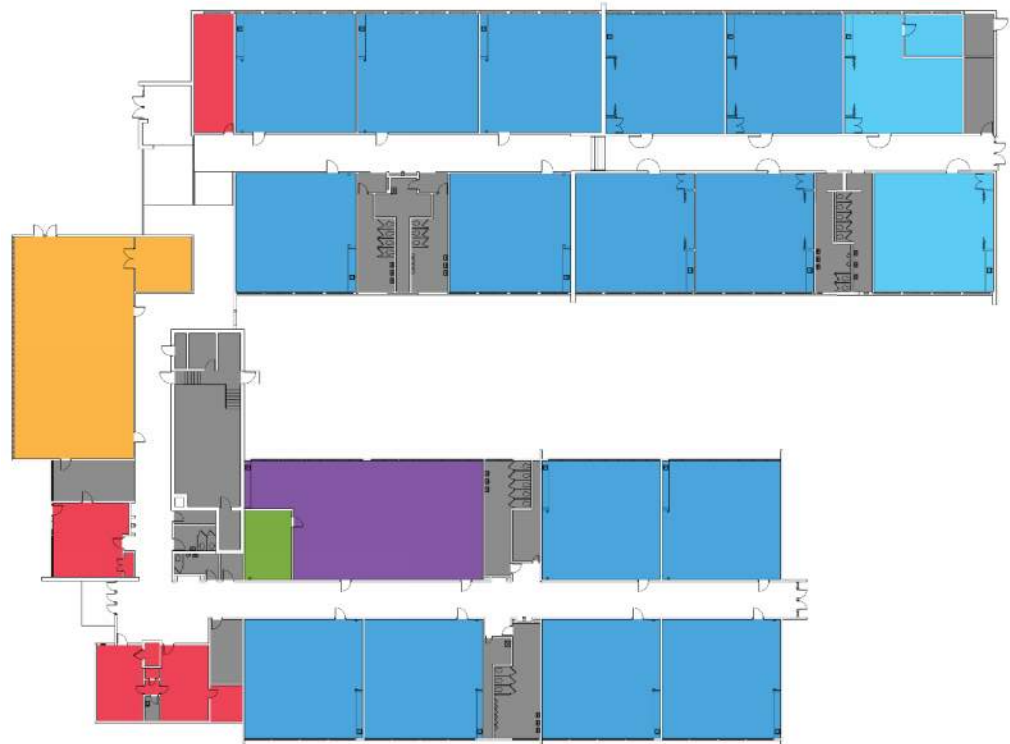
2410 Poly Drive  
Billings, MT 59102  
(406) 281-6217

Year Built .....	1952
Renovations ....	Addition 1955, 1960
Portables .....	0
Site Acres .....	5.03
Building SF .....	32,480
Current Enrollment .....	342
Capacity .....	329
Target Capacity .....	304



### Existing Program Spaces

PLAN LEGEND	
<span style="color: blue;">■</span>	CLASSROOM
<span style="color: lightblue;">■</span>	SPECIAL SERVICES
<span style="color: purple;">■</span>	LIBRARY
<span style="color: red;">■</span>	ADMINISTRATION
<span style="color: grey;">■</span>	MEP/TOILET/KITCHEN
<span style="color: orange;">■</span>	COMMONS/CAFE
<span style="color: brown;">■</span>	GYMNASIUM
<span style="color: green;">■</span>	MUSIC/ART



## Site Characteristics and Deferred Maintenance

Site Characteristics:			
Component		Cost	Priority
Lot Size	5.03 acres		
Building Area	34,388 sf		
Topography	Sloping downward from North to South		
Drainage	Fair to Good – Minor ponding near boiler room		
Drop Off	Large drop off area adjacent to the main entry – poor circulation. City regraded vehicular exiting from the site at alley.		
Hardscape	Asphalt 30,000 sf – some cracking		
Parking Surface	Asphalt 25,700 sf – minor cracking. Asphalt has been repaired, still needs future maintenance (seal coat / crack seal every 5 years)	\$15,420	
Stalls	40 Stalls 2 HC		
Paved Walks/Surfaces	Concrete 5,300 sf, ceramic tile plaza. Priority is to replace broken & uneven sidewalks.	\$3,776	\$3,776
Steps, ramps, retaining walls			
Paved Sports Courts	Asphalt play areas are marked with several activities – asphalt is cracking and in need of repair. Priority is to seal coat playground.	\$9,338	\$9,338
Playgrounds	Several gravel playgrounds with play equipment		
Softscape	113,584 sf		
Play Fields	Large grass area at one end of property		
Landscaping	Some landscaping present		
Utilities	City services		
Fencing	Chain link fencing marks some property boundaries. Remove chainlink fence in parking lot and add 5 parking blocks.	\$2,000	

## Poly Drive Elementary School

### Building Components and Deferred Maintenance

Building Components:			
Component	Sub-Component: Condition Observed and Action to Fix	Cost	Priority
<b>Structural Systems</b>			
Footings/Foundation Walls	Concrete spread footing and stem wall foundation Some cracking in foundation		
Floor Systems	Concrete slab on grade w/pipe tunnel. Concrete on bar joists with crawl space at 1955 addition. Floor cracking observed in one toilet		
Columns and Bearing Walls	Steel columns, wood and cmu bearing walls		
Beams and Joists	Glu lam beams		
<b>Envelope</b>			
Roof	Mineral Surfaced Modified Installed 2002. Roof replaced 2017. Insulation unknown, 5" rigid would be typical for district		
Walls	Brick – minor cracking		
Exterior Windows	Aluminum - new. Windows replaced. Double Paned Glass - new. Windows replaced.		
Exterior Doors	HM doors and Frames. Exterior doors replaced.		
Thermal Systems	1" batt or none		
<b>Interior Finishes</b>			
Interior Walls	Facility Typical – Framed Plaster: Minor damage/wear Entry/Addition Hallway/Storage – Brick or Painted Block: Good condition Hallways – Wood: Good condition minor aging/wear		
Ceilings	Facility Typical – ACT: newer in good condition Facility Typical – Glue on Tile: wearing/aging Storage/Counseling – Painted Wood	\$9,051	
Doors/Hardware/Windows	Doors have knob style hardware non-ADA SCW doors – aging but in good condition		
Floor Finishes	Hall/Nurse/Some Classrooms/Kitch – VCT: Varying conditions. Deficient VCT flooring replaced. Some Classrooms/Admin/Library/Counseling – CPT: Varying conditions. Deficient carpet areas replaced. Kitch/Hall/Storage- Asbestos: Wearing/aging. Deficient asbestos flooring replaced. Toilets/Entry Ramps – Ceramic Tile: Varying conditions. Restroom flooring replaced. Gym - Wood: Good condition	\$0	
Wall Finishes	Paint in good condition throughout FRP: Kitchen FRP varies Ceramic/Stone/Tile: Ceramic Tile in Toilets wearing/patched/aging		
<b>Specialties</b>			
Toilet Partitions	Metal Older one toilet has very low stalls. Staff restrooms remodeled to be ADA compliant in 2016.		
Fixed Seating/Risers	Bleachers: N/A Theater: N/A Classroom/Lecture: N/A Cafeteria: N/A		
Markerboards/Cabinets	All rooms have markerboards Casework is a mix of wood and plam in varying conditions – all functional		

## Poly Drive Elementary School

### Building Components and Deferred Maintenance

HVAC System			
Heating	Controls: Poly is connected to district master controls. Priority is to replace building temp control front end.	\$10,000	\$10,000
	BMS: Acceptable System upgraded to district standard		
	Boiler/Furnace: Newer boilers Boilers/pumps upgraded to district standard		
	Room Units: Newer unit ventilators		
	Hydronic Piping: 4 pipe		
	Alternative Fuel: No		
Ventilating	Air Handler: At multi-purpose (RTU)		
	Ductwork: Minimal		
	Specialized Exhaust: Limited		
	Room Ventilators: Unit ventilators Install crawl space venting	\$15,000	
Cooling	Central AC: Yes Chiller has refrigerant leak. Unit needs to be replaced	\$35,000	\$35,000
	Room AC: No		
	Hydronic Piping: 4 pipe		
Plumbing System			
Fixtures	Some fixtures had updated controls (flush valves on some toilets and urinals) – flush valves are not compatible with fixtures. Staff restrooms remodeled to be ADA compliant in 2016. Priority is to modify 3 compartment sink in kitchen.	\$1,000	\$1,000
	Hot Water Generation: Central Alternative Fuel: No		
Supply Piping	Piping: Copper, varies Pumps: Circulating		
Waste Piping	Piping: Varies Pump: No		
Electrical System			
Building Service	800A, 120/208 3 Ph	\$0	
	Meter Base		
	Generator: No		
	Alternative Source: No		
Lighting	Fixtures - PCB: No		
	Fixtures - Energy: T-8's Light fixtures still from 1996 energy retrofit	\$185,000	
	Light Level Controls: Limited	\$0	
	Occ/Daylight Sensor: Partial Occupancy sensor added to classrooms and corridors		
Distribution	Devices: Power & data distribution upgrade needed	\$65,000	\$65,000
Voice/Data	Intercom: Needs replacement		
	Clock: Acceptable		
	Telephone: Acceptable		
	Data: Computer lab, some computers in library, 1 port per room, Wireless is partial with more coverage planned, Some Power issues. GPON fiber optic data system added to school.	\$0	

## Poly Drive Elementary School

### Code Review / ADA

Code Review/Americans with Disabilities Act (ADA):			
	Description	Cost	Priority
Site	The main entrance to the building is accessible due to concrete poured to eliminate the step up. One other exterior door is accessible via a concrete ramp with a non-compliant hand rail. This door opens into a hallway which is tiered with ramps connecting the different levels, these ramps however are non-compliant. <b>3 interior ramps, at least 2 are non-compliant, and would require a wheelchair lift for compliance.</b>		
Parking	2 HC stalls – van accessible		
Approach, Entry & Exit	See site description above.		
Ramps	In addition to the exterior ramp mentioned above in the site description, there are several interior ramps connecting different tiers of the building. No interior ramps are ADA compliant, all grades are too steep and no handrails comply. <b>Updated cost reflects (3) new ADA platform lifts.</b>	\$36,000	\$36,000
Stairs	Stairs around and inside the building appear to comply with building code, while all handrails do not.		
Elevator/lift	N/A		
Assembly Areas	The Gym/Multipurpose room is accessible, as well as minimal classrooms and two smaller toilet rooms. The rest of the building is not accessible.		
Classroom Access	Only rooms at the same level as entry doors are accessible. All other spaces are accessed by a series of non-accessible ramps. Door hardware is knob style <b>Hardware still needs replacing.</b>	\$39,538	
Restroom Access	Limited to two small toilet rooms. <b>Staff bathrooms updated to meet ADA accessibility.</b>		
Toilets/Restrooms	No fixtures or stalls are accessible. <b>Restrooms updated to meet ADA accessibility.</b>	\$0	
Drinking Fountains	None accessible. <b>Drinking fountain added.</b>	\$0	
Counter Access	36" high counter at Lunch		
Signage per ADA	None		
Audio and Visual Alarms	Yes		
Obstacles	None other than noted		
Automatic Sprinkler System	None observed		
Exit Corridors	Acceptable.		
Other	Exit enclosures shall be enclosed per IBC 1022.		
Other			
<b>Notes:</b> 1. ADA – Compliance with ADA in the existing building is recommended if major construction is completed at this building. 2. Fire/Safety – Fire suppression system in the existing building is recommended if major work is done at this building.			
<b>Building Code Guidelines:</b> 2009 International Building Code; 2009 International Existing Building Code; 1020 ADA Standards for Accessible Design; Administrative Rules of Montana 24.301.351; 2000 NFPA 101 - Life Safety Code			

# 4 K-8 FACILITIES

## Poly Drive Elementary School

### Recommendations

Additional detail regarding scope and cost related to Educational Adequacy and Deferred Maintenance projects can be found in the following tables:

RECOMMENDED BUILDING COMPONENT (FAME) IMPROVEMENT DETAIL:		
Component	Comments	Estimated Cost
Building Envelope	No recommended improvements	\$0
Interiors & Specialties	No recommended improvements	\$0
Mechanical, Electrical & Plumbing	Replace front end building temp control, replace chiller, modify 3-comp sink, power & data distribution upgrade needed	\$111,000
Fire/Life Safety	No recommended improvements	\$0
Site	Replace uneven/broken sidewalks, seal coat playground	\$13,114
ADA	Add 3 new ADA platform lifts	\$36,000
Does not include Soft Costs		Total \$160,114

RECOMMENDED EDUCATIONAL ADEQUACY IMPROVEMENT DETAIL:					
Component:	Item Description:	Qty	UOM	Unit Cost	Cost Estimate
Site Improvements		0	SF		\$0
Total Site:		0	SF		\$0
Addition					
Multi-purpose Room Addition		0	SF	\$210	\$0
Subtotal:		0	SF	\$210	\$0
Gross Area:		0	SF	\$210	\$0
Total Addition:		0	SF	\$210	\$0
Remodel					
Total Remodel:		0			\$0
Subtotal:					\$0
Estimated Cost *Does not include soft costs					
TOTAL RECOMMENDED FACILITY IMPROVEMENT COST SUMMARY:					
Description:	Comments:				
FAME					\$160,114
Educational Adequacy					\$0
Estimated Cost *Does not include soft costs					\$160,114

## Ponderosa Elementary School

### Overview

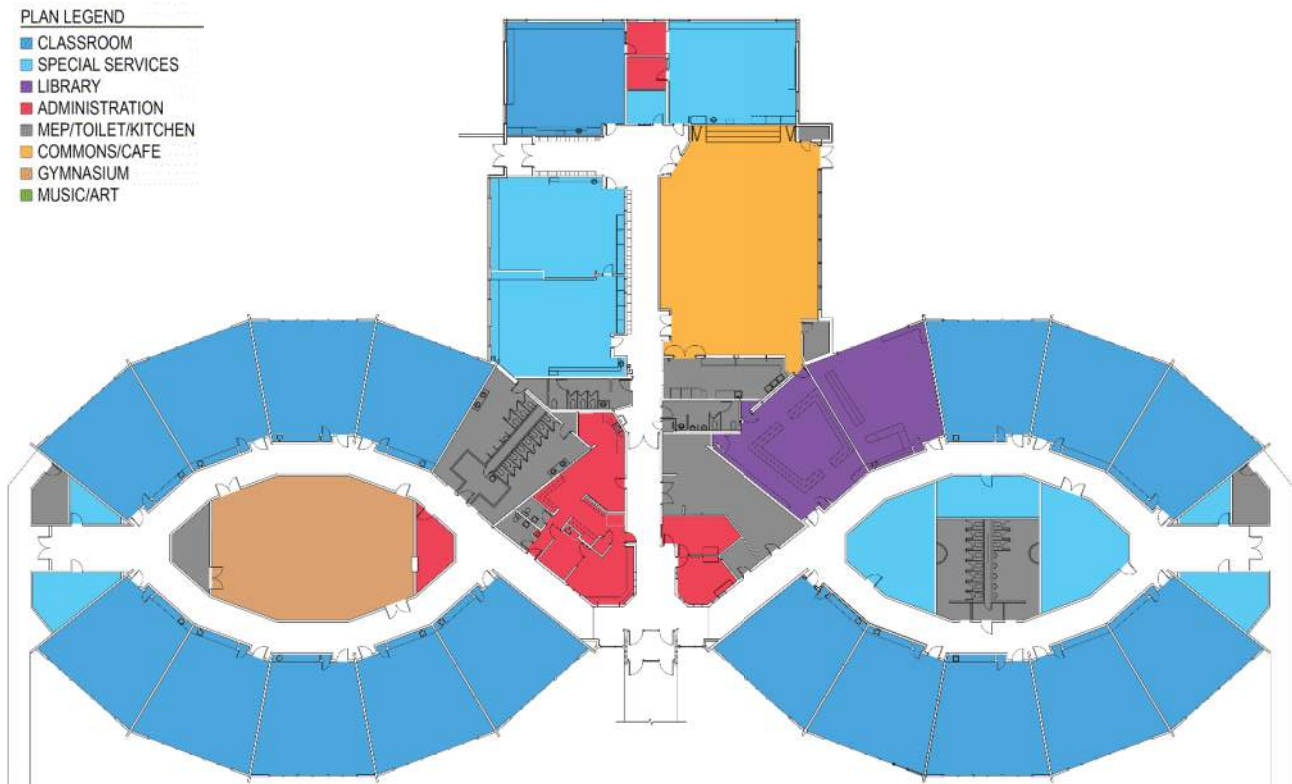
Ponderosa School is a K-5 elementary school. The original 1965 building consisted of 17 classrooms, with a multi-purpose/cafeteria, library, kitchen, office area, workroom, teachers' lounge and toilet rooms. In 2005 4 more classrooms and a larger multi-purpose room were added. The site is generally flat. The building is a single story structure. It has a concrete foundation system with concrete slab on grade floor. The structural system is steel columns with wood beams, joists and decking in the original portion and steel beams and joists in the addition. The perimeter walls are mineral faced plywood on wood studs at original with block & metal on metal studs at the addition. The current roof on original portion is PVC w/ 5" rigid insulation installed in 2012. The roof on the addition is EPDM and metal w/rigid insulation done in 2005. The walls have 2" batt insulation at older portion with 6" batt at addition.

4188 King Ave E  
Billings, MT 59101  
(406) 281-6218

Year Built .....	1965
Renovations .....	Addition 2005
Portables .....	0
Site Acres .....	11.78
Building SF .....	39,800
Current Enrollment .....	270
Capacity .....	394
Target Capacity .....	364



### Existing Program Spaces



## Ponderosa Elementary School

### Site Characteristics and Deferred Maintenance

Site Characteristics:			
Component		Cost	Priority
Lot Size	11.78 acres		
Building Area	39,800 sf		
Topography	Flat		
Drainage	Fair to poor. Drainage improved in 2017 - downspouts connected to french drain and connected to city storm drain system.		
Drop Off	Two large paved drop off areas with paved access to school.		
Hardscape	Asphalt 25,160 sf some cracking Outdoor classroom added.		
Parking Surface	Asphalt 61,800 sf some cracking. Asphalt has been repaired as needed, still requires future life cycle maintenance every 5 years. Cost reflects crack seal & seal coat maintenance at 5-year intervals, for 10 year period.	\$37,080	
Stalls	94 stalls 5 HC (3van)		
Paved Walks/Surfaces	Concrete 5,450 sf fair condition. City of Billings installed CTEP path to shopping center. Front entry broken/uneven concrete replaced.		
Steps, ramps, retaining walls	N/A		
Paved Sports Courts	Asphalt areas surrounding school with multiple activities. Cost reflects maintenance costs.	\$8,123	
Playgrounds	Gravel areas at playground equip.		
Softscape	375,230 sf		
Play Fields	Large grass play fields adjacent to the building stretch to the property line		
Landscaping	Some landscaping in addition to grass areas		
Utilities	City services		
Fencing	Chain link fencing separates the property from a drainage canal Fencing added to CTEP path		

## Ponderosa Elementary School

### Building Components and Deferred Maintenance

Building Components:			
Component	Sub-Component: Condition Observed and Action to Fix	Cost	Priority
<b>Structural Systems</b>			
Footings/Foundation Walls	Concrete spread footings & stem wall foundation		
Floor Systems	Concrete slab on grade		
Columns and Bearing Walls	Steel columns, some areas of bearing walls		
Beams and Joists	Wood beams and joists with wood decking original, steel beams, trusses at addition		
<b>Envelope</b>			
Roof	PVC Installed 2012		
	EPDM Installed 2005		
	Metal Installed 2005		
	Insulation 5" rigid @ 2012, 6" rigid @ addition		
Walls	Original Building Mineral Faced Plywood		
	Addition CMU and Metal Siding		
Exterior Windows	Aluminum		
	Single Glazed (original building). Windows replaced (Desko windows)	\$0	
	Aluminum - Addition		
	Double Glazed - Addition		
Exterior Doors	Mixture of new Aluminum storefront and older wood doors. Doors replaced.	\$0	
	Main Entrance water infiltration issues		
Thermal Systems	2" original, 6" batt addition		
<b>Interior Finishes</b>			
Interior Walls	Facility Typ – Framed Gyp: Ranging from new in the addition to wearing and aging in original building		
	Original Building Classrooms/Faculty Toilets - misc. walls throughout original space - CMU (painted): Good condition, suspect load bearing		
	Original Building Typical - Framed Wall Wood Paneling: Painted in some locations very worn/aging		
	Addition Hallways/Addition Toilets - Ceramix tile: New		
Ceilings	Addition Typical (student toilets original building) - ACT: New		
	Original Building Typical - Glue on Tile: Failing	\$39,057	
	Classrooms/Multipurpose Addition - Exposed: New		
Doors/Hardware/Windows	Addition Hallway - Gyp: New		
	Addition - ADA compliant lever style - Original Building non-ADA compliant knob style: Wear/operational failures - Mortised locks difficult to replace		
	SCW throughout - ranging from new in addition to aging and worn in original building		
Floor Finishes	Addition Typical - VCT: New		
	Original Building Typical - Carpet: aging/worn/rippling/stains (new in admin areas). Carpeting & deficient flooring has been replaced.	\$0	
	Original Building Gym/Corridors/Misc small areas - Asbestos tile: Wearing/aging not deteriorating		
	Original Building Student Toilets - Ceramix Tile: Wear/age		
	Addition Toilets - Sheet Vinyl: New		
Wall Finishes	Paint good throughout		

## Ponderosa Elementary School

### Building Components and Deferred Maintenance

Specialties			
Toilet Partitions	Metal in Original Building/Plastic in Addition		
Fixed Seating/Risers	Bleachers: N/A		
	Theater: N/A		
	Classroom/Lecture: N/A		
	Cafeteria: N/A		
Markerboards/ Cabinets	All rooms have dry erase boards		
	Plastic laminate counters and cabinets in addition: New		
	Wood cabinets and laminate counters in original building: Aging/worn		
HVAC System			
Heating	Building is connected to District controls		
	BMS: Upgrade needed		
	BMS System upgraded to district standard		
	Custodian reports problems with the older HVAC system (leaking air)		
	Pneumatic control system replaced with DDC		
	Room Units: Unit ventilators with central exhaust orig., central air handlers / vav addition		
	Classroom and air handling equipment replaced		
	Hydronic Piping: 4 pipe addition, 2 pipe original		
Ventilating	Alternative Fuel: No		
	Air Handler addition only		
	Addition air handler variable air volume system		
	Ductwork: Yes at addition and exhaust at original		
	Specialized Exhaust: Limited		
	Room Ventilators: Unit ventilators original - need updating		
Cooling	Unit ventilators equipment replaced throughout the building		
	Central AC: Yes at addition only		
	Room AC: No		
	Hydronic Piping: 4 pipe at addition		
Plumbing System			
Fixtures	Sinks/Toilets/Shower: New at addition - older in original building		
	Toilet rooms refurbished in existing facility		
	Hot Water Generation: Central		
	Alternative Fuel: No		
Supply Piping	Piping: Varies		
	Pumps: Domestic return		
Waste Piping	Piping: varies - Drain lines consistently congested		
	Toilet room waste line revised with remodel		
	Pumps: No		

## Ponderosa Elementary School

### Building Components and Deferred Maintenance

<b>Electrical System</b>			
Building Service	400A, 120/208 3Ph, upgrades needed		
	Building electrical service updated to 800A 120/208V 3P		
	Meter Base: Coordinate with service upgrade		
	Building metering equipment improved with service changeout		
	Generator: No		
Lighting	Alternative Source: No		
	Fixtures - PCB: No		
	Building Retrofitted with T8 Fixtures		
	Light fixtures replaced with new flourescent fixtures		
	Light Level Controls: Acceptable at new portion, limited at original		
Distribution	Occupancy sensors added with light fixture replacments		
	Occ/Daylight Sensor: Yes at new portion		
	Sensors throughout the facility		
	Devices: At original, power & data distribution upgrade needed	\$68,000	\$68,000
Voice/Data	Intercom: Adequate		
	Clock: Adequate		
	Telephone: Adequate		
	Data: New cabling installed during remodel, cabling spliced instead of home runs - 2 ports per classroom - wireless has good coverage		
	GPON system installed throughout building.		
<b>Conveying &amp; Vertical Circulation</b>			
Elevators, lifts, stairs ramps	Not applicable		
<b>Safety System</b>			
Egress	Exit Systems: Clear paths of egress		
Extinguishing System	No Automatic Sprinkler	\$153,601	
	Cabinet Systems:		
Exit/Emergency Lighting/Alarms	Exit Lights: Yes		
	Emergency Lighting: Yes		
	Smoke/Heat Detection: Upgraded		
	Fire Alarm System: Upgraded		

## Ponderosa Elementary School

### Code Review / ADA

Code Review/Americans with Disabilities Act (ADA):			
	Description	Cost	Priority
Site	Concrete walks connect both drop off areas to main entry of building. Paved play areas create accessible hardscape around the rear of school.		
Parking	5 Stalls (3 Van)		
Approach, Entry & Exit	Accessible Approach and Entrance		
Ramps	Interior ramp to stage area/classroom is accessible and meets code		
Stairs	N/A		
Elevator/lift	N/A		
Assembly Areas	All areas are accessible.		
Classroom Access	All rooms are accessible, addition rooms have lever style compliant hardware, original doors have "knob" style non-compliant hardware. <b>Work still needs to be done.</b>	\$29,325	
Restroom Access	Toilets in Addition are fully accessible		
Toilets/Restrooms	Toilets in Addition are fully accessible		
Drinking Fountains	Addition has dual height fountains		
Counter Access	Accessible		
Signage per ADA	All signage in addition compliant		
Audio and Visual Alarms	Yes		
Obstacles	None other than noted		
Automatic Sprinkler System	No fire sprinklers		
Exit Corridors	Per IBC Table 1018.1; Corridor Rating of E. Occupancy (Educational) buildings shall be 1 hour without an Automatic Sprinkler System. Exit corridor rating is reduced to 0 (zero) hours with an Automatic Sprinkler System.		
Other	Exit enclosures shall be enclosed per IBC 1022.		
<b>Notes:</b> 1. ADA – Compliance with ADA in the existing building is recommended if major construction is completed at this building. 2. Fire/Safety – Fire suppression system in the existing building is recommended if major work is done at this building.			
<b>Building Code Guidelines:</b> 2009 International Building Code; 2009 International Existing Building Code; 1020 ADA Standards for Accessible Design; Administrative Rules of Montana 24.301.351; 2000 NFPA 101 - Life Safety Code			

## Ponderosa Elementary School

### Recommendations

Ponderosa received a large addition in 2005 which helped improve the heating plant and the technology in the building but little was done to the original building.

Additional detail regarding scope and cost related to Educational Adequacy and Deferred Maintenance projects can be found in the following tables:

RECOMMENDED BUILDING COMPONENT (FAME) IMPROVEMENT DETAIL:		
Component	Comments	Estimated Cost
Building Envelope	No recommended improvements	\$0
Interiors & Specialties	No recommended improvements	\$0
Mechanical, Electrical & Plumbing	Power & data distribution upgrade needed	\$68,000
Fire/Life Safety	No recommended improvements	\$0
Site	No recommended improvements	\$0
ADA	No recommended improvements	\$0
Does not include Soft Costs		Total \$ 68,000

RECOMMENDED EDUCATIONAL ADEQUACY IMPROVEMENT DETAIL:					
Component:	Item Description:	Qty	UOM	Unit Cost	Cost Estimate
Site Improvements					
Total Site:		0	SF		\$0
Addition					
Multi-purpose Room Addition		0	SF	\$210	\$0
Subtotal:		0	SF	\$210	\$0
Gross Area:		0	SF	\$210	\$0
Total Addition:		0	SF	\$210	\$0
Remodel					
Total Remodel:		0			\$0
Subtotal:					\$0
Estimated Cost *Does not include soft costs					
TOTAL RECOMMENDED FACILITY IMPROVEMENT COST SUMMARY:					
Description:	Comments:				
FAME					\$68,000
Educational Adequacy					\$0
Estimated Cost *Does not include soft costs					\$68,000

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## Rose Park Elementary School

### Overview

Rose Park School is a K-5 elementary school. The original 1958 building consisted of 8 classrooms, with a gymnasium/cafeteria, kitchen, office area, workroom, teachers' lounge and toilet rooms. One year later 4 classrooms were added. In 1961 6 more classrooms were added. Smaller additions subsequently added another classroom and an accessibility ramp. The site is generally flat. The building is a single story structure. It has a concrete foundation system with concrete slab on grade floor. The structural system is wood columns and bearing walls with wood beams, 2x4 joists and structural deck. The perimeter walls are brick on CMU w/ some panel finish. The current roof is EPDM installed in 2006. Roof insulation is 4" batt plus rigid above and the walls have 1" rigid insulation.

1812 19th St W  
Billings, MT 59102  
(406) 281-6219

Year Built .....	1958
Renovations .....	Addition '59, '61, '05
Portables .....	0
Site Acres .....	6.32
Building SF .....	30,345
Current Enrollment .....	256
Capacity .....	307
Target Capacity .....	284



### Existing Program Spaces

PLAN LEGEND

CLASSROOM
SPECIAL SERVICES
LIBRARY
ADMINISTRATION
MEP/TOILET/KITCHEN
COMMONS/CAFE
GYMNASIUM
MUSIC/ART



## 4 K-8 FACILITIES

### Rose Park Elementary School

#### Site Characteristics and Deferred Maintenance

Site Characteristics:			
Component		Cost	Priority
Lot Size	10 acres + Alkali Park .29 acres		
Building Area	41,710 sf		
Topography	Flat site surrounded by hills		
Drainage	Good Drainage Upgraded in 2011 to handle heavy runoff. Additional drainage remediation needed.	\$73,213	
Drop Off	Large drop off area adjacent to front doors		
Hardscape	Asphalt 76,000 sf		
Parking Surface	Asphalt 41,350 sf. Priority is to overlay parking lot.	\$31,610	\$31,610
Stalls	56 Parking stalls + 3 HC stalls (2 unsigned)		
Paved Walks/Surfaces	Concrete walkways 10,900. Priority is to replace service sidewalk.	\$8,438	\$8,438
Steps, ramps, retaining walls	None		
Paved Sports Courts	Large asphalt areas with several activities marked out – cracking in asphalt. Priority is to seal coat playground.	\$10,902	\$10,902
Playgrounds	Gravel areas at playground equip.		
Softscape	277,942 sf		
Play Fields	Large areas of grass around school		
Landscaping	Areas around school entrance landscaped		
Utilities	City services		
Fencing	Some fencing at property lines – Chain Link		

## Rose Park Elementary School

### Building Components and Deferred Maintenance

Building Components (Main Building):			
Component	Sub-Component: Condition Observed and Action to Fix	Cost	Priority
<b>Structural Systems</b>			
Footings/Foundation Walls	Concrete spread footings with stem wall foundation		
Floor Systems	Concrete slab on grade		
Columns and Bearing Walls	Wood columns and bearing walls		
Beams and Joists	Wood glu lam beams w/ 2x4 joists and structural decking		
<b>Envelope</b>			
Roof	A small area of EPDM roofing was installed in 2005 north of the gym. The main building has hypalon roofing installed over s series of years- 1980, 1982, 1993 and 1994. These areas will be replaced by 2014 if money allows. <b>Entire roofs replaced.</b>	\$0	
	Insulation 4" batt plus rigid above		
Walls	Brick and concrete exterior walls with some wood		
Exterior Windows	Single pane aluminum framed windows in original building – windows have plastic hardware and are of very poor quality – original openings framed down into very small windows. <b>Windows replaced.</b>	\$0	
Exterior Doors	Older wood doors, new HM doors at ramp to Multipurpose room – hardware is functioning poorly. <b>Exterior doors replaced.</b>		
Thermal Systems	1" batt		
<b>Interior Finishes</b>			
Interior Walls	Facility Typical – Framed Gyp: Good condition throughout with addition walls being new and in excellent condition. Facility Typical – Brick: Many interior spaces have exposed brick with wear and minor damage Toilets – Framed Ceramic Tile: worn. <b>Toilet room remodel: flooring, fixtures &amp; wall paneling at main floor and classroom (west) wing.</b>		
Ceilings	<b>Facility Typical – Glued On Tile: Original building ceiling is glued on tile, tiles aging and failing some being secured with screws, minor staining</b> Kitchen- Gyp: worn, stained, damaged	\$83,107	
Doors/Hardware/Windows	Facility Typical – SCW Doors original to building Knob style hardware non-compliant with ADA		
Floor Finishes	Facility Typical- Carpet: Carpet in facility varies in age and condition. <b>Deficient carpeting replaced.</b> Nurse/Work/Hall- Asbestos Floor Tile: Tiles are showing wear and age in hallways, areas of less traffic flooring in better condition. <b>Deficient asbestos floor tile areas replaced.</b> Student Toilets – Ceramic Tile: Aging and wearing overall poor condition. <b>Restroom floor tile replaced.</b>	\$0	
Wall Finishes	Paint throughout facility was in good condition.		
<b>Specialties</b>			
Toilet Partitions	Metal - aging		
Fixed Seating/Risers	Bleachers: N/A Theater: N/A Classroom/Lecture: N/A Cafeteria: N/A		
Markerboards/Cabinets	Markerboards throughout Facility Typical- Wood Base Cabinets: Age wear Casework- varying conditions-wood base cabinets w/ plastic laminate counters		

## Rose Park Elementary School

### Building Components and Deferred Maintenance

HVAC System			
Heating	Building is connected to the District master controls. Priority is to replace building temp control front end.	\$10,000	\$10,000
	BMS: Upgrades needed BMS upgraded to district standard	\$0	
	Boiler/Furnace: Boiler upgraded 1998 +/- Boilers replaced with district standard	\$0	
	Room Units: Unit ventilators Unit replaced with new equipment and OA louvers improved		
	Hydronic Piping: 2 pipe – upgrades will require replacement of piping in the slab Piping upgraded and replaced		
	Alternative Fuel: No		
	Air Handler: Some central exhaust Gymnasium served by roof mounted unit		
Ventilating	Ductwork: Limited		
	Specialized Exhaust: Limited		
	Room Ventilators: Unit ventilators Replaced equipment		
Cooling	Central AC: No		
	Room AC: No		
	Hydronic Piping: No		
Plumbing System			
Fixtures	Plumbing throughout the building is dated and is repaired on an as needed basis, custodian reported some problems with waste piping – class room sinks back up due to low flow at the ends of drain lines Central toilet rooms upgraded, classroom fixtures upgraded but sewer main not replaced Priority is to modify 3 compartment sink and install a hand wash sink in kitchen.	\$85,000	\$85,000
		\$4,000	\$4,000
	Hot Water Generation: Central		
	Alternative Fuel: No		
Supply Piping	Piping: Copper, varies		
	Pumps: Circulating		
Waste Piping	Piping: Varies		
	Pump: No		
Electrical System			
Building Service	400A, 120/240 1 phase- upgrade needed 400A Service 120/208-3P with potential for 800A if required.	\$0	
	Meter Base: coordinate with service upgrade Metering upgraded to current standards		
	Generator: No		
	Alternative Source: No		
Lighting	Fixtures - PCB: No		
	T-8 Lamps used throughout Lighting systems updated to LED standards		
	Light Level Controls: Limited Classrooms controls upgraded to dimming with Occupancy sensors	\$0	
	Occ/Daylight Sensor: No Occupancy sensors added throughout		
Distribution	Building is in need of more service and additional outlets etc. Additional distribution added throughout building		
	Devices: Power & data distribution upgrade needed Upgrade completed	\$0	

## Rose Park Elementary School

### Building Components and Deferred Maintenance

Voice/Data	Intercom functions properly		
	Central clock system is functional		
	Telephones have been updated		
	Data: Wireless throughout some of facility not all, 2 ports per classroom GPON system installed throughout.		
Conveying & Vertical Circulation			
Elevators, lifts, stairs ramps	No elevator		
	Large ramp provides access to multi-purpose area		
Safety System			
Egress	Exit Systems: Clear paths of egress		
Extinguishing System	No Sprinkler Observed	\$116,870	
	Cabinet Systems:		
Exit/Emergency Lighting/Alarms	Exit Lights: Yes		
	Emergency Lighting: Yes		
	Smoke/Heat Detection: Updated		
	Fire Alarm: Updated. Fire alarm system updated to voice evac.		

## Rose Park Elementary School

### Code Review / ADA

Code Review/Americans with Disabilities Act (ADA):			
	Description	Cost	Priority
Site	There is an accessible route to the main entrance from the drop off area.		
Parking	1 Accessible Parking spot (not van compatible). Work still needs to be done	\$176	
Approach, Entry & Exit	Approach and entry are accessible, no signage observed.		
Ramps	Ramp at assembly and handrail seem to be compliant		
Stairs	Stairs around gym observed to be compliant.		
Elevator/lift	N/A		
Assembly Areas	All accessible		
Classroom Access	Rooms are accessible with 'knob' style non-compliant hardware. Work still needs to be done.	\$37,835	
Restroom Access	Access to restrooms meets ADA requirements		
Toilets/Restrooms	Two student toilet stalls were observed to compliant		
Drinking Fountains	No dual height observed, there were low mounted drinking fountains		
Counter Access	Non-compliant		
Signage per ADA	No signage observed.		
Audio and Visual Alarms	ADA Guideline		
Obstacles	ADA Guideline		
Area of Refuge	Area of refuge adjacent to gym area does not have weather strip on door, and has no permanent communication system, or signage. Signage added.	\$0	
Automatic Sprinkler System	No sprinkler system observed.		
Exit Corridors	Per IBC Table 1018.1; Corridor Rating of E Occupancy (Educational) buildings shall be 1 hour without an Automatic Sprinkler System. Exit corridor rating is reduced to 0 (zero) hours with an Automatic Sprinkler System.		
Other	Exit enclosures shall be enclosed per IBC 1022.		
<b>Notes:</b> 1. ADA – Compliance with ADA in the existing building is recommended if major construction is completed at this building. 2. Fire/Safety – Fire suppression system in the existing building is recommended if major work is done at this building.			
<b>Building Code Guidelines:</b> 2009 International Building Code; 2009 International Existing Building Code; 1020 ADA Standards for Accessible Design; Administrative Rules of Montana 24.301.351; 2000 NFPA 101 - Life Safety Code			

## Rose Park Elementary School

### Recommendations

Additional detail regarding scope and cost related to Educational Adequacy and Deferred Maintenance projects can be found in the following tables:

RECOMMENDED BUILDING COMPONENT (FAME) IMPROVEMENT DETAIL:		
Component	Comments	Estimated Cost
Building Envelope	No recommended improvements	\$0
Interiors & Specialties	No recommended improvements	\$0
Mechanical, Electrical & Plumbing	Replace building temp control front end, plumbing throughout upgraded as needed, modify 3-comp sink, install hand wash station in kitchen,	\$99,000
Fire/Life Safety	No recommended improvements	\$0
Site	Overlay parking lot, replace service sidewalk, seal coat playground	\$50,950
ADA	No recommended improvements	\$0
Does not include Soft Costs	<b>Total</b>	<b>\$ 149,950</b>

RECOMMENDED EDUCATIONAL ADEQUACY IMPROVEMENT DETAIL:					
Component:	Item Description:	Qty	UOM	Unit Cost	Cost Estimate
<b>Site Improvements</b>					
Total Site:		0	SF		\$0
<b>Addition</b>					
Multi-purpose Room Addition		0	SF	\$210	\$0
Subtotal:		0	SF	\$210	\$0
Gross Area:		0	SF	\$210	\$0
Total Addition:		0	SF	\$210	\$0
<b>Remodel</b>					
Total Remodel:		0			\$0
Subtotal:					\$0
Estimated Cost *Does not include soft costs					
TOTAL RECOMMENDED FACILITY IMPROVEMENT COST SUMMARY:					
Description:	Comments:				
FAME					\$149,950
Educational Adequacy					\$0
Estimated Cost *Does not include soft costs					\$149,950

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## Sandstone Elementary School

### Overview

Sandstone Elementary is K-5 elementary school. The original 1978 building consisted of 20 +/- classrooms in an “open planning” configuration. Original also included library, multi-purpose, specialty classrooms, administrative, kitchen, etc. There have been no additions. The building is a single story structure w/ small mechanical mezzanine. It has a concrete foundation system with slab on grade floor system. The structural system is steel columns with steel joists with metal decking. The perimeter walls are steel studs with some concrete masonry units (cmu) that are faced in brick with metal panel accents at doors and windows. The current roof is Hypalon installed in 1994 & 97 with 5” minus of tapered insulation. The walls have 3 ½” batt insulation at metal studs and 2” rigid insulation at cmu. The interior is formed by a moveable wall system that is comprised of interlocking wall panels and ceiling tiles. The lighting and HVAC system is also incorporated into this system. The system is unique, expensive to replace ceiling tiles and light fixtures or add outlets or data.

1440 Nutter Blvd.  
Billings, MT 59101  
(406) 281-6220

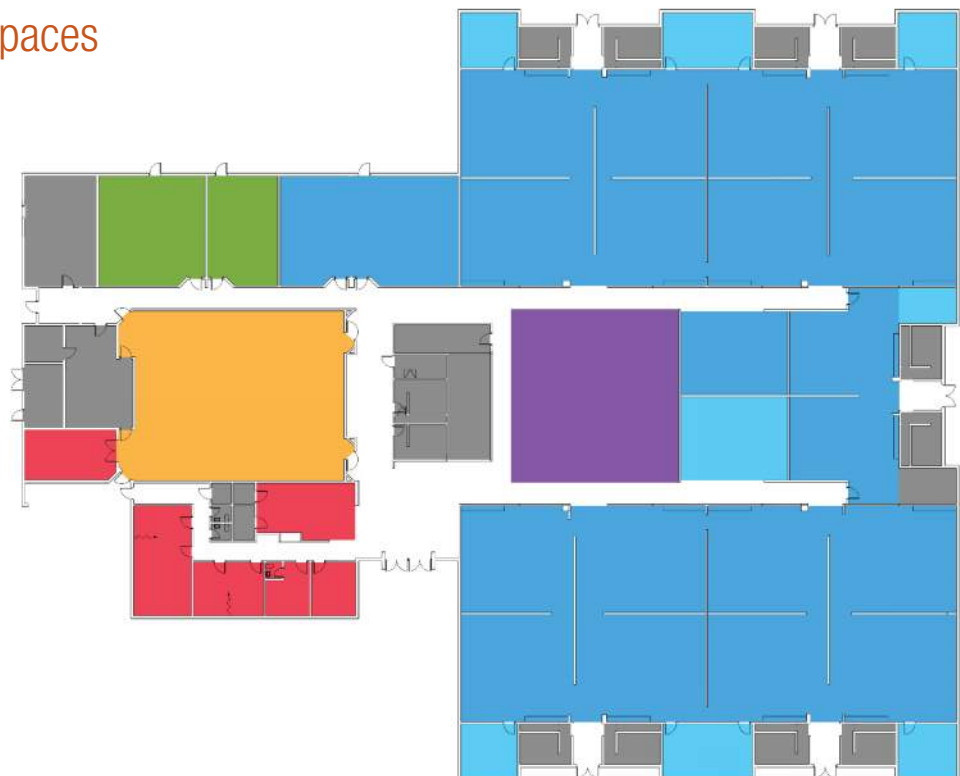
Year Built .....	1978
Renovations .....	0
Portables .....	0
Site Acres .....	20.50
Building SF .....	41,700
Current Enrollment .....	405
Capacity .....	460
Target Capacity .....	426



### Existing Program Spaces

#### PLAN LEGEND

CLASSROOM
SPECIAL SERVICES
LIBRARY
ADMINISTRATION
MEP/TOILET/KITCHEN
COMMONS/CAFE
GYMNASIUM
MUSIC/ART

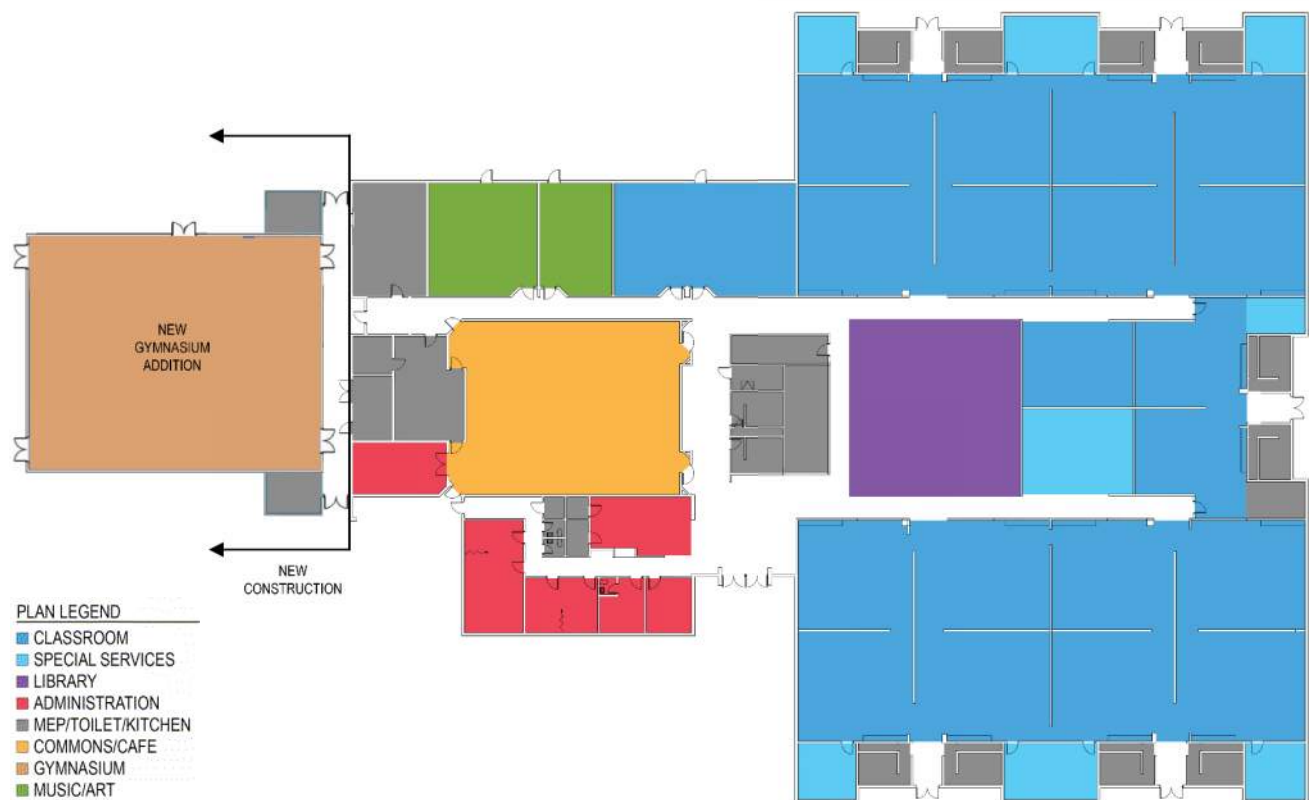


## Sandstone Elementary School

### Program Space Recommendations

Recommendations From 2013 master plan are being carried over for the 2018 master plan. The recommendations include:

- Repurpose existing gymnasium to Cafeteria.
- Create a multi-purpose room addition and associated restrooms.



### Potential Floor Plan Diagram

## Sandstone Elementary School

### Site Characteristics and Deferred Maintenance

Site Characteristics:			
Component		Cost	Priority
Lot Size	21.6 acres		
Building Area	41,621sf		
Topography	Slightly sloping		
Drainage	Fair to good		
Drop Off	Large drop off area adjacent to front doors		
Hardscape	Asphalt 42,000 sf some cracking		
Parking Surface	Asphalt 41,830 sf some cracking Priority is to seal coat parking lot.	\$7,220	\$7,220
Stalls	64 Parking stalls – 1 HC stall		
Paved Walks/Surfaces	Concrete 13,750 sf – settlement in paved walks. No concrete work done. Priority is to replace uneven & broken sidewalks.	\$16,425	\$16,425
Steps, ramps, retaining walls	None		
Paved Sports Courts	Asphalt - Basketball court. Priority is to seal coat playground.	\$12,212	\$12,212
Playgrounds	Gravel areas		
Softscape	803,602 sf		
Play Fields	Large areas of grass around school – several adjacent baseball fields. Added playground equipment.		
Landscaping	Areas around school entrance landscaped		
Utilities	City services		
Fencing	Some fencing at property lines – Chain Link		

## Sandstone Elementary School

### Building Components and Deferred Maintenance

Building Components:			
Component	Sub-Component: Condition Observed and Action to Fix	Cost	Priority
<b>Structural Systems</b>			
Footings/Foundation Walls	Concrete spread footings with stem wall foundation		
Floor Systems	Concrete slab on grade		
Columns and Bearing Walls	Steel columns with limited or no bearing walls		
Beams and Joists	Steel beams and joist with steel decking		
<b>Envelope</b>			
Roof	Hypalon Installed 1995, 1997. <b>Roof replaced.</b>	\$0	
	Insulation: 5" Rigid tapering to drains		
Walls	Brick exterior walls – some areas show signs of settlement, bricks splitting and mortar cracking		
Exterior Windows	Material: Metal. <b>Windows replaced.</b>	\$0	
	Single Pane Glass. <b>Windows replaced.</b>		
Exterior Doors	Doors are HM with HM frame and weather stripping, some doors have 1" lip to adjacent concrete at perimeter. <b>Exterior doors replaced. Added vestibule.</b>		
Thermal Systems	Insulation : 2" Rigid		
<b>Interior Finishes</b>			
Interior Walls	Facility Typ – Partition walls: Majority of the facility is comprised of movable partition walls. The walls interlock with a special ceiling grid. The system is difficult to rearrange and difficult to add power and data to.		
	Admin./Aux. Classrooms/ Entryway/Exterior Walls -Framed Gyp.: Framed gypsum board walls are present in the Admin and Aux classroom portions of the building as well as at exterior walls.		
	Gym/Some perimeter rooms-Masonry: Interior masonry walls are in good condition throughout the facility.		
	Toilets- Framed Ceramic Tile: Student toilets have CT walls, Ceramic tiles in these areas are worn with some grout staining.		
	<b>Gym-Fabric Panels: Above brick on gym walls, panels wearing and need cleaning, age of panels is apparent.</b>	\$40,000	
	Toilets – Glazed brick: Exterior walls in student toilets consist of glazed brick		
Ceilings	Facility Typ.- ACT: Majority of facility ceilings are an ACT lay in system designed to function with moveable walls, the grid is larger than an average system, lights are recessed into ceiling to allow wall flexibility. The mechanical is tied into the system also. ACT throughout the facility is water stained and showing signs of minor damage from frequent removal.		
Doors/Hardware/Windows	Doors are SCW doors		
	Hardware is non ADA compliant with rounded knobs at each door. Mortised locks are difficult to maintain.		
	Frame are HM frames painted.		
Floor Finishes	Facility Typ.- Carpet: varies throughout facility approximately 25% of the facility has new carpet and 75% is aging/rippling/stained. <b>Deficient carpeting replaced.</b>	\$0	
	Toilets/High Traffic/Gym/-Sheet Vinyl: Poor throughout aging/wear. <b>Deficient tile &amp; vinyl flooring replaced.</b>	\$0	
Wall Finishes	Paint: Paint in facility in good condition		

## Sandstone Elementary School

### Building Components and Deferred Maintenance

Specialties			
Toilet Partitions	Metal/Other: Metal toilet partitions no visible damage-however it was noted that they constantly need repair.		
Fixed Seating/Risers	Bleachers: N/A		
	Folding lunch tables need constant repairs		
	Theater: N/A		
	Classroom/Lecture: N/A		
Chalkboards/Tackboards/Cabinets	Cafeteria: N/A		
	Chalkboard/Markerboard: All classrooms contained marker boards in good condition, some auxiliary spaces also had marker boards in good condition.		
	Cabinets: Plastic laminate cabinets in facility are dated, but seem to function well. Cabinets in admin area are new and in excellent condition.		
	Countertops: Plastic laminate countertops in facility are dated, but seem to function well. Counters in admin area are new and in excellent condition. Counters in Teacher's lounge are new and in good condition.		
HVAC System			
Heating	Controls: Building is connected to the district master controls.		
	BMS: acceptable System upgraded to district standard		
	Boiler/Furnace: Classrooms served with gas fired multi-zone units (Mammoth), installed 2004	\$325,000	\$325,000
	Room Units: Ducted supply, both ducted and plenum return. Hydronic heating coils to create additional exterior zoning and remove electric heat		
	Hydronic Piping: 2 pipe Limited to building perimeter		
	Alternative Fuel: No		
Ventilating	Air Handler: Roof top		
	Ductwork: Yes		
	Specialized Exhaust: Limited		
	Room Ventilators: No		
Cooling	Central AC: Trane rooftop DX units installed 1999 +/-		
	Room AC: No		
	Hydronic Piping: No		
Plumbing System			
Fixtures	Sinks/Toilets>Showers: Fixtures appear original to building, showing signs of wear. Some fixtures updated. No toilet or restroom remodels, though.	\$150,000	\$150,000
	Hot Water Generation: Point of use Upgraded to central system in receiving		
	Alternative Fuel: No		
Supply Piping	Piping: Copper		
	Pumps: No		
Waste Piping	Piping: Varies		
	Pumps: No		

## Sandstone Elementary School

### Building Components and Deferred Maintenance

<b>Electrical System</b>			
Building Service	800A, 277/480 3 Phase		
	Meter Base: Acceptable		
	Generator: No		
	Alternative Source: No		
Lighting	Fixtures - PCB: No		
	Fixtures - Energy: Facility uses T-8 lamps through out. Ventilation diffusers integral portion of ceiling/light fixture assemblies. Diffusers out of date and in ill repair.	\$45,000	\$45,000
	Light Level Controls: Switching is awkward Switching still awkward due to use of wall panels versus framed wall construction and limited switch locations available.		
	Occ/Daylight Sensor: Limited Occupancy sensor added to corridors only		
	Service Panels: During high use inadequate service is an issue Areas of insufficient distribution (receptacles)		
	Devices: Power and data distribution upgrade is needed	\$270,537	\$270,537
Voice/Data	Intercom: Functioning problems with speakers		
	Clock: No central clock		
	Telephone: All phones upgraded		
	Data: No computer lab mobile carts are used, Wireless coverage is spotty, 1 port per each room. GPON fiber optic data system added to building.	\$0	
<b>Conveying &amp; Vertical Circulation</b>			
Elevators, lifts, stairs ramps	Not applicable		
<b>Safety System</b>			
Egress	Exit Systems: Unclear paths of egress		
Extinguishing System	Sprinkler: No Sprinkler Observed	\$154,049	
	Cabinet Systems: No		
Exit/Emergency Lighting/Alarms	Exit Lights: Yes		
	Emergency Lighting: Yes – needs repeated repairs. Light project needed.	\$30,000	\$30,000
	Smoke/Heat Detection: Updated – but needs repeated repairs		
	Fire Alarm System: Updated.		
	Fire alarm updated with voice evac.		

## Sandstone Elementary School

### Code Review / ADA

Code Review/Americans with Disabilities Act (ADA):			
	Description	Cost	Priority
Site	The site consists of large contiguous areas of asphalt paving with the area at the main entrance being concrete and landscaped. There is an accessible route to the front door from the drop off area, however the route is not very direct. Paved play areas surrounding the building lead to grass fields and a gravel area with playground equipment. The site boundaries are defined by a chain link fence in some areas. A lip (1-2") at each exterior door prohibits the building access to be truly accessible.		
Parking	There is 1 accessible parking space.	\$529	
Approach, Entry & Exit	The school's main entrance (and other exterior doors) has a 1" height difference with the adjacent paved surface. The main entrance does have an automatic door opener. The doors themselves comply with ADA, the door hardware however does not. The doors have older pulls that are difficult to grasp. Added vestibule. Entry area was redone, and ADA compliance met.	\$0	
Ramps	No ramps on site.		
Stairs	N/A		
Elevator/lift	N/A		
Assembly Areas	All areas are accessible but have knob style hardware. Work still needs to be done.	\$49,320	
Classroom Access	Classrooms are accessible. Those with doors have knob style hardware		
Restroom Access	Access to restrooms meets ADA Guidelines		
Toilets/Restrooms	No stalls or toilet rooms in facility comply with ADA, some stalls did have grab bars, but none provide maneuverability required. Toilets could be modified to comply, this would require fixture removal in most cases. Restrooms remodeled, and are now ADA-compliant.	\$0	
Drinking Fountains	No dual height drinking fountain was observed. ADA drinking fountain added.	\$0	
Counter Access	Lunch counter is 36" A.F.F.		
Signage per ADA	No signage observed.		
Audio and Visual Alarms	Yes. Fire alarm added with voice evac.		
Obstacles	None other than noted		
Automatic Sprinkler System	No sprinkler observed.		
Exit Corridors	Per IBC Table 1018.1; Corridor Rating of E Occupancy (Educational) buildings shall be 1 hour without an Automatic Sprinkler System. Exit corridor rating is reduced to 0 (zero) hours with an Automatic Sprinkler System.		
Other	Exit enclosures shall be enclosed per IBC 1022.		
Other	Per 1018.4; maximum length of corridor shall be 20 feet in a non-sprinklered E occupancy and 50 feet in a sprinklered occupancy.		
Other	Per 1018.4; maximum length of dead end corridor shall be 20 feet in a non-sprinklered E occupancy and 50 feet in a sprinklered occupancy. Exit way passes through intervening space.		
<b>Notes:</b> 1. ADA – Compliance with ADA in the existing building is recommended if major construction is completed at this building. 2. Fire/Safety – Fire suppression system in the existing building is recommended if major work is done at this building.			
<b>Building Code Guidelines:</b> 2009 International Building Code; 2009 International Existing Building Code; 1020 ADA Standards for Accessible Design; Administrative Rules of Montana 24.301.351; 2000 NFPA 101 - Life Safety Code			

## Sandstone Elementary School

### Recommendations

This school is one of the schools with the open plan concept where rooms are created with movable partitions. The walls connect with the specialized ceiling system which includes as integrated HVAC. The overall system is difficult modify and power. For the purpose of this study, replacing the movable wall system with permanent partitions was considered beyond of the scope of deferred maintenance. As part of a long range plan, modifications to the partition system should be considered.

Additional detail regarding scope and cost related to Educational Adequacy and Deferred Maintenance projects can be found in the following tables:

RECOMMENDED BUILDING COMPONENT (FAME) IMPROVEMENT DETAIL:		
Component	Comments	Estimated Cost
Building Envelope	No recommended improvements	\$0
Interiors & Specialties	No recommended improvements	\$0
Mechanical, Electrical & Plumbing	Update boiler/furnace, update plumbing fixtures, update lighting fixtures, power and data distribution device upgrades are needed	\$790,537
Fire/Life Safety	Emergency lighting needs repairs	\$30,000
Site	Seal coat parking lot & playground, replace uneven/broken sidewalks	\$35,857
ADA	No recommended improvements	\$0
Does not include Soft Costs		Total \$ 856,394

RECOMMENDED EDUCATIONAL ADEQUACY IMPROVEMENT DETAIL:					
Component:	Item Description:	Qty	UOM	Unit Cost	Cost Estimate
Site Improvements					
Total Site:		0			\$0
Addition					
Multi-purpose Room Addition	New Multi-purpose Room Addition, Existing Gym/Cafeteria to serve as Cafeteria space.	4500	SF	\$210	\$945,000
Subtotal:		4500	SF	\$210	\$945,000
Gross Area:		1575	SF	\$210	\$330,750
Total Addition:		6075	SF	\$210	\$1,275,750
Remodel					
Total Remodel:		0			\$0
Subtotal:					\$1,275,750
Estimated Cost *Does not include soft costs					\$1,275,750
TOTAL RECOMMENDED FACILITY IMPROVEMENT COST SUMMARY:					
Description:	Comments:	Cost Estimate			
FAME		\$856,394			
Educational Adequacy		\$1,275,750			
Estimated Cost *Does not include soft costs					\$2,132,144

## Washington Elementary School

### Overview

The building is a one story elementary school located in an established residential neighborhood. The building sits up from grade with the main entrance on the west side. The original building was an “E” shaped building with the gymnasium, administration and library on the vertical leg and 3 classroom wings projecting from that. The classroom wings contain 4 classrooms each and are served by single loaded corridors. In 1952, a wing was added to the east side creating a continuous corridor system, 4 classrooms, boy’s and girl’s toilets and 2 interior courtyards. In 1968, a separate annex was constructed to the south and linked with an open covered walkway. The annex provided 4 additional classrooms with separate toilet rooms and HVAC. The original building was constructed with concrete foundation walls and crawl space. The corridor floor has a structural slab and the classroom areas have wood framing. The exterior walls are brick faced reinforced brick. The main corridor walls and gymnasium are reinforced brick. The remaining walls are wood framed with stained wood finish. The roof is wood framed over metal joists. The classroom roof slopes up toward the corridor to form clerestory windows. The original steam heat system has been replaced with a 3 pipe hot and cold water system with unit ventilators. An exhaust system collects the classrooms in each wing and vents through the roof. The 1952 addition has steel columns with glu-laminated beams as the roof structure. The exterior has brick faced, reinforced concrete masonry walls. The interior walls are wood infill walls. The annex has concrete slab on grade with cast concrete duct at the perimeter. Wood joists over glu-lam beams frame the roof and interior and exterior cmu walls provide bearing. The exterior is faced with brick with cement asbestos board panels at the windows.

1044 Cook Ave

Billings, MT 59101

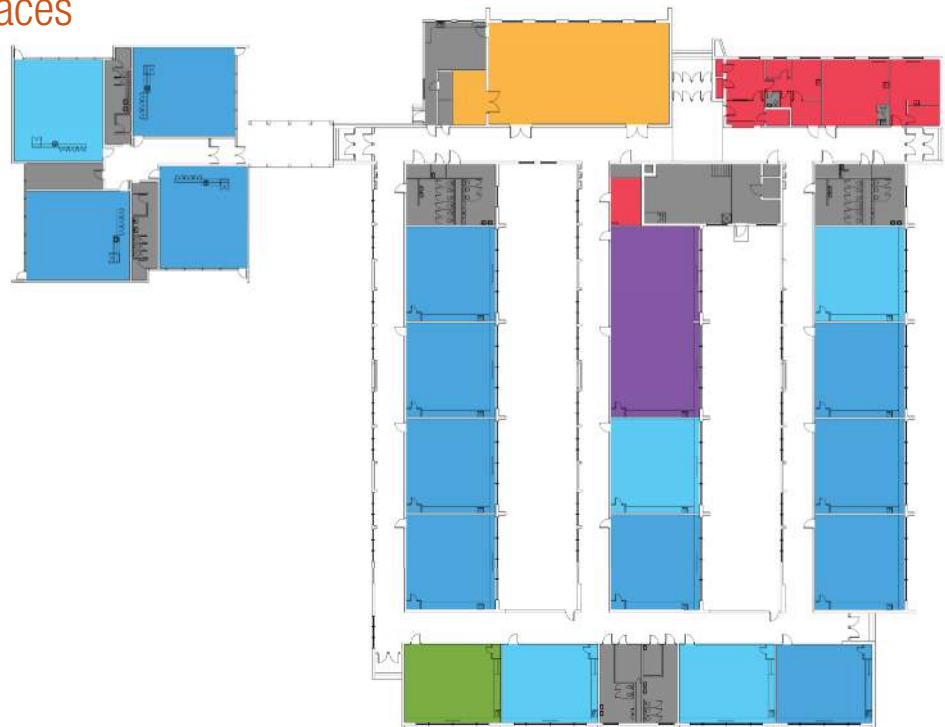
(406) 281-6221

Year Built .....	1948
Renovations .....	Addition 1952
Portables .....	0
Site Acres .....	2.52
Building SF .....	36,590
Current Enrollment .....	296
Capacity .....	263
Target Capacity .....	243



### Existing Program Spaces

PLAN LEGEND	
■	CLASSROOM
■	SPECIAL SERVICES
■	LIBRARY
■	ADMINISTRATION
■	MEP/TOILET/KITCHEN
■	COMMONS/CAFE
■	GYMNASIUM
■	MUSIC/ART

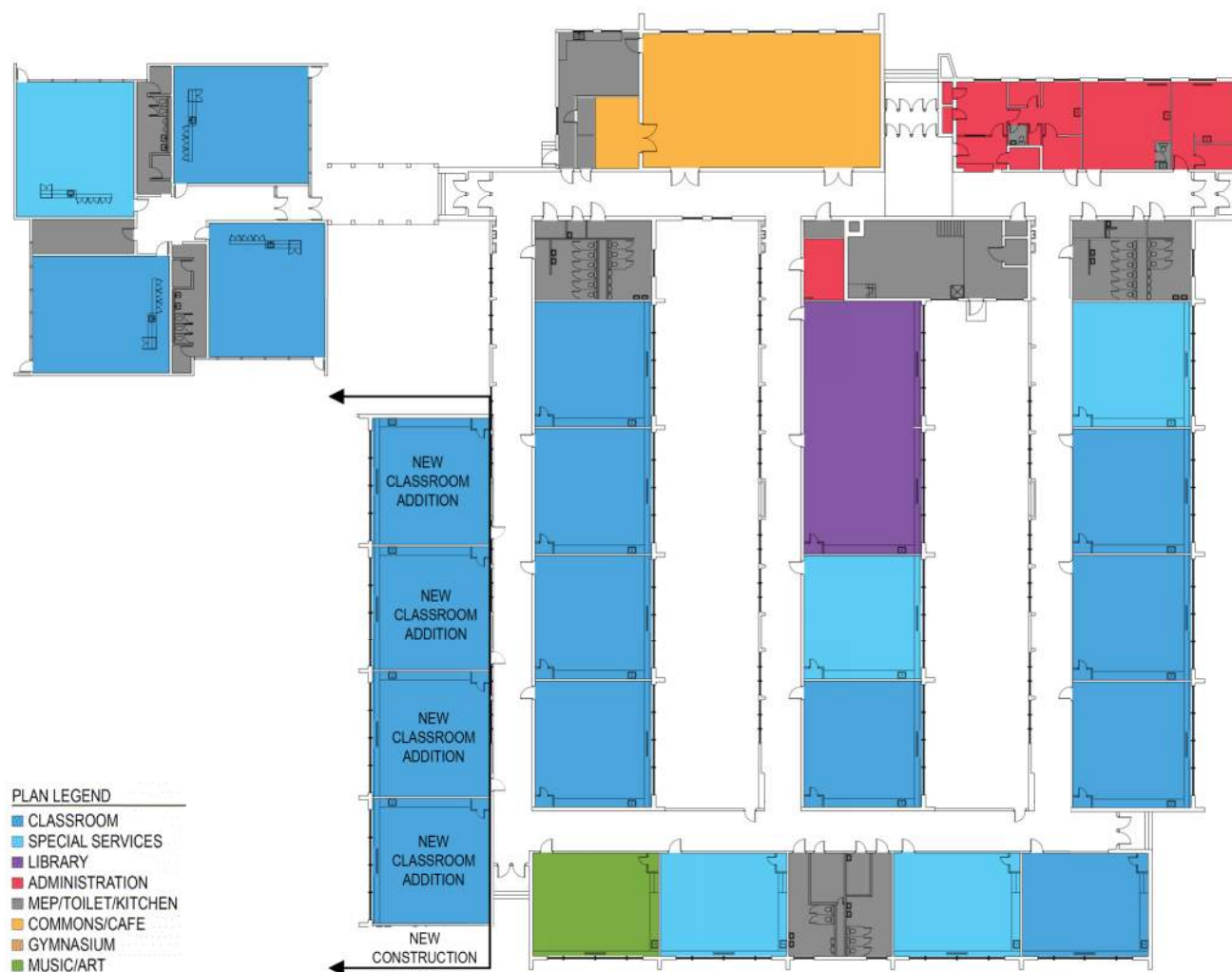


## Washington Elementary School

### Program Space Recommendations

Based upon 2017 demographic projections, Washington Elementary requires the addition of four classroom spaces. The recommendations include:

- An Addition of 4 classrooms



### Potential Floor Plan Diagram

## Washington Elementary School

### Site Characteristics and Deferred Maintenance

Site Characteristics:			
Component		Cost	Priority
Lot Size	2.52 acres		
Building Area	31120 sf ( 5470sf Annex)		
Topography	Flat		
Drainage	Fair		
Drop Off	Curb painted yellow adjacent to main entry – no designated pull out		
Hardscape	Asphalt 27,100 sf some cracking		
Parking Surface	Asphalt 7,750 sf		
Stalls	11 Stalls, 1 Accessible (Van)		
Paved Walks/Surfaces	Concrete 550 sf- good curbs and sidewalks. Add courtyard sidewalk. Add enclosure @ walkway to annex.	\$4,000 \$65,000	
Steps, ramps, retaining walls	Stairs at all entrances – one ramp to main entry – good condition but lacking ramps overall. Enclosed walkway to annex, added ADA ramp to courtyard, and added ADA ramp at kitchen. Added railing at main entry steps.		
Paved Sports Courts	There are several asphalt play areas with a variety of activities marked out. New asphalt paving. Priority is to seal coat playground? Verify w/ Scott Reiter.	\$8,415	\$8,415
Playgrounds	Gravel areas with playground equipment. New playground equipment.		
Softscape	71,936 sf		
Play Fields	There are large grass fields with developed baseball fields around the school adjacent to paved play areas.		
Landscaping	Trees and bushes in courtyard, tress @ North and West sides. Added underground irrigation in courtyard.		
Utilities	City services		
Fencing	Chain Link on south and east		

## Washington Elementary School

### Building Components and Deferred Maintenance

School: Washington Elementary School			
<b>Building Components (Main Building):</b>			
Component	Sub-Component: Condition Observed and Action to Fix	Cost	Priority
<b>Structural Systems</b>			
Footings/Foundation Walls	Concrete spread footings with stem wall foundation, some erosion		
	Crawl Space		
Floor Systems	Concrete slabs on steel joist over crawl space		
Columns and Bearing Walls	Steel columns with some areas of bearing walls		
Beams and Joists	Steel and wood beams / trusses and wood joists		
<b>Envelope</b>			
Roof	Hypalon – Installed in 1984,1985,1987,1996 –planned to be replaced by 2014. <b>Roof replaced. Desire/need to wrap fascia on soffits.</b>	\$50,000	
	Insulation unknown		
Walls	Brick predominant		
Exterior Windows	Aluminum. <b>Windows replaced.</b>	\$0	
	Double Pane glass- recently replaced. <b>Windows replaced in classrooms, not corridors.</b>		
	Clearstory windows in classrooms covered but not insulated. <b>Glazing replaced with Mapes panels.</b>		
Exterior Doors	All Exterior Doors wood, except new HM doors at ADA entry. <b>Exterior doors replaced.</b>	\$0	
	Single Glass relites at some exterior doors single glazed		
Thermal Systems	Insulation – 2" rigid		
<b>Interior Finishes</b>			
Interior Walls	Facility Typical – Framed Plaster: Minor damage. <b>Added wall to create classroom, at library.</b>		
	Gym/Entry/Halls – Brick: Small area of entry, gym brick painted		
	Hallway - Wood: Halls have wood slats one side		
	Toilets – Framed Ceramic tile: Minor cracking/patched. <b>Boy's restroom still requires ADA accomodation.</b>		
Ceilings	Facility Typical – Glued on: Failing/minor staining	\$60,363	
	Kitchen/Boiler/Admin - Plaster		
	Kitchen– ACT: Worn/minor damage		
Doors/Hardware/Windows	Solid Core Wood Doors: Aging/wear		
	Door Hardware – 80% of hardware is knob style and not ADA compliant		
Floor Finishes	Facility Typical – Carpet. <b>Carpet replaced in educational spaces.</b>		
	Hallway in addition – Asbestos: minor wear/some patching. <b>Deficient flooring replaced.</b>	\$0	
	Toilets Addition – Ceramic Tile		
	Gym – Wood: Heaving occurring in one spot		
	Hallways/Toilets original building - Terrazzo		
	Kitchen – SV: Worn aging. <b>Sheet vinyl flooring in kitchen replaced.</b>		
	Nurse/Teachers' Lounge – VCT: Good		
Wall Finishes	Paint throughout in good condition		
	Toilets- Ceramic Tile – minor wear some patching		
	FRP: In kitch: Wear		
<b>Specialties</b>			
Toilet Partitions	Metal Partitions aging but functional		
Fixed Seating/Risers	Bleachers: N/A		
	Theater: N/A		
	Classroom/Lecture: N/A		
	Cafeteria: N/A		

## Washington Elementary School

### Building Components and Deferred Maintenance

Markerboards/ Cabinets	All Rooms Contain a markerboard Cabinets: Wood base cabinets aging but functional Countertops: Plastic laminate counters aging, but functional		
<b>HVAC System</b>			
Heating	Building is connected to Facility Master Controls BMS: Acceptable Controls upgraded to district standard Boiler/Furnace central boiler updated 1997 +/- Boilers upgraded to district standard - high efficiency condensing Room Units: Unit ventilators Hydronic Piping: Steam heat replaced with 3 pipe heating & cooling system in 1998 Alternative Fuel: No		
Ventilating	Air Handler: Multi-purpose room Ductwork: Classrooms are connected to an exhaust system Specialized Exhaust: Limited Room Ventilators: Unit ventilators Unit controllers obsolete but replacements still available		
Cooling	Central AC: Yes Room AC: No Hydronic Piping: Cooling is part of 3 pipe system		
<b>Plumbing System</b>			
Fixtures	Plumbing fixtures in good condition some upgraded to new flush valves – not all flush valves are compatible with fixtures Low flow flush valves on standard fixtures. Priority is to add a hand wash sink in kitchen. Hot Water Generation: Central Alternative Fuel: No	\$3,000	\$3,000
Supply Piping	Piping: Varies Pumps: Circulating		
Waste Piping	Piping: Varies Pump: No		
<b>Electrical System</b>			
Building Service	600A, 120/208 3 Phase Meter Base: Acceptable Generator: No Alternative Source: No		
Lighting	Fixtures - PCB: No Retrofitted with T-8's Light Level Controls: Limited Upgraded to occupancy sensors Occ/Daylight Sensor: No Added to classroom spaces	\$0	
Distribution	Custodian reported no service problems – not tripping breakers — limited panel space throughout building – panel upgrades required to increase space Devices: Power & data distribution upgrade needed	\$303,987	
Voice/Data	Intercom: Good Clock: Acceptable Telephone: New Data: Computer lab in Library and 2 mobile, 2 ports per classroom in partnership with Century Link, Wireless is excellent at 'Enterprise' level, Power is an issue. GPON system added throughout building.	\$0	

## Washington Elementary School

### Building Components and Deferred Maintenance

<b>Conveying &amp; Vertical Circulation</b>			
Elevators, lifts, stairs ramps	Not applicable		
<b>Safety System</b>			
Egress	Exit Systems: Clear paths of egress		
Extinguishing System	Sprinkler: None observed	\$169,772	
	Cabinet Systems: New		
Exit/Emergency Lighting/Alarms	Exit Lights: Yes		
	Emergency Lighting: Yes		
	Smoke/Heat Detection: Yes		
	Fire Alarm System: Yes.		
	Fire alarm system updated to addressable, but not voice evac.		
<b>Building Components (Annex):</b>			
<b>Component</b>	<b>Sub-Component: Condition Observed and Action to Fix</b>	<b>Cost</b>	<b>Priority</b>
<b>Structural Systems</b>			
Footings/Foundation Walls	Concrete spread footings & stem wall foundation		
Floor Systems	Concrete slab on grade		
	Cast concrete with perimeter duct system		
Columns and Bearing Walls	Concrete masonry units interior and wood exterior		
Beams and Joists	Glu lam beams with wood joists		
<b>Envelope</b>			
Roof	Hypalon – Installed in 1993 –plans for replacement by 2014.		
	Annex roof replaced.		
	Insulation 4" batt plus unknown w/ reroof		
Walls	Brick on concrete masonry and panel infill at windows		
Exterior Windows	Aluminum.		
	Windows not replaced.		
	Double Pane Glass		
Exterior Doors	Wood Exterior Doors.		
	Annex exterior doors replaced.		
	Overhead Door: N/A		
Thermal Systems	Insulation 1" rigid		
<b>Interior Finishes</b>			
Interior Walls	Facility Typical – Concrete Block painted		
	Toilets – Block with Ceramic Tile: Worn/minor damage to tile		
Ceilings	Facility Typical – Gyp/Plas: Good		
Doors/Hardware/Windows	Solid Core Wood Doors: Aging/wear		
	Door Hardware – Non ADA compliant		
Floor Finishes	Facility Typical – Carpet: New		
	Hallway- Asbestos Tile: minor wear/aging.		
	Deficient annex floors replaced.	\$0	
	Toilets– Ceramic Tile: wear.		
	Deficient annex floors replaced.		
Wall Finishes	Paint throughout in good condition		
<b>Specialties</b>			
Toilet Partitions	Metal Partitions aging but functional		
Markerboards /Cabinets	All Rooms Contain a markerboard		
	Cabinets: Wood base cabinets aging but functional		
	Countertops: Plam counters aging, but functional		

## Washington Elementary School

### Building Components and Deferred Maintenance

<b>HVAC System</b>			
Heating	Controls: Not connected to district master controls		
	Building added to district BMS system		
	BMS: No		
	Building standard		
	Individual gas forced air furnaces		
	Classroom fan coil units with hot water heat, perimeter fin tube		
	Room Units: No		
	Hydronic Piping: No		
Ventilating	Exposed ceiling mounted piping		
	Alternative Fuel: No		
	Air Handler: No		
	Ductwork: Perimeter concrete duct central fresh air		
Cooling	Buried supply ductwork with central return air, economizer equipped		
	Specialized Exhaust: Limited		
	Room Ventilators: No		
	Central AC: No		
	Fan coils equipped with DX cooling		
	Office spaces equipped with ductless systems		
Plumbing System	Room AC: No		
	Building equipped throughout		
Fixtures	Hydronic Piping: No		
	Sinks/Toilets/Shower: Original, difficulty getting parts	\$18,000	\$18,000
	Hot Water Generation: Central		
Supply Piping	Alternative Fuel: No		
	Piping: Varies		
Waste Piping	Pumps: Circulating		
	Piping: Varies		
Electrical System	Pump: No		
	From main building		
Lighting	225A Panel served with 150A breaker from MDP		
	Fixtures - PCB: No		
	T-8's throughout		
	Light Level Controls: Limited		
	Occ/Daylight Sensor: No		
Distribution	Occupancy sensors added throughout	\$0	
	Devices: Power & data distribution upgrade needed		
Voice/Data	Additional receptacles and plug-mold added	\$0	
	Intercom: Good		
	Clock: Acceptable		
	Telephone: Recently updated		
	Data: only one feed to annex.		
<b>Conveying &amp; Vertical Circulation</b>			
Elevators, lifts, stairs ramps	GPON system added throughout annex.	\$0	
	NA		
<b>Safety System</b>			
Egress	Exit Systems: Clear paths of egress		
	Sprinkler: No automatic sprinkler		
Extinguishing System	Cabinet Systems: No		
	Exit Lights: Yes		
Exit/Emergency Lighting/Alarms	Emergency Lighting: Yes		
	Smoke/Heat Detection: Updated		
	Fire Alarm System: Updated.		
	Fire alarm system upgraded to addressable, not voice evac.		

## Washington Elementary School

### Code Review / ADA

Code Review/Americans with Disabilities Act (ADA):			
	Description	Cost	Priority
Site	Paved walks provide access to the building from the street and sidewalks. Parking area is accessible to main entrance via paved surfaces. The paved play areas are adjacent to the building and are accessible from the main entrance.		
Parking	1 Handicap accessible stall (van)		
Approach, Entry & Exit	The main entrance is the only accessible entrance to the building. Added ADA ramp to courtyard and kitchen	\$0	
Ramps	The ramp at the main entry appears to be compliant in slope and handrails appear compliant as well.		
Stairs	Stairs at entrances have no handrails. There is a handrail at main entrance.	\$0	
Elevator/lift	NA		
Assembly Areas	Assembly areas are accessible		
Classroom Access	Exit doors and exterior doors from annex are too narrow, many doors have 'knob' style non-compliant hardware. Main building has knob style hardware. Work still needs to be done.	\$87,000	
Restroom Access	Access to restrooms meets ADA Guidelines. Annex has no access to toilets. Work still needs to be done.	\$7,402	\$7,402
Toilets/Restrooms	One toilet is modified to comply with ADA guidelines. Annex has no toilets meeting ADA criteria. Boys restrooms still require ADA accomodation. Girls restroom was updated to ADA compliance.	\$25,500	\$25,500
Drinking Fountains	One dual height		
Counter Access	Lunch Counter is at 36"		
Signage per ADA	Non-compliant		
Audio and Visual Alarms	Yes		
Obstacles	None other than noted		
Automatic Sprinkler System	No		
Exit Corridors	Per IBC Table 1018.1; Corridor Rating of E Occupancy (Educational) buildings shall be 1 hour without an Automatic Sprinkler System. Exit corridor rating is reduced to 0 (zero) hours with an Automatic Sprinkler System.		
Other	Exit enclosures shall be enclosed per IBC 1022.		
Other	Per 1018.4; maximum length of dead end corridor shall be 20 feet in a non-sprinkled E occupancy and 50 feet in a sprinkled occupancy. Exit way passes through intervening space.		
<b>Notes:</b> 1. ADA – Compliance with ADA in the existing building is recommended if major construction is completed at this building. 2. Fire/Safety – Fire suppression system in the existing building is recommended if major work is done at this building.			
<b>Building Code Guidelines:</b> 2009 International Building Code; 2009 International Existing Building Code; 1020 ADA Standards for Accessible Design; Administrative Rules of Montana 24.301.351; 2000 NFPA 101 - Life Safety Code			

## Washington Elementary School

### Recommendations

Additional detail regarding scope and cost related to Educational Adequacy and Deferred Maintenance projects can be found in the following tables:

RECOMMENDED BUILDING COMPONENT (FAME) IMPROVEMENT DETAIL:		
Component	Comments	Estimated Cost
Building Envelope	No recommended improvements	\$0
Interiors & Specialties	No recommended improvements	\$0
Mechanical, Electrical & Plumbing	Install hand wash station in kitchen	\$3,000
Fire/Life Safety	No recommended improvements	\$0
Site	Seal coat playground	\$8,415
ADA	Boys ADA restroom improvements	\$32,902
Does not include Soft Costs		Total \$ 44,317

RECOMMENDED EDUCATIONAL ADEQUACY IMPROVEMENT DETAIL:					
Component:	Item Description:	Qty	UOM	Unit Cost	Cost Estimate
Site Improvements					
Total Site:		0			\$0
Addition					
Four (4) Classroom Addition	Construct four (4) Classroom Addition	3600	SF	\$210	\$756,000
Subtotal:		3600	SF	\$210	\$756,000
Gross Area:		1260	SF	\$210	\$264,600
Total Addition:		4860	SF	\$210	\$1,020,600
Remodel					
Total Remodel:		0			\$0
Subtotal:					\$1,020,600
Estimated Cost *Does not include soft costs					\$1,020,600
TOTAL RECOMMENDED FACILITY IMPROVEMENT COST SUMMARY:					
Description:	Comments:	Cost Estimate			
FAME		\$44,317			
Educational Adequacy		\$1,020,600			
Estimated Cost *Does not include soft costs		\$1,064,917			

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## Ben Steele Middle School

### Overview

Ben Steele Middle School serves academic grades 6-8 for Billings Public Schools. The facility is a 119,000 square foot two-story school with drop-off for students via bus or car and access for building services and additional parking for staff and after-hours community use along 56th St W. A baseball and softball field are located to the west of the school, and a football/soccer field is located to the south, adjacent to the teacher and community parking. In order to provide 100% on-site infiltration of stormwater, several smaller detention ponds and swales are located close to the building and parking areas.

Ben Steele Middle School is the second of two new middle schools designed for the District, the programming follows the design standard set from the first of the two schools, Medicine Crow Middle School. To capitalize on the efficiencies of prototype designs, the entire academic portion of Medicine Crow Middle School has been reused. The public spaces, including the Commons, Performance areas, Gym and Kitchen have been rearranged to most efficiently respond to the site and context. The principal exterior materials include masonry, fiber-reinforced cement board panels, metal panels and storefront glazing systems. Facades are composed to allow for maximum daylighting of classrooms and expression of interior organization.

The native soils on the site are very weak. Driven piles are located at each column location on the interior of the building. At the perimeter of the building these piers are located beneath foundation wall corners and at 12'-0" – 18'-0" centers at intermediate spacing. The rammed aggregate piers are laid out in a grid formations over the entire footprint of the building. The main floor is a 5" reinforced slab-on-grade. The upper floor is composed of a 4" concrete slab supported by 1 ½" light gauge galvanized metal decking. The decking is supported by open web steel bar joists. The roof is framed with open web steel bar joists covered with 1 ½" light gauge steel decking. Exterior walls are framed with 6" steel studs at 16" o.c. The walls are sheathed with Dens Glass and/or OSB for shear strength. The columns supporting both the roof and upper floor framing are located within exterior walls.

A central gas-fired boiler plant serves the entire facility. A variable flow primary only heating hot water distribution system is utilized. Heating hot water distribution to air handling unit preheat coils and facility terminal units are accomplished with a direct-return piping system utilizing a variable volume centrifugal pumping system. A central chilled water plant using an air-cooled chiller produces chilled water for mechanical cooling. Chilled water distribution to the air handling units uses a direct-return 2-pipe piping system with variable volume centrifugal pumping system. Several roof-mounted central station air handlers provide heating, cooling, ventilation, and filtration needs for the facility's classrooms, admin, and commons, areas. The air handlers are variable air volume system units with a return fan, a 100% economizer, which includes an independent controlled outdoor air intake, a MERV 8 rated filtration system, a heating hot water preheat coil, a cooling coil, and a supply fan.

5640 Grand Ave  
Billings MT 5910  
(406) 601-1600

Year Built .....	2017
Renovations .....	0
Portables .....	0
Site Acres .....	30.00
Building SF .....	119,000
Current Enrollment .....	745
Capacity .....	715
Target Capacity .....	661



# 4 K-8 FACILITIES

## Ben Steele Middle School

### Existing Program Spaces



Level 2



Level 1

#### PLAN LEGEND

- CLASSROOM
- SPECIAL SERVICES
- LIBRARY
- ADMINISTRATION
- MEP/TOILET/KITCHEN
- COMMONS/CAFE
- GYMNASIUM
- MUSIC/ART

## Ben Steele Middle School

### Site Characteristics and Deferred Maintenance

Site Characteristics:			
Component		Cost	Priority
Lot Size	35.30 acres		
Building Area	118,323 sf		
Topography	Shallow grades, sloping towards south end of site. Previous land use was farmland, soft spots.		
Drainage	Good – some minor issues with water pooling in minimal areas of the site. On-site stormwater system drains to retention ponds, located throughout the site		
Drop Off	Parent Drop-off / visitor parking lot north of school, 47 total spaces.		
Hardscape	Concrete sidewalks and plazas. Raised CIP concrete planter walls. Asphalt basketball courts. Concrete sidewalk network runs throughout site, connecting residential developments to school and grand avenue/56th St. 10' multi-use trail along Grand Ave. & 56th St.		
Parking Surface	Drop-off / visitor parking lot: asphaltic paving, 34,124 sf Bus parking / drop-off / pick-up: asphaltic, 34,490 sf Faculty / event parking lot: asphaltic paving, 66,798 sf Service yard / trash area: asphaltic paving, 9,010 sf.		
Stalls	Drop-off / visitor parking lot: 47 spaces (2 HC) Bus parking / drop-off / pick-up: 24 spaces Faculty / event parking lot: 180 spaces (12 HC) Service yard / trash area: 0 spaces		
Paved Walks/Surfaces	62,227 sf of concrete sidewalks, plazas, etc, including concrete sidewalks at baseball fields, but not 10' multi-use trail at 56th St. & Grand Ave.		
Steps, ramps, retaining walls	Concrete steps at south recessed courtyard, with steel handrail. ADA curb ramps at accessible routes.		
Paved Sports Courts	Two (2) half-court basketball courts, asphaltic paving.		
Playgrounds	None		
Softscape	Large areas of sodded, hydroseeded, native turf and landscaped/shrubbed areas, throughout the remainder of site that is not occupied by school, hardscape or athletic fields.		
Play Fields	1 football field and athletic track, long jump / pole vault / shotput. 2 softball fields and enclosed at-grade dugouts, 2 soccer fields. Electronic scoreboards at base/softball fields, and football field.		
Landscaping	Primarily irrigated turf & native grasses. Several trees on-site, primarily deciduous. Landscaped/shrubbed areas at planting islands, raised planter beds, and around school perimeter. Greenhouse on-site, south of academic wing / shop rooms.		
Utilities	City services, except no municipal storm drain.		
Fencing	Chain Link, at softball fields.		

## Ben Steele Middle School

### Building Components and Deferred Maintenance

Building Components:			
Component	Sub-Component: Condition Observed and Action to Fix	Cost	Priority
<b>Structural Systems</b>			
Footings/Foundation Walls	Concrete spread footings with stem wall foundation. Pad footings at interior columns. Footings sit on rammed aggregate piers.		
Floor Systems	Concrete slab on grade and concrete slab on steel deck / joists.		
Columns and Bearing Walls	Steel columns and beam system, with some areas of cmu bearing walls, at gymnasium		
Beams and Joists	Steel beams, open-web joists and decking		
<b>Envelope</b>			
Roof	Versico 60mil fleeceback PVC membrane, installed in 2015.		
	1/2" densdeck protection board, over 6" min polyisocyanurate insulation, vapor retarder on steel deck.		
	Polyiso crickets, term bars, walk pads at roof equipment.		
Walls	6" or 8" Metal stud walls, baloon framed, batt insulation between studs. 12" CMU masonry walls at gymnasium.		
	1/2" plywood sheathing		
	2" continuous mineral wool rigid insulation between 2" Z-furring strips.		
	Exterior wall finish material is a combination of fiber-cement rainscreen panels, flat-lock metal panels, and CMU masonry veneer.		
Exterior Windows	Aluminum storefront, 1" insulated glazing panels in 2"x4" storefront frames, and 2"x6" curtain wall frames. Mostly inoperable, some operable, awning-type.		
Exterior Doors	Hollow metal and aluminum storefront, 1" insulated glazing at door vision lites.		
Thermal Systems	6" fibergalss batts at metal studs w/ 2" rigid mineral wool, continuous. 2" rigid mineral wool, continuous at gymnasium CMU walls.		
<b>Interior Finishes</b>			
Walls	Light gauge metal framed partitions with gypsum board painted finish. Painted CMU at gymnasium.		
	Plastic laminate wainscots & panels at assembly & circulation areas. Tackable wall panels at assembly & circulation areas.		
	Painted CMU at gymnasium.		
	Acoustic wall panels at gymnasium, commons & music rooms		
	Toilet rooms – Ceramic tile		
	Marker boards in classrooms, typ.		
	Plywood wall panels at shop rooms		
Ceilings	Facility Typical – ACT lay-in ceilings. Framed gypsum board ceilings at reception, main entrance, stairwells.		
	Gym - exposed to ductwork and structure, painted.		
	Commons - Acoustical metal ceiling		
	Kitchen - Vinyl-faced ACT lay-in ceiling		
Doors/Hardware/Windows	Solid core wood interior doors, in hollow metal frames		
	ADA hardware, panic hardware at required exits. Electrified (card reader) hardware at main entrances & exits. Auto-openers at main entrance.		
	Morotorized security grilles with emergency operation puch-button.		
	Hollow metal relites. Tackable wall panels in relite panes at classroom entrance doors.		

## Ben Steele Middle School

### Building Components and Deferred Maintenance

Floor Finishes	Tech Ed/Shop/Lockers/Classrooms – Polished & sealed concrete.		
	Second level - LVT flooring typical, with some carpet tile and sealed concrete		
	First level - polished & sealed concrete typical, with some carpet tile, LVT and sealed concrete		
	Gym – maple wood athletic floor		
	Library/Admin – Carpet tile		
	Kitchen - quarry tile.		
	Toilets – Polished & sealed concrete at lower level, porcelain tile at second floor.		
<b>Specialties</b>			
Toilet Partitions	Solid plastic, overhead-braced. ADA stalls provided as required.		
Fixed Seating/Risers	Bleachers: motorized retractable/telescoping type. Decking is plywood sheeting with clear polyurethane sealant, supported by steel understructure.		
	Theater: N/A		
	Classroom/Lecture: N/A		
	Cafeteria: N/A		
Markerboards/Cabinets	All rooms have markerboards and tack strips, tackable wall panels. Casework is plastic laminate throughout. Countertops are plastic laminate over MDF core.		
<b>HVAC System</b>			
Heating	BMS:		
	Boiler/Furnace: Natural gas-fired central boiler plant. Primary / secondary heating hot water distribution system to air handling unit preheat coils & terminal units.		
	Hydronic Piping: 2-pipe direct return or reverse-return		
	Alternative Fuel: No		
	Air Handler: Roof-mounted air handler units with indoor-mounted central air station handlers in mechanical spaces. Variable air volume system units with economizers & MERV 8 filters. Gym air handler has no cooling.		
	Specialized Exhaust:		
	Ductwork: Galvanized round & rectangular		
Cooling	Central AC: Cooling tower with air-cooled		
	Hydronic Piping: Direct-return 2-pipe piping system		
<b>Plumbing System</b>			
Fixtures	Fixture types: Wall-hung & under-counter lavatories, wall-mounted flush-valve water closets, mop sinks, commercial kitchen fixtures, etc.		
	Hot Water Generation: High-efficiency natural gas-fired, sealed combustion, direct vent domestic water heaters with hot water storage tanks.		
	Alternative Fuel: No		
Supply Piping	Piping: Copper - water; Black steel sch 40 steel - natural gas; Ductile-iron - water distribution.		
	Pumps: Recirculation pumps, elevator sump pump.		
Waste Piping	Piping: Cast-iron & PVC		
<b>Electrical System</b>			
Building Service	2000A, 277/480 3 Phase, step-down transformers to 120/208.		
	Generator: No.		
	Alternative Source: No		
Lighting	Fixtures: LED - troffers, recessed cans, strip fixtures, wall sconces, linear pendants, pole site lighting.		
	Light Level Controls: occupancy sensors with dual-level lighting switching.		
	Occ/Daylight Sensors: Yes - Occupancy		
	Wiring: Copper, Aluminum for 200 amps & above. EMT conduit above grade, PVC below-grade. MC cable at equipment/fixtures only.		

## Ben Steele Middle School

### Building Components and Deferred Maintenance

Distribution	Devices: Power & data distribution: GPON data distribution with wireless.		
Voice/Data	Intercom: Yes - ceiling speakers. Clock: Yes - wireless analog. Clock/bell/paging integrated system. Data: GPON data distribution with wireless.		
<b>Conveying &amp; Vertical Circulation</b>			
Elevators, lifts, stairs, ramps	Hydraulic TK elevator with machine room, 100 - 125 FPM - 2,100lb capacity, 460 V 3-phase power. Plastic Laminate interior with SS accent, handrails, base.		
	Lifts: N/A		
	Stairs: Steel pan with concrete treads, polished concrete treads with abrasive nosing embeds.		
	Ramps: at Commons. Concrete slab on grade, polished concrete finish.		
<b>Safety System</b>			
Egress	Exit Systems: clear paths of egress. Automatic fire door at main academic corridor, both levels.		
Extinguishing System	Building Fully sprinkled, wet-pipe system. Cabinet Systems: No		
Exit/Emergency Lighting/Alarms	Exit Lights: Yes - emergency lights & exit signs, as required by code. Emergency Lighting: Yes Smoke/Heat Detection: Yes Fire Alarm System: Yes - addressable, with voice evac.		
Cameras	Security cameras at main entrances & exits. IP wired network		

## Ben Steele Middle School

### Code Review / ADA

Code Review/Americans with Disabilities Act (ADA):			
	Description	Cost	Priority
Main Building Entrance	Main entrance to building is fully ADA accessible with compliant hardware and auto-opening devices.		
Site	Several paved surfaces provide access to the exterior and public rights of way, all are ADA accessible. Curb cuts at accessible routes.		
Parking	14 Accessible parking stalls		
Approach, Entry & Exit	Approach to main entrances are accessible, as are other secondary entrances & exits		
Ramps	Accessible interior ramp at Commons.		
Stairs	Multiple sets of stairs inside, steps only outside. Stairs and handrails meet code.		
Elevator/lift	Elevator provides access to both levels.		
Assembly Areas	All accessible.		
Classroom Access	Classroom doors and hardware are code compliant and ADA-accessible		
Restroom Access	Restrooms are code-compliant and ADA-accessible		
Toilets/Restrooms	Toilets and restroom fixtures are code-compliant and ADA-accessible		
Drinking Fountains	Drinking fountains are code-compliant and ADA-accessible		
Counter Access	Countertops are code-compliant and ADA-accessible		
Signage per ADA	Building / room signage is code-compliant and ADA-compliant.		
Audio and Visual	Audio and visual devices are code-compliant and ADA-accessible		
Alarms	Alarm systems are code-compliant.		
Obstacles	None observed.		
Automatic Sprinkler System	Building is fully sprinkled, with a code-compliant suppression system.		
Exit Corridors	Exit corridors are code-compliant and ADA-accessible		
<b>Notes:</b>			
1. ADA – Compliance with ADA in the existing building is recommended if major construction is completed at this building.			
2. Fire/Safety – Fire suppression system in the existing building is recommended if major work is done at this building.			
Other			
Other			
<b>Notes:</b>			
1. ADA – Compliance with ADA in the existing building is recommended if major construction is completed at this building.			
2. Fire/Safety – Fire suppression system in the existing building is recommended if major work is done at this building.			
<b>Building Code Guidelines:</b>			
2009 International Building Code; 2009 International Existing Building Code; 1020 ADA Standards for Accessible Design; Administrative Rules of Montana 24.301.351; 2000 NFPA 101 - Life Safety Code			

# 4 K-8 FACILITIES

## Ben Steele Middle School

### Building, Site, Code Recommendations

No recommendations for Ben Steele.

RECOMMENDED BUILDING COMPONENT (FAME) IMPROVEMENT DETAIL:		
Component	Comments	Estimated Cost
Building Envelope		
	No recommended improvements	\$0
Interiors & Specialties		
	No recommended improvements	\$0
Mechanical, Electrical & Plumbing		
	No recommended improvements	\$0
Fire/Life Safety		
	No recommended improvements	\$0
Site		
	No recommended improvements	\$0
ADA		
	Unknown	
Does not include Soft Costs		Total \$0

RECOMMENDED EDUCATIONAL ADEQUACY IMPROVEMENT DETAIL:					
Component:	Item Description:	Qty	UOM	Unit Cost	Cost Estimate
Site Improvements		0	SF		\$0
Total Site:		0	SF		\$0
Addition					
Multi-purpose Room Addition		0	SF	\$210	\$0
Subtotal:		0	SF	\$210	\$0
Gross Area:		0	SF	\$210	\$0
Total Addition:		0	SF	\$210	\$0
Remodel					
Total Remodel:		0			\$0
Subtotal:					\$0
Estimated Cost <i>*Does not include soft costs</i>					
TOTAL RECOMMENDED FACILITY IMPROVEMENT COST SUMMARY:					
Description:	Comments:				
FAME					\$0
Educational Adequacy					\$0
Estimated Cost <i>*Does not include soft costs</i>					\$0

## Castle Rock Middle School

### Overview

Castle Rock is a grade 6, 7, & 8 middle school. The 1977 building consists of 34 +/- classrooms. The original building also included administration, library w/ supporting work rooms, band and chorus rooms, wood and metal shops, cafeteria / kitchen, gymnasium w/ stage, weight room, work out rooms, locker rooms, etc. A portion of the circulation area is through a two story common "atrium" space. There has been one small addition in 1979 to the shop area. The building is predominantly a two story structure but has five different levels. It has a concrete foundation system with concrete slab on grade or slab on steel joist floor system. The structural system is steel columns with steel joists and decking. Perimeter walls are steel studs and concrete masonry units (cmu) that are faced in brick with some areas of aluminum storefront w/ glass and opaque glazing. The current roof is EPDM, Hypalon and PVC installed at various times (see below) with 5" minus of tapered insulation. The walls have 6" batt insulation at metal studs and 2" rigid insulation at cmu.

1441 Governor's Blvd  
Billings, MT 59105  
(406) 281-5800

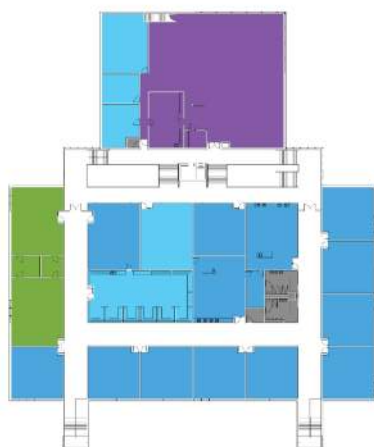
Year Built .....	1977
Renovations .....	Addition 1979
Portables .....	0
Site Acres .....	28.18
Building SF .....	110,471
Current Enrollment .....	584
Capacity .....	715
Target Capacity .....	661



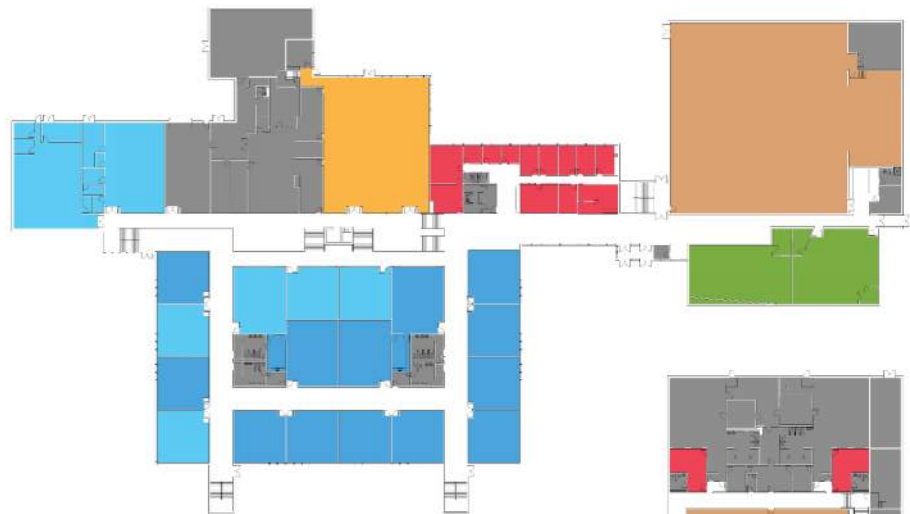
### Existing Program Spaces

#### PLAN LEGEND

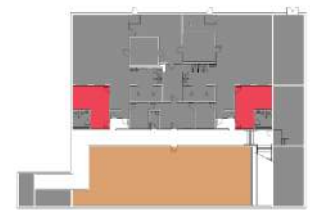
- CLASSROOM
- SPECIAL SERVICES
- LIBRARY
- ADMINISTRATION
- MEP/TOILET/KITCHEN
- COMMONS/CAFE
- GYMNASIUM
- MUSIC/ART



Upper Level



Main Level



Lower Level

## Castle Rock Middle School

### Site Characteristics and Deferred Maintenance

Site Characteristics:			
Component		Cost	Priority
Lot Size	28.18 acres		
Building Area	112,801 sf		
Topography	Sloping - with areas of erosion		
Drainage	Good – some issues with water pooling in various areas of the site, berms around school force water onto paved area. Added french drain at turnaround loop. Remaining drainage improvements still need to be done.	\$200,000	
Drop Off	Designated drop off area adjacent to main entry		
Hardscape	Asphalt 9,600 sf some cracking. Add paving in back to storage shed and garage.	\$30,008	
Parking Surface	Asphalt 83,800 sf some cracking – poor circulation at receiving. Replaced some pole lighting at parking lot. Priority is to seal coat bus lane.	\$107,264 \$6,948	 \$6,948
Stalls	83 Stalls 2 HC – not enough parking		
Paved Walks/Surfaces	Concrete 22,240 sf some settlement / cracking.	\$62,773	
Steps, ramps, retaining walls	Concrete with some wear at entry. Main entry steps replaced. Desire is to add awning over steps leading to the playground.	\$2,000	
Paved Sports Courts	Asphalt areas with activities marked out. Priority is to seal coat playground.	\$2,933	\$2,993
Playgrounds	Added playground equipment.		
Softscape	1,011,692 sf -Large areas of grass around school		
Play Fields	Football, baseball, track. New scoreboards installed at middle schools. Install power to football field scoreboard.	\$20,000	
Landscaping	Several trees on the property, some boulders are present at entry – planting grass is difficult due to soil conditions. Issues with irrigation pump systems. Verify with Scott Reiter. Install greenhouse	\$115,000	\$115,000
Utilities	City services		
Fencing	Chain Link		

## Castle Rock Middle School

### Building Components and Deferred Maintenance

Building Components:			
Component	Sub-Component: Condition Observed and Action to Fix	Cost	Priority
<b>Structural Systems</b>			
Footings/Foundation Walls	Concrete spread footings with stem wall foundation Building is settling. Structural bracing was installed post construction to address this. <b>Work still needs to be done.</b>	\$29,375	
	Floors are shifting in stairwells and gym areas causing electrical problems		
Floor Systems	Concrete slab on grade and concrete slab on steel deck / joists.		
Columns and Bearing Walls	Steel columns with some areas of cmu bearing walls		
Beams and Joists	Steel beams, joists and decking		
<b>Envelope</b>			
Roof	Multiple roof areas with multiple types and ages of roofing. <b>Roof replaced.</b> EPDM – Main areas of building - Installed 2010, 2006. <b>Roof replaced.</b> PVC – in SW corner and main entry - installed 2003. <b>Roof replaced.</b>		
	Hypalon – at garage and high central area - Installed 1995 Garage Ballasted Installed 1980. <b>Roof replaced. Skylights replaced.</b>	\$0	
	Insulation 5" rigid.		
Walls	Brick and Metal - Water infiltration issues/ settling issues/ brick deteriorating in places/ majority of issues at west side of classroom wing Storefront leaking in certain areas, some discoloration, premature aging.	\$115,020	
Exterior Windows	Aluminum Single glazed – some plexi glass or film in poor condition. <b>Windows replaced.</b>	\$0	
Exterior Doors	Hollow Metal – Older Main Entry storefront doors are failing, other storefront doors functional. <b>Exterior doors replaced.</b>	\$0	
Thermal Systems	6" batt at metal studs, 2" rigid cavity at cmu.		
<b>Interior Finishes</b>			
	Facility Typical – Metal framed Gyp: found throughout facility most interior walls are gyp in good condition with minor wear. <b>Build classroom wall and remove temporary.</b>	\$5,000	
	<b>Seal window gaps between offices.</b>	\$5,000	
	Misc. locations throughout – Painted Masonry: found throughout facility in good condition		
	Classrooms (small number) – Moveable wall Panel: Fabric covered moveable wall panels are located in a small number of classrooms – poor quality/aging	\$104,707	
	Toilets – Ceramic Tile: aging/wearing some damage from relocating accessories. <b>Restrooms remodeled: partitions, flooring, fixtures &amp; ADA improvements.</b>		
	<b>All middle schools received new "Enterprise Rooms"</b>		

## Castle Rock Middle School

### Building Components and Deferred Maintenance

Ceilings	Facility Typical – ACT: Sanitary tiles in kitchen, poor condition throughout facility many tiles have water damage, overall age of grid is apparent. <b>ACT ceiling tiles replaced at select locations.</b>	\$0	
	Gym/Stage – Spray on fire proofing over exposed metal: good condition. <b>Added fitness room at stage.</b>		
	Basement Hall/PE Office/Toilets/Locker – Gyp Board: Good condition some wear/staining		
Doors/Hardware/Windows	Non ADA compliant “knob” style hardware		
	Solid Core Wood Doors		
	HM Frames		
	HM Relites		
Floor Finishes	Tech Ed/Shop/Lockers – Concrete Sealed: Good condition well maintained		
	Major Hallways – Terrazzo: Good Condition well maintained		
	Gym/Stage – Wood: Floor is heavily used and showing wear		
	Classrooms/Library/Wrestling/Music/Admin – Carpet: Varying conditions from new to very poor in typical classroom. <b>Deficient carpet floors replaced.</b>	\$0	
	Toilets – Ceramic Tile: poor condition – age/wear. <b>Deficient floor tile replaced.</b>		
	Home Economics, Sewing, Art, Sci Classrooms/Secondary Hallways – VCT: varying conditions new in halls older in rooms. <b>Deficient VCT flooring replaced.</b>	\$0	
	Kitchen/Cafeteria – Sheet Vinyl: Poor condition age/heavy wear. <b>Deficient sheet vinyl flooring replaced.</b>		
<b>Specialties</b>			
Toilet Partitions	Metal Older but functional. <b>Restrooms remodeled: Partitions, flooring, fixtures &amp; ADA improvements.</b>		
Fixed Seating/Risers	Bleachers: N/A		
	Theater: N/A		
	Classroom/Lecture: N/A		
	Cafeteria: N/A		
Markerboards/Cabinets	All rooms have markerboards Casework is plastic laminate throughout in varying states of wear, all seems functional. <b>New reception desk.</b>		

# Castle Rock Middle School

## Building Components and Deferred Maintenance

HVAC System			
Heating	Building is Connected to Facility Master Controls BMS: acceptable BMS system upgraded to district standard. Priority is to replace building temp control front end.	\$10,000	\$10,000
	Boiler/Furnace: boiler nearing end of useful life Central Plant replaced to improve deferred maintenance items and improve operational efficiency		
	Hydronic Piping: 4 pipe Building system water source heat pump with boilers and closed circuit cooling tower		
	Alternative Fuel: No		
	Air Handler: Limited Air handlers provide ventilation air, units sized appropriately and replaced		
	Specialized Exhaust: Limited Room Ventilators: No Kitchen exhaust/make-up system at end of service life	\$250,000	\$250,000
	Ductwork: Ducted central fresh air Ventilation system upgraded to meet current code		
Cooling	Central AC: Yes chiller nearing end of useful life Room AC: heat pumps Building cooling tower replaced and heat pumps improved to high efficeincy units		
	Hydronic Piping: 4 pipe Heat pump system with variable volume pumping		
Plumbing System			
Fixtures	Fixtures appeared older custodian reported District has begun systematic upgrade with flooring projects. Priority is to modify 3 compartment sink and pot sink in kitchen.	\$140,000 \$2,000	\$140,000 \$2,000
	Hot Water Generation: central Water Heaters replaced in 2014		
	Alternative Fuel: No		
Supply Piping	Piping: Copper		
	Pumps: circulating Pumps updated with central plant project		
Waste Piping	Piping: pvc, varies Pumps: No		
Electrical System			
Building Service	2000A, 277/480 3 Phase, Transformers recently replaced to solve electrical problems (surges?) did not solve problem, movement in gym floor causes shorting	\$32,312	\$32,312
	Generator: Yes, limited		
	Alternative Source: No		
Lighting	Fixtures - PCB: No		
	T-8's used throughout- lighting is dated	\$450,000	\$450,000
	Light Level Controls: Very limited	\$165,000	\$165,000
	Occ/Daylight Sensor: Limited		
	Wiring: Adequate Priority is to replace lighting in band/choir rooms with LED fixtures.	\$25,000	\$25,000
Distribution	Devices: Power & data distribution requires upgrade	\$908,518	\$908,518
Voice/Data	Intercom: Older but functional Clock: Older system original to building clocks have trouble syncing Telephone: Recently upgraded Data: Computer Lab, 4 ports per room but not all active (not enough switching), Wireless 2-3 full access points, coverage is spotty, Cabling is newer. GPON system added throughout building.	\$0	

## Castle Rock Middle School

### Code Review / ADA

Code Review/Americans with Disabilities Act (ADA):			
	Description	Cost	Priority
Site	Main entrance to building is accessible with several other doors observed opening at grade; Entrance doors are accessible hardware is not. While several paved surfaces provide access to the exterior, however the slope and varying elevation of the site would make circulation difficult.		
Parking	2 Accessible parking stalls. Same condition.	\$1,586	
Approach, Entry & Exit	Approach to main entrance is accessible, other accessible exits observed		
Ramps			
Stairs	Multiple sets of stairs inside and out, Stairs seem to meet code handrails do not. Same condition.	\$12,803	\$12,803
Elevator/lift	Elevator provides access to all levels- repair needed. Repairs still needed.	\$35,250	\$32,250
Assembly Areas	All accessible except gym area		
Classroom Access	Some doorways are not wide enough to allow access, doors have 'knob' style non-compliant hardware. Work still needs to be done.	\$186,648	
Restroom Access	Restrooms are accessible		
Toilets/Restrooms	No accessible toilet stalls observed		
Drinking Fountains	Several drinking fountains removed no ADA fountains observed. Same condition.	\$9,964	\$9,964
Counter Access	Non-compliant		
Signage per ADA	None observed		
Audio and Visual Alarms	None observed		
Obstacles	None other than noted		
Automatic Sprinkler System	Building is only partially sprinkled		
Exit Corridors	Exit corridors are all connected by a large atrium		
<b>Notes:</b> 1. ADA – Compliance with ADA in the existing building is recommended if major construction is completed at this building. 2. Fire/Safety – Fire suppression system in the existing building is recommended if major work is done at this building.			
<b>Building Code Guidelines:</b> 2009 International Building Code; 2009 International Existing Building Code; 1020 ADA Standards for Accessible Design; Administrative Rules of Montana 24.301.351; 2000 NFPA 101 - Life Safety Code			

## Castle Rock Middle School

### Recommendations

Castle Rock has suffered from settlement issues that have caused cracking in finishes and shorts in the electrical system. Areas of settlement should be documented and monitored for changes. The main entrance is located such that the prevailing winds stress the main entry systems and storefront. Wind breaks or other additions should be considered when replacing the entry system.

Additional detail regarding scope and cost related to Educational Adequacy and Deferred Maintenance projects can be found in the following tables:

RECOMMENDED BUILDING COMPONENT (FAME) IMPROVEMENT DETAIL:		
Component	Comments	Estimated Cost
Building Envelope		
	No recommended improvements	\$0
Interiors & Specialties		
	No recommended improvements	\$0
Mechanical, Electrical & Plumbing		
	Replace building temp control front end, replace exhaust system in kitchen, continue plumbing and lighting fixture upgrades	\$1,982,830
Fire/Life Safety		
	No recommended improvements	\$0
Site		
	Seal coat bus lane and playground, install greenhouse	\$124,941
ADA		
	Stair handrails, elevator repairs & ADA drinking fountains	\$55,017
Does not include Soft Costs		Total \$2,162,788

RECOMMENDED EDUCATIONAL ADEQUACY IMPROVEMENT DETAIL:					
Component:	Item Description:	Qty	UOM	Unit Cost	Cost Estimate
Site Improvements					
Total Site:		0	SF		\$0
Addition					
Multi-purpose Room Addition		0	SF	\$210	\$0
Subtotal:		0	SF	\$210	\$0
Gross Area:		0	SF	\$210	\$0
Total Addition:		0	SF	\$210	\$0
Remodel					
Total Remodel:		0			\$0
Subtotal:					\$0
Estimated Cost *Does not include soft costs					
TOTAL RECOMMENDED FACILITY IMPROVEMENT COST SUMMARY:					
Description:	Comments:				
FAME					\$2,162,788
Educational Adequacy					\$0
Estimated Cost *Does not include soft costs					\$2,162,788

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## Lewis and Clark Middle School

### Overview

Lewis & Clark is a grade 6, 7, & 8 middle school. The 1956 building consisted of 46 +/- classrooms. The original building also included administration, library, band and chorus rooms, wood and metal shops, cafeteria / kitchen, auditorium w/ stage, gymnasium, locker rooms, etc. There has been one addition in 1962 that added 8+ classrooms on the north east corner. The building is predominantly a two story structure. It has a concrete foundation system with crawl space and concrete slab on steel joist floor system. The structural system is predominantly steel columns with steel joists and decking. Glu lams and wood decking were used at the gymnasium. Perimeter walls are concrete masonry units (cmu) that are faced in brick. Areas of aluminum storefront w/ glass. The roof is a concrete on steel deck w/ EPDM, Hypalon and PVC installed at various times with various insulation. The walls have 6" little or no insulation.

1315 Lewis Ave  
Billings, MT 59102  
(406) 281-5900

Year Built .....	1956
Renovations .....	Addition 1962
Portables .....	0
Site Acres .....	15.35
Building SF .....	136,200
Current Enrollment .....	769
Capacity .....	743
Target Capacity .....	687



### Existing Program Spaces



# 4 K-8 FACILITIES

## Site Characteristics and Deferred Maintenance

Site Characteristics:			
Component		Cost	Priority
Lot Size	15.35 acres		
Building Area	144,095 sf		
Topography	Flat to sloping		
Drainage	Mostly good to fair with poor along north side at gymnasium		
Drop Off	Designated drop off area adjacent to main entry		
Hardscape	Minimal		
Parking Surface	Asphalt 76,020 sf some cracking and deterioration. Some concrete and paving work has been completed. Priority is to seal coat small portion of back parking lot	\$150,000 \$2,726	\$150,000 \$2,726
Stalls	125 Stalls 2 HC		
Paved Walks/Surfaces	Concrete 12,080 sf poor to good, replacement needed at some large areas. Added concrete near kitchen. Priority to replace uneven & broken sidewalks.	\$18,459	\$18,459
Steps, ramps, retaining walls	Concrete		
Paved Sports Courts	Minimal		
Playgrounds	-		
Softscape	379,632 sf. Large areas of grass around school		
Play Fields	Football, Baseball, Track. New scoreboards installed at middle schools.		
Landscaping	Several trees on the property, Concrete seating areas at entry, and landscaped courtyard in interior. Priority to install greenhouse.	\$115,000	\$115,000
Utilities	City services		
Fencing	Chain Link		
Site Structures	Underground fuel storage tank needs to be removed in its entirety, or filled.	\$9,000	\$9,000

Level 1

Level 2

## Lewis and Clark Middle School

### Building Components and Deferred Maintenance

Building Components:			
Component	Sub-Component: Condition Observed and Action to Fix	Cost	Priority
<b>Structural Systems</b>			
Footings/Foundation Walls Floor Systems	Concrete spread footings and stem wall foundation. Minor cracking especially on west side. Concrete slab on steel deck / joists over crawl space w/ slab on grade at auditorium. Concrete on steel deck / joists at second floor and roof. <b>Work remains to be completed.</b>	\$17,625	
Columns and Bearing Walls Beams and Joists	Steel columns typical, concrete columns at gymnasium, some bearing walls Steel beams and joists, wood glu lams / deck at gymnasium		
<b>Envelope</b>			
Roof	PVC - Installed 2001,2002. <b>Roof has been replaced.</b>		
Walls	Brick on concrete masonry units (cmu). Significant movement/cracking/horizontal joint deterioration on west side around to south side of auditorium. Needs further investigation to determine exact cause. <b>Kalwall has been replaced. Remainder of work remains to be completed.</b>	\$58,032	
Exterior Windows	Aluminum Single Glazed. <b>Windows replaced.</b> Aluminum – partial replacement should be completed by 2013. <b>Storefront windows replaced.</b> Double Glazed – partial replacement . <b>Windows replaced.</b>		
Exterior Doors	Hollow Metal/Aluminum Store front – some hardware non-ADA compliant. Overhead Door: N/A <b>Exterior doors replaced.</b>		
Thermal Systems	Little or no insulation in walls.		
<b>Interior Finishes</b>			
Interior Walls	Facility Typical – Painted Block/Brick: Found throughout facility – some areas have block that is not painted, typically under windows in some classrooms, these areas are wearing/damaged and should be painted – in some areas brick is unpainted but is in good condition, no recommended painting. Misc. locations throughout – Framed Gyp./Plaster: Good condition Kitchen/Lockers – Glazed Block: Aging wearing. Toilets/Cafeteria – Ceramic Tile: aging/wearing some damage from relocating accessories in toilets, some damage in cafeteria, cracking tile. Gym/Admin Partial – Framed Wood Paneling: Aging poor quality		
Ceilings	Facility Typical – ACT: Sanitary tiles in kitchen, good condition throughout tiles look new. Large Wood Shop/ Storage/Auditorium/Some Toilets - Glued on Tiles: age/wear. Lockers – Gyp: good condition with minor wear		
Doors/Hardware/Windows	Non ADA compliant “knob” style hardware Solid Core Wood Doors very worn. Some HM frames most wood both very worn. Wood/HM Relites Good condition most relites are high on classroom walls and in good condition.		

## Lewis and Clark Middle School

### Building Components and Deferred Maintenance

Floor Finishes	Facility Typical – VCT: found throughout building in good condition/new. <b>Deficient VCT flooring replaced.</b>		
	Tech Ed/Shop/Lockers/Kitch – Concrete Sealed/Painted: Good condition well maintained.		
	Stairways – Terrazzo: Good Condition well maintained .		
	Gym/Stage/Music– Wood: Floor is heavily used and showing wear. <b>Nothing done here.</b>	\$120,422	\$120,422
	Misc. Admin areas/Library Part. – Carpet: fair condition. <b>Deficient carpet replaced.</b>		
	Toilets – Ceramic Tile: poor condition – age/wear/patching. <b>Deficient tile flooring replaced.</b>	\$0	
	Some Science Rooms – Sheet Vinyl: Poor condition age/heavy wear. <b>Deficient sheet vinyl flooring replaced.</b>	\$0	
	Misc. Classrooms and Corridor areas throughout – Asbestos tile: it appears that replacement of Asbestos tile is on going, wearing/aging where it occurs. <b>Deficient asbestos tile replaced.</b>	\$0	
<b>Specialties</b>			
Toilet Partitions	Metal Older but functional.		
Lockers	<b>Toilet partitions replaced.</b>		
Fixed Seating/Risers	Metal Older but Functioning well maintained Bleachers: N/A		
Gym Partition	Theater: N/A Classroom/Lecture: N/A Cafeteria: N/A		
Markerboards/Cabinets	In poor condition, requires regular maintenance and is a safety concern All rooms have marker boards Casework is Wood and Plastic laminate mixed throughout in varying conditions, all appears functional Science Classrooms have wood cabinets with Chemical resistant counters: Age/wear		
<b>HVAC System</b>			
Heating	Building is Connected to Facility Master Controls		
	BMS: acceptable – temp controls in Library are functioning poorly. <b>System wiring improved and front-end upgraded to district standard.</b>		
	<b>Priority is to replace building temp control front end.</b>	\$10,000	\$10,000
	<b>Priority is to modify steam generator and add CO detector.</b>	\$5,000	\$5,000
	Boiler has been upgraded. <b>Seasonal boiler added to improve system performance.</b>		
	Room Units: No		
	Hydronic Piping: 4 pipe		
	<b>Hydronic Pumps: Variable speed</b>		
HVAC System	Alternative Fuel: No		
	Roof top air handlers		
	Specialized Exhaust: Limited		
	<b>Added crawl space ventilation.</b>		
Cooling	Room Ventilators: No		
	Central AC: Yes throughout <b>Room AC: Central office area</b>		
Misc. Notes	Hydronic Piping: 4 pipe		
	Large equipment on roof – some classrooms converted to HVAC rooms, large ducts visible in upstairs hall		

## Lewis and Clark Middle School

### Building Components and Deferred Maintenance

Plumbing System			
Fixtures	Fixtures range from newer to original- replacement in process Hot Water Generation: Central. Verify with Coneer if this 2013 masterplan item was zeroed out & resolved.	\$0	
	Priority is to modify 3 compartment sink and pot sink in kitchen.	\$2,000	\$2,000
	Alternative Fuel: No		
Supply Piping	Piping: Copper, varies Pumps: Circulating		
Waste Piping	Piping: Varies – Cast iron and galvanized pipes reaching the end of life cycle – replacement is on going Pumps: No		
Electrical System			
Building Service	2000A, 277/480 3 Ph. Building has service issues resulting in breakers tripping Meter Base: Acceptable Service setting modified to resolve trips	\$0	
	Generator: No		
	Alternative Source: No		
Lighting	Fixtures - PCB: No T-8's used throughout – Auditorium lighting dated Light Level Controls: Acceptable Occ/Daylight Sensor: Yes Auditorium sound & lighting upgrades.		
	Distribution	Devices: Power and data distribution upgrade needed Classroom distribution items resolved	\$94,500 \$94,500
	Voice/Data	Intercom: New System Clock: New system Telephone: Recently upgraded Data: 6 <sup>th</sup> grade classroom area is in good condition, 2-4 ports per Classroom not all active, 5 existing wireless access points 5-6 more needed, Some power supply issues GPON system installed throughout.	\$0
Conveying & Vertical Circulation			
Elevators, lifts, stairs ramps	Elevator is older and cannot be ADA compliant. Stairs treads undersized, handrails and guardrails are non-compliant with building code.		
Safety System			
Egress	Exit Systems: Generally in compliance		
Extinguishing System	Building Partially sprinkled – gym area only Cabinet Systems: No Nothing done here.	\$533,331	
Exit/Emergency Lighting/Alarms	Exit Lights: Yes Emergency Lighting: Yes Smoke/Heat Detection: Yes Fire Alarm System: Yes. Fire alarm system upgraded to addressable, but not voice evac.		
	Cameras	Camera system upgrade needed. All middle schools to receive new security cameras in 2017/2018.	\$0

## Lewis and Clark Middle School

### Code Review / ADA

Code Review/Americans with Disabilities Act (ADA):			
	Description	Cost	Priority
Site	Main entrance to the building along with several others are accessible. Not all exterior door hardware is accessible. Access to all entrances (accessible or non-accessible) is paved, however the paved surfaces are not contiguous around the building.		
Parking	2 Accessible parking stalls (van)		
Approach, Entry & Exit	Approach to main entrance is accessible, other accessible exits observed		
Ramps	Generally in compliance, some handrail issues. <i>Work remains to be completed.</i>	\$6,934	\$6,934
Stairs	Concrete stairs at several entrances appear to meet code – handrails do not		
Elevator/lift	Elevator provides access to all levels, but appears non accessible due to door operation. <i>Work remains to be completed.</i>	\$76,375	\$76,375
Assembly Areas	Cafeteria and Library have ramps to provide access from hallway down, handrails non-compliant		
Classroom Access	Classrooms are accessible with “knob style non-compliant” door hardware. <i>Work remains to be completed.</i>	\$173,341	
Restroom Access	Restrooms are accessible		
Toilets/Restrooms	No accessible toilet stalls observed. <i>Restroom toilet stalls have been replaced. Boys locker room still needs ADA accessible stall.</i>	\$8,000	\$8,000
Drinking Fountains	No ADA Height Fountains observed. <i>Work remains to be completed.</i>	\$9,946	\$9,946
Counter Access	Not in compliance		
Signage per ADA	None Observed		
Audio and Visual Alarms	Horn/Strobes observed throughout		
Obstacles	None other than noted		
Automatic Sprinkler System	Building is only partially sprinkled- gymnasium area		
Exit Corridors	Generally in compliance		
Other	Exit enclosures shall be enclosed per IBC 1022.		
Other	Per 1018.4; maximum length of corridor shall be 20 feet in a non- sprinklered E occupancy and 50 feet in a sprinklered occupancy.		
<b>Notes:</b> 1. ADA – Compliance with ADA in the existing building is recommended if major construction is completed at this building. 2. Fire/Safety – Fire suppression system in the existing building is recommended if major work is done at this building.			
<b>Building Code Guidelines:</b> 2009 International Building Code; 2009 International Existing Building Code; 1020 ADA Standards for Accessible Design; Administrative Rules of Montana 24.301.351; 2000 NFPA 101 - Life Safety Code			

## Lewis and Clark Middle School

### Recommendations

Additional detail regarding scope and cost related to Educational Adequacy and Deferred Maintenance projects can be found in the following tables:

RECOMMENDED BUILDING COMPONENT (FAME) IMPROVEMENT DETAIL:		
Component	Comments	Estimated Cost
Building Envelope		
	No recommended improvements	\$0
Interiors & Specialties		
	Gym floor replacement/repair	\$120,422
Mechanical, Electrical & Plumbing		
	Replace building temp control front end, modify steam generator and add CO detector, modify 3-comp sink and pot sink in kitchen, resolve power distribution items	\$111,500
Fire/Life Safety		
	No recommended improvements	\$0
Site		
	Repair and replace cracked asphalt, seal coat parking lot, replace uneven/broken sidewalks, install greenhouse, remove fuel storage tank	\$295,185
ADA		
	Handrail improvements, elevator accessibility, locker room ADA stall, ADA drinking fountains	\$101,255
Does not include Soft Costs	Total	\$ 628,362

RECOMMENDED EDUCATIONAL ADEQUACY IMPROVEMENT DETAIL:					
Component:	Item Description:	Qty	UOM	Unit Cost	Cost Estimate
Site Improvements					
Total Site:		0	SF		\$0
Addition					
Multi-purpose Room Addition		0	SF	\$210	\$0
Subtotal:		0	SF	\$210	\$0
Gross Area:		0	SF	\$210	\$0
Total Addition:		0	SF	\$210	\$0
Remodel					
Total Remodel:		0			\$0
Subtotal:					\$0
Estimated Cost *Does not include soft costs					
TOTAL RECOMMENDED FACILITY IMPROVEMENT COST SUMMARY:					
Description:	Comments:				
FAME					\$628,362
Educational Adequacy					\$0
Estimated Cost *Does not include soft costs					\$628,362

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## Medicine Crow Middle School

### Overview

Medicine Crow Middle School serves academic grades 6-8 for Billings Public Schools. The facility is a 118,000 square foot two-story school with drop-off for students via bus or car and access for building services and additional parking for staff and after-hours community use along Barrett Road. Baseball fields are located to the south of the school, and a football/soccer field is located to the west, beyond the additional parking. There is a pond to the south of the site that provides a nature walk and teaching opportunities.

Entrances to the site for bus, auto, and service access occur off of Barrett Road, at the north edge of the property. Bus and auto drop-off areas, separated for traffic control and safety, deliver students to a single entry plaza with a single story entrance vestibule. Service access is from the north, accompanied by staff parking that is also be used after hours by the general public. The principal exterior materials include CMU, fiber-reinforced panels, metal panels and glass in aluminum frames. Facades are composed to allow for maximum daylighting of classrooms and expression of interior organization.

The main floor is a 5" reinforced slab-on-grade. The upper floor is composed of a 4" concrete slab supported by 1 ½" light gauge galvanized metal decking. The decking is supported by open web steel bar joists. The roof is framed with open web steel bar joists covered with 1 ½" light gauge steel decking. Exterior walls are framed with 6" steel studs at 16" o.c. The walls are sheathed with Dens Glass and/or OSB for shear strength. The columns supporting both the roof and upper floor framing are located within exterior walls.

A central gas-fired boiler plant serves the entire facility. A variable flow primary only heating hot water distribution system is utilized. Heating hot water distribution to air handling unit preheat coils and facility terminal units are accomplished with a direct-return piping system utilizing a variable volume centrifugal pumping system. A central chilled water plant using an air-cooled chiller produces chilled water for mechanical cooling. Chilled water distribution to the air handling units uses a direct-return 2-pipe piping system with variable volume centrifugal pumping system. Several roof-mounted central station air handlers provide heating, cooling, ventilation, and filtration needs for the facility's classrooms, admin, and commons, areas. The air handlers are variable air volume system units with a return fan, a 100% economizer, which includes an independent controlled outdoor air intake, a MERV 8 rated filtration system, a heating hot water preheat coil, a cooling coil, and a supply fan.

900 Barrett Road  
Billings MT 59105  
(406) 281-8600

Year Built .....	2016
Renovations .....	0
Portables .....	0
Site Acres .....	30
Building SF .....	118,000
Current Enrollment .....	704
Capacity .....	715
Target Capacity .....	661



## Medicine Crow Middle School

### Existing Program Spaces



Level 2



Level 1

#### PLAN LEGEND

- CLASSROOM
- SPECIAL SERVICES
- LIBRARY
- ADMINISTRATION
- MEP/TOILET/KITCHEN
- COMMONS/CAFE
- GYMNASIUM
- MUSIC/ART

## Medicine Crow Middle School

### Site Characteristics and Deferred Maintenance

Site Characteristics:			
Component		Cost	Priority
Lot Size	30.01 acres		
Building Area	117,021 sf		
Topography	Shallow grades, sloping towards existing retention pond in SE corner of site.		
Drainage	Good – some minor issues with water pooling in minimal areas of the site. On-site stormwater drainage system, ties into municipal storm drain and existing pond.		
Drop Off	Parent Drop-off / visitor parking lot north of school, 14 parking spaces + drive aisle + 10 parallel-park drop-off spaces at curb.		
Hardscape	Concrete sidewalks and plazas. Raised CIP concrete planter walls. Asphalt basketball courts. CTEP concrete sidewalk network runs throughout site, connecting Holling Drain trail with Bench Blvd.		
Parking Surface	Drop-off / visitor parking lot: asphaltic paving, 12,425 sf. Bus parking / drop-off / pick-up: asphaltic, 22,380 sf. Faculty / event parking lot: asphaltic paving, 62,775 sf Service yard / trash area: asphaltic paving, 7,330 sf.		
Stalls	Drop-off / visitor parking lot: 23 spaces (2 HC) Bus parking / drop-off / pick-up: 28 spaces Faculty / event parking lot: 171 spaces (8 HC) Service yard / trash area: 3 spaces		
Paved Walks/Surfaces	100,141 sf of concrete sidewalks, plazas, etc, including concrete sidewalks at baseball fields.		
Steps, ramps, retaining walls	Concrete steps at south recessed plaza / courtyard with steel handrail. ADA curb ramps at accessible routes.		
Paved Sports Courts	Full-court basketball court, asphaltic paving.		
Playgrounds	None, except for Bench Elementary's adjacent playgrounds & equipment.		
Softscape	Large areas of sodded, hydroseeded, native turf and landscaped/shrubbed areas, throughout the remainder of site that is not occupied by school, hardscape or athletic fields.		
Play Fields	1 football field and athletic track, long jump / pole vault / shotput. 2 softball fields and enclosed at-grade dugouts, 2 baseball fields and enclosed at-grade dugouts.  Electronic scoreboards at base/softball fields, and football field.		
Landscaping	Primarily sodded turf, hydroseeded turf, native grasses and landscaped/shrubbed areas. Several trees on-site, primarily deciduous. Greenhouse on-site between gymnasium and faculty/event parking. Owner-provided, owner-installed.		
Utilities	City services, includes storm drain system.		
Fencing	Chain Link, at base/softball fields.		

## Medicine Crow Middle School

### Building Components and Deferred Maintenance

Building Components:			
Component	Sub-Component: Condition Observed and Action to Fix	Cost	Priority
<b>Structural Systems</b>			
Footings/Foundation Walls	Concrete spread footings with stem wall foundation. Pad footings at interior columns. Footings sit on rammed aggregate piers.		
Floor Systems	Concrete slab on grade and concrete slab on steel deck / joists.		
Columns and Bearing Walls	Steel columns and beam system, with some areas of cmu bearing walls, at gymnasium		
Beams and Joists	Steel beams, open-web joists and decking		
<b>Envelope</b>			
Roof	Versico 60mil fleeceback PVC membrane, installed in 2015.		
	1/2" densdeck protection board, over 6" min polyisocyanurate insulation, vapor retarder on steel deck.		
	Polyiso crickets, term bars, walk pads at roof equipment.		
Walls	6" or 8" Metal stud walls, baloon framed, batt insulation between studs. 12" CMU masonry walls at gymnasium.		
	1/2" plywood sheathing		
	2" continuous mineral wool rigid insulation between 2" Z-furring strips.		
	Exterior wall finish material is a combination of fiber-cement rainscreen panels, ribbed metal panels, and CMU masonry veneer.		
Exterior Windows	Aluminum storefront, 1" insulated glazing panels in 2"x4" storefront frames, and 2"x6" curtain wall frames. Mostly inoperable, some operable, awning-type.		
Exterior Doors	Hollow metal and aluminum storefront, 1" insulated glazing at door vision lites.		
Thermal Systems	6" fibergalss batts at metal studs w/ 2" rigid mineral wool, continuous. 2" rigid mineral wool, continuous at gymnasium CMU walls.		
<b>Interior Finishes</b>			
Walls	Light gauge metal framed partitions with gypsum board painted finish. Painted CMU at gymnasium.		
	Plastic laminate wainscots & panels at assembly & circulation areas. Tackable wall panels at assembly & circulation areas.		
	Painted CMU at gymnasium.		
	Acoustic wall panels at gymnasium, commons & music rooms		
	Toilet rooms – Ceramic tile		
	Marker boards in classrooms, typ.		
	Plywood wall panels at shop rooms		
Ceilings	Facility Typical – ACT lay-in ceilings. Framed gypsum board ceilings at reception, main entrance, stairwells.		
	Gym - exposed to ductwork and structure, painted.		
	Commons - Acoustical metal ceiling		
	Kitchen - Vinyl-faced ACT lay-in ceiling		
Doors/Hardware/Windows	Solid core wood interior doors, in hollow metal frames		
	ADA hardware, panic hardware at required exits. Electrified (card reader) hardware at main entrances & exits. Auto-openers at main entrance.		
	Morotorized security grilles with emergency operation puch-button.		
	Hollow metal relites. Tackable wall panels in relite panes at classroom entrance doors.		

## Medicine Crow Middle School

### Building Components and Deferred Maintenance

Floor Finishes	Tech Ed/Shop/Lockers/Classrooms – Polished & sealed concrete.		
	Second level - LVT flooring typical, with some carpet tile and sealed concrete		
	First level - polished & sealed concrete typical, with some carpet tile, LVT and sealed concrete		
	Gym – maple wood athletic floor		
	Library/Admin – Carpet tile		
	Kitchen - quarry tile.		
	Toilets – Polished & sealed concrete at lower level, porcelain tile at second floor.		
<b>Specialties</b>			
Toilet Partitions	Solid plastic, overhead-braced. ADA stalls provided as required.		
Fixed Seating/Risers	Bleachers: motorized retractable/telescoping type. Decking is plywood sheeting with clear polyurethane sealant, supported by steel understructure.		
	Theater: N/A		
	Classroom/Lecture: N/A		
	Cafeteria: N/A		
Markerboards/Cabinets	All rooms have markerboards and tack strips, tackable wall panels. Casework is plastic laminate throughout. Countertops are plastic laminate over MDF core.		
<b>HVAC System</b>			
Heating	BMS:		
	Boiler/Furnace: Natural gas-fired central boiler plant. Primary / secondary heating hot water distribution system to air handling unit preheat coils & terminal units.		
	Hydronic Piping: 2-pipe direct return or reverse-return		
	Alternative Fuel: No		
	Air Handler: Roof-mounted air handler units with indoor-mounted central air station handlers in mechanical spaces. Variable air volume system units with economizers & MERV 8 filters. Gym air handler has no cooling.		
	Specialized Exhaust:		
	Ductwork: Galvanized round & rectangular		
Cooling	Central AC: Cooling tower with air-cooled		
	Hydronic Piping: Direct-return 2-pipe piping system		
<b>Plumbing System</b>			
Fixtures	Fixture types: Wall-hung & under-counter lavatories, wall-mounted flush-valve water closets, mop sinks, commercial kitchen fixtures, etc.		
	Hot Water Generation: High-efficiency natural gas-fired, sealed combustion, direct vent domestic water heaters with hot water storage tanks.		
	Alternative Fuel: No		
Supply Piping	Piping: Copper - water; Black steel sch 40 steel - natural gas; Ductile-iron - water distribution.		
	Pumps: Recirculation pumps, elevator sump pump.		
Waste Piping	Piping: Cast-iron & PVC		
<b>Electrical System</b>			
Building Service	2000A, 277/480 3 Phase, step-down transformers to 120/208.		
	Generator: No.		
	Alternative Source: No		

## Medicine Crow Middle School

### Building Components and Deferred Maintenance

Lighting	Fixtures: LED - troffers, recessed cans, strip fixtures, wall sconces, linear pendants, pole site lighting.		
	Light Level Controls: occupancy sensors with dual-level lighting switching.		
	Occ/Daylight Sensors: Yes - Occupancy		
	Wiring: Copper, Aluminum for 200 amps & above. EMT conduit above grade, PVC below-grade. MC cable at equipment/fixtures only.		
Distribution	Devices: Power & data distribution: GPON data distribution with wireless.		
Voice/Data	Intercom: Yes - ceiling speakers. Clock: Yes - wireless analog. Clock/bell/paging integrated system. Data: GPON data distribution with wireless.		
<b>Conveying &amp; Vertical Circulation</b>			
Elevators, lifts, stairs, ramps	Hydraulic TK elevator with machine room, 100 - 125 FPM - 2,100lb capacity, 460 V 3-phase power. Plastic Laminate interior with SS accent, handrails, base.		
	Lifts: N/A		
	Stairs: Steel pan with concrete treads, polished concrete treads with abrasive nosing embeds.		
	Ramps: at Commons. Concrete slab on grade, polished concrete finish.		
<b>Safety System</b>			
Egress	Exit Systems: clear paths of egress. Automatic fire door at main academic corridor, both levels.		
Extinguishing System	Building Fully sprinkled, wet-pipe system. Cabinet Systems: No		
Exit/Emergency Lighting/Alarms	Exit Lights: Yes - emergency lights & exit signs, as required by code. Emergency Lighting: Yes Smoke/Heat Detection: Yes Fire Alarm System: Yes - addressable, with voice evac.		
Cameras	Security cameras at main entrances & exits. IP wired network		

## Medicine Crow Middle School

### Code Review / ADA

Code Review/Americans with Disabilities Act (ADA):			
	Description	Cost	Priority
Main Building Entrance	Main entrance to building is fully ADA accessible with compliant hardware and auto-opening devices.		
Site	Several paved surfaces provide access to the exterior and public rights of way, all are ADA accessible. Curb cuts at accessible routes.		
Parking	10 Accessible parking stalls		
Approach, Entry & Exit	Approach to main entrances are accessible, as are other secondary entrances & exits		
Ramps	Accessible interior ramp at Commons.		
Stairs	Multiple sets of stairs inside, steps only outside. Stairs and handrails meet code.		
Elevator/lift	Elevator provides access to both levels.		
Assembly Areas	All accessible.		
Classroom Access	Classroom doors and hardware are code compliant and ADA-accessible		
Restroom Access	Restrooms are code-compliant and ADA-accessible		
Toilets/Restrooms	Toilets and restroom fixtures are code-compliant and ADA-accessible		
Drinking Fountains	Drinking fountains are code-compliant and ADA-accessible		
Counter Access	Countertops are code-compliant and ADA-accessible		
Signage per ADA	Building / room signage is code-compliant and ADA-compliant.		
Audio and Visual	Audio and visual devices are code-compliant and ADA-accessible		
Alarms	Alarm systems are code-compliant.		
Obstacles	None observed.		
Automatic Sprinkler System	Building is fully sprinkled, with a code-compliant suppression system.		
Exit Corridors	Exit corridors are code-compliant and ADA-accessible		
<b>Notes:</b> 1. ADA – Compliance with ADA in the existing building is recommended if major construction is completed at this building. 2. Fire/Safety – Fire suppression system in the existing building is recommended if major work is done at this building.			
<b>Building Code Guidelines:</b> 2009 International Building Code; 2009 International Existing Building Code; 1020 ADA Standards for Accessible Design; Administrative Rules of Montana 24.301.351; 2000 NFPA 101 - Life Safety Code			

# 4 K-8 FACILITIES

## Medicine Crow Middle School

### Recommendations

No recommendations for Medicine Crow.

RECOMMENDED BUILDING COMPONENT (FAME) IMPROVEMENT DETAIL:		
Component	Comments	Estimated Cost
Building Envelope		\$0
Interiors & Specialties		\$0
Mechanical, Electrical & Plumbing		\$0
Fire/Life Safety		\$0
Site		\$0
ADA		\$0
Does not include Soft Costs		<b>Total</b> \$0

RECOMMENDED EDUCATIONAL ADEQUACY IMPROVEMENT DETAIL:					
Component:	Item Description:	Qty	UOM	Unit Cost	Cost Estimate
Site Improvements					
Total Site:		0	SF		\$0
Addition					
Multi-purpose Room Addition		0	SF	\$210	\$0
Subtotal:		0	SF	\$210	\$0
Gross Area:		0	SF	\$210	\$0
Total Addition:		0	SF	\$210	\$0
Remodel					
Total Remodel:		0			\$0
Subtotal:					\$0
Estimated Cost <i>*Does not include soft costs</i>					
TOTAL RECOMMENDED FACILITY IMPROVEMENT COST SUMMARY:					
Description:	Comments:				
FAME					\$0
Educational Adequacy					\$0
Estimated Cost <i>*Does not include soft costs</i>					\$0

## Riverside Middle School

### Overview

Riverside is a grade 6, 7, & 8 middle school. The 1963 building consists of 29 +/- classrooms. The Original building also included administration, library, band and chorus rooms, wood and metal shops, cafeteria / kitchen, gymnasium, weight room, locker rooms, etc. There has been one addition in 1979 to add work rooms and special purpose rooms wrapped around the library. The building is a one story structure but was designed to receive a second floor over portions of it. It has a concrete pier & grade beam foundation system with concrete slab on grade floor system. The structural system is concrete columns with concrete roof at classrooms and steel columns with steel joists and decking elsewhere. Perimeter walls are concrete masonry units (cmu) that are faced in brick or unfaced with some areas of plaster finish. The current roof is a variety of types and ages (see below) with a variety of insulation. The walls have cavity fill (vermiculite?) insulation.

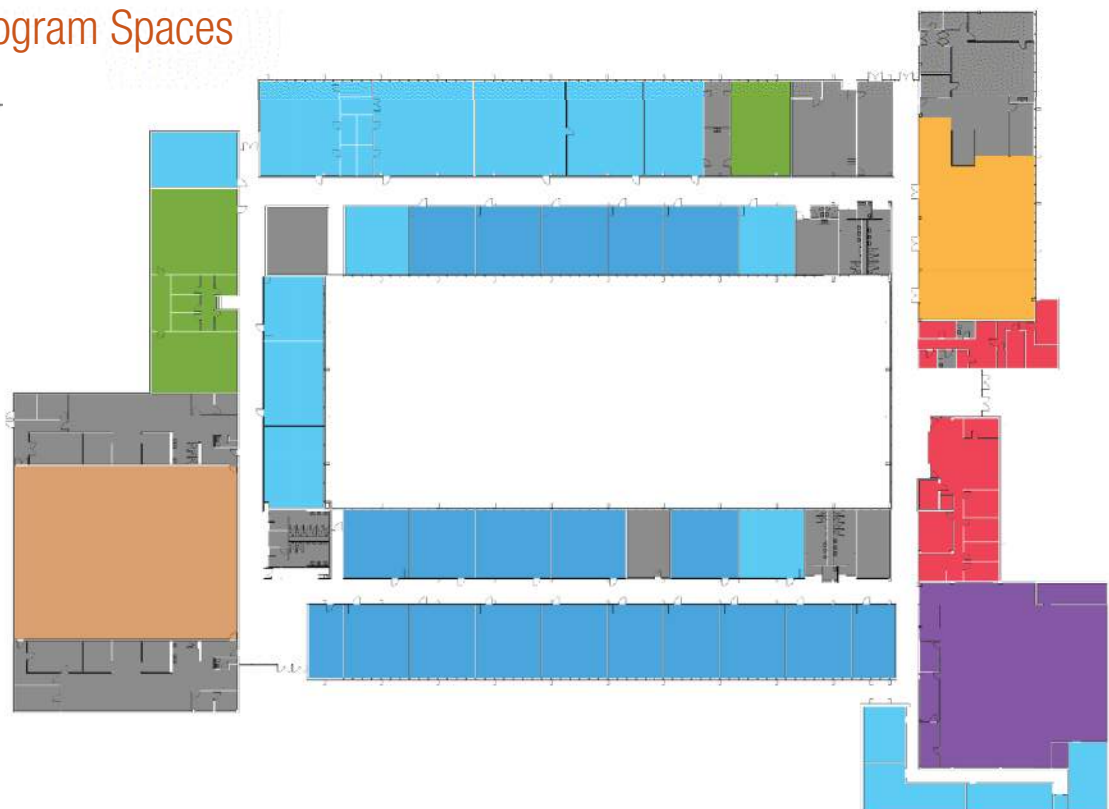
3700 Madison  
Billings, MT 59101  
(406) 281-6000

Year Built .....	1963
Renovations .....	Addition 1979
Portables .....	0
Site Acres .....	11.29
Building SF .....	86,609
Current Enrollment .....	522
Capacity .....	604
Target Capacity .....	559



### Existing Program Spaces

PLAN LEGEND	
CLASSROOM	
SPECIAL SERVICES	
LIBRARY	
ADMINISTRATION	
MEP/TOILET/KITCHEN	
COMMONS/CAFE	
GYMNASIUM	
MUSIC/ART	

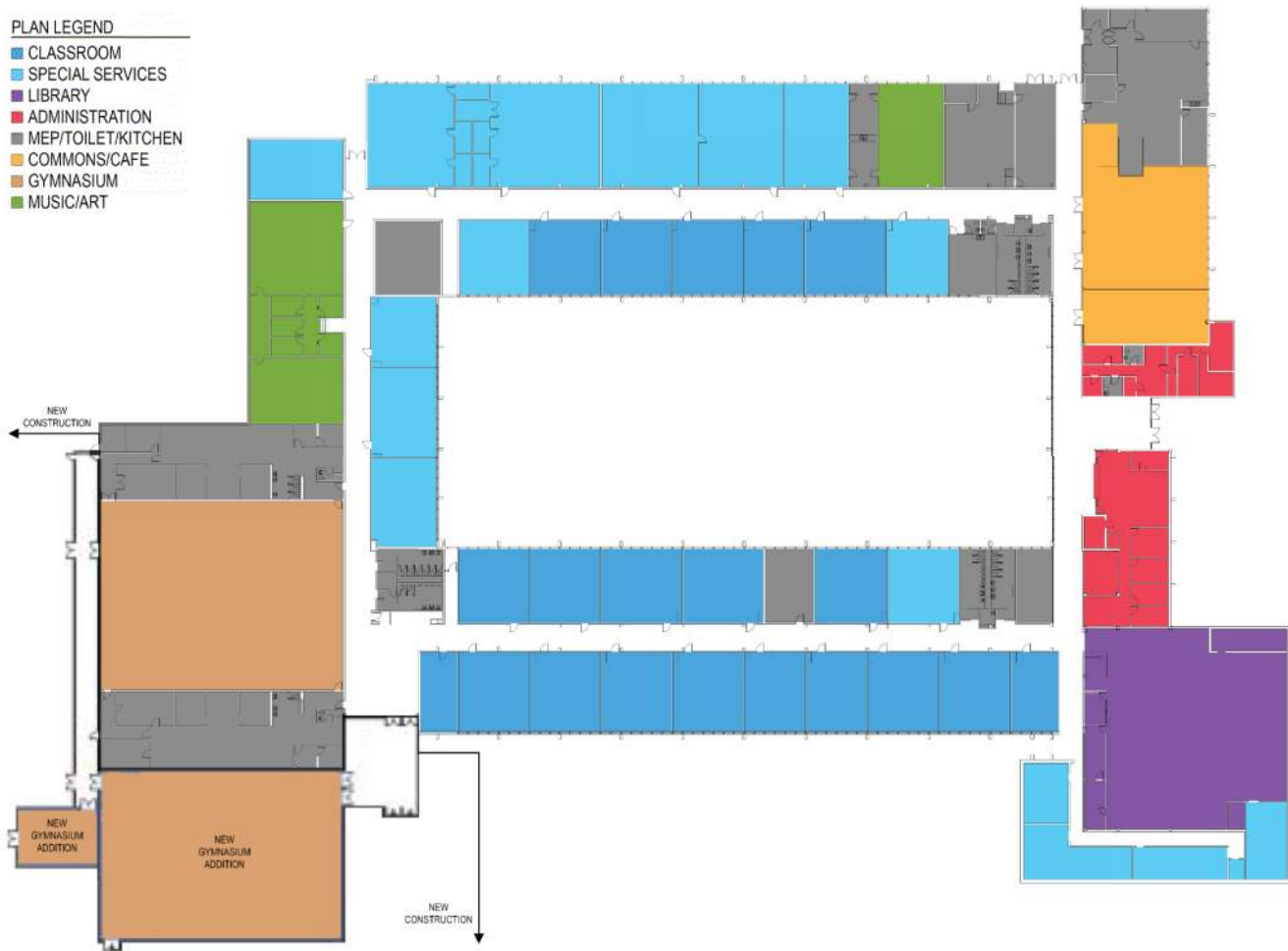


## Riverside Middle School

### Program Space Recommendations

Recommendations From 2013 master plan are being carried over for the 2018 master plan. The recommendations include:

- A new Auxiliary Gymnasium addition



Potential Floor Plan Diagram

## Riverside Middle School

### Site Characteristics and Deferred Maintenance

Site Characteristics:			
Component		Cost	Priority
Lot Size	11.29 acres		
Building Area	110,548 sf		
Topography	Flat		
Drainage	Fair to Poor - Freezing water at entry forces water back into Main entrance. Parking drains poorly – French drain adjacent		
	To track fills with heavy rain or irrigation and water back flows		
	Onto track – backup caused by back pressure in site drainage. Drainage issues remain.	\$77,197	
Drop Off	Designated drop off area adjacent to main entry		
Hardscape	Minimal		
Parking Surface	Asphalt 61,550 sf some cracking and deterioration. Priority is to seal coat parking lot.	\$10,800	\$10,800
Stalls	79 Stalls 1 HC		
Paved Walks/Surfaces	Concrete 14,400 sf areas of significant spalling. New concrete at front entrance and gym entrance. Priority is to replace uneven and broken sidewalk.	\$0 \$13,763	 \$13,763
Steps, ramps, retaining walls	Concrete with some wear		
Paved Sports Courts	None		
Playgrounds			
Softscape	Large areas of grass around school		
Play Fields	Football, Baseball, Track. Some drainage issues at football field. New scoreboards installed at middle schools.		
Landscaping	Several trees on the property, courtyard landscaped Priority is to install greenhouse.	\$115,000	\$115,000
Utilities	City services		
Fencing	Chain Link Desire to install gate at service entrance.	\$2,500	

## Riverside Middle School

### Building Components and Deferred Maintenance

Building Components:			
Component	Sub-Component: Condition Observed and Action to Fix	Costs	Priority
<b>Structural Systems</b>			
Footings/Foundation Walls	Concrete pier footings with grade beam perimeter foundation		
Floor Systems	Concrete slab on grade		
Columns and Bearing Walls	Concrete and steel columns with limited bearing walls		
Beams and Joists	Concrete pan roof over classrooms with steel beams / joist / deck elsewhere		
<b>Envelope</b>			
Roof	All roof areas budgeted to be replaced by 2014. <b>Roofs replaced.</b>		
	Ballasted EPDM – Installed 1990. <b>Roofs replaced.</b>		
	Hypalon– Installed 1984,1986,1987,1994,1999, 2011 (PVC?). <b>Roofs replaced.</b>		
	Hypalon VAC – Installed 1998. <b>Roofs replaced.</b>		
	Smooth Modified – Installed 1985. <b>Roofs replaced.</b>		
	Insulation varies		
	Misc. roof comments in 2013 Masterplan. <b>Roofs replaced.</b>		
Walls	Brick/Concrete/CMU – Minor Vert. Cracking Minor voids and cracking in grout joints. Minor brick cracking, spalling, and loosening. <b>Work remains to be completed.</b>	\$27,671	
	Storefront aging – needs replacement. <b>Storefront has been replaced.</b>	\$0	
Exterior Windows	Aluminum. <b>Windows replaced.</b> Single glazed – issues with vandals breaking glass.	\$0	
Exterior Doors	Older HM Doors – non ADA hardware Some older aluminum storefront failing. <b>Doors replaced.</b>		
Thermal Systems	Cavity fill insulation (vermiculite?)		
<b>Interior Finishes</b>			
Interior Walls	Facility Typical – Brick/Block: Painted in some areas brick is left unpainted in entries and halls		
	Misc. locations throughout – Wood Paneling: Poor quality found in most classrooms and throughout halls and the rest of the building. <b>Work remains to be completed.</b>	\$163,420	
	Counselor/Music/Cafeteria- Framed Gyp: Good Condition		
	Kitch/Lockers – Glazed Block: Damage wear /voids in grout in places		
	Toilets – Ceramic Tile: cracking observed – damage from moved accessories		
	<b>Added weight room / fitness room.</b>		
	<b>All middle schools received "Enterprise Rooms".</b>		
Ceilings	Facility Typical – ACT: poor condition throughout facility many tiles have water damage, overall age of grid is apparent. <b>Work remains to be completed.</b>	\$57,921	
	Cafeteria – Glue on Tiles		
	Locker/Kitchen – Gyp Board: Good condition some wear/staining		

## Riverside Middle School

### Building Components and Deferred Maintenance

Doors/Hardware/Windows	Non ADA compliant "knob" style hardware – 5" backset in doors causes hardware problems		
	Solid Core Wood Doors		
	HM Frames		
	HM Relites		
	Skylights in Gym. Gym skylights have been replaced, with retractable shades.		
Floor Finishes	Facility Typical – Asbestos tiles: wearing/aging. Deficient asbestos flooring has been replaced.		
	Major Hallways – Terrazzo: Good Condition well maintained minor cracking		
	Gym – Wood: Floor is recently refinished and painted		
	Counseling/Detention/Band/Choir – Carpet: Varying conditions. Deficient flooring has been replaced.	\$0	
	Toilets – Ceramic Tile: poor condition – age/wear cracking in toilets requires observation, some cracking continues on to wall. Deficient restroom tile flooring has been replaced.		
	Locker/Shop – Painted Concrete		
	Partial Classrooms/Partial Corridor/Cafeteria – VCT: appears Asbestos tiles are being replaced with VCT – majority of floors still asbestos. Deficient flooring has been replaced.	\$0	
Wall Finishes	Paint throughout facility is in good condition		
<b>Specialties</b>			
Toilet Partitions	Metal - Older, but functional. Added partitions, meet ADA compliance.		
Lockers	Metal - Older, in poor condition		
Fixed Seating/Risers	Bleachers: Yes		
	Theater: N/A		
	N/A Classroom/Lecture: N/A		
	Cafeteria: N/A		
Markerboards /Cabinets	Chemical resistant counters in Science rooms in good condition - aging Plastic laminate casework in varying conditions, All rooms have markerboards		
	Wood Cabinets wearing but functional – tall closets in classrooms in good condition		
<b>HVAC System</b>			
Heating	Building is Connected to Facility Master Controls BMS: acceptable BMS has been upgraded to current district standard Room wall mounted thermostats upgrade to district DDC standard		
	Alternative Fuel: no		
	Priority is to upgrade temperature control front end.	\$50,000	\$50,000
	Boilers replaced in 2009 Room Units: air over fan coil Hydronic Piping: 2 pipe Seasonal boiler added to improve seasonal performance		
Ventilating	Air Handlers need replacement \$1,760,520 Air Handler: Central air handlers, Air handlers in gym work poorly Air handlers upgraded in 2017		
	Priority is to modify steam generator and add CO detector	\$5,000	\$5,000
Ductwork:	Underground ducts to classroom fin tube radiation		
	New Ventilation @ shop / Ventilation needed at kitchen and music areas Room Ventilators: no		
	Kitchen air handler replaced and exhaust fans update		
	Music room unit ventilators installed		
Cooling	Central AC in Library only – requires constant maintenance Some window units in admin Library A/C units updated		
Hydronic Piping:	System flushed and glycol solution replaced		

## Riverside Middle School

### Building Components and Deferred Maintenance

Plumbing System			
Fixtures	Fixtures are a mix of older and newer, new fixtures have automatic valves	\$ 84,500	\$ 84,500
	Problems with under counter drains		
	South corridor sewer main revise to prevent flooding		
	Hot Water Generation: central		
	Priority is to modify 3 compartment sink and pot sink in kitchen.	\$2,000	\$2,000
	Alternative Fuel: no		
Supply Piping	Piping: copper, varies Pumps: circulating		
Waste Piping	Piping: varies Pumps: no		
	Waste piping is failing in some areas		
	Piping reviewed not failing but settling		
	Sewer lines to street need replacement Item resolved with corridor line revision		
Electrical System			
Building Service	800A, 277/480 3 Phase- additional service needed Meter Base: acceptable		
	Service updated		
	Backup generator performs poorly, power fades	\$ 32,500	\$ 32,500
	Alternative Source: no		
Lighting	Fixtures - PCB: no		
	Fixtures upgraded to newer fluorescent fixtures		
	T-8's used throughout		
	Light Level Controls: limited		
	Classroom lighting controls improved		
	Occ/Daylight Sensor: no. Sensors added		
Distribution	Devices: Power & data distribution upgrade needed	\$ 165,000	\$ 165,000
Voice/Data	Intercom: Older but functional		
	Intercom replaced		
	Clock: Digital in hall, battery in rooms		
	Telephone: recently upgraded		
	Data: Insufficient power, 1-2 ports per room computers in rooms not set up well, Computer Lab in Library is set up well, 6-8 wireless access points do not provide coverage to whole facility, 6-8 more are needed. GPON system installed throughout building.		
Conveying & Vertical Circulation			
Elevators, lifts, stairs ramps	Not applicable		
Safety System			
Egress	Exit Systems: Clear paths of egress		
Extinguishing System	No		
	Cabinet Systems: No Work remains to be completed	\$325,806	
Exit/Emergency Lighting/Alarms	Exit Lights: Yes		
	Emergency Lighting: Yes		
	Smoke/Heat Detection: Not Updated		
	Devices upgraded		
	Fire Alarm System: Not Updated.		
	Fire alarm system upgraded to addressable, but no voice evac.		
Cameras	System upgrade is needed. Security cameras have been replaced.	\$0	\$0

## Riverside Middle School

### Code Review / ADA

Code Review/Americans with Disabilities Act (ADA):			
	Description	Cost	Priority
Site	Building is single story and accessible from several entries. Access around the site is provided by contiguous paved surfaces.		
Parking	1 Accessible parking stall. Still remains.	\$1,586	
Approach, Entry &	Approach to main entrance is accessible, other accessible exits observed		
Exit			
Ramps	N/A		
Stairs			
Elevator/lift			
Assembly Areas	All accessible		
Classroom Access	Classrooms are accessible – doors have 'knob' style hardware which is non-compliant. Work remains to be completed	\$118,234	
Restroom Access	Restrooms are accessible		
Toilets/Restrooms	No accessible toilet stalls observed. ADA partitions & stalls installed.	\$0	
Drinking Fountains	Several Drinking fountains observed at low heights no dual height fountains		
Counter Access	Non-compliant		
Signage per ADA	Non-compliant		
Audio and Visual			
Alarms	Non-compliant		
Obstacles			
Automatic Sprinkler	No		
Exit Corridors			
Other	Exit enclosures shall be enclosed per IBC 1022.		
Other			
<b>Notes:</b> 1. ADA – Compliance with ADA in the existing building is recommended if major construction is completed at this building. 2. Fire/Safety – Fire suppression system in the existing building is recommended if major work is done at this building.			
<b>Building Code Guidelines:</b> 2009 International Building Code; 2009 International Existing Building Code; 1020 ADA Standards for Accessible Design; Administrative Rules of Montana 24.301.351; 2000 NFPA 101 - Life Safety Code			

# 4 K-8 FACILITIES

## Riverside Middle School

### Building, Site, Code Recommendations

Bond projects for Riverside include window and roof replacement as well as some mechanical upgrades.

Additional detail regarding scope and cost related to Capacity, Educational Adequacy and Physical Plant projects can be found in the following tables:

RECOMMENDED BUILDING COMPONENT (FAME) IMPROVEMENT DETAIL:		
Component	Comments	Estimated Cost
Building Envelope	No recommended improvements	\$0
Interiors & Specialties	No recommended improvements	\$0
Mechanical, Electrical & Plumbing	Upgrade temperature control front end, modify steam generator and add CO detector, modify 3-comp sink and pot sink in kitchen.	\$339,000
Fire/Life Safety	No recommended improvements	\$0
Site	Seal coat parking lot, replace uneven/broken sidewalks, install greenhouse	\$139,563
ADA	No recommended improvements	\$0
Does not include Soft Costs	Total	\$478,563

RECOMMENDED EDUCATIONAL ADEQUACY IMPROVEMENT DETAIL:					
Component:	Item Description:	Qty	UOM	Unit Cost	Cost Estimate
Site Improvements					
Total Site:		0			\$0
Addition					
Physical Education Addition	New Auxiliary Gymnasium Addition, Existing Gym/Cafeteria to serve as Cafeteria space	6500	SF	\$210	\$1,365,000
Subtotal:		6500	SF	\$210	\$1,365,000
Gross Area:		2275	SF	\$210	\$477,750
Total Addition:		8775	SF	\$210	\$1,842,750
Remodel					
Total Remodel:		0			\$0
Subtotal:					\$1,842,750
Estimated Cost	*Does not include soft costs				\$1,842,750
TOTAL RECOMMENDED FACILITY IMPROVEMENT COST SUMMARY:					
Description:	Comments:	Cost Estimate			
FAME		\$478,563			
Educational Adequacy		\$1,842,750			
Estimated Cost	*Does not include soft costs	\$2,321,313			

## Will James Middle School

### Overview

Will James is a grade 6, 7 & 8 middle school. The 1967 building consists of 30 +/- classrooms. The original building also included administration, library, band and chorus rooms, wood and metal shops, cafeteria / kitchen, gymnasium, weight room, locker rooms, etc. There has been one addition in 1974 to add a new library / resource and 4 classrooms. The building is a one story structure. The floor has both concrete on steel deck over crawl space and concrete slab on grade. The foundation is concrete footing /stem wall in the original and concrete pier & grade beam at the addition. The structural system is steel columns with steel joists and decking. Perimeter walls are concrete masonry units (cmu) that are faced in brick or unfaced with some areas of plaster finish. The current roof is a variety of types and ages (see below) with a variety of insulation. The walls have cavity fill (possibly vermiculite) insulation.

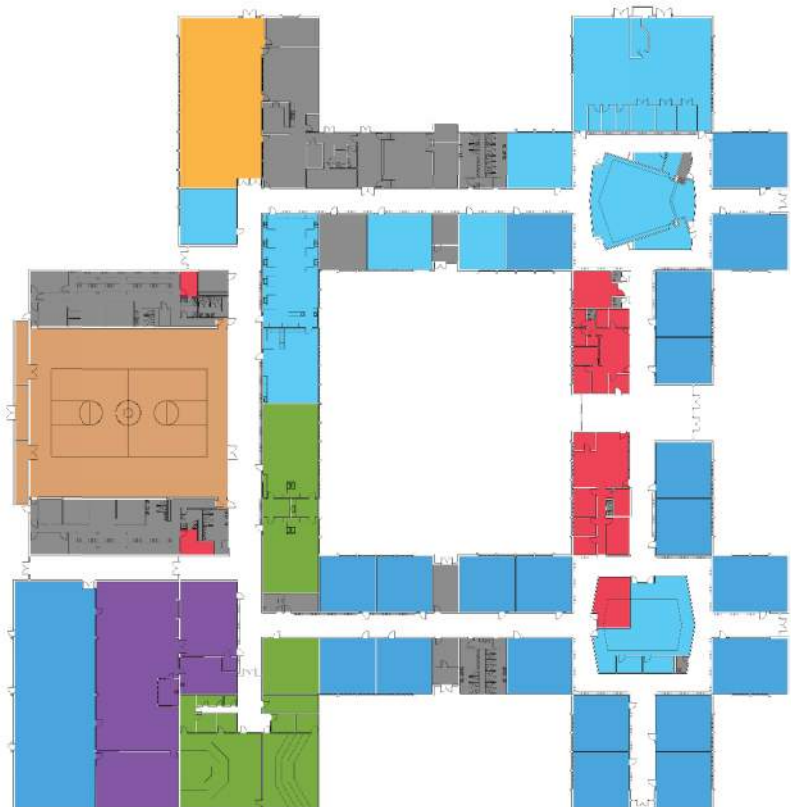
1200 30th St W  
Billings, MT 59102  
(406) 281-6100

Year Built .....	1967
Renovations .....	Addition 1974
Portables .....	0
Site Acres .....	20.44
Building SF .....	91,143
Current Enrollment .....	524
Capacity .....	664
Target Capacity .....	614



### Existing Program Spaces

PLAN LEGEND	
<span style="color: blue;">■</span>	CLASSROOM
<span style="color: lightblue;">■</span>	SPECIAL SERVICES
<span style="color: purple;">■</span>	LIBRARY
<span style="color: red;">■</span>	ADMINISTRATION
<span style="color: grey;">■</span>	MEP/TOILET/KITCHEN
<span style="color: orange;">■</span>	COMMONS/CAFE
<span style="color: brown;">■</span>	GYMNASIUM
<span style="color: green;">■</span>	MUSIC/ART

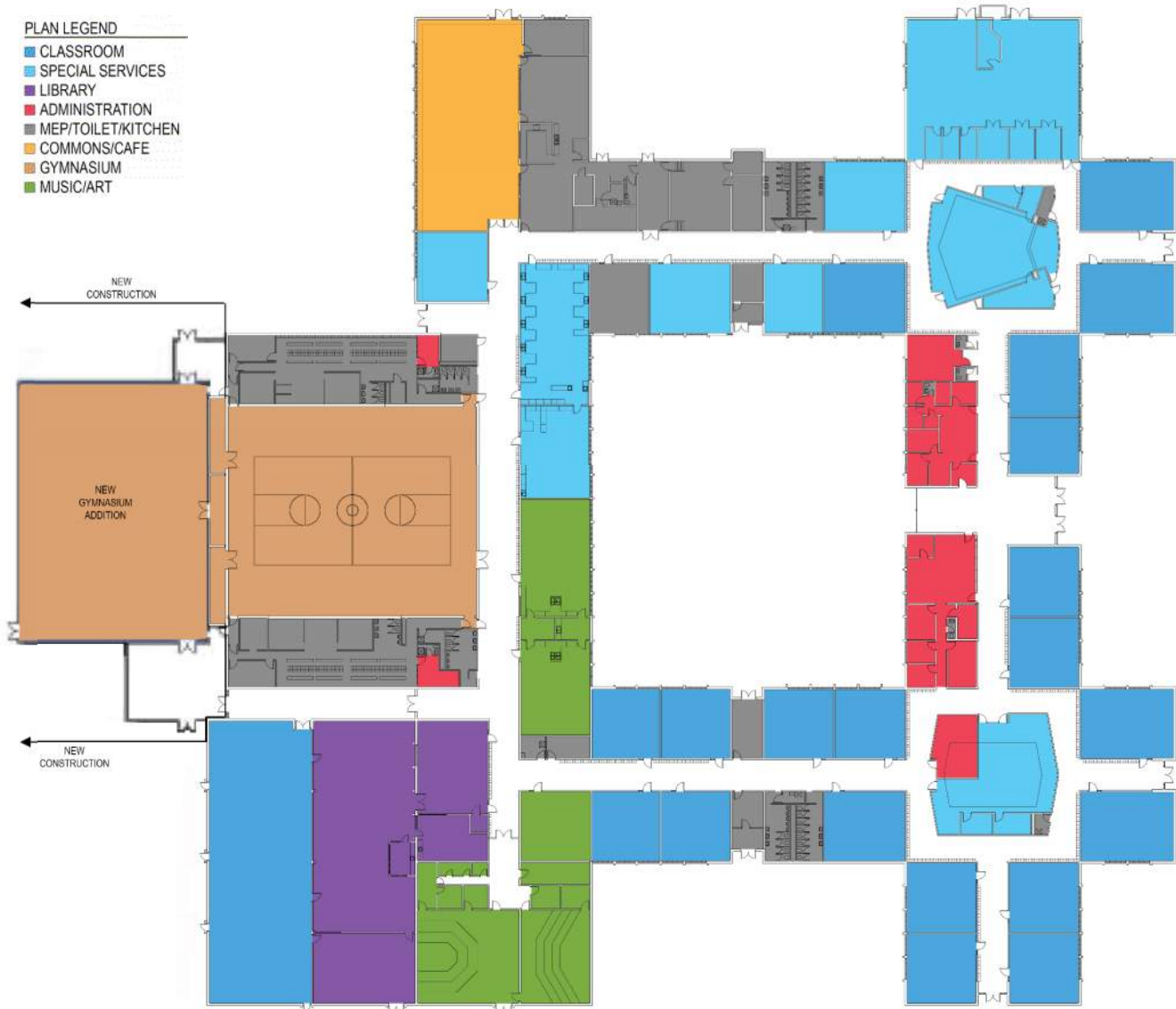


## Will James Middle School

### Program Space Recommendations

Recommendations From 2013 master plan are being carried over for the 2018 master plan. The recommendations include:

- A new Auxiliary Gymnasium addition



Potential Floor Plan Diagram

## Will James Middle School

### Site Characteristics and Deferred Maintenance

#### Site Characteristics:

Component		Cost	Priority
Lot Size	20.44 acres		
Building Area	106,500 sf		
Topography	Flat		
Drainage	Fair to Poor. Work remains to be completed.	\$ 226,920	
Drop Off	Designated drop off area adjacent to main entry		
Hardscape	Asphalt 17,864 sf some cracking / deterioration		
Parking Surface	Asphalt 41,900 sf some cracking / deterioration – site circulation is poor Replaced parking lot.	\$ -	
Stalls	102 Stalls 4 HC		
Paved Walks/Surfaces	Concrete 14,700 sf some severe cracking. Deficient concrete has been replaced.	\$ -	
Steps, ramps, retaining walls	Concrete with some wear		
Paved Sports Courts	Paved areas with activities marked out		
Playgrounds	-		
Softscape	700,273 sf, Large areas of grass around school		
Play Fields	Football, Baseball, Track. Replaced two softball fields, added drainage to track, upgraded irrigation system.		
Landscaping	Several trees on the property, courtyard landscaped		
Utilities	City services		
Fencing	Chain Link Softball field fencing updated.		

## Will James Middle School

### Building Components and Deferred Maintenance

School: Will James Middle School

#### Building Components:

Component	Sub-Component: Condition Observed and Action to Fix	Cost	Priority
<b>Structural Systems</b>			
Footings/Foundation Walls	Original building has concrete spread footing and stem wall foundation. Addition has concrete piers with a grade beam.		
Floor Systems	Both concrete on steel deck / joists over crawl space and concrete slab on grade.		
Columns and Bearing Walls	Steel columns with limited areas of bearing walls		
Beams and Joists	Steel beams and joists		
<b>Envelope</b>			
Roof	Ballasted EPDM – Installed 1982,1992,1993- most area scheduled for replacement 2013-2014. A small area still needed Hypalon– Installed 1993,1995 Roofs have been replaced	\$ -	
	Cedar Shakes – Installed 2011. Roofs have been replaced.		
	Insulation varies		
Walls	Brick/Cedar Shakes/Stucco		
Exterior Windows	Aluminum Single glazed. Windows have been replaced	\$ -	
Exterior Doors	Older HM Doors – non ADA hardware – some exterior doors are laminated. Exterior deficient doors have been replaced		
Thermal Systems	Cavity fill vermiculite (asbestos?)		
<b>Interior Finishes</b>			
Interior Walls	Facility Typical – Brick/Block: Painted in some areas brick is left unpainted in entries, halls and portions of library		
	Misc. locations throughout – Wood Paneling: Poor quality found in most classrooms and throughout halls and the rest of the building. Work remains to be completed	\$ 144,534	
	Misc. locations throughout- Framed Gyp: Good Condition		
	Kitch/Lockers – Glazed Block: Damage wear /voids in grout in places 1/3 through locker replacement		
	Toilets – Ceramic Tile: cracking observed – damage from moved access. Remodeled all toilet rooms		
	Computer Lab adj. to library – Partition Walls: wear/quality		
Ceilings	Facility Typical – ACT: ACT is aging minor damage/staining throughout Kitchen/Choir Partial/Library/Band Storage – Glue on Tiles Work remains to be completed	\$ 14,015	
	Locker – Gyp Board: Good condition some wear/staining		
	Gym – Exposed Structure		
Doors/Hardware/Windows	Non ADA compliant “knob” style hardware		
	Solid Core Wood Doors HM Frames		
	HM Relites		
	Skylights in Gym		

## Will James Middle School

### Building Components and Deferred Maintenance

Floor Finishes	Facility Typical – Asbestos tiles: wearing/aging. <b>Deficient floors have been replaced.</b>	\$ -	
	Gym – Wood: Floor is in excellent condition		
	Admin/Spec. Education/Library/Classrooms (new adj. to library) Choir/Band – Carpet: Varying conditions. <b>Deficient carpet has been replaced.</b>	\$ -	
	Toilets – Ceramic Tile: poor condition – age/wear cracking in toilets requires observation, some cracking continues on to wall		
	Locker – Painted Concrete		
	Partial Classrooms/Partial Corridor/Cafeteria – VCT: appears Asbestos tiles are being replaced with VCT – majority of floors still asbestos – most VCT occurring from patching		
Wall Finishes	Paint throughout facility is in good condition		
<b>Specialties</b>			
Toilet Partitions	Metal Older and new composite – metal stalls functional		
Lockers	Metal Older in poor condition		
Fixed Seating/Risers	Bleachers: N/A Theater: N/A Classroom/Lecture: N/A Cafeteria: N/A		
Fixed Seating/Risers	Pull out seating in gym, did not observe function, was stored against wall		
Markerboards/Cabinets	All rooms have markerboards Plastic laminate casework in varying conditions Wood Cabinets wearing but functional		
<b>HVAC System</b>			
Heating	Scheduled for controls upgrade in 2013- VAV's need to increase efficiency BMS: scheduled for upgrade 2013 <b>Controls upgraded to meet district standard 2018</b> Boilers scheduled for replacement <b>Boilers meet district standard for high efficiency boiler (3 units)</b> Room Units: no Hydronic Piping: 2 pipe Alternative Fuel: no		
Ventilating	Air Handler: Central air handler, roof top at addition Ductwork: Dual duct constant volume <b>Air Handler Controls updated</b> Room Ventilators: no <b>Air terminal units replaced</b>	\$ 175,000	\$ 175,000
Cooling	AC in Library only Hydronic Piping: no		
<b>Plumbing System</b>			
Fixtures	Fixtures are a mix of older and newer – new valves needed throughout Hot Water Generation: central <b>General toilet rooms upgraded with new fixtures and to meet ADA requirements</b> Alternative Fuel: no		
Supply Piping	Piping: copper, varies Pumps: circulation		
Waste Piping	Piping: varies Pumps: no		
<b>Electrical System</b>			

## Will James Middle School

### Building Components and Deferred Maintenance

Building Service	1000A, 277/480 3Ph. Meter Base: acceptable Service upgrade to 1600A 277/480-3P Generator: no Alternative Source: no		
Lighting	Fixtures - PCB: no T-8's used throughout Building lighting upgraded to LED Light Level Controls: limited Classroom spaces controls capable of diming Occ/Daylight Sensor: limited Room Controls improved to dimming and occupancy sensors		
Distribution	Devices: Power & data distribution upgrade needed Transformer located in one of the new 6 <sup>th</sup> grade classrooms is a safety concern Building panels and transformers replaced to increase capacity Additional classroom receptacles added to meet building function		
Voice/Data	Intercom: acceptable Clock: acceptable Telephone: recently upgraded Data: 6 <sup>th</sup> Grade classrooms have good infrastructure: (4) ports at each corner of the classroom, overhead power, good network and wireless capabilities/ 2-4 ports per room in other rooms, not all active, Wireless 5 access points, need 5- 6 more, Power issues throughout. GPON data system installed throughout.	\$ -	
<b>Conveying &amp; Vertical Circulation</b>			
Elevators, lifts, stairs ramps	Not applicable		
<b>Safety System</b>			
Egress	Exit Systems: clear egress paths		
Extinguishing System	Sprinkler: No automatic sprinkler. Work remains to be completed. Cabinet Systems:	\$ 194,183	
Exit/Emergency Lighting/Alarms	Exit Lights: Yes Emergency Lighting: Yes Smoke/Heat Detection: Updated Fire Alarm System: Updated. Fire alarm continues to trip. Addressable, but not voice evac.		
Cameras	Adequate. Additional security cameras needed.		

## Will James Middle School

### Code Review / ADA

#### Code Review/Americans with Disabilities Act (ADA):

	Description	Cost	Priority
Site	Main Entrance is accessible, several other entrances are not accessi		
Parking	1 Access parking stall		
Approach, Entry & Exit	Approach to main entrance is accessible		
Ramps	N/A		
Stairs	N/A		
Elevator/lift	N/A		
Assembly Areas	All areas are accessible.		
Classroom Access	All classrooms accessible – doors have non-compliant 'knob' style hardware Work remains to be completed	\$ 135,800	
Restroom Access	Restrooms are accessible – locker room showers/toilets not accessible due to curb		
Toilets/Restrooms	At least one toilet stall was accessible		
Drinking Fountains	Several Drinking fountains observed at low heights no dual height fountains		
Counter Access	Non-compliant		
Signage per ADA	None Observed		
Audio and Visual Alarms	None Observed		
Obstacles	None other than those noted		
Automatic Sprinkler System	No		
Exit Corridors	Generally clear paths		
Other	Exit enclosures shall be enclosed per IBC 1022.		
<b>Notes:</b> 1. ADA – Compliance with ADA in the existing building is recommended if major construction is completed at this building. 2. Fire/Safety – Fire suppression system in the existing building is recommended if major work is done at this building.			
<b>Building Code Guidelines:</b> 2009 International Building Code; 2009 International Existing Building Code; 1020 ADA Standards for Accessible Design; Administrative Rules of Montana 24.301.351; 2000 NFPA 101 - Life Safety Code			

# 4 K-8 FACILITIES

## Will James Middle School

### Recommendations

Additional detail regarding scope and cost related to Educational Adequacy and Deferred Maintenance projects can be found in the following tables:

#### RECOMMENDED BUILDING COMPONENT (FAME) IMPROVEMENT DETAIL:

Component	Comments	Estimated Cost
Building Envelope	No recommended improvements	\$0
Interiors & Specialties	No recommended improvements	\$0
Mechanical, Electrical & Plumbing	Ventilation improvements	\$175,000
Fire/Life Safety	No recommended improvements	\$0
Site	No recommended improvements	\$0
ADA	No recommended improvements	\$0
Does not include Soft Costs	Total	\$175,000

#### RECOMMENDED EDUCATIONAL ADEQUACY IMPROVEMENT DETAIL:

Component:	Item Description:	Qty	UOM	Unit Cost	Cost Estimate
Site Improvements					
Total Site:		0			\$0
Addition					
Multi-purpose Room Addition	New Auxiliary Gymnasium Addition, Existing Gym/Cafeteria to serve as Cafeteria space	6500	SF	\$210	\$1,365,000
Subtotal:		6500	SF	\$210	\$1,365,000
Gross Area:		2275	SF	\$210	\$477,750
Total Addition:		8775	SF	\$210	\$1,842,750
Remodel					
Total Remodel:		0			\$0
Subtotal:					\$1,842,750
Estimated Cost	*Does not include soft costs				\$1,842,750
TOTAL RECOMMENDED FACILITY IMPROVEMENT COST SUMMARY:					
Description:	Comments:				Cost Estimate
FAME					\$175,000
Educational Adequacy					\$1,842,750
Estimated Cost	*Does not include soft costs				\$2,017,750



## Overview

The 2013 Master Plan focused on capacity and deferred maintenance at elementary and middle schools, the 2018 Master Plan emphasizes needs at the district's high schools. Senior, West, and Skyview high schools are all in need of major systems maintenance, accessibility upgrades, and renovations to create 21st century learning environments related to CTE curriculum.

Mechanical, electrical, plumbing, technology, and ADA upgrades have been identified through school tours and meetings with district staff and engineering consultants. Educational adequacy improvements have been identified through school principal interviews, school tours, community meetings, and teacher workshops. Visioning exercises with the Core Leadership Team have created goals and provided direction for CTE programs for secondary education.

Recommendations for the 2018 Master Plan focus on capacity, equity, deferred maintenance, and improvements to CTE infrastructure at secondary education facilities. Goals developed during the Master Planning process include developing a positive reputation for CTE Career Pathways, create facilities that support students to become life-long innovators, and develop facilities which give the district flexibility to accommodate multiple CTE delivery models.

To address equity, educational adequacy improvements to CTE facilities between all of the district's high schools, the Master Plan recommends the following projects:

\$ 3,063,175	Modifications to existing CTE spaces at Senior HS
\$ 3,165,900	Modifications to existing CTE spaces at Skyview HS
\$ 2,951,025	Modifications to existing CTE spaces at West HS
\$ 5,872,500	Performing Arts Renovations at Senior High (Recommendation from 2013 Master Plan)
<b>\$15,052,600</b>	<b>Subtotal</b>

To address building, site, life cycle, deferred maintenance, and ADA compliance needs at all high school facilities the Master Plan recommends a variety of projects throughout the district:

\$12,212,715	Building, Site, Life Cycle, Deferred Maintenance, and ADA Compliance Costs at Senior HS
\$ 6,753,427	Building, Site, Life Cycle, Deferred Maintenance, and ADA Compliance Costs at Skyview HS
\$12,915,802	Building, Site, Life Cycle, Deferred Maintenance, and ADA Compliance Costs at West HS
<b>\$31,881,944</b>	<b>Subtotal</b>

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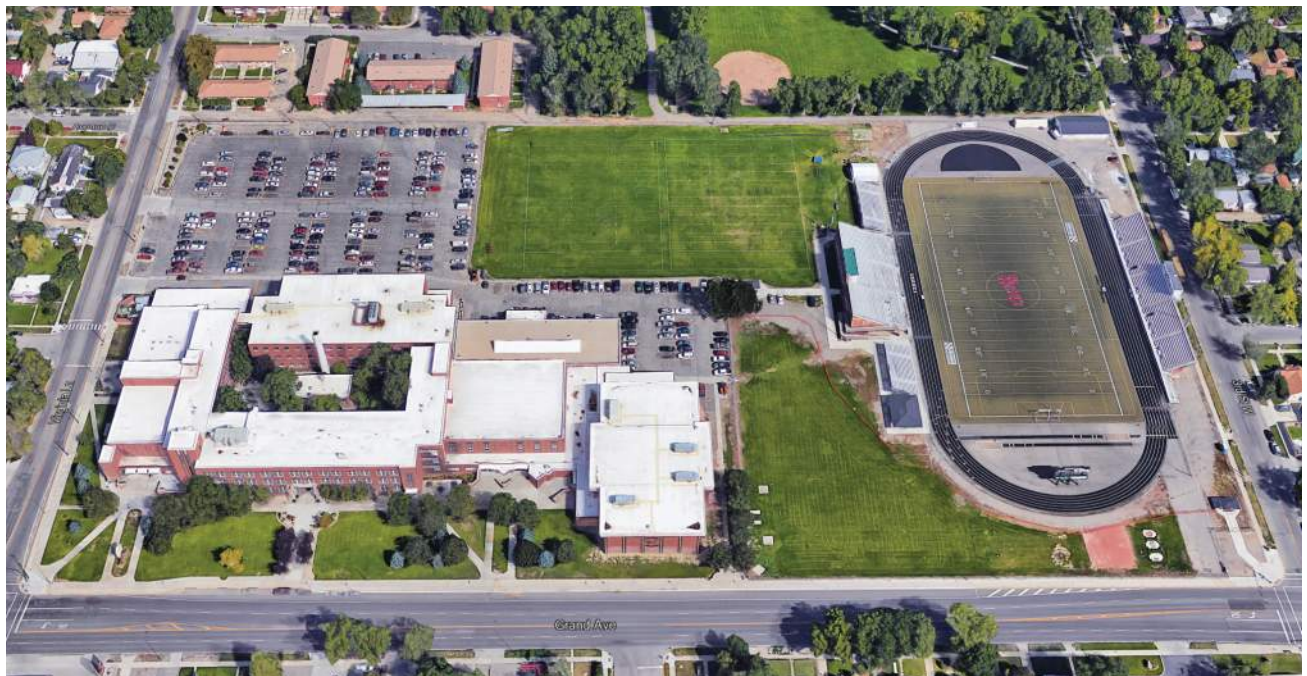
## Senior High School

### Overview

Senior High is the oldest current high school in Billings, replacing Lincoln Center. It was originally constructed in 1938 with additions in 1953, 1967 and 1973. The original building consisted of a U shaped 3 story classroom section with 2 story music/ drama as well as two-story gymnasium and athletic area. In 1953, additional music, art and tech ed spaces were constructed along the north side. (Drawings for the original building and 1953 addition were not found) In 1967 several additions were added including kitchen space, a 3 story classroom and library wing ( the upper level of which was unfinished initially) and a new gymnasium and locker spaces ( with plans for additional gym space). In 1973, the rest of the gymnasium area was constructed. The building constructed in 1967 and later is brick veneer on cmu or concrete. The floors are concrete slab on grade or on metal deck and bar joists. The roof is steel structure with metal decking. The classroom/library wing has pad footings. The gymnasium has cast concrete pipe tunnel. Fiber was installed in the building in 1996. The original heating system was steam, which is in the process of replacement. A new 4 pipe hot water system has been installed. The traditional layout of classroom spaces creates difficulties to create 21st century learning environments. Classrooms are stand alone with minimal access to shared areas and small group break out areas. Deteriorating building systems and lack of space limit program offerings for CTE curriculum.

425 Grand Ave  
Billings, MT 59101  
(406) 281-5400

Year Built .....	1938
Renovations ... Additions '53, '67, '74	
Portables .....	0
Site Acres .....	18.07
Building SF .....	228,314
Current Enrollment .....	1,876
Capacity .....	1,686
Target Capacity .....	1,560



# 5 HIGH SCHOOL FACILITIES

Se  
Edi

Billings  
PUBLIC SCHOOLS  
Inspire Educate Empower

ool  
am Spaces

Fabrication Labs

Specialized Labs

Flexible Labs

General Labs

Level 3

Level 2

Level 1

## Senior High School

### Site Characteristics and Deferred Maintenance

Site Characteristics:			
Component		Cost	Priority
Lot Size	18.07 acres		
Building Area	266,310 sf		
Topography	Flat		
Drainage	Fair to Poor. No change in conditions.	\$126,054	
Drop Off	No drop off		
Hardscape			
Parking Surface	Asphalt 107,280 sf some cracking and deterioration. No change in conditions.	\$500,434	\$500,434
Stalls	300 Stalls 7 HC		
Paved Walks/Surfaces	Concrete 15,160 sf, some cracking, spalling, settlement. No change in conditions.	\$52,922	\$52,922
Steps, ramps, retaining walls	Concrete – minor cracking/deterioration – custodian reports concrete deterioration as a major problem in areas where ramps have to be salted in winter. No change in conditions.	\$31,725	\$31,725
Paved Sports Courts	Tennis Courts in Pioneer Park adjacent		
Playgrounds			
Softscape	437,692 sf Large areas of grass, playfields		
Play Fields	Practice fields also access to Daylis Stadium and Pioneer Park		
Landscaping	Several trees on the property, Concrete seating areas at entry, and landscaped courtyard in interior		
Utilities	City services		
Fencing	Chain Link		
Site Structures	Boiler stack in courtyard needs to be removed in its entirety.	\$75,000	\$75,000
	Underground fuel storage tank needs to be removed in its entirety, or filled.	\$9,000	\$9,000

## Senior High School

### Building Component and Deferred Maintenance

Building Components:			
Component	Sub-Component: Condition Observed and Action to Fix	Cost	Priority
<b>Structural Systems</b>			
Footings/Foundation Walls	Stem Walls: Concrete		
	Foundations: Concrete		
	Concrete grade beams		
Floor Systems	Small cracks observed in Terrazzo, Terrazzo Stairs and Ceramic tiles in various locations		
	Pipe Chase in new gymnasium area		
	Slab on grade		
	Concrete on metal deck		
Columns and Bearing Walls	Steel columns and concrete or cmu bearing walls		
Beams and Joists	Steel beams and metal joists		
<b>Envelope</b>			
Roof	This building is in the process of all new PVC roofing by 2014.		
	Zones 12 & 13 need roofs replaced.	\$23,290	\$23,290
	Insulation – district standard is R-30.		
Walls	Primarily brick with some Terra Cotta and precast aggregate panels Some spalling observed in bricks high on wall, voids in grout at retaining walls adjacent to stairs at entry. Work remains to be completed.	\$99,766	
	Evidence that sprinklers are incorrectly adjusted so that they don't spray masonry walls		
Exterior Windows	Aluminum – almost all of the windows were recently replaced. Work remains to be completed.	\$66,020	\$66,020
	Double Glazed		
Skylights @ ceramics	Requires constant maintenance		
Exterior Doors	HM door and frames some aluminum storefront		
Thermal Systems	Insulation minimal in walls, R-20 assumed in new roof areas		
<b>Interior Finishes</b>			
Interior Walls	Facility Typical – Painted Block/Brick: Found throughout facility – some areas have block that is not painted, typically under windows in some classrooms, these areas are wearing/damaged and should be painted – in some areas brick is unpainted but is in good condition, no painting recommended. Work remains to be completed.	\$36,848	
	Misc. locations throughout – framed gyp./plaster: Good condition		
	Kitchen/Lockers – glazed block: Aging wearing		
Ceilings	Toilets/Cafeteria – ceramic tile: Aging/wearing some damage from relocating accessories in toilets, some damage in cafeteria, cracking tile		
	Gym/Admin Partial – framed wood paneling: Aging, poor quality		
	New ACT being installed with HVAC and roofing work		
	Facility Typical – ACT: Sanitary tiles in kitchen, good condition throughout, tiles look new, some tiles are painted by students, Lockers in girls locker room in very poor condition		
	Art/Journalism/Auditorium/Choir – Glue on Tile		
	Kitchen/Vestibule/Auditorium/Wood Shop/Small Gym/Lockers – Gyp/Plaster: Good Condition		
	Large Gym - Tectum		
	Boy's Locker/Ceramics – Painted Concrete		

## Senior High School

### Building Component and Deferred Maintenance

Doors/Hardware/Windows	Non ADA compliant "knob" style hardware		
	Solid Core Wood Doors- very worn. <i>Work remains to be completed.</i>	\$381,728	\$381,728
	Some HM frames, most wood both very worn		
	Wood/HM Relites Good condition, most relites are high on classroom walls and in good condition		
Floor Finishes	Facility Typical – VCT: found throughout building in classrooms and some corridors. <i>Most (90% +/-) classrooms still require floor replacement.</i>	\$345,829	\$345,829
	Tech Ed/Ceramics/Lockers/Kitchen – Concrete Sealed/Painted: Good condition well maintained		
	Stairways – Terrazzo: Good Condition well maintained – cracking observed in several locations		
	Gym/Stage/Music– Wood: Floor is heavily used and showing wear. <i>Small gymnasium floor still needs replacement.</i>	\$68,000	\$68,800
	Counseling/Library/Business/Band/Admin – Carpet: Varying conditions from new to worn		
	Toilets – Ceramic Tile: Poor condition – age/wear/patching		
	Art (1 room)/Journalism/Classrooms (partial/upper)/Home Economics – Sheet Vinyl: Poor condition age/heavy wear		
	Cafeteria/Teachers Lounge/Classrooms/Corridors – Asbestos tile: It appears that replacement of Asbestos tile is on-going with VCT, wearing/aging where it occurs		
<b>Specialties</b>			
Toilet Partitions	Metal Older/New Composite – Varying Condition		
Lockers	Metal Older but Functioning well maintained. <i>Girls' locker room is undersized, as compared to boys'.</i>	\$600,000	\$600,000
Fixed Seating/Risers	Bleachers: Pull out bleachers are failing in large gym. <i>Bleacher replacement a high priority.</i>	\$1,186,750	\$1,186,750
	Theater: Yes good condition, older wood		
	Classroom/Lecture: N/A		
	Cafeteria: N/A		
Theater lighting/rigging	<i>Rigging and other theater equipment needs replacement, theater seating requires replacement, ADA accessibility issues should be addressed. Priority.</i>	\$681,343	\$681,343
Markerboards /Cabinets	All rooms have markerboards		
	Casework is wood and plastic laminate mixed throughout in varying conditions, all appears functional		
	Science Classrooms have wood cabinets with Chemical resistant counters:		
	Age/wear		

## Senior High School

### Building Component and Deferred Maintenance

HVAC System			
Heating	Building is Connected to Facility Master Controls		
	BMS: upgrade is needed Update Building Controls to Current District Standard	\$90,000	\$90,000
	2 Boilers one original to building – ½ building is heated by steam HVAC system is being upgraded in phases – the western and southern portions have been replaced. Update modular high efficiency boiler plant to support entire building via hot water	\$250,000	\$250,000
	Replace auditorium air handling unit with exterior unit - Original equipment	\$185,000	\$185,000
	Repalce roof mounted equipment on gymnsaium with new hot water equipment	\$315,000	\$315,000
	Replace steam heating in the tech wing	\$1,250,000	\$1,250,000
	Replace air handler for old gym area - original equipment	\$175,000	\$175,000
	Classroom ventilation in north, west and southwest corner variable air volume Installation of variable air volume in remaining classroom spaces		
	Room Units: Unit ventilators Replace classroom unit ventilators with new variable air volume system including roof mounted air handler unit.	\$1,400,000	\$1,400,000
	Hydronic Piping: 4 pipe Extend heating distribution piping to new variable air volume system	\$225,000	\$225,000
	Alternative Fuel: No		
Ventilating	Building appears to be on a ducted system in assembly areas and labs Revise science space ventiatlition system to meet educational requirements	\$65,000	\$65,000
	Ventilation in toilets fitted with new non functioning windows is and issue Replace toilet room ventilation system	\$25,000	\$25,000
	Specialized Exhaust: In labs, kitchen		
	Replace kitchen hood system including hood, make-up air equipment and exhaust fans	\$125,000	\$125,000
	Room Ventilators: In classrooms Replace unit ventilator with variable air volume boxes		
Cooling	Central A/C throughout renovated classroom areas		
	Additional air cooled chiller for remaining classroom space	\$110,000	
	Add air conditioning to Auditorium (with unit replacement)	\$45,000	
	Add air conditioing to tech wing (with unit replacement)	\$60,000	
Plumbing System			
Fixtures	Age of fixtures varies throughout facility – Custodian reports problems replacing parts in older valves etc. Update plumbing fixtures	\$450,000	\$450,000
	Hot Water Generation: Central boiler Modular boiler storage tank system in good condition	\$85,000	\$85,000
	Alternative Fuel: No		
Supply Piping	Piping: Older Replace plumbing chase supply piping	\$210,000	\$210,000
	Pumps: Circulating	\$3,600	\$3,600
Waste Piping	Piping: Older Replace plumbing chase piping	\$115,000	\$115,000
	Replace kitchen waste piping including grease interceptor	\$85,000	\$85,000
	Install roof overflows for secondary piping (overflow)	\$90,000	\$90,000

## Senior High School

### Building Component and Deferred Maintenance

Electrical System			
Building Service	4000A, 277/480 3Ph.		
	Service upgraded in 2002		
	Backup Generator in place and functional- carries emergency lighting only		
	Building distribution panels upgraded		
Lighting	T-8's used throughout – Auditorium lighting dated		
	Light Level Controls: Upgraded in some areas		
	Lighting controls added to spaces where HVAC systems completed	\$215,000	
	Occ/Daylight Sensor: Yes in spaces where HVAC improved		
	Update corridor lighting to LED	\$110,000	
	Revise lighting in tech area to current standards	\$80,000	\$80,000
	Update Classroom lighting to LED required to complete HVAC	\$635,000	\$635,000
	Replace parking lot lighting for safety and security	\$85,000	\$85,000
	Replace Auditorium Lighting	\$165,000	\$165,000
Distribution	Replace fluorescent fixtures with LED lights in gymnasium (Main and Aux)	\$115,000	\$115,000
	Wiring: Some wiring is still cloth – being replaced with other upgrade projects		
	Cloth wiring needs to be removed from remainder of building	\$315,000	\$315,000
	Building service upgraded 2012 during renovations		
Voice/Data	Devices: Inadequate number	\$615,000	\$615,000
	Intercom: Functioning		
	Clock: New digital system		
	Telephone: Recently upgraded		
Conveying & Vertical Circulation	Data: Computer lab has good service, New cabling is being installed as HVAC work is done, 3 <sup>rd</sup> floor has new wiring, 2 <sup>nd</sup> floor and office have partial new wiring, 8 ports in new classrooms, 4 ports in old classrooms all ports active, Wireless 'Enterprise' access throughout building with certified support, Security Cameras are on separate lines.		
	GPON data system needs to be installed.	\$869,807	\$869,807
Elevators, lifts, stairs ramps			
	Elevator is older – functioning, cannot be compliant with ADA.		
	Elevator needs to be replaced.	\$80,000	\$80,000
	Stairs generally meet building code, handrails vary throughout handrails do not extend far enough for code compliance in all situations.		
Safety System			
Egress	Exit Systems: Clear egress paths		
	Building Partially sprinkled – Auditorium only.		
Extinguishing System	Conditions remain as noted.	\$850,869	
Exit/Emergency Lighting/Alarms	Exit Lights: Yes		
	Emergency Lighting: Yes		
	Smoke/Heat Detection: Updated		
	Fire Alarm System: Updated in 2003		
Security	Security system needs additional card readers & access points. Need to control all exits, not just some. Andover system (same system at all high schools).	\$35,000	\$35,000

## Senior High School

### Code Review / ADA

Code Review/Americans with Disabilities Act (ADA):			
	Description	Cost	Priority
Site	Main entrance to building facing Grand Ave. is not accessible. Accessible entrance is at rear of building adjacent to parking lot and handicap accessible parking spaces.		
Parking	2 Accessible parking stalls (van)		
Approach, Entry & Exit	Only accessible approach at rear of building		
Ramps	Ramp rise/run, guardrails, and handrails compliance with Building Code and ADA.		
Stairs	Concrete stairs at several entrances appear to meet code - handrails meet code where they are present - not all exterior stairs have handrails – Interior stairs meet code with varying handrails not all of which comply. Ramp by auditorium was updated, other work remains to be completed.	\$21,857	\$21,857
Elevator/lift	Elevator provides access to all levels		
Assembly Areas	Assembly areas are accessible		
Classroom Access	Classrooms are accessible via elevator – non-compliant 'knob' style hardware on many doors. Work remains to be completed.	\$307,409	
Restroom Access	Restrooms are not all accessible – all have space to be made accessible – materials at individual locations will vary the cost of work		
Toilets/Restrooms	No accessible toilet stalls observed – all toilets have room to be modified to include accessible stalls without reducing the fixture count, however in some instances major shuffling of fixture locations would be required. Work remains to be completed. Priority.	\$29,610	\$29,610
Drinking Fountains	New drinking fountains installed in various locations		
Counter Access			
Signage per ADA	None Observed		
Audio and Visual Alarms	Horn/Strobes observed throughout		
Automatic Sprinkler System	Building is only partially sprinkled		
Exit Corridors			
Other	Exit enclosures shall be enclosed per IBC 1022.		
Other	Per 1018.4; maximum length of corridor shall be 20 feet in a non- sprinklered E occupancy and 50 feet in a sprinklered occupancy.		
<b>Notes:</b> 1. ADA – Compliance with ADA in the existing building is recommended if major construction is completed at this building. 2. Fire/Safety – Fire suppression system in the existing building is recommended if major work is done at this building.			
<b>Building Code Guidelines:</b> 2009 International Building Code; 2009 International Existing Building Code; 1020 ADA Standards for Accessible Design; Administrative Rules of Montana 24.301.351; 2000 NFPA 101 - Life Safety Code			

## Senior High School

### Recommendations

Senior High has received a series of upgrades including new windows, new roofing, new HVAC systems and conversion to hot water heat. Recommendations include continual work on system upgrades as well as efforts to address site needs and specialties. Educational adequacy recommendations focus on upgrades CTE curriculum and program offerings. CTE spaces included for upgrades include tech ed and wood shop fabrication spaces, specialty labs for science and family consumer sciences, as well as the business/finance/marketing center and art/maker spaces. The extent of work included for CTE programs include mechanical, electrical, plumbing, equipment, storage, casework, and furniture upgrades.

Additional detail regarding scope and cost related to Educational Adequacy and Deferred Maintenance projects can be found in the following tables:

RECOMMENDED BUILDING COMPONENT (FAME) IMPROVEMENT DETAIL:		
Component	Comments	Estimated Cost
Building Envelope		
	Replace roof, exterior windows	\$89,310
Interiors & Specialties		
	Replace doors, VCT in classrooms, gymnasium floors, replace bleachers, replace theater seats & equipment, and expand girls' locker room	\$3,264,450
Mechanical, Electrical & Plumbing		
	Continue working on HVAC system replacement, plumbing system upgrades. Upgrade electrical service and continue adding power distribution.	\$8,023,407
Fire/Life Safety		
	Replace elevator, update security system	\$115,000
Site		
	Repair and replace concrete and paved areas, remove courtyard boiler stack, remove sub-grade fuel tank	\$669,081
ADA		
	Update ADA ramps, install ADA stalls/toilets	\$51,467
Does not include Soft Costs Total		\$ 12,212,715

RECOMMENDED EDUCATIONAL ADEQUACY IMPROVEMENT DETAIL:					
Component:	Item Description:	Qty	UOM	Unit Cost	Cost Estimate
Site Improvements					
Total Site:		0			\$0
Addition					
Performance Arts	New Performance Arts Facility	15000	SF	\$290	\$4,350,000
Subtotal:		15000	SF	\$290	\$4,350,000
Gross Area:		5250	SF	\$290	\$1,522,500
Total Addition:		20250	SF	\$290	\$5,872,500
Remodel:					
Fab (Tech/Wood) Room Improvements:	M/P/E, Casework & Furniture	1	LS	\$595,850	\$595,850
Specialty (Culinary) Room Improvements:	M/P/E, Casework & Furniture	1	LS	\$351,360	\$351,360
Specialty (Science) Room Improvements:	M/P/E, Casework & Furniture	1	LS	\$1,224,840	\$1,224,840
General (Business) Room Improvements:	M/P/E, Casework & Furniture	1	LS	\$374,775	\$374,775
Flexible (Art) Room Improvements:	M/P/E, Casework & Furniture	1	LS	\$516,350	\$516,350
Total Remodel:		0			\$3,063,175
Subtotal:					\$8,935,675
Estimated Cost *Does not include soft costs					\$8,935,675
TOTAL RECOMMENDED FACILITY IMPROVEMENT COST SUMMARY:					
Description:	Comments:				Cost Estimate
FAME					\$12,212,715
Educational Adequacy					\$8,935,675
Estimated Cost *Does not include soft costs					\$21,148,390

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## Skyview High School

### Overview

Constructed in 1987, Skyview is the District's newest high school. It is a split 2 story structure with brick on cmu exterior walls. It has a concrete footing and foundation system with concrete slab on grade floors at the lower level and concrete slab on metal deck on steel joists for the second floor system. Roof structure is metal deck on metal bar joists. The interior walls are gypsum board on stud or furred concrete. The building has a developed fire rated corridor system, door assemblies and fire separation walls as well as a fire suppression system. The mechanical system consists of a boiler with fan coil units in the classroom areas and roof top air handler for the assembly spaces. Classrooms are departmentally organized with strong CTE curriculum. Classrooms are stand alone with minimal access to shared areas and small group break out areas. Inflexible furniture and traditional classroom setting limit 21st century educational opportunities.

1775 High Sierra Blvd.  
Billings, MT 59105  
(406) 281-5200

Year Built .....	1987
Renovations .....	0
Portables .....	0
Site Acres .....	30.03
Building SF .....	242,336
Current Enrollment .....	1,586
Capacity .....	1,684
Target Capacity .....	1,558



# 5 HIGH SCHOOL FACILITIES

Fabrication Labs

Specialized Labs

Flexible Labs

General Labs

Level 2

Level 1

## Skyview High School

### Site Characteristics and Deferred Maintenance

Site Characteristics:			
Component		Cost	Priority
Lot Size	44.16 acres 8.52 (vacant)		
Building Area	253,271 sf		
Topography	Sloping		
Drainage	Generally good – some ponding – Problems with water in Shop area and at Receiving. Work remains to be completed.	\$63,027	
Drop Off	Designated drop off area adjacent to main entry		
Hardscape			
Parking Surface	Asphalt 335,150 sf - cracking. Work remains to be completed, and is considered a priority.	\$504,065	\$504,065
Stalls	684 Stalls 11 HC		
Paved Walks/Surfaces	Concrete 26,460 sf some settlement, cracking. Work remains to be completed.	\$10,584	\$10,584
Steps, ramps, retaining walls	Concrete with some wear		
Paved Sports Courts	4 tennis courts. Require replacement, considered a priority.	\$300,000	\$300,000
Playgrounds			
Softscape	1,780,648 sf Large areas of grass around school		
Play Fields	Football, baseball, football practice, track with black surface. Track requires replacement, and is considered a priority.	\$153,300	\$153,300
Landscaping	Several outdoor seating areas, trees and other plantings, boulders		
Utilities	City services		
Fencing	Chain Link		
Irrigation	System is on city water		
Site Structures	Underground fuel storage tank needs to be removed in its entirety, or filled.	\$12,000	\$12,000

## Skyview High School

### Building Components and Deferred Maintenance

Building Components:			
Component	Sub-Component: Condition Observed and Action to Fix	Cost	Priority
<b>Structural Systems</b>			
Footings/Foundation Walls	Concrete footings and foundation walls		
	Foundations: Custodian reports major wall cracking in lower level halls		
	Retaining walls moving and settling – cap installed. Wood plank retaining wall on site is a maintenance issue		
Floor Systems	Floors on upper levels of the building are cracking repeatedly cracks addressed as they occur – Band room is settling floor cracking		
	Building is settling- cracking occurs in all systems. Work remains to be completed, but not necessarily a priority.	\$209,526	
Columns and Bearing Walls	Settling is apparent in bearing walls		
Beams and Joists			
<b>Envelope</b>			
Roof	Ballasted EPDM – Installed 2011		
	New skylights installed in 2011		
	Insulation R-22		
Walls	Brick and glazed block – grout cracking and voiding, building settling causing walls to crack – inconsistent expansion joints. This work needs to be done, and is considered a priority. Thru wall flashing also needs to be replaced.	\$702,260	
Exterior Windows	Aluminum		
	Double Glazed in poor condition (need resealing) leaking air and moisture. Work remains to be completed, and is considered a priority.	\$75,853	\$75,853
Exterior Doors	HM and Aluminum storefront doors, most original to building - poor condition. Work remains to be completed, and is considered a priority.	\$180,014	\$180,014
Thermal Systems	Insulation - minimal		
<b>Interior Finishes</b>			
Interior Walls	Facility Typical – Framed Gyp: Found throughout facility most interior walls are gyp in good condition with minor wear		
	Misc. Locations throughout – Painted CMU and Brick: Found throughout facility in good condition – settlement causing voids in mortar		
	Classrooms (small number) – Moveable wall Panel: Fabric covered moveable wall panels are located in a small number of classrooms – poor quality/aging		
	Toilets/Hallways (at doorways)/Toilets – Ceramic Tile: Minor wear/age		
Ceilings	Facility Typical – ACT: Condition varies some areas of major water staining from previous roof leaks – tiles hard to acquire Work remains to be completed.	\$162,965	
	Gym/Stage/Art/Shops – Spray on fire proofing over exposed metal: good condition		
	Toilet/Auditorium – Gyp Board: Good condition some wear/staining		

## Skyview High School

### Building Components and Deferred Maintenance

Doors/Hardware/Windows	Non ADA compliant "knob" style hardware failing – keys stick. Repairs as needed have taken place, but remainder of work remains to be completed.	\$309,436	
	Solid Core Wood Doors		
	HM Frames		
	HM Relites		
	Several coiling fire doors in kitchen/cafeteria area – doors separating cafeteria and hallway no longer function as fire doors but are still operable, kitchen doors remain as fire doors.		
Floor Finishes	Art/Shops/Lockers – Concrete Sealed: Good condition well maintained		
	Major Hallways/Kitch/toilets – Quarry Tile: Good Condition well maintained		
	Gym/Stage – Wood: Floor in poor condition due to roof leaks will need to be sanded and redone. Gym floor requires repair/replacement.	\$165,584	\$165,584
	Classrooms/Library/Auditorium/Music/Admin – Carpet: Varying conditions from new to very poor in typical classroom. Repairs as needed have taken place, but remainder of work remains to be completed.	\$378,311	\$378,311
	Lockers/Hallways – Ceramic Tile: Poor condition – age/wear		
	Home Economics/ Science classrooms/secondary hallways/Auditorium/Resource/Special Education – VCT: varying conditions new in corridors, older in classrooms		
	Kitchen/Cafeteria/Lockers/Lower Gym – Sheet Vinyl: Poor condition age/heavy wear		
Wall Finishes	Paint throughout facility is in good condition some peeling – some oil paint present all recently used paints latex.		
	FRP in Kitchen		
<b>Specialties</b>			
Toilet Partitions	Most older original metal partitions which are rusting through, slowly being replaced. Work remains to be completed.	\$42,300	\$42,300
Fixed Seating/Risers	Bleachers: N/A		
	Theater: N/A		
	Classroom/Lecture: N/A		
	Cafeteria: N/A		
Markerboards / Cabinets / Lockers	All rooms have markerboards		
	Plastic laminate casework throughout aging, some delamination. Work remains to be completed.	\$49,350	
	Wood and laminate casework in science rooms in good condition		
	Lockers in PE area are rusting		

## Skyview High School

### Building Components and Deferred Maintenance

HVAC System			
Heating	Building is not fully Connected to Facility Master Controls – currently upgrading to new system Upgrade of controls completed at terminal units		
	BMS: Upgrade is needed Front end upgrade required	\$54,000	\$54,000
	Boilers recently reconditioned		
	Building heating distribution pumps - original need to be replaced	\$65,000	\$65,000
	Modification to building heat recovery system required	\$75,000	\$75,000
	Hydronic Piping to fan coil units in each room		
	Underground fuel oil storage tank (in parking lot) and supply piping need investigation as to condition. Tank and piping original Day tank required for generator	\$40,000	\$40,000
	Alternative Fuel: N/A		
	Air Handler: Ventilation unit AHU-4 undersized by current code Replace equipment to meet current code	\$325,000	\$325,000
	Classroom fan coil units original beyond service life, need replacement	\$1,075,000	\$1,075,000
Ventilating	Kitchen ventilation equipment need replacement (AHU 7 and 8)	\$215,000	\$215,000
	Specialized Exhaust: In lab and shop spaces Update shop venting for current education requirements	\$110,000	\$110,000
	Improve ventilation system in training room and weight room area	\$125,000	\$125,000
	Venting needed for ice machine in training room		
	Cooling		
	Central AC: Yes but not in PE department Replace IT closet A/C units	\$45,000	\$45,000
Cooling	Modular chiller removed in 2009 Primary chiller original needs replacement	\$215,000	\$215,000
	Cooling pumps - original need to be replaced	\$85,000	\$85,000
	System cooling tower original, replacement required	\$185,000	\$185,000

## Skyview High School

### Building Components and Deferred Maintenance

Plumbing System			
Fixtures	Fixtures appeared older custodian reported that systematic replacement was on going – observed no new fixtures		
	fixture flush valve replacement required	\$85,000	\$85,000
	Hot Water Generation: New water heaters in 2008		
	Hot Water Heater Replacement	\$32,000	
Supply Piping	Revise hot water distribution for lower level toilet rooms	\$14,000	\$14,000
	Piping: minor leaks in domestic hot water loop		
	Patch piping and revise water circulation	\$30,000	\$30,000
	Pumps: Circulating		
Waste Piping	Irrigation water supply is on city services		
	Piping		
Electrical System	Install grease trap for kitchen drain system	\$18,500	\$18,500
Building Service	3000A, 277/480 3Ph., original service		
	Service disconnect failed and was replaced		
	Meter Base		
	Generator: Yes		
Lighting	Generator Replacement and add critical building functions (heating)	\$90,000	\$90,000
	Alternative Source: No		
	Photovoltaic system added to building		
	Changing out metal halide in library and gym		
Distribution	Fixtures updated to LED		
	T-8's used throughout		
	Revise school lighting to LED	\$1,050,000	\$1,050,000
	Auditorium lighting control obsolete and requires updating	\$35,000	\$35,000
Voice/Data	Light Level Controls: Update to current code	\$625,000	\$625,000
	Occ/Daylight Sensor: None installed		
	Switchgear: New main switch		
	Service to building is adequate		
Conveying & Vertical Circulation	Intercom		
	Clock		
	Telephone: Recently upgraded		
	Data: Computer Lab, 4 ports per classroom. Main backbone scheduled for update. Enterprise level wireless access throughout.		
Safety System	High Schools require upgrade to data network - GPON system, similar to elementary & middle schools.	\$196,779	\$196,779
	Security cameras are on data network, scheduled to receive separate lines in the near future.		
Elevators, lifts, stairs ramps	Elevator present and functional needs upgrades to be compliant with ADA		
	Stairs appear to be compliant- handrails have attachment concerns – regular reattachment maintenance required		
Exit/ Emergency Lighting / Alarms	Exit Systems: Clear paths of egress		
	Fire Sprinkler system installed		
	Exit Lights: Yes		
	Emergency Lighting: Yes		
Cameras	Smoke/Heat Detection: Updated		
	Fire Alarm System: Updated.		
	This is an older Simplex Grinnell fire alarm system, which needs significant repair and/or replacement.	\$35,000	\$35,000
	Security camera system: Yes.		
	Security system requires additional access points and upgrades.	\$120,000	\$120,000

## Skyview High School

### Code Review / ADA

Code Review/Americans with Disabilities Act (ADA):			
	Description	Cost	Priority
Site	Main entrance to building is accessible with several other doors observed opening at grade; Entrance doors are accessible hardware is not. While several paved surfaces provide access to the exterior, however the slope and varying elevation of the site would make circulation difficult.		
Parking	11 Accessible parking stalls		
Approach, Entry & Exit	Approach to main entrance is accessible, other accessible exits observed		
Ramps	Ramp rise/run, guardrails, and handrails compliance with Building Code and ADA.		
Stairs	Multiple sets of stairs inside and out. Stairs seem to meet code, handrails do not. <i>Work remains to be completed.</i>	\$18,137	\$18,137
Elevator/lift	Elevator provides access to all levels		
Assembly Areas	All accessible		
Classroom Access	All classrooms accessible, with 'knob' style non-compliant hardware		
Restroom Access	Restrooms are accessible		
Toilets/Restrooms	Stalls compliant at time of installation		
Drinking Fountains	Several drinking fountains observed at various heights		
Counter Access	Compliant at time of installation		
Signage per ADA	None Observed		
Audio and Visual Alarms	System appears to be older		
Obstacles			
Automatic Sprinkler System	Sprinklered		
Exit Corridors	Exit corridors are all connected by a large atrium		
Other	Exit enclosures shall be enclosed per IBC 1022.		
Other	Per 1018.4; maximum length of corridor shall be 20 feet in a non- sprinklered E occupancy and 50 feet in a sprinklered occupancy.		
<b>Notes:</b> 1. ADA – Compliance with ADA in the existing building is recommended if major construction is completed at this building. 2. Fire/Safety – Fire suppression system in the existing building is recommended if major work is done at this building.			
<b>Building Code Guidelines:</b> 2009 International Building Code; 2009 International Existing Building Code; 1020 ADA Standards for Accessible Design; Administrative Rules of Montana 24.301.351; 2000 NFPA 101 - Life Safety Code			

## Skyview High School

### Recommendations

Recommendations include continual work on system upgrades as well as efforts to address site needs and specialties. Educational adequacy recommendations focus on upgrades CTE curriculum and program offerings. CTE spaces included for upgrades include tech ed and wood shop fabrication spaces, specialty labs for science and family consumer sciences, as well as the business/finance/marketing center and art/maker spaces. The extent of work included for CTE programs include mechanical, electrical, plumbing, equipment, storage, casework, and furniture upgrades.

Additional detail regarding scope and cost related to Educational Adequacy and Deferred Maintenance projects can be found in the following tables:

RECOMMENDED BUILDING COMPONENT (FAME) IMPROVEMENT DETAIL:		
Component	Comments	Estimated Cost
Building Envelope		
	Reseal exterior windows, replace exterior doors	\$255,867
Interiors & Specialties		
	Repair/replace gymnasium floor, finish carpet replacement, replace bathroom partitions	\$586,195
Mechanical, Electrical & Plumbing		
	Major repairs in HVAC, plumbing and electrical systems	\$4,758,279
Fire/Life Safety		
	Fire alarm & security system upgrades.	\$155,000
Site		
	Repair/replace asphalt and concrete, repair/replace sport courts & track, remove fuel tank	\$979,949
ADA		
	Stair handrail ADA improvements	\$18,137
Does not include Soft Costs		<b>Total \$6,753,427</b>

RECOMMENDED EDUCATIONAL ADEQUACY IMPROVEMENT DETAIL:					
Component:	Item Description:	Qty	UOM	Unit Cost	Cost Estimate
<b>Site Improvements</b>					
Total Site:		0			\$0
<b>Addition</b>					
Subtotal:		0			\$0
Gross Area:		0			\$0
Total Addition:		0			\$0
<b>Remodel</b>					
Fab (Tech/Wood) Room Improvements:	M/P/E, Casework & Furniture	1	LS	\$737,200	\$737,200
Specialty (Culinary) Room Improvements:	M/P/E, Casework & Furniture	1	LS	\$578,270	\$578,270
Specialty (Science) Room Improvements:	M/P/E, Casework & Furniture	1	LS	\$1,074,780	\$1,074,780
General (Business) Room Improvements:	M/P/E, Casework & Furniture	1	LS	\$396,600	\$396,600
Flexible (Art) Room Improvements:	M/P/E, Casework & Furniture	1	LS	\$379,050	\$379,050
Total Remodel:					\$3,165,900
Subtotal:					\$3,165,900
Estimated Cost *Does not include soft costs					\$3,165,900
<b>TOTAL RECOMMENDED FACILITY IMPROVEMENT COST SUMMARY:</b>					
Description:	Comments:				Cost Estimate
FAME					\$6,753,427
Educational Adequacy					\$3,165,900
Estimated Cost *Does not include soft costs					\$9,919,327

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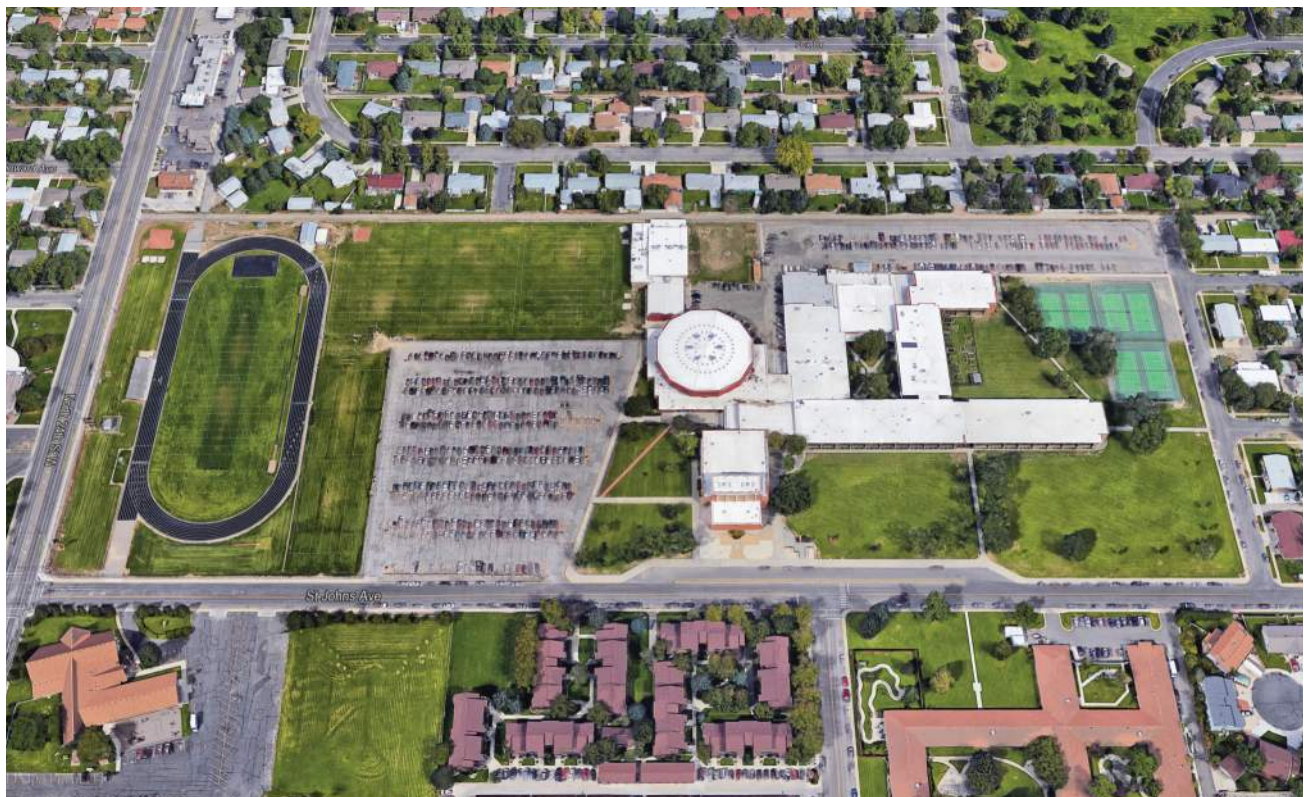
## West High School

### Overview

West High School was originally constructed in 1959 with additions or remodels occurring every three to five years over the next 20 years. The building is predominantly brick faced cast concrete with some cmu. Floors are slab on grade or cast concrete pan system at the second floor and roof deck. The 1971 auxiliary gym area is constructed of a pre-engineered metal building system with metal skin. The heating system is fin tube radiators or unit ventilators. Classrooms at West are organized departmentally; Tech ed and wood shop fabrication spaces are located adjacent to each other, business, marketing, and finance classrooms are located in the business center, culinary classrooms are physically connected with the textile classroom located in the northeast wing, science classrooms are grouped together and located on the second floor. The school has a traditional layout with classrooms as stand alone spaces with minimal access to shared areas and small group break out areas. Inflexible furniture and traditional classroom settings limit 21st century educational opportunities and create barriers for teacher and student collaboration.

2201 St. John's Ave  
Billings, MT 59102  
(406) 281-5600

Year Built .....	1959
Renovations ....	'62, '66, '71, '74, '78
Portables .....	0
Site Acres .....	29.74
Building SF .....	218,458
Current Enrollment .....	1,812
Capacity .....	1,731
Target Capacity .....	1,601



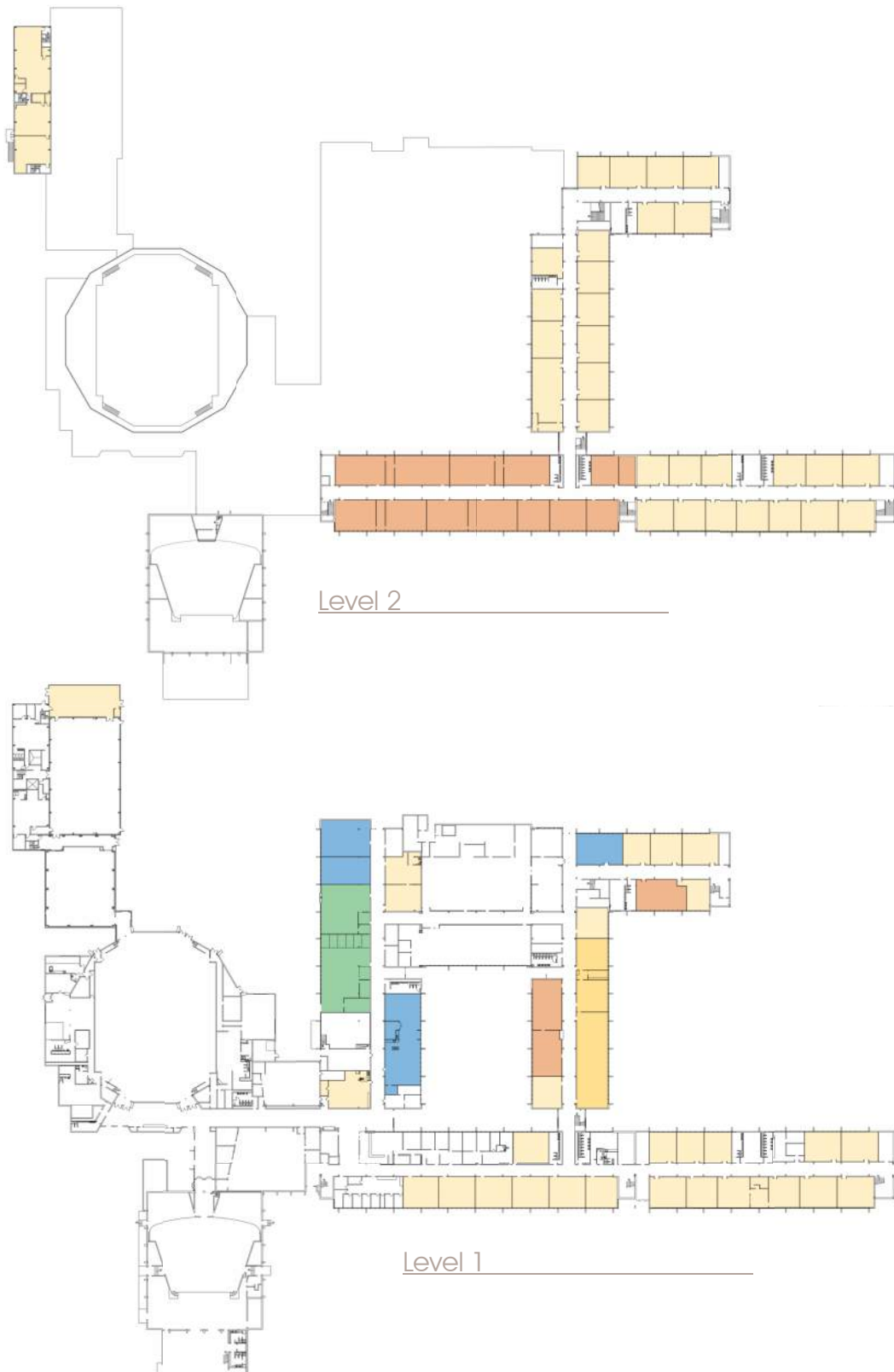
# 5 HIGH SCHOOL FACILITIES

Fabrication Labs

Specialized Labs

Flexible Labs

General Labs



## West High School

### Site Characteristics and Deferred Maintenance

Site Characteristics			
Component		Cost	Priority
Lot Size	29.74 acres		
Building Area	239,887 sf		
Topography	Flat		
Drainage	Fair to Poor, back parking lot and west side of locker rooms has ponding issues. <i>Requires regrading - back parking lot floods alley houses - and is considered a</i>	\$164,500	\$140,000
Drop Off	Large on street drop off with designated pull out		
Hardscape			
Parking Surface	Asphalt 280,000 sf some cracking and deterioration. <i>Replacing asphalt parking lot needs to be done, and is a high priority.</i>	\$1,306,130	\$1,306,130
Stalls	589 Stalls 15 HC		
Paved Walks/Surfaces	Concrete 34,670 sf some settlement, spalling, cracking. <i>Work remains to be completed, and is considered a priority</i>	\$13,893	\$13,893
Steps, ramps, retaining walls	Concrete – few exterior concrete stairs with some spalling Handrail extensions are non-compliant. <i>Work remains to be completed, and is considered a priority.</i>	\$10,179	\$10,179
Paved Sports Courts	6 tennis courts on site, some deterioration. <i>Tennis courts need to be replaced, and are considered a priority.</i>	\$400,000	\$400,000
Playgrounds			
Softscape	771,715 sf Large areas of grass around school		
Play Fields	Football, track. <i>Track requires some maintenance - resurface.</i>	\$133,728	
Landscaping	Several trees on the property, Concrete seating areas at entry, and landscaped courtyard in interior, gated garden area on east side		
Utilities	City services		
Fencing	Chain Link		

## West High School

### Building Components and Deferred Maintenance

Building Components:			
Component	Sub-Component: Condition Observed and Action to Fix	Cost	Priority
<b>Structural Systems</b>			
Footings/Foundation Walls	Stem Walls: Concrete		
	Foundations: Concrete		
	Retaining Walls- minimal		
Floor Systems	Slab on grade and cast concrete pan system		
	Cracking due to movement or settlement is evident in hallways. Work remains to be completed, and is considered a priority.	\$33,823	\$33,823
	Some concrete utility tunnels		
Columns and Bearing Walls	Concrete and concrete masonry unit bearing walls		
Beams and Joists	Cast concrete pan system		
<b>Envelope</b>			
Roof	North wing replaced in 2012 with PVC		
	Plans for replacing auditorium, admin and west classroom area in 2013		
	Hypalon – Installed 1988, 1989, 1990, 1992, 1993, 1994, 1995, 1998, 1999 in gymnasium and south classroom wings. Work remains to be done, and is a priority.	\$692,381	\$692,381
	Built Up Roofing – east side of gym 2003		
	PVC-2003 at high central area		
	Metal - 1999		
	Insulation unknown		
Walls	Brick faced concrete or cmu, cast concrete, metal siding		
	Tuck pointing needed on high walls at auditorium. Work remains to be completed, and is a priority.	\$138,741	\$138,741
Exterior Windows	Aluminum		
	Single glazed – some areas with broken glass. \$1,500,000 in window replacements were done in 2013. Remainder of work remains to be completed, and is a priority.	\$225,750	\$225,750
Skylights @ Gym roof	Skylights are older and were not well integrated into the new roof system		
Exterior Doors	HM doors varying in age and condition		
Thermal Systems	Insulation - minimal to none		
<b>Interior Finishes</b>			
Interior Walls	Facility Typical – Painted Block/Brick: Found throughout facility – Interior Brick glazed in some areas		
	Misc. locations throughout – Framed Gyp./Plaster: Good condition		
	Kitchen/Lockers – Glazed Block: Aging wearing		
	Toilets – Ceramic Tile: Aging/wearing some damage from relocating accessories in toilets		
	Classrooms/Admin Partial/Business/Metal Shop/AV. Work remains to be completed.	\$43,442	
Ceilings	Classroom/Ceramics/Library – Framed Wood Paneling: Aging/wear		
	Facility Typical – ACT: Varying conditions throughout mostly wearing and discolored – some areas very water stained and damaged. Work remains to be completed.	\$378,829	
	Locker/Library/Cafeteria/Band – Glue on Tile		
	Auditorium – Plaster Baffles		
	Lockers – some exposed structure		
Doors/Hardware/Windows	Non ADA compliant “knob” style hardware		
	Solid Core Wood Doors very worn		
	Some HM frames most wood both very worn		
	Wood/HM Relites Good condition most relites are high on classroom walls and in good condition		
	Skylights in men's locker room		

## West High School

### Building Components and Deferred Maintenance

Floor Finishes	Corridor/AV Classroom/Faculty Toilets/Cafeteria/Chorus – VCT: Found throughout building in classrooms and some corridors-patched in many areas. <b>Work remains to be completed, and is a priority.</b>	\$801,912	\$801,912
	Drafting/Locker – Concrete Sealed/Painted: Good condition well maintained		
	Stairways – Terrazzo: Good Condition well maintained – cracking observed in several locations		
	Gym/Stage/Music– Wood: Floor is heavily used and showing wear but well maintained		
	Admin/Business/Guidance/Auditorium – Carpet: Varying conditions from new to worn		
	Toilets – Ceramic Tile: poor condition – age/wear/patching		
	Classrooms (majority)/Corridors (partial)/Study Hall/Metal Shop/Band – Asbestos tile: It appears that replacement of Asbestos tile is on-going with VCT, wearing/aging where it occurs – Asbestos is most common flooring in building		
	Stair treads are worn. <b>Work remains to be completed.</b>	\$4,406	
Wall Finishes	Paint throughout facility is in good condition		
	Wood Wainscot in cafeteria		
	Glazed blocks/bricks to 6' @ stairs in good condition		
	Acoustical Panels@ Chorus		
	FRP in drafting in fair condition (observed through window)		
<b>Specialties</b>			
Toilet Partitions	Metal Older/New Composite – Varying Condition		
Lockers	Metal older, but functioning, well maintained. <b>Inequity between boys and girls locker room sizes. Recommend enlarging girls', \$175/sf.</b>	\$554,225	
Fixed Seating/Risers	Bleachers: Electronically controlled – maintenance issue		
	Theater:		
	Classroom/Lecture:		
	Cafeteria:		
Markerboards/ Cabinets	All rooms have markerboards		
	Casework is wood and plastic laminate mixed throughout in varying conditions, all appears functional		
	Science Classrooms have wood cabinets with Chem counters: Age/wear – some chem tops very worn and in need of replacement		
<b>HVAC System</b>			
Heating	Building is Connected to Facility Master Controls-upgraded in 2009		
	<b>BMS: Upgrade is needed</b>	\$85,000	\$85,000
	Scheduled for boiler replacement		
	<b>Boiler system updated in 2011</b>		
	HVAC upgrade needed		
	<b>Replace building air handling units</b>	\$1,100,000	\$1,100,000
	Room Units: Air over fintube, Annex and Choral have gas fired roof top units		
	<b>Annex rooftop equipment replaced in 2012</b>		
	Hydronic Piping: Hot water supply and return loop		
	Alternative Fuel: None		

## West High School

### Building Components and Deferred Maintenance

Ventilating	Under floor ducted to classroom fin tube units		
	Separate dedicated air handlers in the main gymnasium Replace gymnasium air handling equipment	\$240,000	\$240,000
	Specialized Exhaust: In labs and shop areas Science exhaust system no longer serve class curriculum	\$90,000	\$90,000
	Replace kitchen hood system including hood, make-up air equipment and exhaust fans	\$165,000	\$165,000
	Wood shop ventilation worn out and no longer serves class function	\$125,000	\$125,000
Cooling	Air Conditioning only in weight room and gym via roof top unit		
	Room AC: In window AC in administration area Ductless split system units added when building windows changed		
	Rest of buildings has no cooling Add classroom air conditioning	\$2,754,000	\$2,754,000
<b>Plumbing System</b>			
Fixtures	Age of fixtures is a concern – gaskets and seals have to be manufactured for replacement – showers and science room sinks were an area of concern Replace building plumbing fixtures	\$550,000	\$550,000
Water Heating	Hot Water Generation: Central – upgrades scheduled for 2013 Alternative Fuel: None		
Supply Piping	Piping: Older Replace plumbing chase supply piping	\$280,000	\$280,000
	Pumps: domestic circulating		
Waste Piping	Replace building storm drainage piping and add secondary roof drainage system	\$310,000	\$310,000
	Replace kitchen waste piping including grease interceptor	\$85,000	\$85,000
	Piping: Older Replace plumbing chase piping	\$115,000	\$115,000
<b>Electrical System</b>			
Building Service	800A, 277/480 3 Ph. Gym has separate service 600A, 120/208 Service updated in 2012		
	Backup Generator in place and functional -Minimal for Emergency Lighting Replace Generator and provide power for critical components (heating)	\$90,000	\$90,000
	Alternative Source: None		
Lighting	T-8's used throughout Update to LED lighting	\$876,000	\$876,000
	Light Level Controls: Limited Automated lighting controls	\$416,100	\$416,100
	Buildign exterior and parking lot	\$96,000	\$96,000
Distribution	Switchgear: Distribution panels original to the building Replace building electrical distribution panels	\$876,000	\$876,000
	Devices: Limited Install additional classroom receptacles	\$465,000	\$465,000
Voice/Data	Intercom: Operation issues		
	Clock: Very dated Simplex system		
	Telephone: Recently upgraded		
	Data: Office area has been redone and backbone has been upgraded the remainder of cable is in poor condition, Wireless 'Enterprise' available nearly throughout, 4-8 ports per classroom not all ports are active, Security cameras are on a separate system. High Schools require upgrade to data network - GPON system, similar to	\$190,599	\$190,599

## West High School

### Building Components and Deferred Maintenance

Conveying & Vertical Circulation			
Elevators, lifts, stairs ramps	Elevator is older – functioning cannot be made to be ADA compliant Stairs appear to meet building code, handrails vary throughout handrails do not extend far enough for code compliance in all situations. Hoist way Lift: Maintained by outside service		
Safety System			
Egress	Exit Systems: Clear egress paths		
Extinguishing System	Building Partially sprinkled – Gym Only. Work remains to be completed. Cabinet Systems: Yes	\$887,881	
Exit/Emergency Lighting/Alarms	Exit Lights: Yes Emergency Lighting: Yes Smoke/Heat Detection: Updated Fire Alarm System: Updated		

## West High School

### Code Review / ADA

Code Review/Americans with Disabilities Act (ADA):			
	Description	Cost	Priority
Site	Parking lot and large drop off area at building main entrance are accessible – very few entrances observed with steps required.		
Parking	15 Accessible Parking Stalls		
Approach, Entry & Exit	Several accessible entrances and exits to building.		
Ramps	Ramp rise/run, guardrails, and handrails compliance with Building Code and ADA.		
Stairs	Stairs in building appear to meet code – hand rails are not compliant, require extensions.	\$24,005	\$24,005
Elevator/lift	Elevator provides access to all levels. Elevator needs to be replaced. Priority.	\$76,375	\$76,375
Assembly Areas	Cafeteria, Library, Auditorium and gym are all accessible		
Classroom Access	Not all classrooms are accessible. Most classroom doors have non-compliant "knob" hardware. Work remains to be completed.	\$347,506	
Restroom Access	Restrooms are not all accessible – all have space to be made accessible – materials at individual locations will vary the cost of work. Work remains to be	\$133,245	\$133,245
Toilets/Restrooms	No accessible toilet stalls observed – all toilets have room to be modified to include accessible stalls without reducing the fixture count, however in some instances major shuffling of fixture locations would be required.		
Drinking Fountains	Non-ADA compliant. Work remains to be completed.	\$10,669	\$10,669
Counter Access	Varies		
Signage per ADA	None Observed		
Audio and Visual Alarms	Horn/Strobes observed throughout		
Obstacles	ADA Guideline		
	ADA Guideline		
Automatic Sprinkler System	Building is only partially sprinkled		
Exit Corridors			
Other	Exit enclosures shall be enclosed per IBC 1022.		
Other	Per 1018.4; maximum length of corridor shall be 20 feet in a non-sprinklered E occupancy and 50 feet in a sprinklered occupancy.		
<b>Notes:</b> 1. ADA – Compliance with ADA in the existing building is recommended if major construction is completed at this building. 2. Fire/Safety – Fire suppression system in the existing building is recommended if major work is done at this building.			
<b>Building Code Guidelines:</b> 2009 International Building Code; 2009 International Existing Building Code; 1020 ADA Standards for Accessible Design; Administrative Rules of Montana 24.301.351; 2000 NFPA 101 - Life Safety Code			

## West High School

### Recommendations

West High received a series of bond funded improvements to its building systems in 2013 and 2014, including boiler upgrades, window replacement and roof replacement. Similar to Senior High, the amount of work did not address all of the need. Recommendations include continual work on system upgrades as well as efforts to address site needs and specialties. Educational adequacy recommendations focus on upgrades CTE curriculum and program offerings. CTE spaces included for upgrades include tech ed and wood shop fabrication spaces, specialty labs for science and family consumer sciences, as well as the business/finance/marketing center and art/maker spaces. The extent of work included for CTE programs include mechanical, electrical, plumbing, equipment, storage, casework, and furniture upgrades.

Additional detail regarding scope and cost related to Educational Adequacy and Deferred Maintenance projects can be found in the following tables:

RECOMMENDED BUILDING COMPONENT (FAME) IMPROVEMENT DETAIL:		
Component	Comments	Estimated Cost
Building Envelope		
	Repair areas of cracking from settlement in hallways, replace roofing over gymnasium and classrooms, replace walls in auditorium, finish replacing exterior windows	\$1,090,695
Interiors & Specialties		
	Replace VCT flooring throughout	\$801,912
Mechanical, Electrical & Plumbing		
	Continue improvements to HVAC, plumbing and lighting systems not funded with recent bonds.	\$8,908,699
Fire/Life Safety		
	No recommended improvements	\$0
Site		
	Repair areas of cracking and deterioration in parking lots, update drainage, ADA compliant	\$1,870,202
ADA		
	Replace elevator, stair handrails, make restrooms & drinking fountains ADA accessible	\$244,294
Does not include Soft Costs		Total \$ 12,915,802

RECOMMENDED EDUCATIONAL ADEQUACY IMPROVEMENT DETAIL:					
Component:	Item Description:	Qty	UOM	Unit Cost	Cost Estimate
Site Improvements					
Total Site:		0			\$0
Addition					
Subtotal:		0			\$0
Gross Area:		0			\$0
Total Addition:		0			\$0
Remodel:					
Fab (Tech/Wood) Room Improvements:	M/P/E, Casework & Furniture	1	LS	\$514,850	\$514,850
Specialty (Culinary) Room Improvements:	M/P/E, Casework & Furniture	1	LS	\$449,260	\$449,260
Specialty (Science) Room Improvements:	M/P/E, Casework & Furniture	1	LS	\$1,143,840	\$1,143,840
General (Business) Room Improvements:	M/P/E, Casework & Furniture	1	LS	\$417,575	\$417,575
Flexible (Art) Room Improvements:	M/P/E, Casework & Furniture	1	LS	\$425,500	\$425,500
Total Remodel:					\$2,951,025
Subtotal:					\$2,951,025
Estimated Cost *Does not include soft costs					\$2,951,025
TOTAL RECOMMENDED FACILITY IMPROVEMENT COST SUMMARY:					
Description:	Comments:	Cost Estimate			
FAME		\$12,915,802			
Educational Adequacy		\$2,951,025			
Estimated Cost *Does not include soft costs					\$15,866,827

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## Career Center

### Overview

The Billings Career Center offers multiple opportunities in vocational and technical education which can be paired with academic preparation at a student's home school. While at the Career Center students can, among other course offerings; build a house, repair automobiles, teach pre-kindergarten children, and network computers. Students also have the opportunity to learn and practice: digital photography, printing, welding, machining, web page design, interior decorating, culinary arts, broadcast media, video production, engineering, animation, urban agriculture, and applied medicine.

The Billings Career Center offers an action approach to learning where students can develop employment skills, receive a high school diploma, and prepare for college all at the same time. Career Center classes also count toward your graduation requirements in english, social studies, and science.

The Career Center is a one story precast concrete building with cast concrete features and insulated metal panels. The exterior structural system is precast concrete and cmu bearing walls. The interior structure is steel columns, cmu and concrete bearing walls. The floor structure is slab on grade and the roof structure is steel bar joists with metal decking. The roof drainage is formed by tapered rigid insulation. The floors are sealed concrete, some vinyl asbestos tile corridors and ceramic tile in the toilet rooms. The walls are painted concrete and cmu as well as movable wall systems. The ceilings are gypsum board on furring. There are aluminum frame windows and doors as well as hollow metal frame doors. The HVAC system is multiple roof top units.

3723 Central Ave  
Billings, MT 59102  
(406) 255-3867

Year Built .....	1974
Renovations .....	Addition 2000
Portables .....	0
Site Acres .....	20.63
Building SF .....	133,394
Current Enrollment .....	-
Capacity .....	-
Target Capacity .....	-



Fabrication Labs

Specialized Labs

Flexible Labs

General Labs

Level 1



## Career Center

### Site Characteristics and Deferred Maintenance

Site Characteristics:			
Component		Cost	Priority
Lot Size	18.50 acres 8.52 (vacant)		
Building Area	137,230 sf		
Topography	Flat		
Drainage	Fair to poor		
Drop Off	Designated drop off area adjacent to main entry		
Hardscape	-		
Parking Surface	Asphalt 227,250 sf significant cracking, some deterioration. Repairs only as needed, since 2013. Parking lot still requires full replacement/repair.	\$512,676	\$512,676
Stalls	396 Stalls 4 HC		
Paved Walks/Surfaces	Concrete 22,040 sf		
Steps, ramps, retaining walls	Concrete with some wear		
Paved Sports Courts			
Playgrounds	Gravel play area with playground equipment		
Softscape	829,576 sf, Large areas of grass around school		
Play Fields			
Landscaping	Some trees and a sculpture adjacent to main entry, grass around much of the building		
Utilities	Irrigation system is supplied by new wells installed in 2010 Fire hydrant loop is connected to city water		
Fencing	Chain Link - wrought iron		

## Career Center

### Building Components and Deferred Maintenance

Building Components:			
Component	Sub-Component: Condition Observed and Action to Fix	Cost	Priority
<b>Structural Systems</b>			
Footings/Foundation Walls	Concrete footings & foundation walls		
	Retaining walls		
Floor Systems	Floors: Observed cracking throughout building need to investigate further.	\$29,375	\$29,375
	Pipe Chase		
	Crawl space		
Columns and Bearing Walls	Pre-cast concrete & Masonry		
Beams and Joists	Steel & concrete beams		
<b>Envelope</b>			
Roof	Hypalon - 1989, 1990, 1992, 1994, 1995. Some sections of roof have been replaced, but several sections last replaced in '89-'95 still require replacement.	\$805,570	\$805,570
	EDPM in 2012 at the east wing and north center		
	Insulation unknown - tapered		
Walls	Concrete with some metal - Sprinklers are hitting building and need adjustment. Concrete panels are deteriorating exposing rebar inside which is cut off as it becomes a problem. Concrete is in poor condition around entire building. Metal panels have peeling paint. Some paint repair has been completed. Topical finishes only. Sprinkler heads have been adjusted to avoid building.	\$300,009	
Exterior Windows	Aluminum - water infiltration occurring at cracks forming around windows. Work remains to be completed.	\$270,931	\$270,931
	Single		
Exterior Doors	Exterior Doors in poor condition, aging. Only non-functional doors have been replaced as needed. Remainder of work remains to be completed.	\$123,463	\$123,463
	New Overhead Doors		
Thermal Systems	Insulation unknown		
<b>Interior Finishes</b>			
Interior Walls	Facility Typical - Framed Gyp: Throughout facility all premanent interior walls are gyp.		
	Walls made of movable wall system are difficult to add power and data to and expensive to repair or replace		
	Misc. locations throughout - Painted CMU and Brick: Walls at perimeter and commons spaces		
	Classrooms/Admin/Library - Moveable wall panel: Fabric covered moveable wall panels create classroom spaces throughout the facility		
Ceilings	Facility Typical - ACT: Condition varies some areas of major water staining - movable wall system integrates with non-standard ceiling tiles. High lobby ceilings are difficult to access. Only stained ceiling tiles replaced as needed. Remainder of work remains to be completed.	\$43,342	
Doors/Hardware/Windows	Non ADA compliant "knob" style hardware		
	HM Doors		
	HM Frames		
	HM Relites		

## Career Center

### Building Components and Deferred Maintenance

Floor Finishes	Shops - Concrete Sealed: Good condition well maintained		
	Toilets/Entry - Quarry Tile: Good condition well maintained		
	Classrooms/Library/Auditorium/Admin - Carpet: Varying conditions from new to very poor. Work remains to be completed.	\$210,793	\$210,793
	Corridors/Early Education Toilets/Addition Classrooms/Dark Rooms/Web Design VCT Work remains to be completed.	\$458,742	\$458,742
	Some classrooms - Asbestos: Poor condition - very little in facility		
Wall Finishes	Paint throughout facility is in good condition		
<b>Specialties</b>			
Toilet Partitions	Older Metal Partitions. Work remains to be completed.	\$16,920	\$16,920
Fixed Seating/Risers	Bleachers: N/A		
	Theater: N/A		
	Classroom/Lecture: N/A		
	Cafeteria: N/A		
Markerboards/ Cabinets	All rooms have markerboards		
	Plam casework throughout aging		
<b>HVAC System</b>			
Heating	Building is connected to Facility Master Controls Building utilizes several different temperature control systems, replacement required	\$110,000	\$110,000
	Classroom areas served with variable volume rooftop equipment (gas/electric) Units in reasonable condition but ductwork failing	\$815,000	\$815,000
	Shop spaces heated with gas fired unit heaters, equipment needs replacement	\$115,000	\$115,000
	Exhaust systems and corersponding makeup air units need of replacement	\$710,000	\$710,000
		\$280,000	\$280,000
Ventilating	Makeup air units in shops are in need of replacement	\$280,000	\$280,000
	Ductwork: localized with roof top units plenum return Install return air ductwork to separate classroom spaces	\$270,000	\$270,000
	Specialized Exhaust: in shop areas Exhaust system need to be updated to current cirriculum	\$90,000	\$90,000
Cooling	Central AC: Yes No A/C in the shop areas		
<b>Plumbing System</b>			
Fixtures	Fixtures appeared older. Custodian reported no problems - Wash areas in toilets receive continuous maintenance Update plumbing fixtures and replace flush valves	\$115,000	\$115,000
	Hot Water Generation: replaced in 2008		
	Alternative Fuel:		
Supply Piping	Piping: Overhead copper piping		
	Pumps: recirculation pump	\$5,287	
Waste Piping	Waste piping: existing waste piping requires continual maintenance. Runs are long and lack sufficient slope. Investigation is recommended. Revise long runs of interior sewer piping	\$85,000	\$85,000
<b>Electrical System</b>			
Building Service	3000A, 277/480 3 Phase		
	Service to building is adequate		
	Additional 110 sub panels needed	\$75,000	\$75,000
	Generator: No existing equipment		

## Career Center

### Building Components and Deferred Maintenance

Lighting	T-8's used throughout except in commons and shop		
	Update lighting with LED	\$810,000	\$810,000
	Light Level Controls: limited		
	Install code required controls	\$425,000	\$425,000
	Occ/Daylight Sensor: Needed		
Distribution	Switchgear: Distribution panels original and loaded		
	Devices: Additional outlets needed, difficult to add to movable panel system Provide additional panel space and additional classroom circuits	\$165,000	\$165,000
Voice/Data	Intercom: Working		
	Clock: 50% on master clock system, others atomic		
	Telephone: recently upgraded		
	Data: Several computer labs throughout building. Cabling is poor quality and not certified or installed properly. At least 4 ports per classroom with some having more. 'Enterprise' wireless access throughout. GPON data system needs to be installed.	\$119,418	\$119,418
<b>Conveying &amp; Vertical Circulation</b>			
Elevators, lifts, stairs ramps	Ramps provide access to administration areas		
	Stairs appear to be compliant		
	Hoist way: NA		
	Lift: NA		
<b>Safety System</b>			
Egress	Exit Systems: Clear paths of egress		
Extinguishing System	None observed.		
	Confirmed, there is no sprinkler system.	\$507,923	
	Fire hydrant loop is connected to city water service, water tank is decommissioned. Recommend to remove existing above-grade water tank.	\$65,000	\$65,000
Exit/Emergency Lighting/Alarms	Exit Lights: Yes		
	Emergency Lighting: Yes		
	Smoke/Heat Detection: Upgraded		
	Fire Alarm System: Upgraded		

## Career Center

### Code Review / ADA

Code Review/Americans with Disabilities Act (ADA):			
	Description	Cost	Priority
Site	Both major entrances to the building are accessible. Some spaces inside require steps down to enter. All toilets have access as well as most classrooms. Note excessive cross slope at sidewalk adjacent to entry.		
Parking	4 accessible parking stalls		
Approach, Entry & Exit	Approach to main entrance is accessible, other accessible exits observed		
Ramps	Interior ramps observed to be steeper than allowed by code		
Stairs	Multiple sets of stairs inside appear compliant		
Elevator/lift	N/A		
Assembly Areas	Auditorium is not accessible		
Classroom Access	Classrooms are compliant with the exception of a small number requiring steps down to enter. Doors have 'knob' style non-compliant hardware. Still needs addressing.	\$118,234	
Restroom Access	Restrooms are accessible		
Toilets/Restrooms	Only toilet stalls in addition were accessible		
Drinking Fountains	Several drinking fountains observed at various heights		
Counter Access	ADA Guideline		
Signage per ADA	None observed		
Audio and Visual Alarms	System appears to be older		
Obstacles			
Automatic Sprinkler System	None observed		
Exit Corridors	Absence of doors makes corridors unable to be smoke or fire protected		
Other	Exit enclosures shall be enclosed per IBC 1022		
Other	Per 1018.4; maximum length of corridor shall be 20 feet in a non-sprinklered E occupancy and 50 feet in a sprinklered occupancy		
<b>Notes:</b> 1. ADA – Compliance with ADA in the existing building is recommended if major construction is completed at this building. 2. Fire/Safety – Fire suppression system in the existing building is recommended if major work is done at this building.			
<b>Building Code Guidelines:</b> 2009 International Building Code; 2009 International Existing Building Code; 1020 ADA Standards for Accessible Design; Administrative Rules of Montana 24.301.351; 2000 NFPA 101 - Life Safety Code			

# 5 HIGH SCHOOL FACILITIES

## Career Center

### Recommendations

Master plan recommendations for the Career Center focus on concepts for substantial renovations, additions, or new construction as described in section 3 of the master plan book. Additional information detailed below are minimum deferred maintenance projects if recommendations in section 3 are not realized.

RECOMMENDED BUILDING COMPONENT (FAME) IMPROVEMENT DETAIL:		
Component	Comments	Estimated Cost
Building Envelope		
	Replace roofs, windows and exterior doors.	\$1,229,339
Interiors & Specialties		
	Replace deficient floors, toilet partitions.	\$686,455
Mechanical, Electrical & Plumbing		
	Repair/replace/upgrade existing mechanical, electrical and plumbing systems as indicated in Building Components information.	\$4,184,418
Fire/Life Safety		
	Remove existing above-grade water holding tank on site.	\$65,000
Site		
	Parking lot replacement/repair	\$512,676
ADA		
	No recommended improvements	\$0
Does not include Soft Costs		Total \$ 6,677,888

RECOMMENDED EDUCATIONAL ADEQUACY IMPROVEMENT DETAIL:					
Component:	Item Description:	Qty	UOM	Unit Cost	Cost Estimate
Site Improvements					
Total Site:		0			\$0
Addition					
Physical Education		0			\$0
Subtotal:		0			\$0
Gross Area:		0			\$0
Total Addition:		0			\$0
Remodel					
Total Remodel:		0			\$0
Subtotal:					\$0
Estimated Cost *Does not include soft costs					\$0
TOTAL RECOMMENDED FACILITY IMPROVEMENT COST SUMMARY:					
Description:	Comments:				Cost Estimate
FAME					\$6,677,888
Educational Adequacy					\$0
Estimated Cost *Does not include soft costs					\$6,677,888



## Overview

The district's other facilities include; the Lincoln Center, Rimrock Learning Center, Daylis Stadium, Facilities Services Building, District Warehouse, and several undeveloped parcels of land. The Lincoln Center houses district administration and adult education classes. Rimrock Center has been updated to become the district's early learning center. The district services building and warehouse provide support to all the district's facilities. Daylis Stadium serves all high schools and is the district's premier athletic facility.

The master planning team toured all the facilities and worked with district staff to understand current and future needs. An emphasis was placed on understanding opportunities at the Lincoln Center and it's role in CTE education. The Lincoln Center is located centrally in the city, making it easier for Skyview students to access. Currently the Lincoln Center spaces are fully utilized by district administration and adult education classrooms making it difficult to relocate. The building is configured as a traditional school with double loaded corridors and individual classrooms making it difficult to meet the needs of the CTE curriculum. Parking continues to be a difficulty for existing operations and demand would be increased if high school or CTE resources were developed at the Lincoln Center.

The Rimrock Center is currently being renovated to house the district's early learning programs. This work is being funded by bond proceeds from the 2015 bond. MEP, technology, and architectural systems are being replaced and upgraded.

The district facilities building houses the district's maintenance and repair professionals, Sodexo food services, facilities records storage, and maintenance repair equipment.

The district warehouse houses the district's print shop, IT repair, teacher resource center, activities director and rentals, transportation, permanent records, food storage, inter-school mail, and surplus storage.

Master planning work has been completed for new facilities, lighting, and track and field upgrades at Daylis Stadium. Design work and cost estimating was done by CTA Architects.

The Daylis Stadium Master Plan calls for new facilities

\$ 8,373,592	Daylis Stadium Master Plan - Base
\$ 10,604,459	Daylis Stadium Master Plan - w/ Alternates

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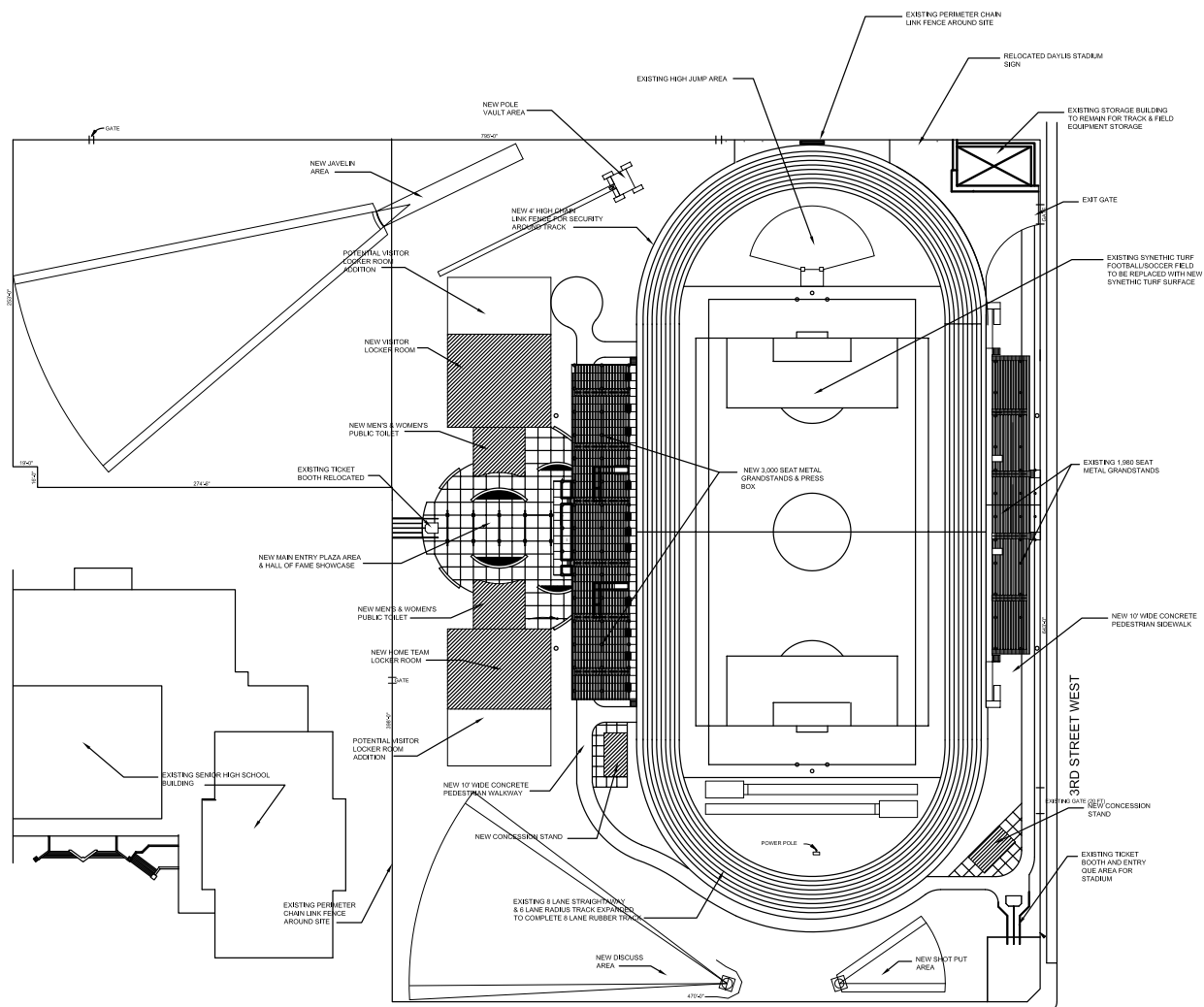
## Daylis Stadium Master Plan

### Overview (design and costs by CTA Architects)

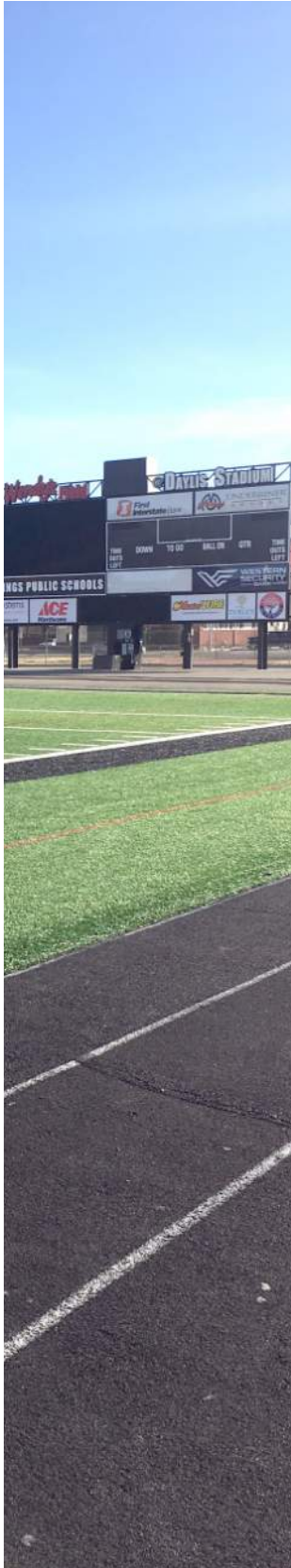
This project is to upgrade the athletic facilities at Daylis Stadium. The scope of work for the project includes; replacing field turf, lighting, track, grandstands, bleachers, locker room, toilets, and miscellaneous site improvements. The field turf work includes removal of existing artificial turf field and installation of new 2 1/4" artificial turf system over existing gravel and drain system with minor grading to existing drainage system. The lighting systems will be removed and replaced with new HID field lights. The new track will have latex multi-layer rubber track with an 8 lane straight away and development of new 8 lane track and straight way. This will also include development of new perimeter fence and concrete safety sidewalk/curb.

The bleachers and existing grandstand will be demolished and replaced with a new 3,000 seat pre-engineered metal grandstands on the west side of the stadium with a press box. Locker rooms will be constructed for home and visitors and the public restrooms will be capable of serving 5,000 people.

Site Improvements include updates around the track and new support structures for track and football storage. A new 8' high decorative vertical picket perimeter fence will replace the existing chain link fence. Various alternates are included for the locker rooms, lighting, and track. The alternates are captured in the cost summary below.



## Daylis Stadium Master Plan



### Project Cost Summary

#### PHASE 1 BASE BID PROJECT- SUMMER 2015

- |                                 |           |
|---------------------------------|-----------|
| 1. Stadium Lighting Replacement | \$507,754 |
| 30 Foot Candle - HID Fixtures   |           |

#### PHASE 2 BASE BID PROJECTS- SUMMER 2018

- |  |             |
|--|-------------|
| 1. Replace Football Field Turf System                | \$602,168   |
| 2 1/4" Field Turf - Revolution System                |             |
| 2. Improve Track to 8 Lanes and Resurface            | \$502,203   |
| 7 ply latex track system                             |             |
| 3. Replace West Side Grandstand and Bleachers        | \$1,200,958 |
| 3,000 seats with press box                           |             |
| 4. New Basic Locker Rooms and Public Toilets         | \$3,562,821 |
| 2 locker rooms, 80 students each, support spaces     |             |
| Public toilets for 5,000 people                      |             |
| 5. Site Improvements                                 | \$1,222,527 |
| Concession stands, field events, public plaza, walks |             |
| 6. System Development Costs- Water & Sewer           | \$80,000    |
| Net- 2" to 3" water line & sewer use fee             |             |
| 7. Miscellaneous Expenses                            | \$57,000    |
| Survey & Geotechnical                                | \$20,000    |
| Testing 0.50%  | \$37,000    |

#### TOTAL PHASE 1 & 2 BASE BID PROJECTS- 4/2015

Escalate Phase 2 to 2018 3 years at 3%	\$7,735,431
	638,161

#### TOTAL PHASE 1 & 2 BASE BID PROJ- COMPLETED FALL 2018

**\$8,373,592**

#### PROJECT ALTERNATES OR UPGRADES

- |   |             |
|---|-------------|
| 1. Remove and Replace Perimeter Fence               | \$353,553   |
| Upgrade to prefinished metal picket fence           |             |
| 2. Upgrade Track Surfacing from Latex to Urethane   | \$123,900   |
| Atlas BSS Track System (BENYON)                     |             |
| 3. Add 2 Visitor Locker Rooms                       | \$1,325,392 |
| 2 locker rooms, 80 students each                    |             |
| 4. Upgrade to 50 Foot Candle HID Lights for Stadium | \$33,480    |
| 5. Upgrade to 30 Foot Candle LED Lights for Stadium | \$153,053   |
| 6. Upgrade to 50 Foot Candle LED Lights for Stadium | \$202,208   |
| 7. Upgrade PA Sound System for Stadium              | \$39,281    |

#### TOTAL PHASE 1 & 2 WITH ALTERNATES

**\$10,604,459**

## Lincoln Center

### Overview

The Lincoln Center sits on the site of the city's first school constructed in 1884. It was a 4 room, 2 story brick structure that swayed in the wind. Originally called The School House it was renamed Old North School. In 1900, it was joined on the site with the addition of Jefferson School and renamed Lincoln when schools were given names of presidents. A 1912 addition converted the building into Billings High School. In 1934 the original building was torn down and the auditorium and the central section constructed. Jefferson, located in the southeast corner, was used as a middle school and the new Lincoln was the high school.

It was used exclusively as a junior high school after Senior High was built and continued as such until shortly after Castle Rock was opened. Starting in 1983, it housed district administrative departments and adult education. For a brief time between 2003 and 2011, part of the second floor was used for 9th grade academy. The building currently houses the administrative offices for the district as well as adult education, Community 7, truancy and transitions, driver's education, Trustees' board room and part of the district's server needs.

415 N 30th St  
Billings, MT 59101  
(406) 281-5005

Year Built .....	1884
Renovations .....	Addition 1912,1914
Portables .....	0
Site Acres .....	2.59
Building SF .....	130,280
Current Enrollment .....	-
Capacity .....	-
Target Capacity .....	-



### Educational Program

The Lincoln Center is still configured as a traditional high school or middle school with double-loaded corridors and compartmentalized areas that are not open to each other or easily reconfigured by educators in their daily work. The various additions and renovations to the building have made way finding a bit difficult. The building is currently fully utilized in terms of space and capacity.

When evaluated as a conventional middle school or high school, the building's physical education space is in need of serious repair, the auditorium is an amenity but under utilized and in need of upgrades, and some programs like science, art or computer sciences are entirely without accommodation. The building's current use of space as district headquarters, adult and continuing education, and flexible accommodation for various special education programs works well for the District. In general the building would need significant interior reconfiguration to meet 21st century educational goals in order to accommodate district curriculum.

Adult and Continuing Education is currently housed at the Lincoln Center, but there are opportunities for the program to be more associated with the Career Center and their amenities.

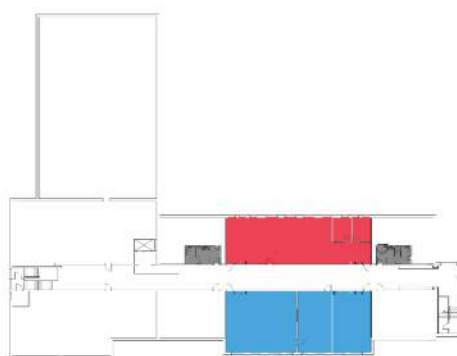
## 6 OTHER DISTRICT FACILITIES

### Lincoln Center

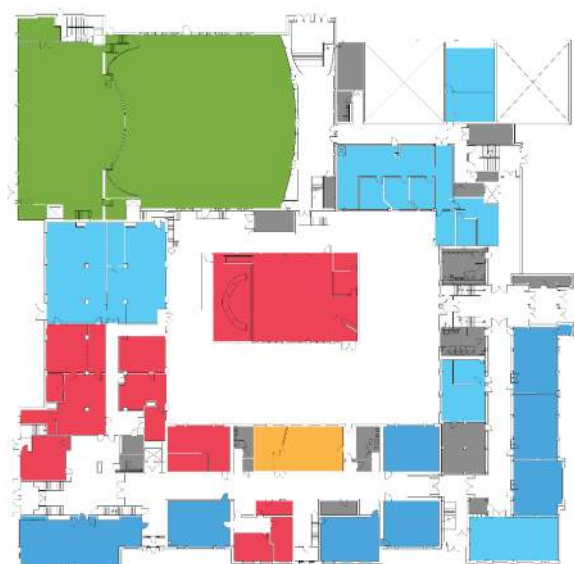
#### Existing Program Spaces

##### PLAN LEGEND

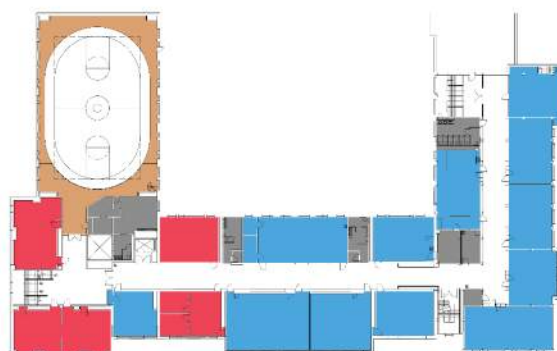
- CLASSROOM
- SPECIAL SERVICES
- LIBRARY
- ADMINISTRATION
- MEP/TOILET/KITCHEN
- COMMONS/CAFE
- GYMNASIUM
- MUSIC/ART



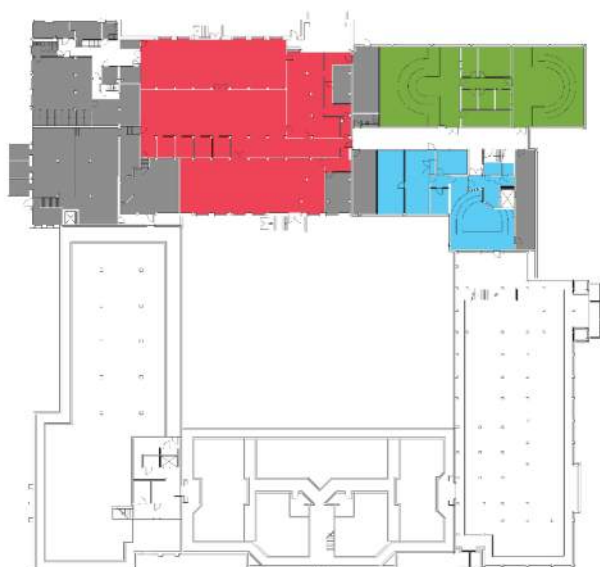
Level 4



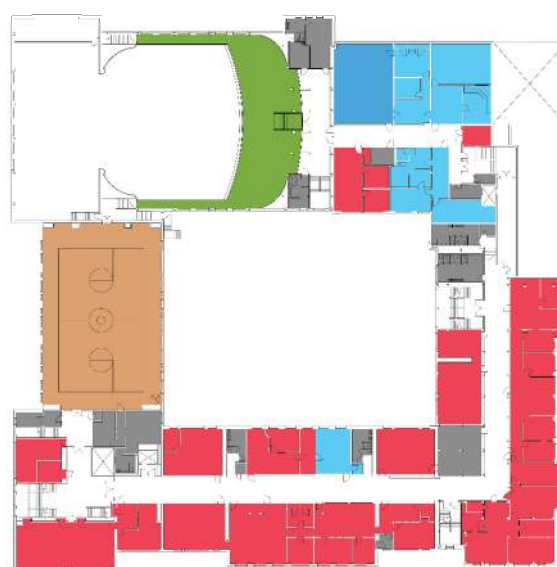
Level 1



Level 3



Lower Level



Level 2

## Lincoln Center - Auditorium

### Overview (design and costs by CTA Architects in 2014)

This project addresses the needs and costs required to improve the stage and performance capabilities of the Lincoln Center Auditorium to more effectively serve the middle schools and the numerous school entities who use it for larger presentations and rehearsals. The Lincoln Center Auditorium is a facility that could serve a wide variety of venues very effectively if obsolete or missing systems are upgraded. Stage rigging and lighting systems are very expensive. Adding the number of necessary electrical, mechanical and structural upgrades to make the auditorium into a completely suitable facility for large audiences becomes a major project.

The Lincoln Center Auditorium is an impressive facility with is 1,634 seat capacity, 498 of that in the balcony, high ceilings, and Art Deco details. Overall the lobbies and house are in good condition and have been well maintained. The district reports that the space is highly regarded acoustically for music performances, but does have some limitations regarding articulation of speech. The existing sound system appears to be over 20 years old, with the exception of a few replacement components.

The stage is quite large, 81' wide and 42' deep, with a large 48' by 20' high proscenium opening, with some limited storage rooms adjacent to the platform. The gridiron is only 43'-4" above the stage floor, but should be 48' with a 20' high proscenium to allow fully functional conventional rigging to be used. The dimmer system, light battens, and curtains all appear to be original 1935 equipment. Several years ago, the original rigging equipment was inspected and most of the operating systems removed due to wear and safety concerns. Dead hung curtains were left in place, and since then some battens have been hung with homemade roped rigging. The lighting system is antiquated and does not meet any current standards, has no theatrical lighting instruments (just colored 100 watt bulbs), and parts have not been available for the dimmer system for decades. The stage floor is in reasonably good shape, but the original foot lighting system in the rap doors in the front floor of the stage area fire hazard and a tripping hazard.

The original heating and ventilation system failed a few years ago, and a minimum response consisting of one large rooftop HVAC unit was implemented to "keep the building from freezing up." A steam unit heater was later added to the stage, which successfully offset most of the large heat loss from this area. This system is not designed for Billings' extreme temperatures, nor does it provide the code required ventilation air for large capacity audiences, nor would it address the cooling loads of the new theatrical lighting system.

Both the Building department and Fire department agreed that this project would be reviewed under the IBC, chapter 34, Existing Buildings. No upgrades are required unless there are life safety conditions as deemed by the local jurisdiction. (2) 6 horn/strobe fire annunciators need to be added, the remainder of the fire alarm system, including the annunciator on stage is adequate. Existing exiting capacity has the adequate number of exits, with 3 restricted paths using IBC 2012 formulas, and would come into play with crowds over 1,000. For a full renovation, doubling the width of the outdoor exit stair from the west side of the main lobby would be a logical improvement to bring this exit up to 80% of the required width. The facility is significantly short of adequate toilet facilities. The shortage could be met by opening up the east wing of the building which would allow access to large men and women toilet rooms on the main and 2nd floor. A new handicapped lift in the lobby allows access from grade level entry to the main lobby and auditorium level.

The Planning and Development Committee requested an assessment of the project to improve performance with a much smaller, incremental approach. The planning team focused on just the top priorities that would allow effective use of the auditorium by smaller audiences for modest events similar to its recent use. With this as a focus, a very cost effective approach with a tight budget was developed. The following summary of costs identifies full renovation base costs along with identifies alternates. A minimal approach renovations is also included. For additional information, refer to the 2014 report.



## Lincoln Center - Auditorium

### Project Cost Summary (design and costs by CTA Architects in 2014)

**BASE BID FULL RENOVATION (May 2014, has not been updated for inflation to 2018)**

A. DEMOLITION AND HAZMAT ABATEMENT	
B. STRUCTURAL UPGRADES - RIGGING / CODES	
C. STAIR AND LADDER UPGRADES - SAFETY / CODES	
D. SOUND SYSTEM AND RECORDING	
E. HVAC - STAGE AND AUDITORIUM	
F. ELECTRICAL AND FIRE ALARM DEVICES	
SUBTOTAL ITEMS A - F	\$ 491,643
G. CONTRACTOR FEES, GENERAL CONDITIONS	\$ 104,131
H. CONSTRUCTION CONTINGENCY	\$ 119,155
<b>SUBTOTAL - CONSTRUCTION</b>	<b>\$ 714,929</b>
I. RIGGING AND CURTAINS	\$ 251,000
J. LIGHTING ,PANELS, CONTROLS	\$ 320,000
K. THEATRICAL CONTINGENCY	\$ 57,100
<b>SUBTOTAL - THEATRICAL EQUIPMENT</b>	<b>\$ 628,100</b>
L. DESIGN AND PROJECT MANAGEMENT COSTS	not included
<b>TOTAL PROJECT COST - BASIC</b>	<b><u>\$1,525,846</u></b>
M. ACOUSTIC IMPROVEMENTS OPTIONS	\$ 66,967
N. DOCK LIFT OPTION	\$ 37,147
O. AUDITORIUM CHANDELIERS - UPGRADE	\$ 15,336
<b>TOTAL ALTERNATES COST</b>	<b><u>\$ 119,450</u></b>
<b>MINIMAL APPROACH</b>	
Priority 1 - Safety and Sound System	\$ 29,011
Priority 2 - Theatrical Lighting & Electrical - Minimum	\$ 79,238
Priority 3 - Replace Rear Traveler Curtain	\$ 6,435
Priority 4 - Reinforce Wood Gridiron Floor	\$ 10,224

## Rimrock Learning Center

### Overview

Rimrock School is a former K-6 elementary school. It has been closed for several years and / or used for Head Start and other programs. The original 1952 building consisted of 12 classrooms, with a gymnasium/cafeteria, kitchen, office area, workroom, teachers' lounge and toilet rooms. In 1976 a library structure was added. Site is constantly sloping from north to south. The building is a single story structure. It has a concrete foundation system with concrete slab floor and pipe tunnels. The structural system is steel columns with wood beams, wood joists and structural decking. The perimeter walls are brick on wood frame. The current roof is hypalon and metal installed in 1994. Roof insulation is unknown, walls have 1" rigid insulation. Currently the school is undergoing extensive renovations to become the district's Learning Center. MEP, technology, and architectural upgrades are being accomplished with proceeds from the 2013 bond measure.

1300 Rimrock Rd  
Billings, MT 59102  
(406) 255-3867

Year Built .....	1952
Renovations .....	Addition 1976, 2017
Portables .....	0
Site Acres .....	4.19
Building SF .....	23,043
Current Enrollment .....	-
Capacity .....	-
Target Capacity .....	-



### Existing Program Spaces

PLAN LEGEND

CLASSROOM
SPECIAL SERVICES
LIBRARY
ADMINISTRATION
MEP/TOILET/KITCHEN
COMMONS/CAFE
GYMNASIUM
MUSIC/ART



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## District Warehouse

### Overview

The warehouse is a multi-use building that houses 32 employees from various District departments, including athletics/activities, curriculum, printing, technology, transportation, mail/lunch delivery, and inventory storage. The warehouse also serves as a central intake for all newly purchased equipment from where it is logged, tagged and delivered. The warehouse provides copy services for the district and carries most of the supplies used by everyone from teachers to secretaries. The building systems are functional and no necessary repairs or upgrades were identified.



1470 Industrial Ave  
Billings, MT 59101  
(406) 281-5578

Year Built .....	1994
Renovations .....	0
Portables .....	-
Site Acres .....	-
Building SF .....	35,460



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## District Facilities Services

### Overview

The district facilities building houses the district's maintenance and repair professionals, Sodexo food services, facilities records storage, and maintenance repair equipment. Maintenance and repair professionals include; (9) grounds keeping crew members, (2) electrical, (2) plumbing, (3) carpenters, (2) temp control/mechanical, (4) painters, and (1) glazer. Storage attached to the east of the building houses trucks and irrigations equipment, the district currently rents space for heavy equipment, lifts, lawn mowers, tractors, and fertilizers. The building also stores all facilities projects records including as-built drawings and operation and maintenance manuals. The building has offices for the executive director of facilities, union president, and custodial foreman. Sodexo offices for (8) staff and interns are housed in the building.

101 Tenth St.  
Billings, MT 59101  
(406) 281-5074

Year Built .....	1962
Renovations .....	0
Portables .....	-
Site Acres .....	-
Building SF .....	24,000



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## Undeveloped Properties

16.04 Acres      Located at Arrowhead Elementary School      (Could be an elementary or middle school site)



## 6 OTHER DISTRICT FACILITIES

### Undeveloped Properties

8.38 Acres

Located at the Career Center

(Could be an elementary school site)



## Undeveloped Properties

11.22 Acres Located at Castle Rock Middle School (Could be an elementary or middle school site)  
 2.53 Acres Located across Governors Blvd at Castle Rock (not large enough for a school site)



30(?) Acres Located at Ben Steel Middle School (elementary school site)



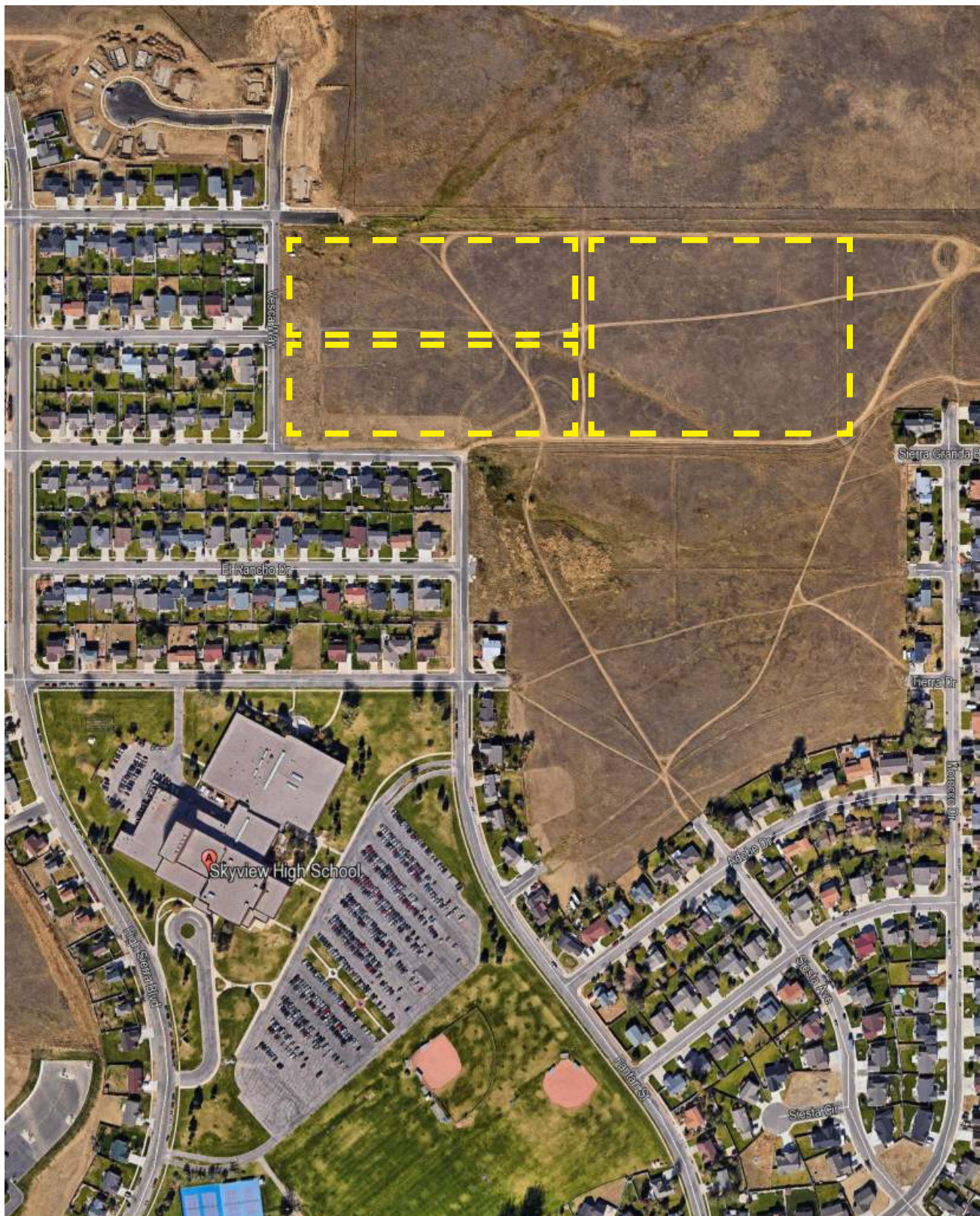
## 6 OTHER DISTRICT FACILITIES

### Undeveloped Properties

8 Acres

Located west of Skyview High School

(elementary school site)



## Undeveloped Properties

34 Acres      Located at west of Career Centerl      (high school site)





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