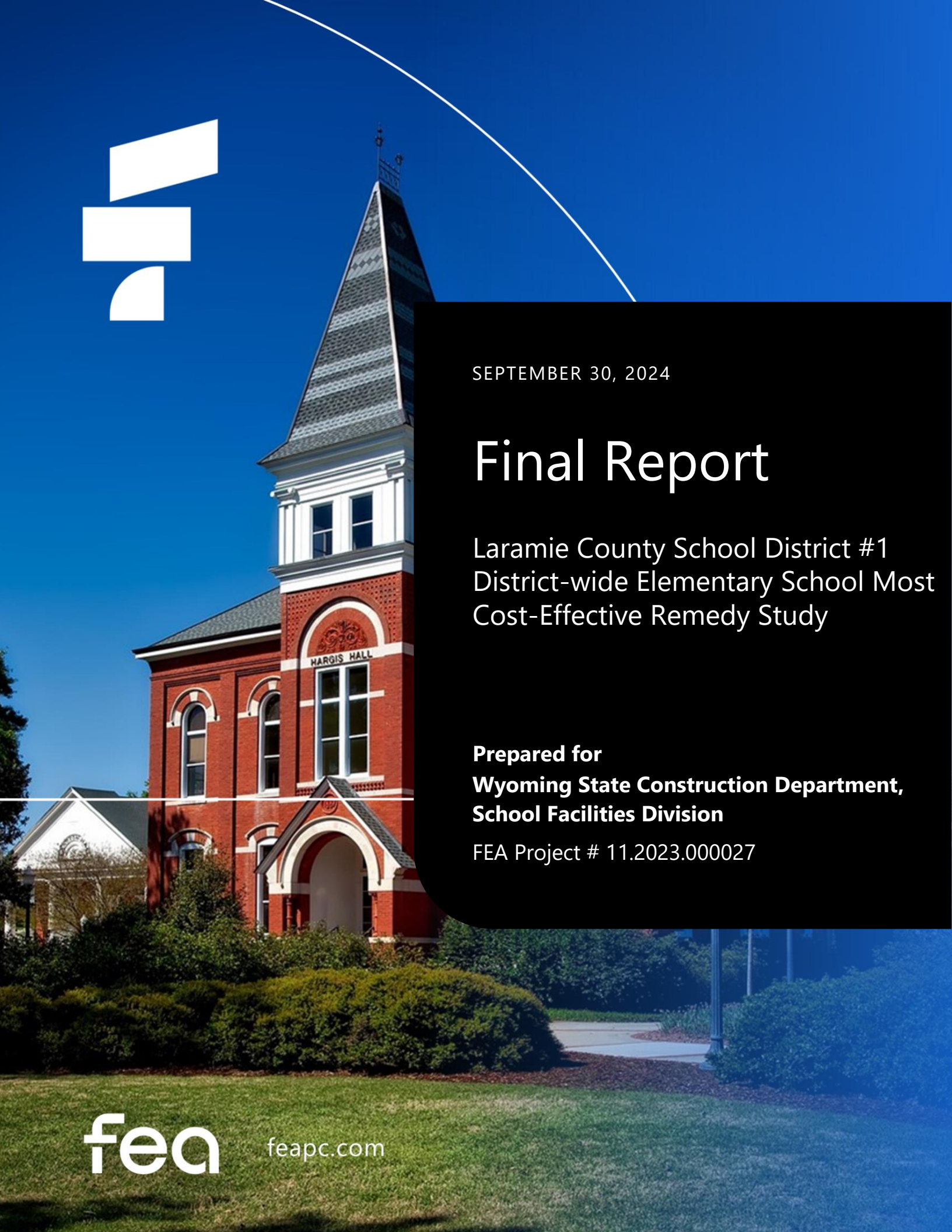

SEPTEMBER 30, 2024

Final Report

Laramie County School District #1 District-wide Elementary School Most Cost-Effective Remedy Study

Prepared for
Wyoming State Construction Department, School Facilities Division

FEA Project # 11.2023.000027

fea feapc.com

September 30, 2024

Shelby Carlson, P.E.
School Facilities Division Administrator
Wyoming State Construction Department, School Facilities Division
700 West 21st Street
Cheyenne, WY 82009
shelby.carlson@wyo.gov

SUBJECT: Laramie County School District #1 District-wide Elementary School Most Cost-Effective Remedy Study
District-wide Elementary School Study
Wyoming State Construction Department, School Facilities Division
FEA Project No: 11.2023.000027

Dear Shelby,

FEA is honored to provide this report of the Laramie County School District #1 District-wide Elementary School Study. Our services have been provided in accordance with Attachment B – Scope of Services to our contract with the State Construction Department, School Facilities Division, which was executed on January 16, 2024.

This report presents an overview of our work and a review of our findings and conclusions based on interviews, meetings, site visits, workshops, and analyses completed during this most cost-effective remedy study.

Please reach out to Rich Merrill should you have any questions regarding this report. Following feedback from the State and Laramie County School District #1, FEA will issue report revisions if deemed appropriate. We look forward to continuing to work with you to complete this project.

Best regards,
FEA

Rich Merrill, PE, DBIA, FMP
Project Manager
rich.merrill@feapc.com

Ryan Small
VP Products & Programs
ryan.small@feapc.com

William W. Small, PE, PMP
Principal
small@feapc.com

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Executive Summary

Introduction

The School Facilities Division (SFD) of the Wyoming State Construction Department (SCD) engaged FEA to conduct a comprehensive study to determine the Most Cost-Effective Remedy (MCER) for addressing critical capacity and condition needs of the Laramie County School District No. 1 (the District) elementary school facilities. Seven buildings were identified as part of the MCER study, each of which was identifies with either a building need due to condition or capacity. These buildings are shown in Table 1: Building Needs, below:

Triad	School Name (Current Configuration)		Identified Building Need
South	Arp	(K-6)	Capacity
South	Sunrise	(K-6)	Capacity
Central	Hobbs	(K-4)	Condition
Central	Jessup	(K-4)	Condition
Central	Miller	(4-6)	Condition
East	Buffalo Ridge	(K-4)	Condition
East	Saddle Ridge	(K-4)	Capacity

Table 1: Building Needs

Addressing Building Needs

Building needs associated with capacity were addressed through a combination of construction and non-construction actions, including grade reconfigurations, boundary adjustments, additions to current schools, and new construction. Building needs associated with condition were addressed through a combination of continued application of major maintenance, elimination through consolidation, and capital construction.

Addressing capacity needs required making enrollment projections over the period of the MCER study and evaluating the existing school capacities against projected enrollments. Multiple enrollment projection models were created and back tested for accuracy, including those explicitly referred to in Wyoming School Facilities Commission (SFC) Rule Chapter 8, Section 4(a)(i-iii), SFC Enrollment Projection Methodology. The models are explained further in this report with additional information provided in Appendix A02, Enrollment Projections. These models proved to be divergent in their projections of enrollment over the study period, with models projecting either decline or growth after applying the error rates associated with the models. Therefore, it was determined current enrollment would be applied when identifying actions to address capacity within the context of this MCER study.

Identification and Refinement of Potential Remedies

After analyzing the District's condition and capacity needs, six key themes were used to guide the development of 18 potential remedies. Identification and refinement of the potential

remedies was a collaboration between FEA, SCD, and the District. Remedies included addressing facilities on a building-by-building basis, returning to a K-6 configuration, implementing 4-6 configurations, fully executing the District's long-term strategy of a K-4/5-6 configuration across three Triads, or hybrid approaches to incorporate the best features of various potential remedies. A feasibility analysis was conducted to assess the practicality of these potential remedies, considering the extent of their alignment with the District's long-term goal of implementing a 5-6 grade configuration and State objectives. This process led to a reduction in the list of potential remedies from 18 to 12. The 12 potential remedies were further reduced through a facilitated process referred to as Choosing by Advantages (CBA).

Looking at cost and benefits (e.g., conducting a cost-benefit analysis) is important when identifying the most cost-effective remedy. FEA used the CBA process to systematically evaluate and compare the benefits and costs of various potential remedies. The structured CBA decision-making approach requires a cooperative review of these remedies and prioritizes the advantages of each potential remedy before considering costs, ensuring transparency and objectivity in the selection process. Conducted in Cheyenne, Wyoming, from July 9-11, 2024, the CBA workshop was facilitated by FEA and included representatives from the District and the SFD. The evaluation revealed that potential remedies focusing on fewer, larger elementary schools provided the greatest overall advantages, while other solutions were less advantageous. Rough order of magnitude (ROM) costs were compared to benefits (as quantified by the total Advantage Score from the CBA workshop) for all potential remedies, from which three potential remedies were advanced for further evaluation and analysis.

Evaluation and Analysis of Potential Remedies

The three potential remedies advanced through the CBA workshop were subsequently evaluated for feasibility through a separate, in-person joint workshop of the SFD and District facilitated by FEA. The workshop prioritized the actions associated with each of these potential remedies. Timing and schedules for the actions associated with each potential remedy were estimated for funding, procurement, design, bidding and construction. With all actions laid out (in time) for the three potential remedies, a fourth, hybrid potential remedy was introduced and scheduled during the workshop. And finally, a fifth potential remedy, which was a variation of the fourth potential remedy, was introduced and scheduled immediately following this workshop.

With an estimated timeline of actions associated with each of the five potential remedies, a more detailed cost analysis was completed. The analysis identified life cycle costs for all buildings over a 20-year period and calculated the present value of those costs. Table 2: Cost

and Benefit, below, shows a summary of the costs and benefits (Advantage Score) of each potential remedy.

POTENTIAL REMEDY	PRESENT VALUE	ADVANTAGE SCORE
1	$3,021,431,014	642
2	$3,022,138,963	788
3	$3,025,032,862	734
4	$3,011,287,064	788
5	$3,030,413,495	788

Table 2: Costs and Benefits

The relationship between the cost (present value) and the benefit (Advantage Score) for each remedy is illustrated in Figure 1: Cost-Benefit Comparison, below.

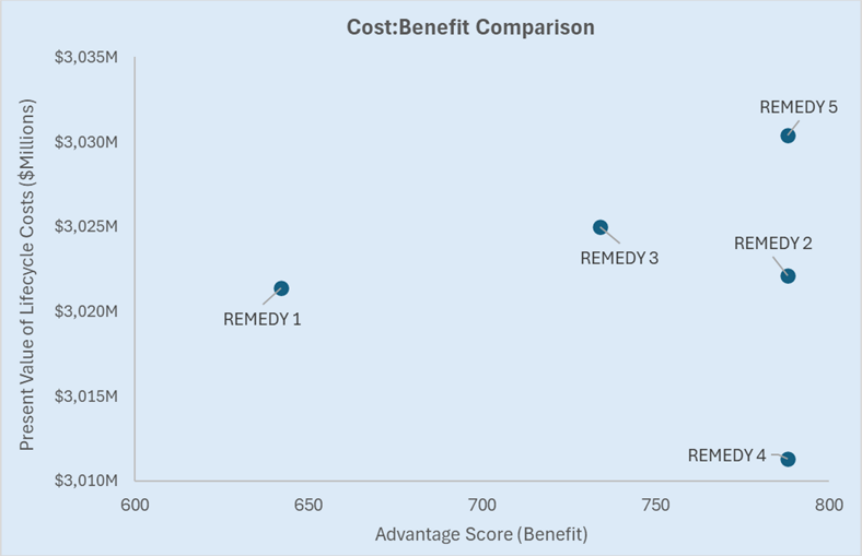


Figure 1: Cost-Benefit Comparison

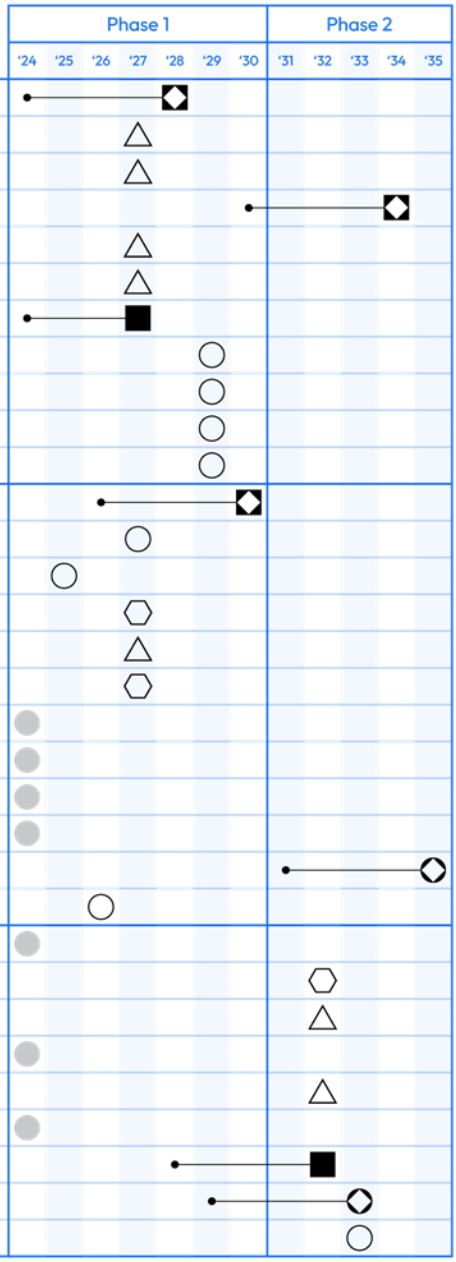
The purpose of a cost-benefit analysis is to understand the tradeoff between benefit received (as measured by advantage on the horizontal axis) and cost required to achieve the benefit (as measured by present value of life cycle costs on the vertical axis). Figure 1: Cost-Benefit Comparison chart depicts the analysis of all five potential remedies. Remedy 4 provides the greatest benefit for the least cost. **Therefore, Remedy 4 is considered the Most Cost-Effective Remedy.**

Summary of the Most Cost-Effective Remedy

To address the District's identified condition and capacity building needs, implementation of the MCER takes place in two phases: Phase 1 (2024-2030) and Phase 2 (2031-2035). Actions executed during these phases, including construction, reconfigurations, and taking schools offline in the South, Central, and East Triads. For the purposes of the MCER study, offline is meant to indicate buildings have been modeled to be removed from use for educational

purposes and an allowance for the cost of demolition has been included in the present value analysis. School attendance boundaries will be adjusted within Triads but not across Triads or Districts. Upon completion of these actions, the condition and capacity needs are anticipated to be resolved, reducing the State's block grant and major maintenance (sustainment) costs, and lowering the average age of District buildings by about 21 years. Details of building needs associated with schools, timing of major actions included in the MCER, timing of funding requests, modeled grade configuration of each school, modeled enrollment by school, and modeled capacity by school are shown in Figure 2: MCER Summary on the next page.

	SCHOOLS	2023-24 ENROLLMENT	MODELED ENROLLMENT	MODELED CAPACITY	MODELED GRADE CONFIG.
SOUTH	**Arp**	292	509	**550**	K-4
	Sunrise	319	230	**265**	K-4
	Afflerbach	325	227	**376**	K-4
	Cole	144	203	**267**	K-4
	Goins	291	206	**301**	K-4
	Rossman	290	205	**292**	K-4
	New South 5-6	0	587	**650**	5-6
	Hebard	111	0		
	Bain	222	0		
	Fairview	87	0		
	Lebhart	86	0		
CENTRAL	**Hobbs**	209**	312	**356**	K-4
	Jessup	123**	0		
	Miller	69	0		
	Davis	222**	271	**298**	K-4
	Pioneer Park	363	267	**356**	K-4
	Prairie Wind	306**	380	**420**	K-4
	Clawson	4	4	**16**	K-6
	Gilchrist	122	122	**132**	K-6
	Willadsen	5	5	**32**	K-6
	Freedom	316	316	**343**	K-6
	Coyote Ridge	425*	569	**652**	5-6
	Deming	82	0		
EAST	**Buffalo Ridge**	170	170	**232**	K-4
	Saddle Ridge	353	225	**250**	K-4
	Alta Vista	213	249	**260**	K-4
	Anderson	298	298	**322**	K-4
	Baggs	290	287	**290**	K-4
	Dildine	300	300	**342**	K-4
	Saddle Ridge II	0	128	**250**	K-4
	Meadowlark	485	724	**800**	5-6
	Henderson	272	0		



* Enrollment number includes students moved from Hobbs, Jessup, Davis, and Prairie Wind beginning in the 2024/2025 school year.

** Enrollment number excludes students moved to Coyote Ridge beginning in the 2024/2025 school year.

The end state of each school is shown for this MCER.

BUILDING NEED

- Condition
- Capacity

ACTIONS

- Boundary Adjustment (BA)
- Reconfigure / BA
- No Action
- Offline
- Addition
- Replace / BA
- New School
- Request Funding

Figure 2: MCER Summary

1. Introduction

The School Facilities Division (SFD) of the Wyoming State Construction Department (SCD) is conducting a comprehensive study to determine the Most Cost-Effective Remedy (MCER) for addressing critical capacity and condition needs of the Laramie County School District No. 1 (the District) elementary school facilities. This report is prepared in compliance with Wyoming Statute 21-15-117 (b) and the School Facilities Commission (SFC) Rules, as outlined in SFC Rules Chapter 8, Section 5. These rules require school districts across the state of Wyoming to ensure their facilities meet statewide adequacy standards and address both current and future needs related to building capacity, condition, and adequacy, so the facilities do not impede the school districts' ability to deliver quality educational services.

1.1 Purpose of the Study

The purpose of this study is to identify the MCER to resolve the District's elementary school capacity and condition needs. As required in SFC Rules Chapter 8, Section 5(a)(i-ii), this study evaluates schools with a projected enrollment exceeding 100% of capacity and schools with a projected Facility Condition Index (FCI) exceeding 0.3 within 5 years as reported in the 2023 SCD Annual Report. By considering the elementary schools collectively, this study identifies the most cost-effective remedy to meet the identified "school building and facility needs to deliver quality education services and to meet adequacy standards" in accordance with SFC Rules Chapter 8, Section 5(c).

Pursuant to SFC Rules Chapter 8, Section 5(b)(iii), the SFD "may consider needs related to multiple buildings in a single study, including building needs that may not qualify for a study under the (capacity or condition) thresholds" previously mentioned. Due to the number of buildings in the District identified as exceeding the thresholds of SFC Rules Chapter 8, Section 5(a)(i-ii), the SFD commissioned this study requiring all elementary school facilities in the District to be considered collectively. In considering the District as a whole, the SFD also required this MCER to specifically identify actions to address needs for the following schools:

For capacity,	Arp Elementary School,
	Saddle Ridge Elementary School,
	Sunrise Elementary School; and
For condition,	Buffalo Ridge Elementary School,
	Hobbs Elementary School,
	Jessup Elementary School, and
	Miller Elementary School.

No schools were identified by the District as inadequate to deliver required educational services per SFC Rules Chapter 3, Section 8.

Needs vary across these schools and, depending on the nature and breadth of these needs, actions required to address those needs can range from simple and lower cost to complex and higher cost. Building renovation, addition, replacement, new construction, or any combination of these are considered construction alternatives (referred to as actions within a remedy). In some cases, remedies may include non-construction alternatives (or actions) such as making changes to grade configuration in schools, making attendance boundary adjustments, or applying available major maintenance funds to sustain facilities. Non-construction alternatives may also include taking schools offline where that is required to deliver the most cost-effective remedy. For the purposes of the MCER study, offline is meant to indicate buildings have been modeled to be removed from use for educational purposes and an allowance for the cost of demolition has been included in the present value analysis.

As agreed with the SFD and District, there were four elementary schools that were not considered in this district-wide MCER study. Due to their rural locations, it was agreed that Clawson, Gilchrist, and Willadsen would not effectively contribute to meeting the needs of the seven schools identified for this study. Similarly, due to its current and projected enrollments compared to capacity and the community served by Freedom Elementary (F.E Warren Air Force Base), it was agreed that Freedom would also not effectively contribute to meeting the needs of the schools identified for this study.

1.2 What is Covered in the Report

This report presents a background of what drove the need for a MCER study, and why this study was commissioned by the SFD. A brief explanation about the contracted scope of work is provided along with the methodology/approach that was used to study this district-wide portfolio of elementary schools. A district-wide study is then provided addressing seven schools identified with building needs while explaining the process used to determine the most cost-effective remedy.

This study consisted of three phases:

Phase 1: The first phase focused on identifying and evaluating potential remedies. More than 20 potential remedies have been explored, with all potential remedies review jointly be FEA, SFD and the District. Various construction and non-construction approaches were grouped thematically into six categories. A joint exercise was completed to ensure a thorough evaluation of potential actions for the schools and to identify which potential remedies should be studied further in Phase 2.

Phase 2: A Choosing by Advantages (CBA) workshop was held to evaluate the actions associated with each potential remedy. Actions were identified and evaluated at each school and included a combination of new construction, replacement, renovation, grade reconfiguration, attendance boundary adjustments, building additions, and/or no action. Factors were applied to help determine which potential remedy provided the highest benefit, and costs were then considered to make an initial cost-benefit comparison between potential remedies. Three potential remedies were identified to be studied further as a result of the CBA workshop.

Phase 3: MCER development occurred during this phase that involved prioritizing potential remedies, establishing funding and timing, performing a financial analysis, and making a more detailed cost benefit analysis. Block grant and major maintenance funding was modeled, construction cost estimates were developed, and a present value analysis was completed for all potential remedies. Results from Phase 3 were used to perform a deep dive into the financial modeling of the remedy and its long-term impact to the student education.

The report includes a detailed explanation of the selected remedy, including the cost, life span, and capacity considerations. This explanation is supported by a summary of the potential remedies evaluated and reasons for accepting or rejecting each. Based on the approval of this selected remedy, this study also provides its implementation plan and the timeline.

By the conclusion of this report, the SFD will provide the District and the SFC a clear recommendation for the MCER. This MCER will include the actions required to address the building needs of the original seven schools included in FEA's contracted task order, align with the State's adequacy standards, and provide a sustainable, long-term solution for the District's facility needs. The MCER will also balance cost, efficiency, and educational outcomes while addressing both current and future enrollment projections.

2. Background and Rationale

An evaluation of the adequacy of school buildings and facilities and prioritization of these buildings is conducted by the SFC annually. The SFC also develops an annual schedule for building condition needs and one for building capacities. Based on the results of these evaluations, the SFC ensures the adoption of the most cost-effective method of remediation.

As the District, in this case, and the State, for all school districts, also contend with aging school facilities and infrastructure, it is often necessary to review their conditions to identify what might impede the delivery of quality educational services. As such, SFC Rules Chapter 8, Section 5(a)(ii), requires the SFD to conduct a MCER study for any school building or facility that has a Facility Condition Index (FCI) score exceeding 0.3. Three elementary school buildings in the District were identified and included in this study.

This MCER study was requested due to three schools identified as having a capacity need and four schools having a condition need. These studies are authorized by the SFD of the Wyoming SCD acting on behalf of the SFC.

The three elementary schools listed in the task order with a projected capacity need (student enrollment exceeding 100% of capacity) as reported in the SCD 2023 Annual Report are:

Arp Elementary School (134.90% of capacity)

Saddle Ridge Elementary School (126.00% of capacity)

Sunrise Elementary School (108.30% of capacity)

And the four elementary schools identified in the task order with a projected condition need (an FCI exceeding 0.3 within 5 years) as reported in the SCD 2023 Annual Report are:

Hobbs Elementary School (5-year FCI = 0.464)

Buffalo Ridge Elementary School (5-year FCI = 0.357)

Jessup Elementary School (5-year FCI = 0.349)

Miller Elementary School (5-year FCI = 0.281) *Note: The 5-year FCI for Miller is projected at 0.296 in 2028 based on the 2023 condition assessment data. However, the 10-year FCI (within the period of this study) is projected at 0.385.*

Instead of performing individual MCER studies for each of these seven schools, the SFD anticipated that the broader approach of a district-wide study would offer a more effective long-term remedy. This information outlines a concurred direction for the District and SFD to follow for current needs and projected future needs. Annual planning meetings between the District and SFD should include a discussion about verifying how this MCER still reflects the current state of the District's enrollment and building conditions.

With 25% of the elementary schools represented in these seven schools, a possibility offered itself to a long-term plan for elementary school configurations and factors determining the

sequence of future capital construction funding requests. To manage the view of the District's portfolio in one study, the SFD and District will have the opportunity to concur on what is needed in the near future (the next 5 years) and in the long run. This approach will allow the District a long-term facility and financial strategy to ensure district-wide student education needs are met. An additional benefit for having this long-term plan is that it allows for MCER amendments, thereby reducing or eliminating the need for yearly District MCER studies. This MCER study also solidifies the direction and makes affordable adaptations to any changes in the educational programs.

3. Scope of Work

Scope and Objectives

With a primary objective to determine the MCER for the District-wide elementary school portfolio, it was necessary for the State to understand the capacity and condition of all District elementary schools, as well as the financial implications of all potential remedies. Understanding that the MCER could involve a combination of construction and non-construction remedies, it was necessary to evaluate multiple actions for each potential, district-wide remedy.

Considering a wide range of potential remedies involves making decisions that take into account feasibility, cost, benefit, and effectiveness. The evaluation requires potential remedies do not impede the District's ability to meet statewide adequacy standards or to deliver the prescribed statewide educational program. The evaluation of potential remedies to determine which is most cost-effective also requires review of total costs to the State, including: anticipated capital construction costs (first-time costs); ongoing operational costs (via the block grant); long-term sustainment costs (major maintenance payments), and disposition costs (e.g., transfer, demolition, etc. costs). As these costs can vary over time, depending on the anticipated implementation strategy and schedule for any particular remedy, identifying the *least-cost* remedy requires analysis of the present value of life cycle costs. Determining the *most cost-effective* remedy further requires the evaluation of both costs and benefits.

FEA was engaged by the SCD to evaluate possible remedies, including construction and non-construction solutions, and the associated financial implications in determining the most cost-effective remedy for District school facilities. This MCER study was to consider all elementary schools in the District, a total of 30, in developing district-wide potential remedies. Elementary schools identified with a capacity need included Arp, Saddle Ridge, and Sunrise, and the schools identified with a condition need included Buffalo Ridge, Hobbs, Jessup, and Miller. Any potential district-wide remedy was required to provide individual remedies for these seven schools. As individual school remedies could impact several schools, potential cost-effective remedies required a district-wide solution instead of individual school remedies.

Accordingly, FEA was contracted to conduct a district-wide MCER study for all 30 elementary schools to evaluate the long-term needs and impacts of potential remedies across the portfolio based on the data and information available at the time of the study. The following is a summary of the tasks included in the study:

- Study preparation - Identifying/familiarizing with SFC rules
- Data collection – Review of existing data
- Project overview – Identify background information for basis of analysis
- Educational specifications/Program of spaces – Review of the District's educational specifications
- Site analysis – Assessment of potential sites
- Identification of potential remedies – determine types of remedies available

- Analysis of potential remedies – Collaboration about the potential remedies with the District and SCD
- Anticipated most cost-effective remedy – Summary of costs, schedules, and priorities
- Most Cost-Effective Remedy – Meetings with SCD, District, Board of Trustees, and Commission

There were additional subtasks associated within each task, which collectively provided means for determining the MCER. As the main purpose of the study is to determine the most cost-effective remedy, there could be numerous ideas related to this District portfolio. To address this type of portfolio, there were known or established District practices that helped focus the study and keep the possible number of potential remedies manageable. Two such practices involved 1) maintaining the current direction of transitioning to a 5-6 school for grade level advancement throughout the District, and 2) to retain the current Triad boundaries.

4. Methodology

Phase 1 – Information Gathering

This phase involved a comprehensive effort to gather and analyze data to inform the development of potential remedies. The data collection and analysis aimed to address both capacity and condition needs across the District. A brief summary of the remedy identification process, feasibility analysis, and preparation for the CBA workshop can be found in this section. Further information regarding the potential remedy development process leading up to the CBA workshop can be found in Appendix A01, CBA Workshop Summary Report.

4.1 Data Collection and Site Visits

The FEA team conducted a kickoff meeting to collect information and data from the District and to converse about the current state of the elementary schools, learn how the schools function, and understand how the District viewed the capital construction plan. These meetings allowed us to identify documents needed, begin theme development, learn about the Triad boundaries and school configuration, and the challenges of school facility management. The information gathering continued throughout the project, but this initial data gathering was critical to the process and allowed the District an opportunity to share the approach previously used for providing the required educational space.

This initial kickoff meeting allowed us to align the stakeholders' expectations through common terminology and share viewpoints about this MCER study that were important to them. The collection of information included information shared about the District's plan for the South Triad, previous MCER studies, attendance boundary maps, potential new sites, master plan, and planned property disposition.

Site visits to the seven schools identified with needs were conducted, to familiarize ourselves with the buildings. Physical inspections of the buildings clarified what the documentation was conveying or not conveying. Any gaps of information deemed necessary for this study were identified and requested. Some data gaps included site plans showing all the property encumbrances, sewer maintenance records for issues reported during the visit, and observation reports of the assessments performed by the SCD. During the site visits, our team was able to observe the typical classrooms and record observations about the space being used as educational or non-educational purposes.

4.2 Establishment of Themes

After collecting and analyzing the data, the FEA team identified the following six themes for addressing the District's condition and capacity needs.

1. Address Individual Sites Only
2. Keep Current Mixed Configurations
3. Full 5-6 Implementation (Two 5-6 Schools per Triad)

4. Full 5-6 Implementation (One 5-6 School per Triad)
5. Full 4-6 Implementation (Two 4-6 Schools per Triad)
6. Eliminate 5-6 Schools, Transition Entirely to K-6

These themes served as guiding principles for developing potential remedies. Each theme represented a different approach to addressing the identified building needs. Some focused on building new schools, reconfiguring grades, or addressing specific capacity issues.

4.3 Development of Potential Remedies

Based on the identified themes, the team outlined 17 potential remedies aimed at addressing both condition and capacity needs. Examples of the potential remedies included returning to a K-6 configuration or reconfiguring the grades into a K-3 and 4-6 configuration. Another potential remedy considered was to leave the facilities as-is and address issues on a building-by-building basis. The team also considered maintaining the District's current 5-6 configuration, which had been previously acknowledged by the SFD when new construction was authorized.

In addition to these potential remedies, the District's potential remedy (bringing the total potential remedies to 18) defined as right-sized, modern school facilities that addressed District program needs, adequate capacity, and acceptable condition. A total of 18 potential remedies were initially identified by FEA, SCD, and the District.

4.4 Feasibility Analysis and Reduction of Remedies

After identifying the initial 18 potential remedies, the team conducted a high-level feasibility analysis to determine which of these remedies were practical and actionable. This analysis also considered whether the potential remedy aligned with both the District's long-term strategy and the State's objectives. For example, potential remedies such as the K-6 configuration and K-3 and 4-6 configuration were determined to not meet the District's 5-6 grade configuration model, which has been adopted. In fact, these alternate configuration strategies would be a reversal of the District's long-term strategy, which had been partially implemented in two of the three Triads. The feasibility analysis allowed the team to reduce the list of potential remedies from 18 to 12. Additional information can be found in Appendix A01, CBA Workshop Summary Report.

4.5 Preparation for the CBA Workshop

Before advancing to Phase 2, the team consolidated potential remedies further based on outcome similarities. Potential remedies that would yield similar outcomes were merged, bringing the total number of potential remedies down to seven. Potential remedies that focused on meeting minimum adequacy requirements, maintaining smaller neighborhood schools, and providing fewer, larger schools were common among a number of them, which allowed for the merge. These seven potential remedies were further analyzed during the CBA workshop.

Phase 2 – Choosing by Advantages

The CBA process is a structured decision-making methodology that focuses on evaluating options based on their benefits (advantages) first and then evaluating the costs. A significant benefit of this process is the open and transparent decision-making process to document the most important factors when comparing potential remedies and their relative advantages. The CBA process was central to evaluating and ranking the potential remedies based on both benefits and costs to identify the potential most cost-effective remedies.

4.6 Intent of the CBA Process

The purpose of the CBA workshop was to help decision makers objectively evaluate and compare the advantages and costs of the identified potential remedies. By systematically prioritizing the advantages, the CBA process aimed to ensure that the chosen remedy(s) provided the highest overall value and aligned with the studies' goals and criteria. The goal was to identify remedies that offered the best results from a cost-benefit perspective.

The CBA workshop was conducted in Cheyenne, Wyoming from July 9th to July 11th, 2024. The workshop was facilitated by FEA and participated by the District and SCD representatives. The full list of attendees is available in Appendix A01, CBA Workshop Summary Report.

4.7 Evaluation of the Potential Remedies

To evaluate each of the potential remedies, workshop participants were asked to summarize their attributes, identify the advantages of each potential remedy, and determine the importance of each advantage. The advantages were evaluated using factors that were identified by the participants. These factors allowed the participants to begin to evaluate the benefits (e.g., improved capacity, better utilization of space, alignment with District strategy) that a particular potential remedy might provide. The result was a combination of all factors showing which potential remedies provided the greatest overall advantage.

The evaluation of advantages highlighted that the potential remedies that focused on fewer larger elementary schools provided the highest overall advantage while the non-construction focus provided the lowest overall advantage.

4.8 Introduction of Costs

The cost evaluation included a rough order of magnitude (ROM) cost estimate for each potential remedy. The ROM cost estimates focused on anticipated construction activities that might be associated with an action assigned to a school for each potential remedy. A cost-to-benefit (advantage) ratio of each potential remedy was calculated and graphed to highlight the remedies that offered the best results considering both their advantages and their costs.

4.9 Final Selection of Remedies

After completing the cost-benefit analysis, the team identified three potential remedies that were closely grouped in terms of both their relative advantages and their costs. These three

potential remedies represented the best possible balance between costs and benefits, and they were advanced for further analysis. These potential remedies included:

- **Potential Remedy 1.** Upgrades for current District program, keep smaller neighborhood elementary schools (identified as Remedy 4b in CBA workshop)
- **Potential Remedy 2.** Construction with fewer larger elementary schools (identified as Remedy 4c in CBA workshop)
- **Potential Remedy 3.** Right-sized, modern school facilities that address District program needs, adequate capacity, and acceptable condition (identified as Remedy LAR01 in CBA workshop)

A detailed summary of the full CBA process conducted in the workshop with details on each potential remedy and the findings can be found in Appendix A01, CBA Workshop Summary Report.

Phase 3 – Identifying the MCER

4.10 Prioritization of Remedies

The three potential remedies identified in the CBA workshop as most advantageous were further analyzed for costs, estimating timing, and practical execution. This step was critical in deciding the sequence in which the potential remedies would be implemented, ensuring efficiency, minimizing disruption, and addressing both immediate and long-term needs.

The first task for the analysis was to arrange the three potential remedies identified during the CBA in a priority order. This prioritization was based on multiple practical considerations such as the necessity for new construction to address capacity or condition of the existing facilities, reconfiguration of school grade structures to both address capacity and optimize facility footprint, and movement of students to implement the remedy. Key elements influencing the prioritization included:

- **Construction or Replacement Needs:** A crucial factor in this evaluation was determining which buildings required immediate construction or replacement. These decisions were driven by a combination of capacity limitations, building condition, and completion of the District's long-term strategic objectives. For instance, schools facing critical overcrowding or those with facilities in poor condition were prioritized for construction to ensure a timely solution to both capacity and condition challenges.
- **Student Movement and Reconfiguration:** Another vital component of the remedy execution plan involved assessing how student populations would be relocated or redistributed within the District. Moving students between schools was not only necessary to alleviate overcrowding but also played a key role in aligning the District with the targeted grade configurations. This included planning around the introduction of new grade structures and consolidating students to maximize the use of existing and newly constructed facilities. Optimizing the building footprint was critical in determining the most cost-effective remedy.

The resulting roadmap established a phased approach to execution, providing a logical and structured implementation plan. This roadmap enabled decisionmakers to visualize the progression of each potential remedy, ensuring that construction and reconfigurations would proceed in a manner that minimized disruption to both the educational process and the District's operational flow. This step was essential to ensuring the potential remedies not only resolved current issues but also provided a sustainable framework for the District's future condition and capacity needs.

By prioritizing these potential remedies, a clear path forward was developed, allowing for an efficient allocation of resources and a streamlined execution of the District's long-term facility plan.

4.11 Funding and Timing Considerations

Once the prioritization of potential remedies was established, the next critical task was for the team to evaluate each potential remedy based on funding availability and the optimal timing for execution. These considerations were essential for ensuring that the identified remedies could be implemented without delays or disruptions due to financial constraints.

Each potential remedy underwent a detailed analysis to determine when the SFD anticipated they could be funded based on assumptions of timing funding requests. Some of the remedies were eligible for immediate funding, meaning that they could be initiated as soon as the MCER study was approved by the District's Board of Trustees and accepted by the SFC. These remedies addressed urgent capacity and condition needs, which made their prompt execution a priority. Other remedies, however, required more long-term financial planning and necessitated future funding requests to ensure resources would be available in subsequent years. This distinction helped guide the development of a comprehensive funding strategy that aligned with both immediate needs and long-term District goals.

To coordinate the sequence of actions with funding availability, a remedy execution calendar was created. This calendar laid out a timeline for each phase of the remedy implementation, specifying when funding would need to be requested and allocated. The calendar was an essential tool for ensuring that:

- Remedies could be carried out in an optimal sequence, aligning with the District's capacity, construction schedules, and operational needs.
- Funding requests could be submitted at appropriate intervals, securing financial resources in time to avoid delays in the overall implementation process.

This strategic alignment of funding and timing allows for a seamless progression from planning to execution. By ensuring that the right financial resources are available at the right time, the District can move forward with the selected remedy efficiently, while maximizing long-term benefits and minimizing interruptions to educational services. This approach also allows the District and State to remain focused on a long-term capital strategy, which can then be reviewed on a yearly basis over the course of implementation.

Special Note on remedy Identification. While working through the prioritization of the potential remedies (the three identified during the CBA process), one additional potential remedy (i.e., Remedy 4) was identified. After each of the three CBA remedies were prioritized and arranged for execution over time, it became apparent that a hybrid of the three potential remedies would provide certain logistical advantages that could not be realized by the original three. This hybrid remedy was, therefore, also prioritized and arranged for execution over time in the same manner during the prioritization and scheduling workshop. Furthermore, shortly after the conclusion of this workshop, the District suggested one additional potential remedy (Remedy 5) as a slight adjustment to Remedy 4. The adjustment affected the combined actions for three buildings in the East Triad, with no other modifications. Upon review by the State and FEA, it was agreed that both additional remedies offered advantages similar to the most advantageous of the three remedies identified during the CBA workshop. Therefore, the two additional remedies, making five potential remedies in total, would be included in the final analysis to identify the MCER.

4.12 Financial Analysis

The financial analysis conducted in this phase was comprehensive, evaluating projected costs to the State that would be associated with the implementation of each remedy. The purpose was to ensure that the MCER could be identified based on a detailed breakdown of first-time costs, ongoing operational costs, and ongoing major maintenance costs over a 20-year financial projection period. Identifying a MCER also required balancing new building with consolidation of existing buildings and removing some buildings from inventory. Removal of buildings from inventory has a significant impact on ongoing block grant and major maintenance funding.

Based on the requirements of the MCER process, the potential remedy that met the needs (condition and capacity) of the study, compared favorably on a cost-benefit basis, and resulted in the least cost would be identified as the Most Cost-Effective Remedy, or MCER.

First-time Costs

The financial analysis began by identifying the first-time costs for each potential remedy. This included costs for construction, renovation, demolition, and any associated actions required to implement that remedy. A third-party cost estimator was engaged to develop these estimates, ensuring that all first-time costs were accounted for.

Additionally, the financial analysis considered the need for swing space—temporary accommodations for students and staff during construction or renovation. However, most remedies were designed to utilize existing swing space within the District, or they allowed for new facilities to be constructed on current sites without the need to vacate old buildings. As such, swing space costs were only included if necessary.

Ongoing Operational Costs

The next step was to evaluate the ongoing operational costs for each potential remedy. This included costs for day-to-day school operations such as staffing, utilities, and other recurring

expenses. The financial analysis also assessed major maintenance costs, which would be necessary to continue to sustain the facilities over time.

A key part of the operational cost evaluation was understanding how changes in school configurations and enrollments—a precursor to Average Daily Membership (ADM)—would impact the Wyoming School Foundation Program guarantee, or *block grant*. The analysis reviewed how the execution of each remedy would affect the state-provided block grant funding—which is calculated based on school configuration and ADM. For example, if a remedy involved replacing a large building with a smaller one of lesser ADM, the block grant funding would decrease accordingly. Conversely, if a school with higher projected enrollment was built, block grant funding would increase.

The movement, or redistribution of students, across multiple schools was also considered to ensure that funding allocations matched the modeled enrollment as each remedy was implemented. Each remedy was examined by comparing the beginning state (current grade configuration, building capacity, and funding levels) with the end state (after the remedy's completion). This allowed projection of how much the State would allocate for ongoing operational costs based on the final school configurations.

Ongoing Major Maintenance Costs

To quantify ongoing major maintenance costs, the analysis followed a similar process. Major maintenance funding, which was calculated based on the allowable square footage of each building and for the District as a whole, was projected forward. As the size of buildings changed or buildings were constructed, replaced, consolidated, or taken offline, the major maintenance funding amounts were re-calculated accordingly. The goal was to determine how much major maintenance funding would be required with each remedy based on the portfolio of facilities in place in each year of the study period.

4.13 Present Value Calculation

To provide a long-term financial outlook, costs were projected over a 20-year period, factoring in both the near-term costs of implementation and the long-term ongoing sustainment costs. This included inflating costs to reflect the year they would be incurred and then discounting them back to present value to ensure a consistent basis for comparing remedies.

Finally, all projected costs—both first-time and ongoing—were combined into a present value (PV) calculation for each remedy. This allowed for a properly-indexed (to 2024 dollars), side-by-side comparison of the total costs of each remedy, adjusted for the timing of when those costs would occur.

The remedy with the lowest present value was identified as the MCER, representing the least long-term cost to the State over the 20-year period. This approach ensured that both immediate financial impacts and long-term sustainment were considered in identifying the MCER.

This structured financial analysis ensured that each remedy was evaluated holistically, providing a clear understanding of the financial implications for both the District and the State.

4.14 Cost Benefit Analysis

After the prioritization, funding and timing analysis, and additional financial analysis, an additional cost-benefit analysis was performed. This analysis was performed on the three potential remedies from the CBA workshop plus the two additional remedies that were identified during or as a result of the prioritization process. Given that the hybrid remedies included the most advantageous elements from the three CBA workshop remedies in an innovative approach, the advantages of the hybrid remedies were assumed to be at least the same as the highest of the three CBA remedies. Therefore, no further analysis of the advantages of the hybrid remedies was necessary.

After calculating the present value for each remedy, the total costs were aggregated. This involved summing up the present value of all cash flows associated with each action, including construction, renovations, and ongoing operational and maintenance costs, for all buildings involved. For buildings identified to be taken offline, ongoing operational and maintenance costs were included until the year after going offline, at which time a demolition cost was assumed (anticipated to be the highest cost to the State for the disposition of the building). Even in cases where a building required no immediate action, its projected operational costs were included to ensure a complete financial picture.

Once the present value was calculated for each remedy, the results were compared with the advantage analysis from the CBA workshop. These Advantage Scores were used as a proxy for the benefit each potential remedy would provide. The goal was to create a cost-benefit comparison, where the cost was derived from the present value calculation and the benefit was represented by the Advantage Scores.

This comparison allowed for a direct evaluation of how much benefit each potential remedy would provide relative to its cost; those that offered the greatest benefit for the least cost were prioritized. This process ensured the final recommendation was not only most favorable (incurring least cost) financially, but it also offered the greatest benefit to the District in addressing the District's capacity needs, condition needs, and long-term facility strategy.

By aligning the cost-benefit ratio for each potential remedy, the one that provided the best overall value could be identified, confirming it as the MCER. This thorough and methodical approach ensured that both immediate financial considerations and long-term benefits were fully accounted for in the final decision-making process.

5. Interpretation of Findings

This section details the key analytical components of the study and interprets these analyses, as necessary. Conclusions as a result of these analyses and interpretations are explained insofar as they impacted further analysis or decisions of the study. However, general conclusions and recommendations are provided in Section 6. Conclusions and Recommendations.

5.1 Enrollment Analysis

Multiple enrollment projection models were created and back tested for accuracy, including those explicitly referred to in Chapter 8 Section 4(a)(i-iii), SFC Enrollment Projection Methodology, per W.S. § 21-15-116(a). Most models forecasted a decline in District enrollment over the study period. These model forecasts are shown in Figure 3: Enrollment Projection Models, below. It also indicates model projections of enrollment are divergent over time.

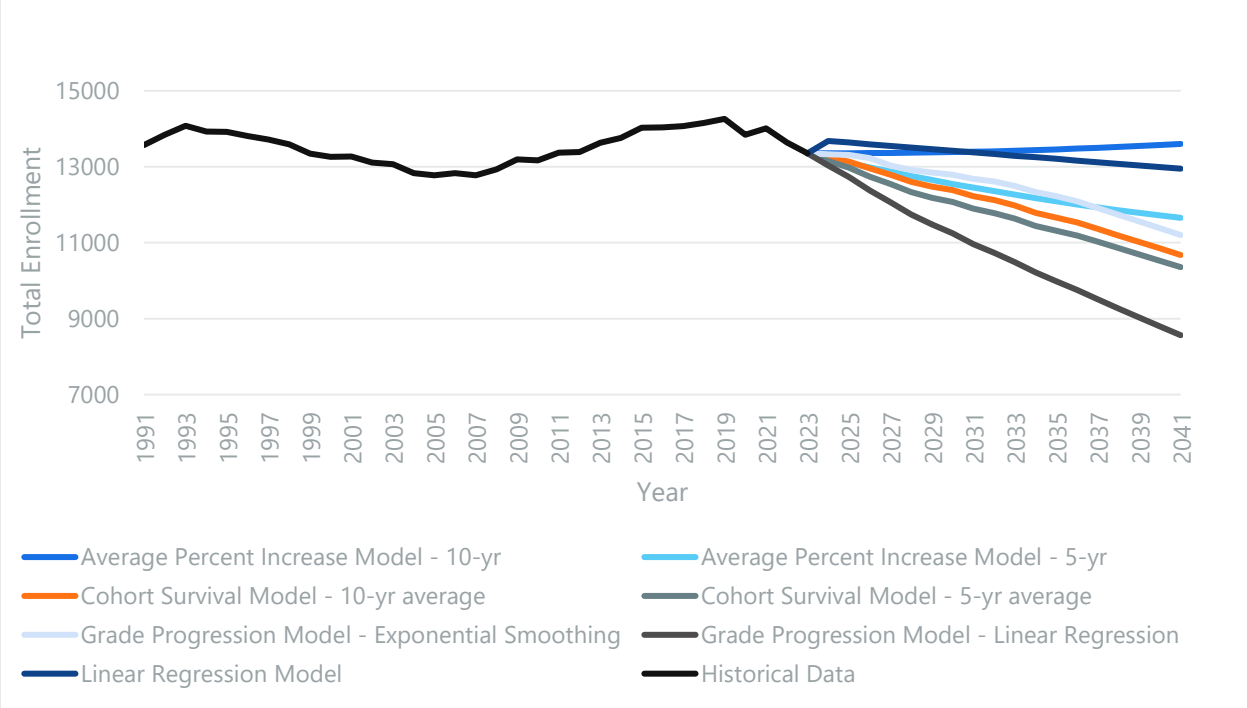


Figure 3: Enrollment Projection Models

When taking an average of model projections (mean model) and applying the back-tested historical error rate to the mean model we can visualize a potential range of outcomes. This is shown in Figure 4: Projection of Mean Model with Estimated Error Range, where the line represents historical and projected enrollment and the colored bands surrounding the line represent the historical error rate of the portion of the line representing the mean model's enrollment projection.

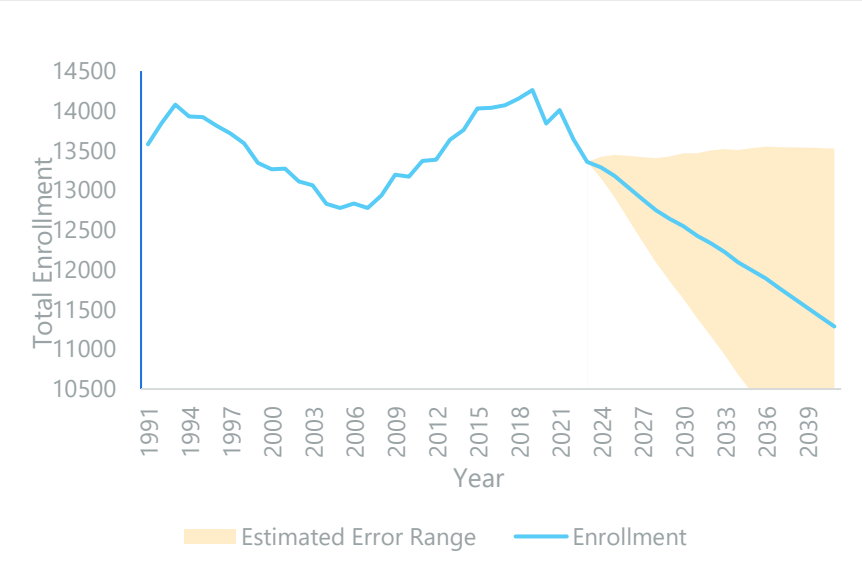


Figure 4: Projection of Mean Model with Estimated Error Range

It would be reasonable to conclude, given the back-tested error rates on projections, that enrollment would not decline indefinitely. Moreover, the cyclical nature of enrollment over the past 30 years requires the consideration of a broader historical context where enrollment has both grown and declined. To apply this, an auto-regressive moving average (ARMA) was created to supplement the required models. The ARMA model incorporates additional historical data per Section 4(d) of the SFC Enrollment Projection Methodology and forecasts a period of decline before increasing toward the District's average historic enrollment.

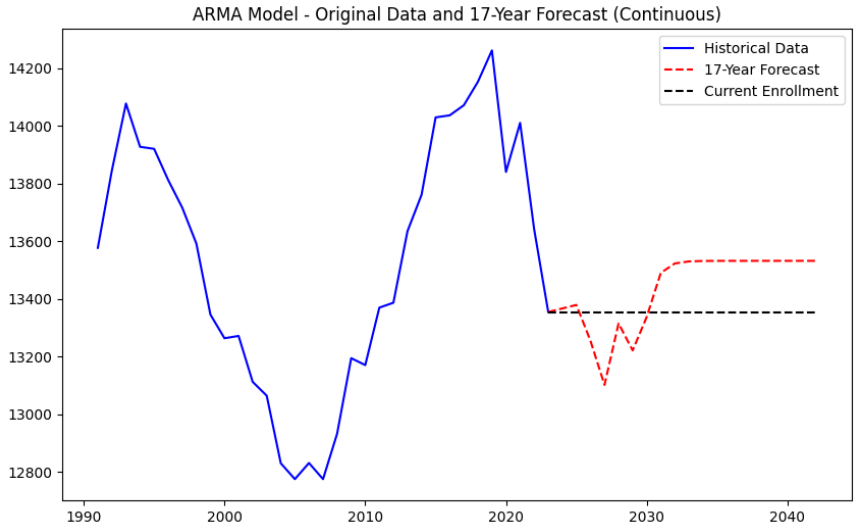


Figure 5: Auto-Regressive Moving Average (ARMA) Model

Figure 5: Auto-Regressive Moving Average (ARMA) Model depicts the ARMA model. Historical enrollment is represented with the blue line, the model's projected enrollment is represented

with the red dotted line and the continuation of the most recent enrollment level is represented with the black dotted line.

For the purposes of the study, the largest risk to relying on any single enrollment projection method would be the under-building of capacity as a result of using near-term declines to project long-term enrollment. Because it is less burdensome to reduce capacity than adding it, and models are divergent in their projections of enrollment over the study period, the decision was made to base the MCER enrollment projections on the most recent enrollment data. Analysis of various models depict disparate forecasts of enrollment. For more information regarding the specific models evaluated, refer to Appendix A02, Enrollment Projections.

5.2 Review of Condition Data

To understand the impact of conditions, FEA reviewed the projected conditions for each school building in the District included in this study relative to timing of planned actions of the MCER, with particular attention paid to the school buildings requiring actions to address condition needs. The following is a brief review of condition buildings included in this MCER study and how those buildings are anticipated to be treated as the MCER is executed.

In some cases, it may be possible to avoid significant major maintenance expenditures if projected expenditures can be deferred until the planned action is completed. Potential cost avoidance is included in the individual building summaries that follow. It is also expected that utility costs will be eliminated once any buildings taken offline are transferred or demolished, which will be a savings to the District.

Taking buildings offline will also provide commensurate savings to the State, in both block grant funding and major maintenance funding attributed to those buildings once the buildings go offline. The cost savings to the State for reductions in block grant funding and major maintenance funding are considered in the present value financial analysis. The action of taking some buildings offline, along with other life cycle cost reductions, is a critical part of the MCER.

- **Buffalo Ridge Elementary School** – Buffalo Ridge was originally constructed in 1959, is 33,040 gross square feet, and is located on a 7.53-acre site in Cheyenne, Wyoming. The building is configured as a K-4 and was at 73.3% capacity based on October 2023 enrollment data. The 5-year FCI for Buffalo Ridge was projected at 0.357 by 2028 based on the 2023 condition assessment data, as shown below in Figure 6: Ridge Elementary School FCI Analysis Graph. However, the building was renovated in 2022, and the District confirmed some of the needs identified in the 2023 assessment would be remedied through commissioning of mechanical systems and there were no other known, short-term needs. The District was confident they could manage conditions at Buffalo Ridge through application of major maintenance funds for the duration of this MCER study (through 2036).

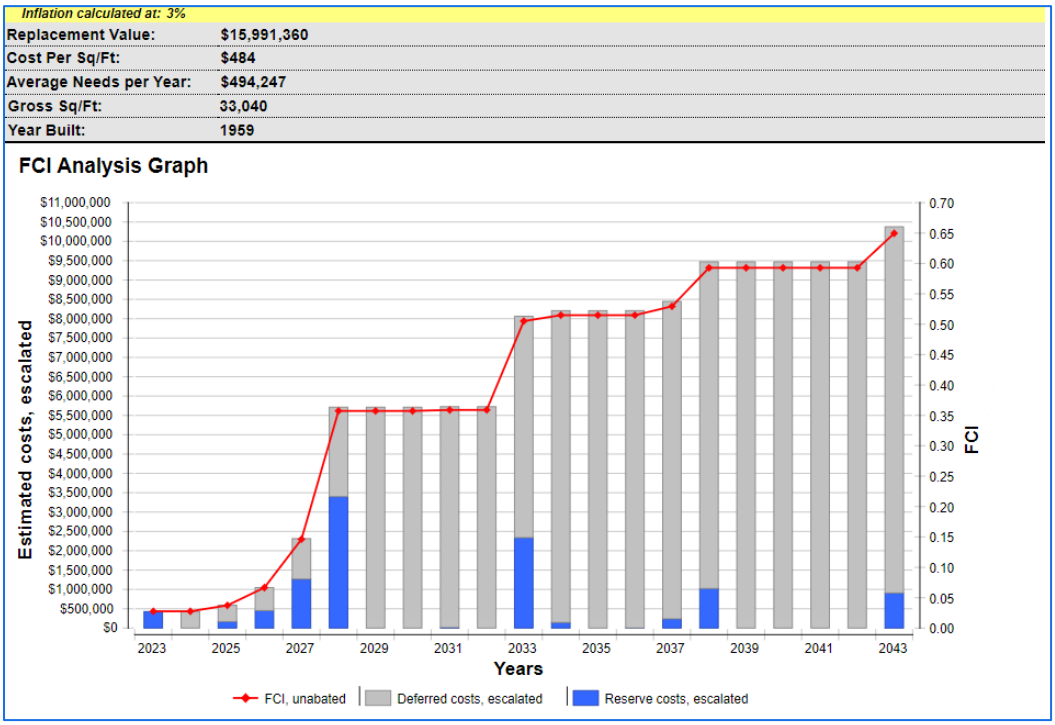


Figure 6: Buffalo Ridge Elementary School FCI Analysis Graph
Source: SFD 2023 FCI Analysis Report (assetworks.com)

- **Hobbs Elementary School** – Hobbs was originally constructed in 1959, is 41,708 gross square feet, and is located on a 9.22-acre site in Cheyenne, Wyoming. The building was configured as a K-6 and was at 98.7% capacity based on October 2023 enrollment data. However, the school was reconfigured as a K-4 for the 2024/25 school year with the opening of Coyote Ridge, which reduced the capacity to 67%. The 5-year FCI for Hobbs is projected at 0.464 in 2028 based on the 2023 condition assessment data, which is the same FCI projected over the period of 2028 to 2030, as shown below in Figure 7: Hobbs Elementary School FCI Analysis Graph. The MCER anticipates Hobbs being replaced in 2030. The District was confident they could manage conditions at Hobbs through application of major maintenance funds until the replacement school goes online. However, to the extent major maintenance can be deferred, there is potential for the District to manage up to $9.3M of cost avoidance over the 5-year period from 2024-2028 based on projections from the 2023 condition assessment data. This would allow any unused funds (due to avoidance) to be reallocated to other major maintenance needs across the District.

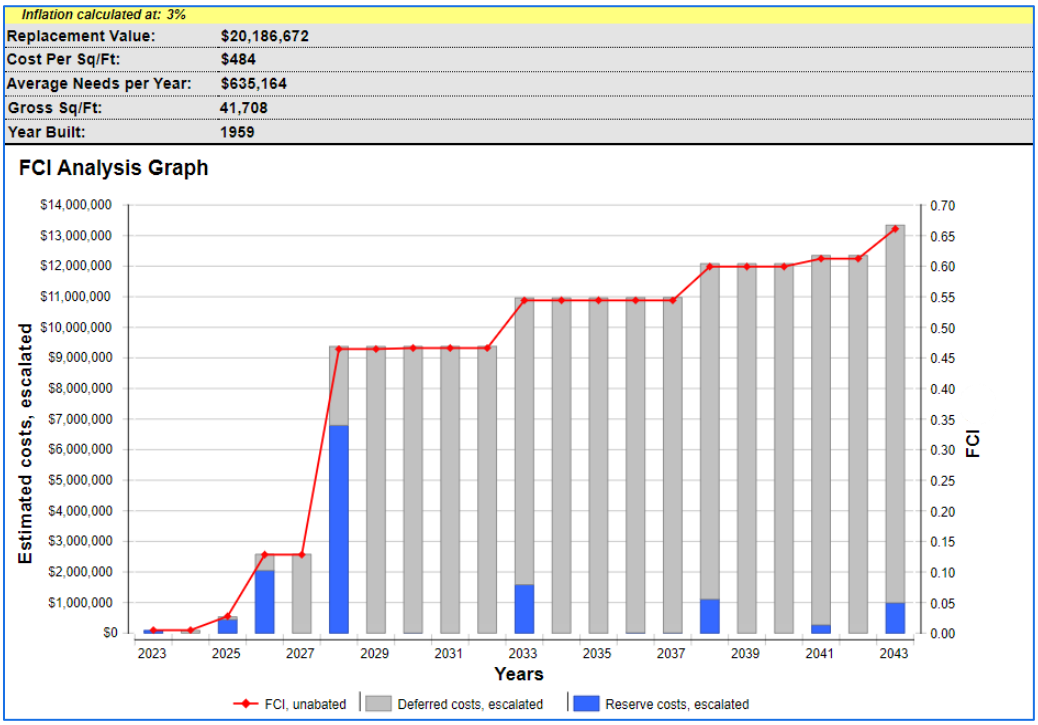


Figure 7: Hobbs Elementary School FCI Analysis Graph
Source: SFD 2023 FCI Analysis Report (assetworks.com)

- **Jessup Elementary School** – Jessup was originally constructed in 1961, is 31,710 gross square feet, and is located on a 5.5-acre site in Cheyenne, Wyoming. The building was configured as a K-6 and was at 83.1% capacity based on October 2023 enrollment data. However, the school has been reconfigured as a K-4 for the 2024/25 school year with the opening of Coyote Ridge, which reduced the capacity at Jessup to 48.4%. The 5-year FCI for Jessup is projected at 0.349 in 2028 based on the 2023 condition assessment data, as shown below in Figure 8: Jessup Elementary School FCI Analysis Graph. The MCER anticipates Jessup being taken offline in 2027, prior to significant major maintenance funds being expended. Taking Jessup offline before 2028 could result in a potential cost avoidance of up to $5.3M based on projections from the 2023 condition assessment data. This would allow any unused funds (due to avoidance) to be reallocated to other major maintenance needs across the District.

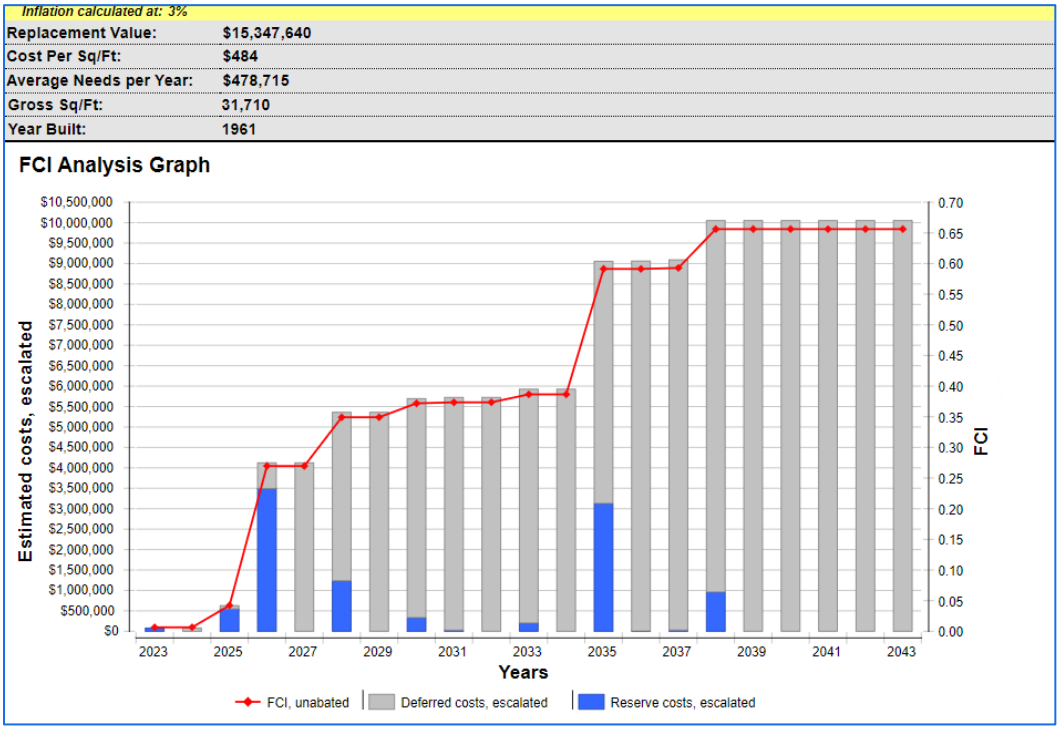


Figure 8: Jessup Elementary School FCI Analysis Graph
Source: SFD 2023 FCI Analysis Report (assetworks.com)

- **Miller Elementary School** – Miller was originally constructed in 1965, is 12,777 gross square feet, and is located on an 8.04-acre site in Cheyenne, Wyoming. The building is configured as a 4-6 and was at 71.9% capacity based on October 2023 enrollment data. The 5-year FCI for Miller is projected at 0.296 in 2028 based on the 2023 condition assessment data. However, the 10-year FCI is projected at 0.385, as shown below in Figure 9: Miller Elementary School FCI Analysis Graph. The MCER anticipates Miller being taken offline in 2025, prior to significant major maintenance funds being expended. Taking Miller offline prior to 2028 could result in a potential cost avoidance of up to $1.8M based on projections from the 2023 condition assessment data. This would allow any unused funds (due to avoidance) to be reallocated to other major maintenance needs across the District.

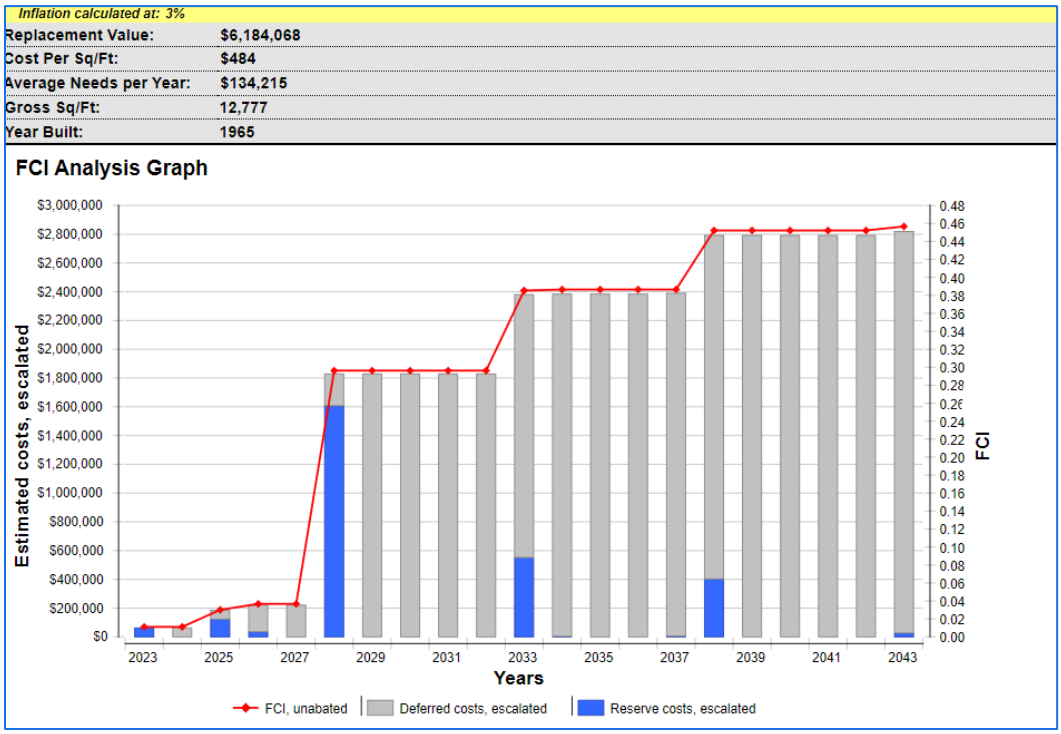


Figure 9: Miller Elementary School FCI Analysis Graph
Source: SFD 2023 FCI Analysis Report (assetworks.com)

5.3 Financial Analysis for Determination of MCER

The determination of the MCER is based on an analysis of the present value of costs over a 20-year period. A 20-year period was determined to be sufficiently long to allow capturing the impact of life cycle cost associated with the actions taken in the execution of a potential remedy.

The present value analysis considers the costs to the State over the analysis period (20 years). It includes the following:

1. First-time costs include the capital cost of new construction, replacement, or renovation. These are the capital costs requested in the SCD's proposed budget. If approved, these are the capital costs funded by the State. First-time costs are inflated to the year of planned construction as anticipated in each remedy. FEA engaged a third-party professional cost estimator to provide detailed cost estimates for anticipated capital construction activities. To estimate related site development costs, FEA developed test-fit site plans, which are attached in Appendix A06, Site Diagrams.
2. Future operational costs are based on the District's calculation of block grant funding as adjusted to reflect the execution of remedy actions. The District utilized the Wyoming Department of Education block grant funding model (and calculation tool) for these calculations. Future block grant funding is then substituted for current block grant funding when there is a change based on a remedy action. For example, if a school is constructed and students move between school, block grant funding will change based on the schools in service, the anticipated distribution of students to those schools, and the assumed ADM at each school based on student movements. For schools anticipated to be taken offline, those schools are assumed to receive no block grant funding once the school goes offline. For the purposes of this analysis, future ADM is based on projected enrollment.
3. Ongoing major maintenance costs are estimated by applying the State's methodology for calculation of annual major maintenance payments. The annual major maintenance payments are based on schools assumed to be in service in any given year as a remedy is executed, and the enrollment assumed for each of the schools in service. Allowable square footages (and resultant funding) are therefore adjusted as schools are introduced, modified (e.g., via addition), or removed from service.
4. Demolition costs are assumed for each school anticipated to be taken offline. Although the final disposition will be determined as the time to take a school offline approaches, the SCD indicated that demolition should be assumed for all buildings anticipated to be taken offline.

To calculate the present value of each remedy, the cashflows (costs at points in time) for each of the above costs are projected based on the timing of remedy actions and the schools in service at any point in time. The analysis was extended over a 20-year period to extend beyond the completion date of any construction forecast for any potential remedy and coincide with a common federal and State agency planning period. Cashflows are projected for every school, for

each cost type (first-time, ongoing operational, ongoing major maintenance, and demolition), for each year over the 20-year period. Each cashflow was inflated to the appropriate future year and then discounted back to present.

The inflation rate used for the present value analysis is 4.6%, which represents the annualized inflation rate from January 2006 to January 2024, based on U.S. Bureau of Labor Statistics (BLS), Producer Price Index data for new school building construction, not seasonally adjusted. This is represented in BLS data Series ID PCU236222236222; https://data.bls.gov/timeseries/pcu236222236222.

The discount factor used to discount future values back to present is 5.6%, which represents the annualized return over the last 10 years of the Common School Permanent Land Fund as provided by Wyoming State Treasurer's Office as of July 31, 2024. The ten-year rate was selected because the period is greater than the period between this study and the final year of funding allocation required to fund the activities in the proposed MCER.

In addition to the present value analysis, FEA considered both benefits and costs. Benefits were determined via the CBA process previously described, where the Advantage Scores for each remedy represent a quantification of benefit. The table below, Table 3: Advantage Scores, provides a summary of the present value analysis of the five potential remedies and the associated Advantage Scores. A table in Appendix A04, Present Value Analysis provides additional detail of the analysis.

POTENTIAL REMEDY	PRESENT VALUE	ADVANTAGE SCORE
1	$3,021,431,014	642
2	$3,022,138,963	788
3	$3,025,032,862	734
4	$3,011,287,064	788
5	$3,030,413,495	788

Table 3: Advantage Scores

6. Conclusion and Recommendations

6.1 Summary of MCER

Determining the MCER involved three distinct elements of work: the CBA workshop, the prioritization and scheduling workshop, and the financial analysis.

The establishing priorities workshop was a structured interactive workshop facilitated by FEA on August 27, 2024, at the offices of the SCD. The workshop included representatives from the District and the SFD. The workshop focused on analyzing the actions proposed for each remedy to determine an order of priorities in accomplishing the actions. Representatives from the District and the SFD collaborated in developing a priority-based approach for each potential remedy based on the seven schools with identified building need for the study, overlaying the District's priorities, prospective timing of funding, and other local economic factors.

The first step of this process utilized the outline of actions for each potential remedy from the CBA workshop. Each remedy was laid out using building blocks representing each school building, and placing the 'buildings' from left to right, in line, or groups, indicating what action could happen first with dependencies and projected milestones. After each potential remedy was laid out in order of priorities, a schedule was established with projected milestones relative to anticipated funding and local economic factors that should be considered. These local economic factors included concerns about having multiple major capital improvement projects underway at the same time and the ability to find qualified contractors to perform the work.

A hybrid potential remedy (Remedy 4) was developed after the three potential remedy concept schedules were established. The outcome of the CBA workshop and prioritization workshop identified Remedy 4 as the preferred remedy. Remedy 5 was considered as a variation of Remedy 4. Remedy 5 differs from Remedy 4 only in the configuration and size of two schools in the East Triad.

A financial analysis of the five potential remedies was completed next and produced a present value of the costs associated with each. Figure 10: Cost-Benefit Analysis illustrates the cost-benefit relationship of the five potential remedies. The sum of present values of the cashflows associated with each remedy action represents the cost of each potential remedy in the chart, and the CBA Advantage Score represents the benefit of each potential remedy. The MCER is deemed to be the remedy that provides the greatest benefit at the least cost. As indicated in Figure 10, Remedy 4 satisfies both—it is both the most advantageous of the potential remedies and the least cost.

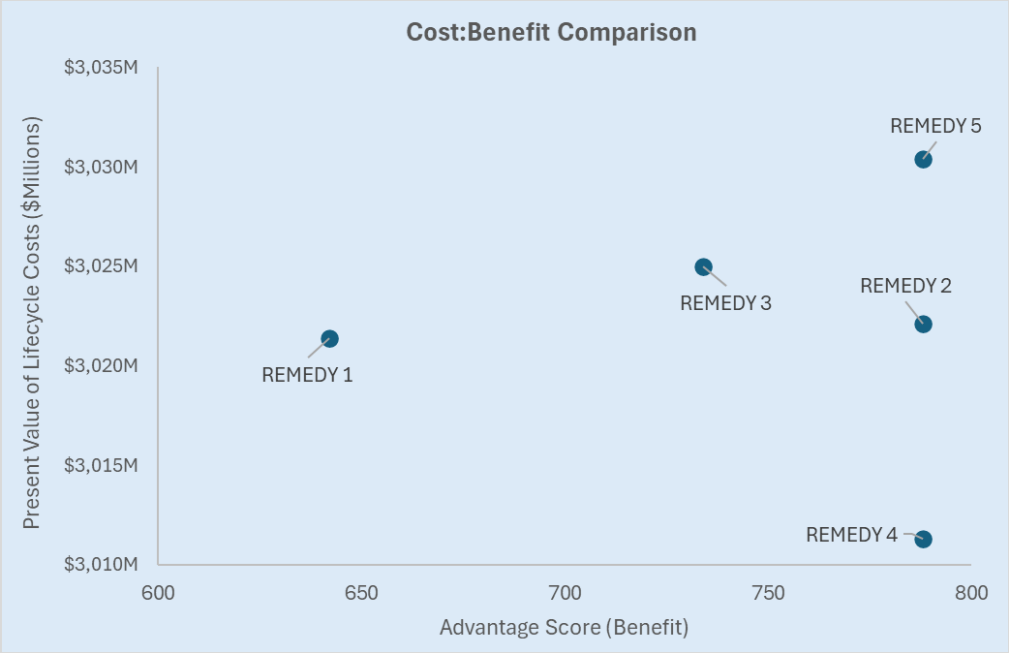


Figure 10: Cost-Benefit Analysis

The result of the two workshops allowed narrowing potential remedies through evaluation of feasibility, advantages, and costs. The financial analysis that followed **identified Remedy 4 as the Most Cost-Effective Remedy, or MCER.**

Figure 11: Most Cost-Effective Remedy Infographic represents a summary of the MCER (i.e., Remedy 4). Appendix A03, Most Cost-Effective Remedy (MCER) Details provides a detailed description of the MCER with justifications for how the remedy actions were prioritized.

PHASE 1 (2024-2030): Utilizes existing appropriated funding to make the most significant impact across the District and impacts the largest number of elementary schools. This Phase addresses six of the seven schools with identified building need for the MCER: Arp, Buffalo Ridge, Hobbs, Jessup, Miller, and Sunrise.

PHASE 2 (2031-2035): Requires future funding requests for design and construction. These requests have been planned to stagger projects to alleviate local economic factors, including concerns about having multiple major capital improvement projects underway at the same time and the ability to find qualified contractors to perform the work. This Phase addresses one of the seven schools with identified building need for the MCER: Saddle Ridge. While Saddle Ridge is currently shown as a capacity need, the District will manage this until the actions required for the East Triad can be implemented in Phase 2.

While school boundaries will be adjusted within Triads, no changes will occur across Triads or Districts. Upon completion of these actions, the condition and capacity needs will have been resolved, reducing the State's block grant and major maintenance (sustainment) costs and lowering the average age of District buildings by about 21 years. Details of timing of major activities, building needs associated with schools, timing of funding requests, modeled grade

configuration of each school, modeled enrollment by school, and modeled capacity by school are shown in Figure 11: Most Cost-Effective Remedy Infographic.

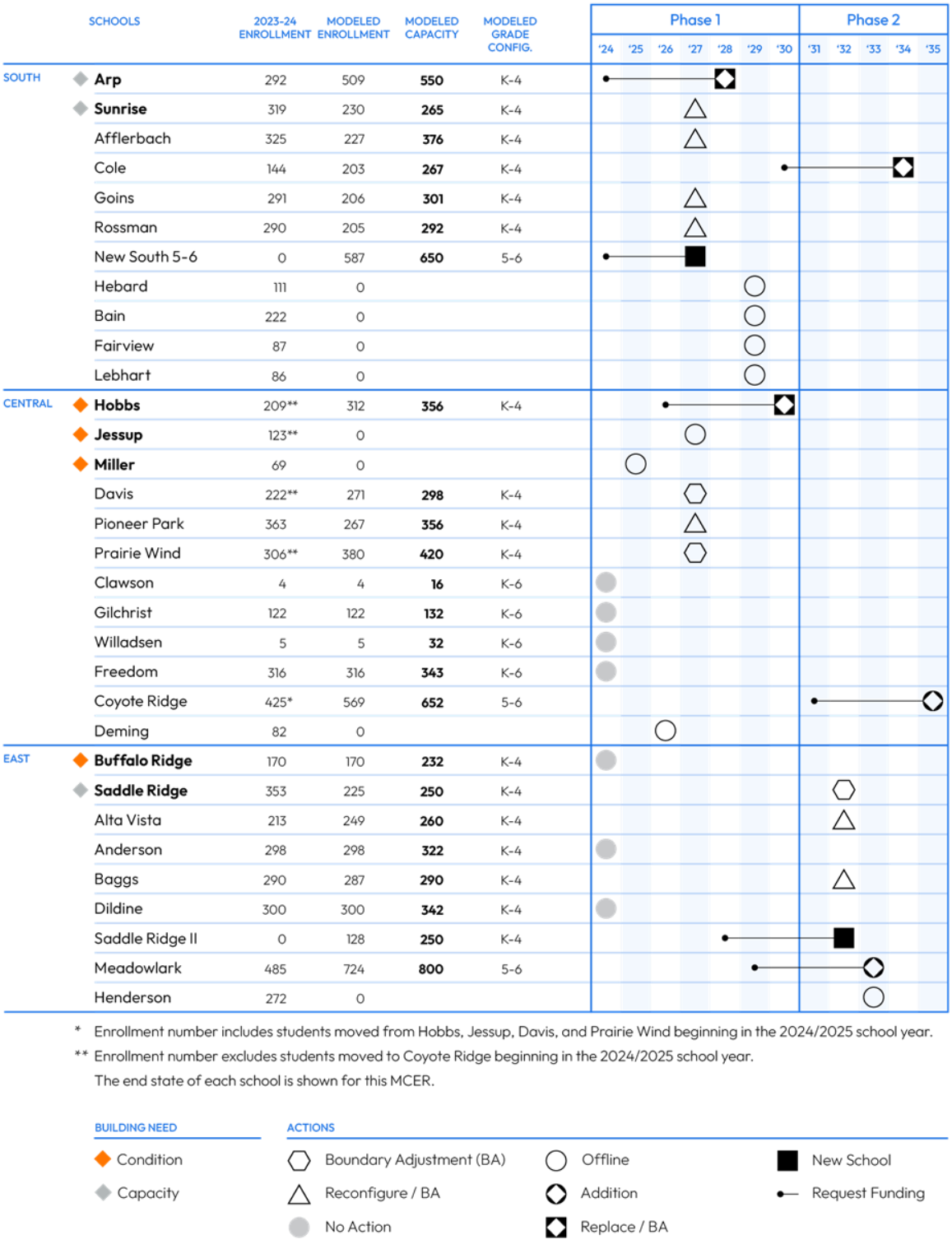


Figure 11: Most Cost-Effective Remedy Infographic

7. Appendices

A01 CBA Workshop Summary Report

A01.1 Introduction

Most Cost-Effective Remedy (MCER) studies are required on most public school facility projects that are funded by the State of Wyoming through the School Facilities Commission (SFC) and the School Facilities Division (SFD) of the State Construction Department (SCD). These studies are specifically for the purpose of identifying the most cost-effective method of remediation of school building and facility needs in order to deliver quality education and comply with statewide adequacy standards. These studies are ordered based on a facility condition index of 0.3 or higher, or a school capacity exceeding 100%, or other circumstances identified by SCD. The size and scope of these studies can vary widely depending on the issue and the potential remedies to explore. MCER studies focus on the solution to facility needs by examining, analyzing, and identifying the best way to provide the necessary functions in consideration of education and financial interests for the school districts and the State of Wyoming.

FEA's contract included a scope of work involving ten tasks to complete a typical MCER study. The choosing By Advantages (CBA) process aligns with *Task 7.0 – analysis of remedy option of the scope of work*. This MCER study is focused on Laramie County Schol District Number 1 (the District) Elementary Schools. The first phase of this MCER study involved broad identification of many potential remedies. FEA was tasked with studying seven elementary schools requiring remedies for condition (four schools) and capacity (three schools) needs. In addition, FEA was asked to consider the seven schools and their needs in the context of the whole district. To do so, FEA looked at:

- Remedies to address the individual needs of the seven specific schools only
- Remedies to address the individual needs of the seven specific schools while also considering the programmatic needs in a minimalistic approach across all schools throughout the District
- Remedies to address the individual needs of the seven specific schools while also considering the programmatic needs in a broader approach across all schools throughout the District
- Remedies to address the individual needs of the seven specific schools while also considering the longer-term district plan to transition to separate schools for grades K-4 and 5-6 throughout the District.

In addition to the eleven remedies developed by FEA, the District developed one remedy that was defined as right sized, modern school facilities that address district program needs, adequate capacity, and acceptable condition. The initial identification of potential remedies conducted by FEA, SCD, and the District defined six themes, with a total of 18 remedies, as

shown in Table 1(see Appendix A01, Appendix B – Details of Each Remedy for details on each remedy).

MCER	THEME		POTENTIAL REMEDY	
ES	1	Address Individual Sites Only	1a	Focus on Minimum Adequacy Requirements
ES	1	Address Individual Sites Only	1b	Upgrades for Current District Program Delivery
ES	2	Keep Current Mixed Configurations	2a	Focus on Non-Construction Alternatives to meet Minimum Adequacy Requirements
ES	2	Keep Current Mixed Configurations	2b	Upgrades for Current District Program, Keep Smaller Neighborhood Elementary Schools
ES	2	Keep Current Mixed Configurations	2c	Upgrades for Current District Program, Fewer Larger Elementary Schools
ES	3	Full 5-6 Implementation (Two 5-6 Schools per Triad)	3a	Focus on Non-Construction Alternatives to meet Minimum Adequacy Requirements
ES	3	Full 5-6 Implementation (Two 5-6 Schools per Triad; One Larger, One Smaller)	3b	Upgrades for Current District Program, Keep Smaller Neighborhood Elementary Schools
ES	3	Full 5-6 Implementation (Two 5-6 Schools per Triad; One Larger, One Smaller)	3c	Upgrades for Current District Program, Fewer Larger Elementary Schools
ES	4	Full 5-6 Implementation (One 5-6 School per Triad)	4a	Focus on Non-Construction Alternatives to meet Minimum Adequacy Requirements
ES	4	Full 5-6 Implementation (One 5-6 School per Triad)	4b	Upgrades for Current District Program, Keep Smaller Neighborhood Elementary Schools
ES	4	Full 5-6 Implementation (One 5-6 School per Triad)	4c	Construction, Tend to Fewer Larger Elementary Schools
ES	4	Full 5-6 Implementation (One 5-6 School per Triad)	LAR01	Right Sized, Modern School facilities that address District Program Needs, Adequate Capacity, and Acceptable Condition
ES	5	Full 4-6 Implementation (Two 4-6 Schools per Triad)	5a	Focus on Non-Construction Alternatives to meet Minimum Adequacy Requirements
ES	5	Full 4-6 Implementation (Two 4-6 Schools per Triad)	5b	Upgrades for Current District Program, Keep Smaller Neighborhood Elementary Schools
ES	5	Full 4-6 Implementation (Two 4-6 Schools per Triad)	5c	Upgrades for Current District Program, Fewer Larger Elementary Schools
ES	6	Eliminate 5-6 Schools, Transition Entirely to K-6	6a	Focus on Non-Construction Alternatives to meet Minimum Adequacy Requirements
ES	6	Eliminate 5-6 Schools, Transition Entirely to K-6	6b	Upgrades for Current District Program, Keep Smaller Neighborhood Elementary Schools
ES	6	Eliminate 5-6 Schools, Transition Entirely to K-6	6c	Upgrades for Current District Program, Fewer Larger Elementary Schools

Table 1 – Initial Potential Remedies

Initial Reduction of Remedies

The themes provided a structure for identifying and organizing various remedies that could potentially be evaluated further for each type of action needed for the remedy. Within each theme, remedies were categorized from less intervention to more intervention (typically *a* thru *c*) as part of the remedy.

Although the initial effort identified a lengthy list of possible remedies, initial review and discussion with District and SCD representatives allowed an initial reduction of the remedies. During the first phase of this study, the remedies were narrowed from 18 to 12 by analyzing the District's vision and education program goals through a series of meetings and presentations. Through this process, themes 5 and 6, as shown in Table 1 and their related remedies, were eliminated.

Theme 5 covered the potential transition to a K-3 & 4-6 grade configuration throughout the District. This theme was considered due to the similarities of the restricted capacity for grades K-3 (based on a 16:1 student-teacher ratio, or 50 square feet per student) versus the restricted capacity for grades 4-6 (based on a 25:1 student-teacher ratio, or 40 square feet per student). However, this theme fell short of the District's overall program goals and would be a step backward from the District's long-term vision of implementing the 5-6 grade configuration

throughout the District. Furthermore, this theme was deemed impractical as existing K-6 schools would need to be renovated to accommodate appropriate program needs and spaces of the reconfigured grade levels. For this reason, the remedies within Theme 5 were eliminated from further evaluation.

Theme 6 covered the elimination of the 5-6 configuration and transition to K-6 configuration throughout the District. This was considered due to the number of schools in the District already being a K-6 configuration, and the idea that it might be easier to transition all elementary schools to this grade configuration. However, this theme was also eliminated since eliminating the 5-6 grade configuration also falls short of the District's education program goals and would be a step backward from the District's long-term vision of implementing the 5-6 grade configuration throughout the District. As of the time of this study, the 5-6 configuration had already been implemented in the District's East Triad, where about two-thirds of the 5-6 students attend Meadowlark Elementary School. Many of the Central Triad 5-6 students were also scheduled to begin attending Coyote Ridge Elementary School in the upcoming 2024-2025 academic year. Eliminating the 5-6 configuration would also require significant renovation of the two 5-6 schools recently constructed (Meadowlark ES and Coyote Ridge ES) to accommodate the needs of the K-4 grade levels. It was also reported that standard test scores for this age group have risen with students at Meadowlark, and that students are transitioning better from the 5-6 school to the seventh grade (contained in the existing 7-8 junior high schools). Therefore, it was deemed more beneficial, and less disruptive to students, parents, and staff to extend the 5-6 configuration to the South Triad rather than eliminate the 5-6 configuration throughout the District. For this reason, the remedies within Theme 6 were eliminated from further evaluation.

This report presents a summary of the workshop conducted to determine the MCER for the Laramie County 01 Elementary School Study. The CBA workshop was conducted in Cheyenne, Wyoming from July 9th to July 11th, 2024. The workshop was facilitated by FEA, with District and SCD representatives participating. The full list of attendees can be found in the attendance sheet in Appendix A01, Appendix A – Attendance.

The workshop had three main objectives, which were to:

- Differentiate between the proposed remedies
- Compare remedies by focusing on the advantages, and
- Identify one or more remedies considered the most advantageous for final analysis

A01.2 Choosing by Advantages Process Overview

The CBA process is a structured decision-making methodology that focuses on evaluating options based on their advantages first and then evaluating the costs. A significant benefit of this process is the open and transparent decision-making process to document the most important factors when comparing remedies and the relative advantages of each remedy for each factor. Our workshop encouraged participation from everyone and allowed the group to reach consensus on the various items throughout the process. The process involved five main steps:

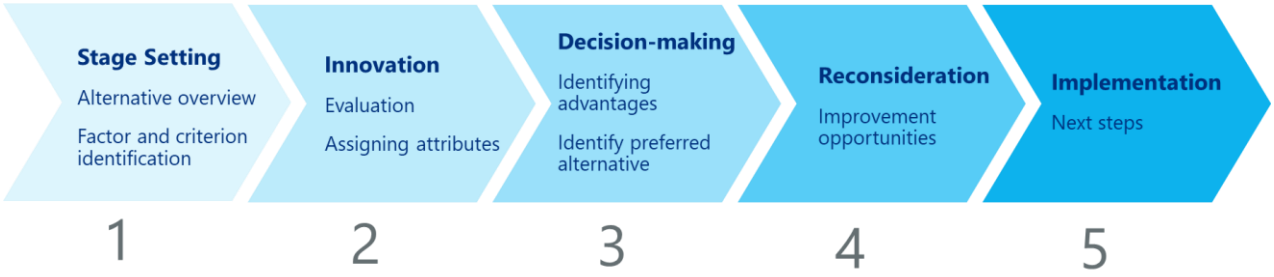


Figure 1 – Overview of CBA process

This method helped decision-makers objectively compare different remedies by highlighting the specific benefits of each one. By systematically prioritizing these advantages, the CBA aimed to ensure that the chosen remedy(s) provided the highest overall value and aligned with the stakeholders' goals and criteria.

During the stage setting step, after we introduced the workshop objectives and the MCER study objectives, a stakeholder analysis was conducted to facilitate a conversation around who would be affected by the outcomes of each remedy, and what interests each stakeholder would have. The final activity of the stage setting step was to identify the factors that would be used to analyze each remedy with and the criteria with which the factor would be judged.

The innovation step began on the second day of the workshop, which was devoted to evaluating each remedy, by assigning attributes for each of the agreed upon factors. This involved scoring each factor for each remedy to determine which remedy provided the greatest advantage.

The decision-making step began on the third day where we compared the advantages of the remedies against each other. The next step in the process was to rank the factors based on their level of importance and to assign each factor an importance value from 1 to 100. With all the information collected, an advantage score could be calculated for each remedy. Finally, rough order of magnitude cost estimates were introduced to compare costs to benefits.

After reviewing the advantage scores and cost estimates, the reconsideration stage allowed for additional discussion on remedies, opportunities for improvement within remedies, and next steps.

A01.3 Stakeholder Analysis

Stakeholder analysis is a process of identifying people or groups that a project will impact and identifying what their interests are related to the project. These interests could include how a project impacts them, what their desired outcomes are, and their desired features of a project. A brainstorming session was held during the workshop to develop a stakeholder list and what the impacts might be on the identified stakeholders. The group generated the following list of stakeholders with possible considerations of factors expected to be important to each stakeholder:

- **Students** – Safety / environment / playgrounds / staying with current friend group
- **Parents** – Location / neighborhood / safety / Environment / Parking / Environment / Quality of Education / Performance / Teachers or Staff / Necessities (meals and other aspects)
- **Citizens/Community** – Change in traffic patterns / cost / economic impacts / safety or security / Appearance of School / character of building / Equity between triads / Equity across the state
- **Teachers/Other with certifications** – Environment / different learning environments / technology / ability to have diverse teaching spaces / Comfort / Class size / parking / access / location / RR / safety or security
- **Support Staff (maintenance, etc.)/District** – Modernization of buildings / Ease of Maintenance / Quantity of Staff / Quality of Staff / Cost / Ease of tracking costs / Nutrition / Space allocation / Safety and security / ability to attract teachers
- **Principals / Admin Staff** - Environment / different learning environments / technology / ability to have diverse teaching spaces / Comfort / Class size / parking / access / location / RR / safety or security / Line of sight / ease of hiring staff / Modernization / Support functions locations / Functionality / Ease of operations / Cost – funding for staff / EIP space allocation / retention and recurrent of staff
- **Board of trustees** – Equity / stakeholders / modernization and new schools / adjust to new teach trends / serve constituents within budget constraints
- **Statewide Community** – Equity across the state / value / program sustainability / efficiency of operations / cost / availability of funds
- **Legislators** - Equity across the state / value / program sustainability / efficiency of operations / cost / availability of funds / serve constituents or stakeholders / balance over and underfunding / revenue and expenditure balance / ROI (return on investment) / Policies / Maintain local control while meeting statewide standards / comparison to rest of the nation / where do we rank in capacity and condition comparted to national averages
- **Superintendent** – Ease of operations / recruitment of new teachers / programing / test scores, college placement (performance) / Cost or budget / resource management /

facility maintenance / Like principals in some ways / WDE standards / meeting expectation from staff and community

- **School Commission/School Facilities (SCD)** – Condition / Capacity / suitability / Equity statewide / Budget / Like legislators or superintendents / Major maintenance / policies at statewide level / safety and security / Modernization / life cycle cost / tracking data / reporting requirements / funding
- **Wyoming Department of Education (WDE)** – Block grants / teaching standards / delivering education programs / can building meet required curriculum / Ability to meet requirements / equity / can district meet state standards / what is national standards
- **Local government** – where is school / impacts on infrastructure / availability of local utilities to meet demand by new schools / economic impacts / safety or security / work staff / impacts on local community from increase population to do work / AHJ
- **Emergency Personal (Police, Fire, First Responders)** – Location / Access / Safety / Distance / Building Code / Construction
- **PTA/Groups** – Triad / School location / Legacy / School Quality / Safety / Comfortable body text This information was taken and used to create a word cloud as shown in Figure 2 below. This graphic shows the prominence of the words that were most common in the stakeholder perspective list. The most prevalent words were safety, staff, cost, equity, security, ability, environment, standards, modernization, and location. The attendees were reminded of the stakeholder list and interests throughout the workshop.

Figure 2 – Word cloud of stakeholder interests

A01.4 Summary of Remedies

During the first day of the workshop, the themes and potential remedies were reviewed to ensure that all participants understood what was being proposed. Four themes, with a total of 12 potential remedies, were discussed during the workshop as shown in Table 2.

MCER	THEME		POTENTIAL REMEDY	
ES	1	Address Individual Sites Only	1a	Focus on Minimum Adequacy Requirements
ES	1	Address Individual Sites Only	1b	Upgrades for Current District Program Delivery
ES	2	Keep Current Mixed Configurations	2a	Focus on Non-Construction Alternatives to meet Minimum Adequacy Requirements
ES	2	Keep Current Mixed Configurations	2b	Upgrades for Current District Program, Keep Smaller Neighborhood Elementary Schools
ES	2	Keep Current Mixed Configurations	2c	Upgrades for Current District Program, Fewer Larger Elementary Schools
ES	3	Full 5-6 Implementation (Two 5-6 Schools per Triad)	3a	Focus on Non-Construction Alternatives to meet Minimum Adequacy Requirements
ES	3	Full 5-6 Implementation (Two 5-6 Schools per Triad; One Larger, One Smaller)	3b	Upgrades for Current District Program, Keep Smaller Neighborhood Elementary Schools
ES	3	Full 5-6 Implementation (Two 5-6 Schools per Triad; One Larger, One Smaller)	3c	Upgrades for Current District Program, Fewer Larger Elementary Schools
ES	4	Full 5-6 Implementation (One 5-6 School per Triad)	4a	Focus on Non-Construction Alternatives to meet Minimum Adequacy Requirements
ES	4	Full 5-6 Implementation (One 5-6 School per Triad)	4b	Upgrades for Current District Program, Keep Smaller Neighborhood Elementary Schools
ES	4	Full 5-6 Implementation (One 5-6 School per Triad)	4c	Construction, Tend to Fewer Larger Elementary Schools
ES	4	Full 5-6 Implementation (One 5-6 School per Triad)	LAR01	Right Sized, Modern School facilities that address District Program Needs, Adequate Capacity, and Acceptable Condition

Table 2 – Potential Remedies at Start of Workshop

Each theme included multiple remedies with different areas of focus. In Themes 2 through 4, the "a" remedies focused on meeting minimum adequacy requirements; the "b" remedies focused on maintaining smaller neighborhood schools; and the "c" remedies focused on providing fewer, larger schools. This identification of different areas of focus was intentional to generate open and transparent thoughts and conversations for the MCER study.

Initial evaluation was performed for the following potential remedies:

- 1a – 7 elementary schools with focus on adequacy standards
- 1b – 7 elementary schools with upgrades for current district programs
- 2a – 30 elementary schools with non-construction with current configurations and minimum adequacy requirements
- 2b – 30 elementary schools with upgrades to district program with current configurations and smaller neighborhood elementary schools
- 2c – 30 elementary schools with upgrades to district program with current configuration and fewer neighborhood elementary schools
- 3a – 32 school with non-construction with minimum adequacy standards and two 5-6 schools per triad
- 3b – 34 schools with upgrades to district program with two 5-6 schools per triad and smaller neighborhood elementary schools
- 3c – 34 schools with upgrades to district program with two 5-6 schools per triad and fewer larger neighborhood elementary schools

- 4a – 30 schools with non-construction with minimum adequacy standards and one 5-6 school per triad
- 4b - 31 schools with upgrades to district program with one 5-6 school per triad and smaller neighborhoods elementary schools
- 4c – 31 elementary schools with upgrades to district program with one 5-6 school per triad and fewer larger neighborhood elementary schools
- LAR01 – 30 elementary schools from information provided by the District on 4.12.2024

Refinement of Remedies

An analysis conducted by FEA revealed the outcomes of several remedies were similar in nature. FEA reviewed an initial set of criteria as shown in Table 3 to analyze the remedies for how well the outcomes addressed the criteria. The degree to which the criteria would be addressed ranged from "fully address," shown with a darker blue, to "won't address," shown with the lightest blue (see Figure 3). The progression of darker to lighter is a simple method of graphically displaying the results of the analysis.

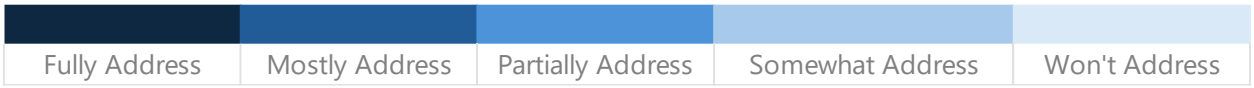


Figure 3 – Color coding analysis results

This high-level view allowed for a conclusion that the areas of focus for remedies a, b, and c resulted in identical outcomes across Themes 2, 3, and 4. Participants agreed to focus on fewer remedies based on the overlapping results. Even though 1a and 1b had results limited to either "somewhat address" and "won't address," these remedies were chosen for further evaluation because they specifically focused on the individual schools that triggered the capacity or condition for a MCER study. Table 3 summarizes the refinement analysis.

	Potential Remedy											
	1A	1B	2A	3A	4A	2B	3B	4B	2C	3C	4C	LAR01
CRITERIA												
Adequacy Standards												
Condition												
Capacity												
Property Restrictions												
Program Delivery												
Critical Special Programs												
Transportation												
Summary												

Table 3 – Refinement analysis results

This process allowed the group to conclude that 4 of the potential remedies (2a, 2b, 3a, and 3b) should not be fully analyzed. Remedy 3c was also removed from further analysis because it did not align with the District's stated vision and goals.

Based on the analysis offered by FEA, with feedback from the SCD and the District, concurrence was reached to include the remedies that met the minimum requirements set forward by the MCER (1a and 1b), the remedies that provided a broad range of solutions (4a, 4b, 2c and 4c), and the District-identified remedy (LAR01). This analysis resulted in seven potential remedies to be analyzed through the full CBA process.

A01.5 Defining Factors

The next step in the CBA workshop was to define the factors that would be used to evaluate the advantages of the remedies. The process required the group's concurrence for each factor to be included. The workshop participants brainstormed factors and came to consensus that the 14 factors summarized in Table 4 would be used for the evaluation.

Factor	Definition	Measurement	Criteria
Security	The ability to provide a more secure learning environment	Improvement in security	More improvement is better
Site Improvements	The ability to meet requirements related to certain site features	Degree meets site requirements	Higher is better
Accessibility	The ability to meet the ADA and provide an accessible learning environment	Degree in addressing	Higher is better
Building Code	The ability to bring buildings into compliance with modern building codes	Advancement toward current code	Higher is better
Space Adequacy & Utilization	The ability to provide adequate education space	Degree in addressing	Higher is better
Program Disruption	The degree to which a remedy will cause disruptions to the learning environment	Degree in disruption	Less is better
Student Environment	The ability to improve learning environment and conditions for students	Improvement in condition	More is better
Condition	The ability to improve district wide building condition	Improvement in condition	More is better
Special Needs Students	The ability to provide accommodations for special needs students	Ability to meet accommodations	More is better
Grade Configuration	The ability to address the District's grade configuration policy	Addressing Strategy	Yes is better
Boundary Adjustment & Transportation	Whether or not the remedy required a boundary change that is capacity driven	Capacity driven Boundary Change	No is better
Operational Efficiency	Whether or not the remedy increases or decreases the total number of schools within the District	Number of Schools	Fewer is better
Capacity	Whether or not the remedy provides that most schools are near 90% capacity	90% capacity	Closest to 90% is best
Modernization	To what degree does the remedy provide for a modernized educational environment with improved technology.	% of SF	Higher is better

Table 4 – Factors information

The factors reflect elements of the remedies where there are performance differences that are important for the decision on the remedies. Participants identified attributes—the defining characteristics, qualities, or consequences—of each factor, and the measurement that would be used for each of the attributes. The group also determined the criteria for each to describe how the attribute would be judged. Extensive discussion took place regarding each factor's measurement in order to understand its impact on the decision-making process.

A01.6 Evaluation of the Remedies

Remedy evaluation relied on group consensus to define the scoring values and apply scoring to the type of action (see *Factor Scoring* below) within each remedy. Evaluating each action per school within the remedies for each factor via group consensus provided transparency for the decision-making process.

Factor Scoring

The evaluation process involved the group reaching consensus on what values to assign to each factor for each remedy. For nine of the factors, a scoring system was agreed to. Scores were applied based on the outcomes of the remedies. Table 5 summarizes the outcomes that are part of the remedies.

Outcome (Action)	Definition
No Action	No change associated
Disposal	Remove building from inventory funded by the state
Boundary Adjustment	Attendance boundary change
Space Improvements	Refresh building finishes
Full Renovation	Change building layout, replacement of building systems
Addition	Add building area by increase the overall square footage
Reconfiguration	Change of grade assignment at the school
Replacement	Entire demolition and replacement of the school
New Construction	New building on a new site

Table 5 – Actions and definitions

At this stage of the process, nine of the factors were assigned numerical scores aligning with the factor criteria. Table 6 summarizes the numerical scoring process. To emphasize the importance of this decision-making process, the attribute values for all factors and actions were developed through group consensus.

Factor	Security	Site Improvements	Accessibility	Building Code	Space Adequacy & Utilization	Program Disruption	Student Environment	Condition	Special Needs Students
Measurement	Improvement in Security	Degree Meets Site Requirements	Degree in Addressing	Advancement Toward Current Code	Degree in Addressing	Level of Disruption	Improvement in Comfort	Improvement in Condition	Ability to meet Accommodations
Criteria	Higher is better	Higher is better	Higher is better	Higher is better	Higher is better	Lower is better	More is better	More is better	More is better
Type of Action									
No Action	0	0	0	0	0	0	0	0	0
Disposal	0	0	0	0	0	0	0	2	0
Boundary Adjustment	0	0	0	0	0	2	0	0	0.5
Space Improvements	0	0	0.5	0.5	1	1	1	1	1.5
Full Renovation	1	0	1.5	1.5	1	3	1.5	1.5	1.5
Addition	0.5	0	0	0.5	0.5	1	1	1	1
Reconfiguration	0	0	0	0	0	0	0	0	0
Replacement	2	2	2	2	2	Range (0-3)	2	2	2
New Construction	2	2	2	2	2	0	2	2	2

Table 6 – Numerical scoring to assign attributes

The remaining five factors (Table 7) were evaluated based on the outcomes of the entire remedy versus evaluating each school's impact. For example, the operational efficiency was based on the number of schools remaining with the remedy. And the fewer number of schools remaining with the remedy was better as it implied fewer schools would require fewer resources to operate.

Factor	Grade Configuration	Boundary Adjustment & Transportation	Operational Efficiency	Modernization	Capacity
Measurement	Addressing strategy	Capacity driven boundary change	Number of schools	% of SF	90% capacity
Criteria	Yes is better	No is better	Fewer is better	Higher is better	Closest to 90 is best

Table 7 – Criteria for assigning attributes

The CBA process produced over 2,000 data points that were assigned by consensus and aggregated for evaluation. Table 8 summarizes the attributes for each factor for each remedy based on the scoring.

	Assigned Attributes						
	Remedy 1a	Remedy 1b	Remedy 4a	Remedy 4b	Remedy 2c	Remedy 4c	Remedy LAR01
Description	1	2	3	4	5	6	7
Security	5.5	9.0	4.5	15.0	11.0	14.5	13.0
Site Improvements	0.0	6.0	0.0	12.0	8.0	10.0	10.0
Accessibility	6.0	9.0	4.5	15.5	11.0	13.5	11.5
Building Code	7.5	10.5	6.0	16.5	12.0	16.0	13.0
Space Adequacy & Utilization	5.5	9.5	4.5	15.5	11.0	15.5	12.5
Program Disruption	15.0	13.0	18.0	25.0	17.0	24.0	15.0
Student Environment	9.0	12.0	7.5	17.5	13.0	19.0	15.5
Condition	9.0	12.0	15.5	23.5	27.0	33.0	29.5
Special Needs Students	9.0	12.0	17.0	26.0	28.0	35.0	31.0
Grade Configuration	0	0	0	1	0	1	1
Boundary Adjustment & Transportation	1	1	0	0	1	1	1
Operational Efficiency	30	30	26	28	24	24	25
Capacity	82.0%	82.0%	79.0%	79.4%	88.0%	83.5%	84.3%
Modernization (technology)	22.0%	23.0%	33.0%	45.0%	28.0%	58.0%	44.0%

Table 8– Assigned attributes

Relative Advantages

At this point in the CBA process, the relative advantages were determined for each factor. The first step was to find the lowest value for each factor for each of the remedies. The next step in the process is to determine the advantage of each remedy relative to the other remedies. To do

this, the group identified the difference between each of the other advantage scores and the lowest value, providing the relative advantage of each to the lowest value. The relative advantages for each factor are summarized in Table 9.

Using the security factor as an example, the relative advantage is shown in the following table. The difference between Remedy 1a and Remedy 4a is 1.0, and the difference between Remedy 4c and Remedy 4a is 11.0. Across the line for security the values for the differences are recorded and the highest relative advantage is highlighted green, and the lowest relative advantage is highlighted red.

	Relative Advantages						
	Remedy 1a	Remedy 1b	Remedy 4a	Remedy 4b	Remedy 2c	Remedy 4c	Remedy LAR01
Description	1	2	3	4	5	6	7
Security	1.0	4.5	0.0	10.5	6.5	10.0	8.5
Site Improvements	0.0	6.0	0.0	12.0	8.0	10.0	10.0
Accessibility	1.5	4.5	0.0	11.0	6.5	9.0	7.0
Building Code	1.5	4.5	0.0	10.5	6.0	10.0	7.0
Space Adequacy & Utilization	1.0	5.0	0.0	11.0	6.5	11.0	8.0
Program Disruption	2.0	0.0	5.0	12.0	4.0	11.0	2.0
Student Environment	1.5	4.5	0.0	10.0	5.5	11.5	8.0
Condition	0.0	3.0	6.5	14.5	18.0	24.0	20.5
Special Needs Students	0.0	3.0	8.0	17.0	19.0	26.0	22.0
Grade Configuration	0.0	0.0	0.0	1.0	0.0	1.0	1.0
Boundary Adjustment & Transportation	1.0	1.0	0.0	0.0	1.0	1.0	1.0
Operational Efficiency	6.0	6.0	2.0	4.0	0.0	0.0	1.0
Capacity	8.00%	8.00%	11.00%	10.65%	2.00%	6.55%	5.73%
Modernization (technology)	0%	1%	11%	23%	6%	36%	22%

Table 9 – Relative Advantages

Advantage Importance Score

The paramount advantage, the advantage that has the most importance, was determined by consensus of the group. In making this determination, the group considered the reason for the studies, the magnitude of the advantage, and the magnitude of the associated attributes. This effort began with ranking the factors, keeping the advantages in mind, in order of importance from 1 (highest) to 14 (lowest). A weight of 100 was assigned to the highest-ranking factor, which also established the paramount advantage. No other factor can have more weight than the paramount advantage. A consensus was reached for the advantage in the space adequacy & utilization factor to be the paramount advantage. This is summarized in Table 10.

This step in the CBA process establishes the importance of the advantages and weighs all advantages. This process was highly transparent and informative for all participants. Although reaching consensus did take thorough discussions, participants agreed the final weights and relative importance were appropriate and justifiable.

Factor	Importance Score
Security	20
Site Improvements	55

Factor	Importance Score
Accessibility	34
Building Code	30
Space Adequacy & Utilization	100
Program Disruption	15
Student Environment	80
Condition	99
Special Needs Students	90
Grade Configuration	90
Boundary Adjustment & Transportation	50
Operational Efficiency	85
Capacity	99
Modernization (technology)	93

Table 10 – Importance score

Review of Advantages

The final step of determining the benefits for remedies is summarized in Table 11. Potential remedy 4c was determined during the workshop to provide the most overall advantage and potential remedy 4a to provide the least overall advantage. This outcome highlighted that the remedies that focused on fewer larger elementary schools provided highest overall advantage while the non-construction focus provided the lowest overall advantage. These results helped inform the CBA process when reviewing the overall scores.

		Weighted Advantage Scoring						
		Remedy. 1a	Remedy 1b	Remedy 4a	Remedy 4b	Remedy 2c	Remedy 4c	Remedy LAR01
Description	Importance	1	2	3	4	5	6	7
Security	20	1.82	8.18	0.00	19.09	11.82	20.00	17.27
Site Improvements	55	0.00	27.50	0.00	55.00	36.67	45.83	45.83
Accessibility	34	4.86	14.57	0.00	34.00	21.05	32.38	27.52
Building Code	30	4.29	12.86	0.00	28.57	17.14	30.00	25.71
Space Adequacy & Utilization	100	9.52	47.62	0.00	100.00	61.90	100.00	90.48
Program Disruption	15	2.50	0.00	6.25	15.00	5.00	12.50	7.50
Student Environment	80	10.91	32.73	0.00	69.09	40.00	80.00	76.36
Condition	99	0.00	12.64	27.38	58.98	75.83	99.00	96.89
Special Needs Students	90	0.00	10.80	28.80	55.80	68.40	90.00	88.20
Grade Configuration	90	0.00	0.00	0.00	90.00	0.00	90.00	90.00
Boundary Adjustment & Transportation	50	50.00	50.00	0.00	0.00	50.00	50.00	50.00
Operational Efficiency	85	85.00	85.00	28.33	56.67	0.00	0.00	14.17
Capacity	99	41.16	41.16	9.07	0.00	99.00	45.16	47.40
Modernization (technology)	93	0.00	2.58	28.42	59.42	15.50	93.00	56.83
Relative Benefit = Sum of Advantage Scores		210.05	345.64	128.25	641.62	502.31	787.87	734.18

Table 11 – Weighted Advantage Scoring

Another consideration was to proceed with the single remedy with the overall highest benefit (Remedy 4c) and not proceed with the other remedies with the next highest overall benefit scores (Remedies LAR01 and 4b). However, it was agreed that discontinuing the evaluation of Remedy LAR01 and Remedy 4b without comparing costs would be premature.

Cost Evaluation

The cost evaluation started by developing rough order of magnitude (ROM) cost estimates for each remedy. The ROM cost estimates focused on anticipated construction activities that might be associated with an action assigned to a school for each remedy. Some remedies involved more actions than others, and as a reminder, the (a) remedies were focused on non-construction activities. With that focus, ROM cost estimates for (a) remedies were expected to be lower. Conversely, compared to the (a) remedies, the (c) remedies involved a higher amount of construction activities and thus were expected to have higher ROM cost estimates.

Assumptions made for cost evaluation included:

- ROM dollar-per-square-foot ($/SF) costs for anticipated activities applied to the affected building area;
- the costs only included direct cost of construction and did not include design fees, permit fees, swing space, construction observation, commissioning, purchase of land, purchase and installation of furniture fixtures and equipment (FF&E), or life cycle costs;
- if a mixture of actions (addition and renovation) was anticipated, the $/SF for each activity was based on the type of action and the affected area (SF) and not a single, combined cost for all actions; and
- ROM costs were based on the activities occurring in the 2nd quarter of 2024 without inflation to a projected timeline.

Table 12 shows the ROM cost estimates for each remedy.

	Remedy 1a	Remedy 1b	Remedy 4a	Remedy 4b	Remedy 2c	Remedy 4c	Remedy LAR01
Cost	$66,000,000	$88,000,000	$106,000,000	$238,000,000	$128,000,000	$248,000,000	$228,000,000

Table 12 – Rough order of Magnitude Cost Summary

Comparison of Advantage to Cost

An important principle of the CBA process is that advantages are scored first, and those scores are independent of cost. This is to allow the identification of the most advantageous solution(s) without the influence of cost. Costs are then introduced and compared to benefits (advantages). At this stage, costs included were first-time, capital costs (e.g., construction, renovation, demolition) only. Life cycle costs will be introduced later in the study.

When charting the costs vs. benefits, a clear distinction for 4b, 4c, and LAR01 was apparent, with those remedies having significantly higher advantages. In other words, these are the remedies that best meet the MCER project needs, most fully satisfy the decision factors identified by the CBA participants and are designed to address the long-term objectives of the stakeholders. As expected, higher costs were associated with higher advantages.

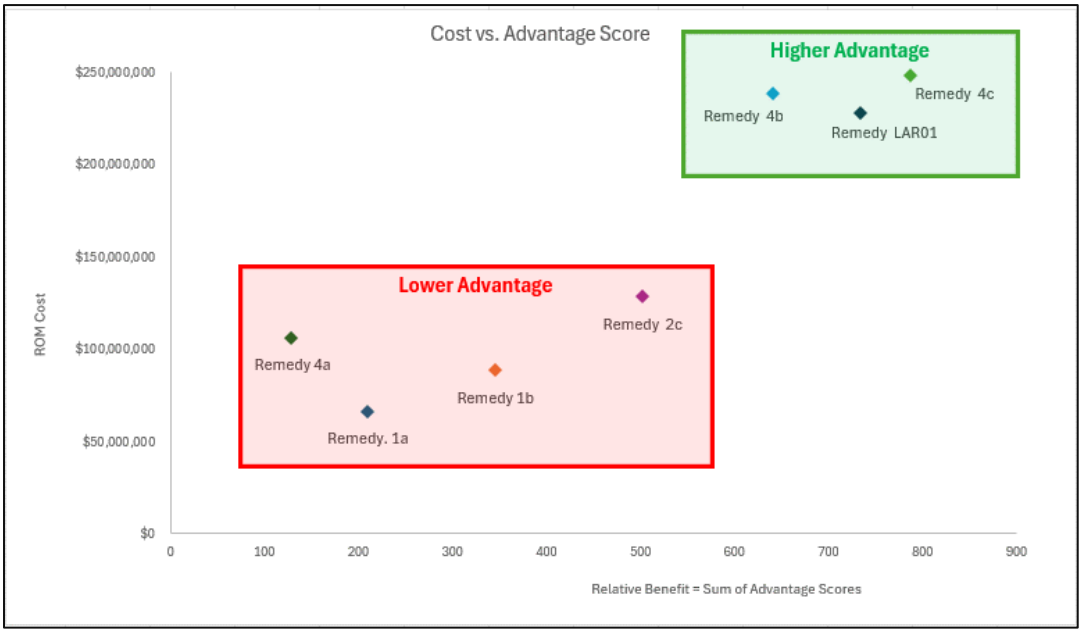


Figure 4 – Benefit vs. Cost

Potential remedies1a, 1b, 2c, and 4a provided much lower advantage at a much lower initial cost. However, this was based on looking at each remedy independently and as determined in the CBA workshop.

Next steps

The remedies with the higher advantage more closely align with the direction to address the district-wide education program. The CBA workshop participants were able to reach consensus that the three remedies with the highest advantages are close enough together that all three should be evaluated further. The comparison informs us about the next steps needed and where refinement for remedy needs to be made. With the long-term strategy of delivering quality education for students, the CBA process allowed the group to come to consensus on relative advantages and identify potential remedies that address buildings' adequacy, condition, and capacity.

The three potential remedies chosen for further analysis (4b, 4c, LAR01) will be further analyzed in the next step. This involves performing site visits to verify room-by-room type and use for each building, and develop the scope of work for renovations, replacements, additions, new construction, and replacement of buildings. Observations will be recorded about specific condition and capacity needs at the buildings included in each remedy in order to include the appropriate activities to address those needs in the anticipated scopes of work.

Complete cost estimates will be developed for each school where construction activities are anticipated for each remedy. The cost estimates are intended to include the scope of work required to meet the needs identified for each building in order to provide a turnkey building and site, including design, permitting, inspection and testing services, swing space, demolition, construction, and FF&E allowance.

Sequencing and timing accompanying each building's action will be outlined in cooperation with the SCD and district, with FEA facilitating discussion. This will allow for the estimation of inflated construction costs as well as life cycle costs. It was acknowledged that this process might identify the MCER as a hybrid of the three potential remedies identified by this CBA process. If that is the case, the hybrid remedy scope and cost will be defined and developed for presentation to SCD.

Through this process, the determination of the MCER will be provided at the end of the next phase of the study.

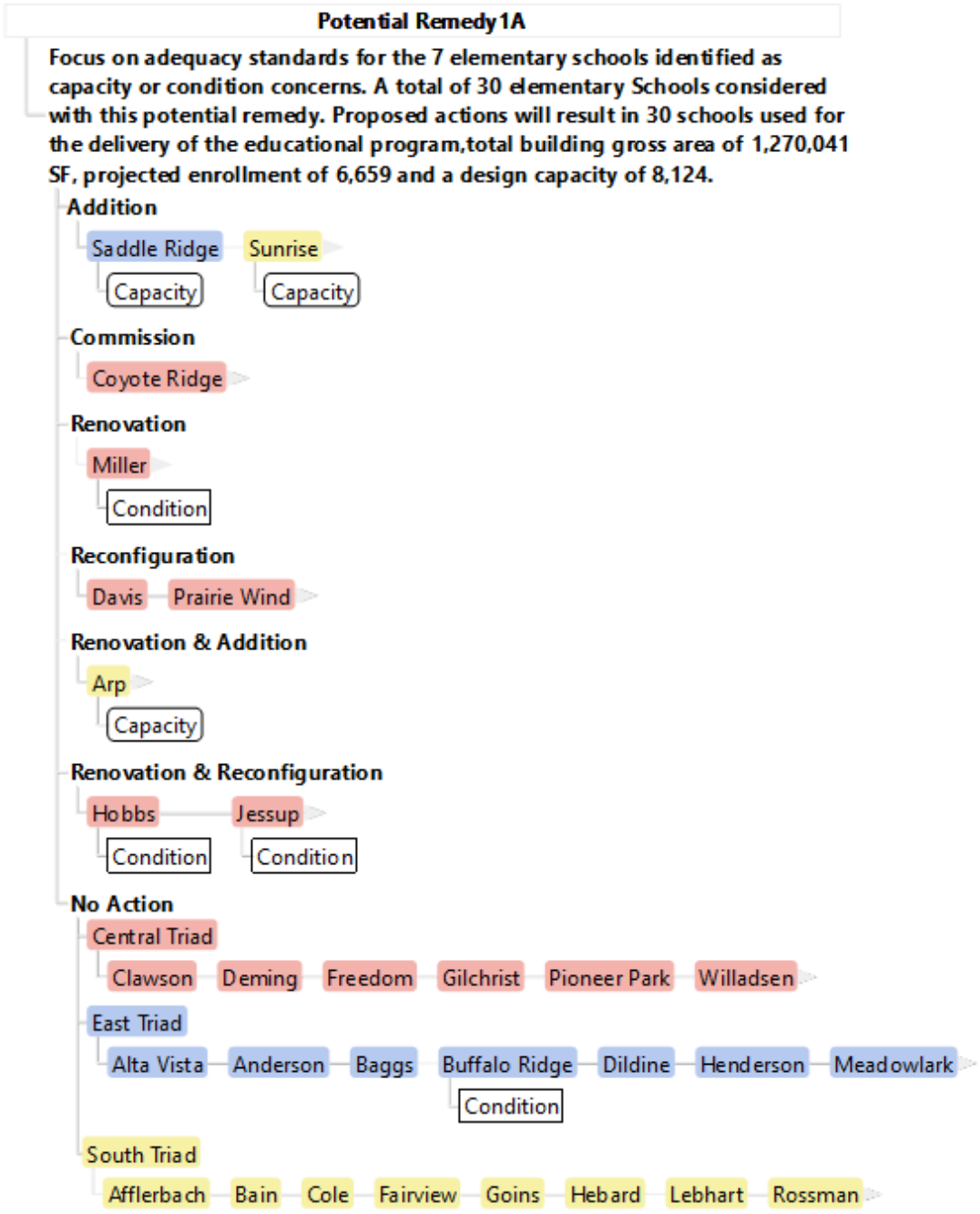
A01 - Appendix A – Attendance Sheet

Choosing by Advantages Workshop July 9 to July 11
LAR01 ES MCER Study
Sign-in Sheet

Name	Title	Email address	Attended (initial)		
			7/9	7/10	7/11
Dr. Stephen Newton		stephen.newton@laramie1.org			
Andy Knapp	Exec. Director of Support Operations	andy.knapp@laramie1.org	✓	✓	✓
Shannon Fertig	PLANNING ADMINISTRATOR	shannon.fertig@laramie1.org	✓	✓	✓
Vicki Bonds	PLANNER	vicki.bonds@laramie1.org	✓	✓	✓
Del McOmie	DIRECTOR	delbert.mcomie@wyo.gov	[illegible]	(afternoon)	✓
Shelby Carlson		shelby.carlson@wyo.gov			
John Rexius	P.M Supervisor	john.rexius@wyo.gov	✓	✓	✓
Michael Bernett	MICHAEL BERNETT	michael.bernett@wyo.gov	✓	✓	✓
Amber Leach	Planner	amber.leach@wyo.gov	✓	✓	✓
Jessica Gilfilian		jessica.gilfilian1@wyo.gov			
Courtney Muir		courtney.muir1@wyo.gov			
Bill Small	PRINCIPAL	small@feapc.com	✓	✓	✓
Maureen Roskoski	Vice President	maureen.roskoski@feapc.com	✓	X	✓
Daniel Besmer	Scribe/ Registered Engineer	daniel.besmer@feapc.com	✓	X	X
Rich Merrill	Project Manager	rich.merrill@feapc.com	RM	RM	RM
Paul Riley	PRESIDENT / ARCHITECT	pvriley@mca.design	PR	✓	✓
RYAN SMALL	ANALYST	ryan.small@feapc.com			✓

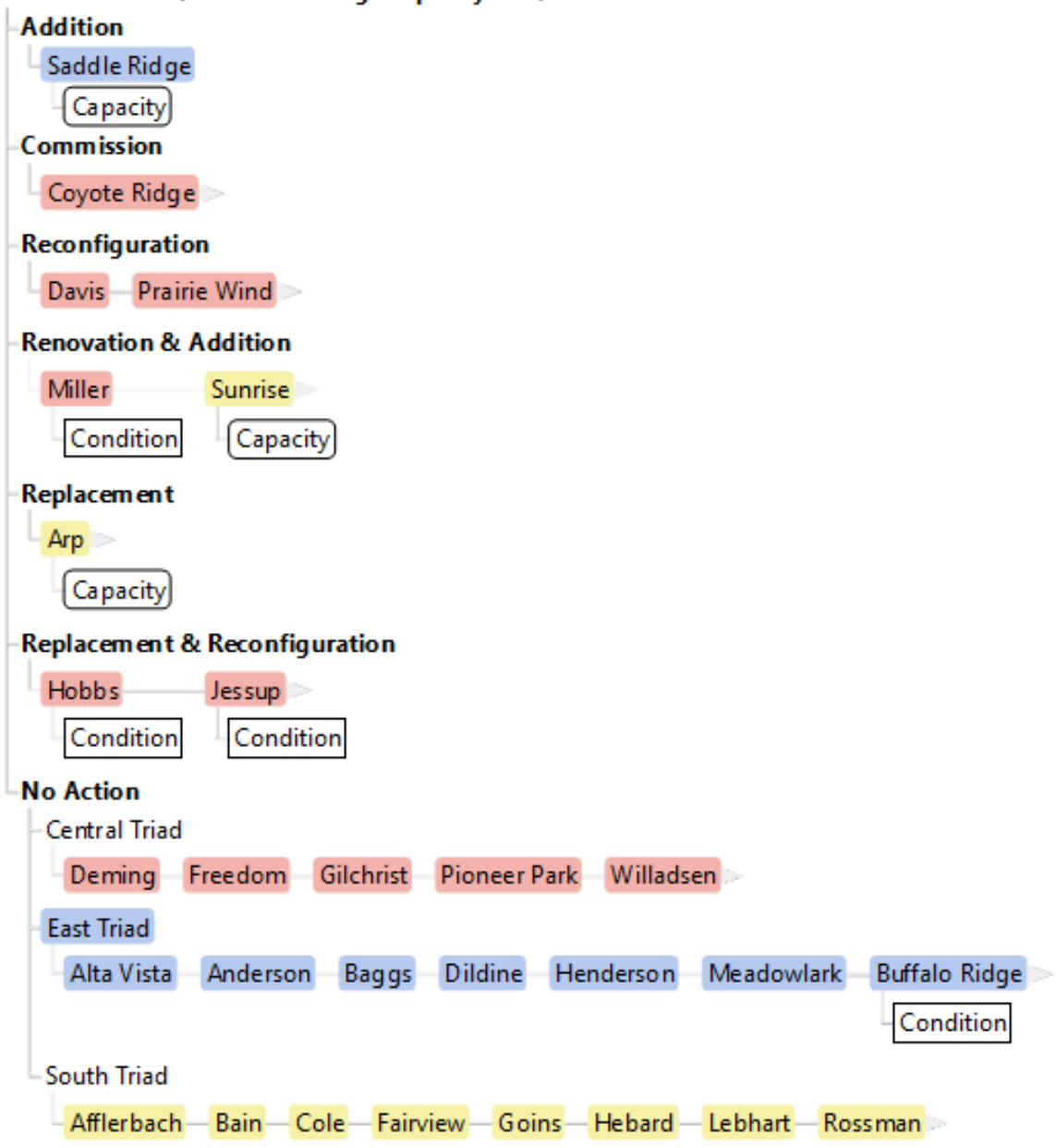
A01 - Appendix B – Potential Remedy Details

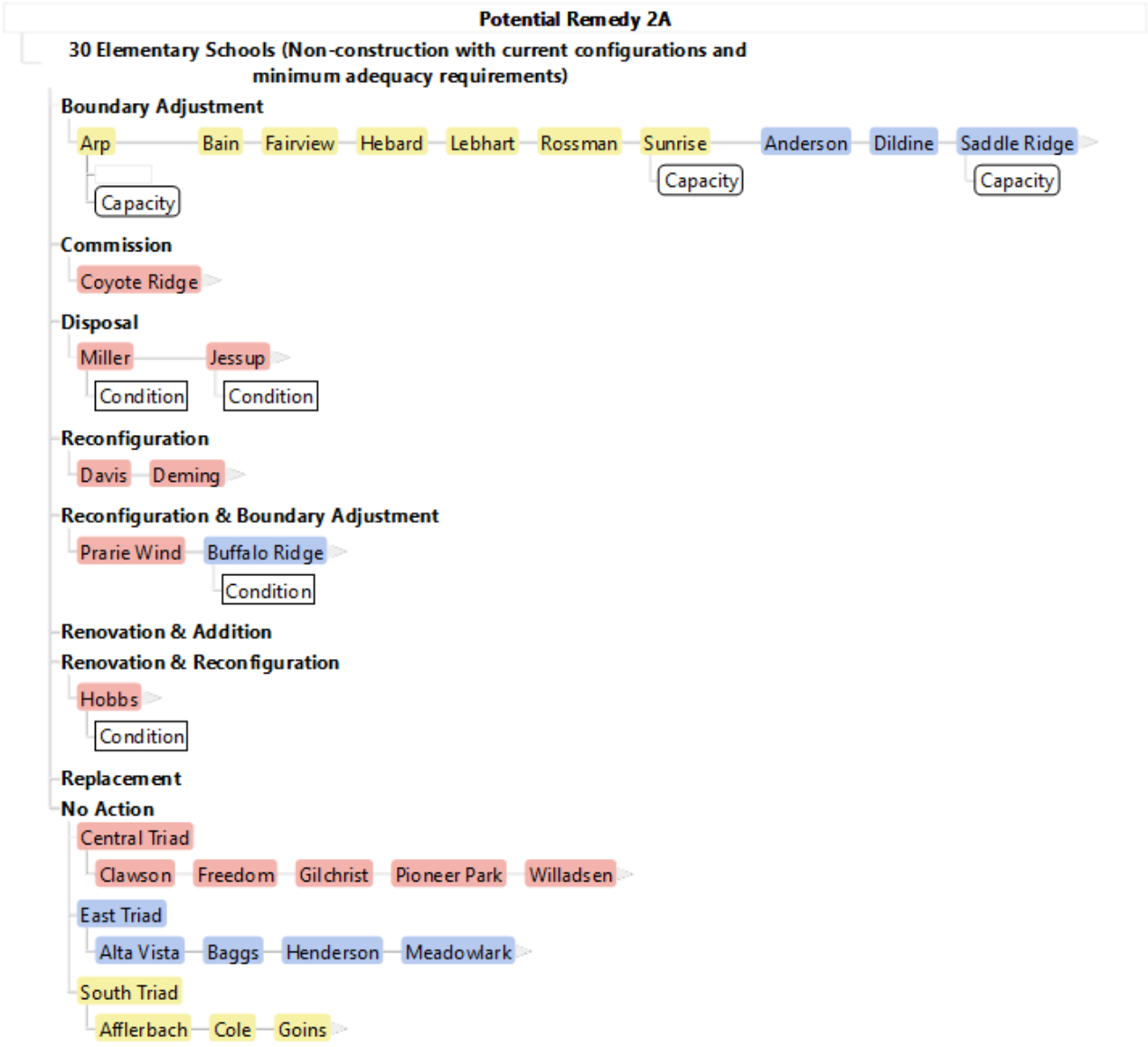
Note: The following notes and figures are products of the CBA workshop held on July 9-11, 2024. FEA facilitated the daily work sessions, with District and SFD representatives present and participating.

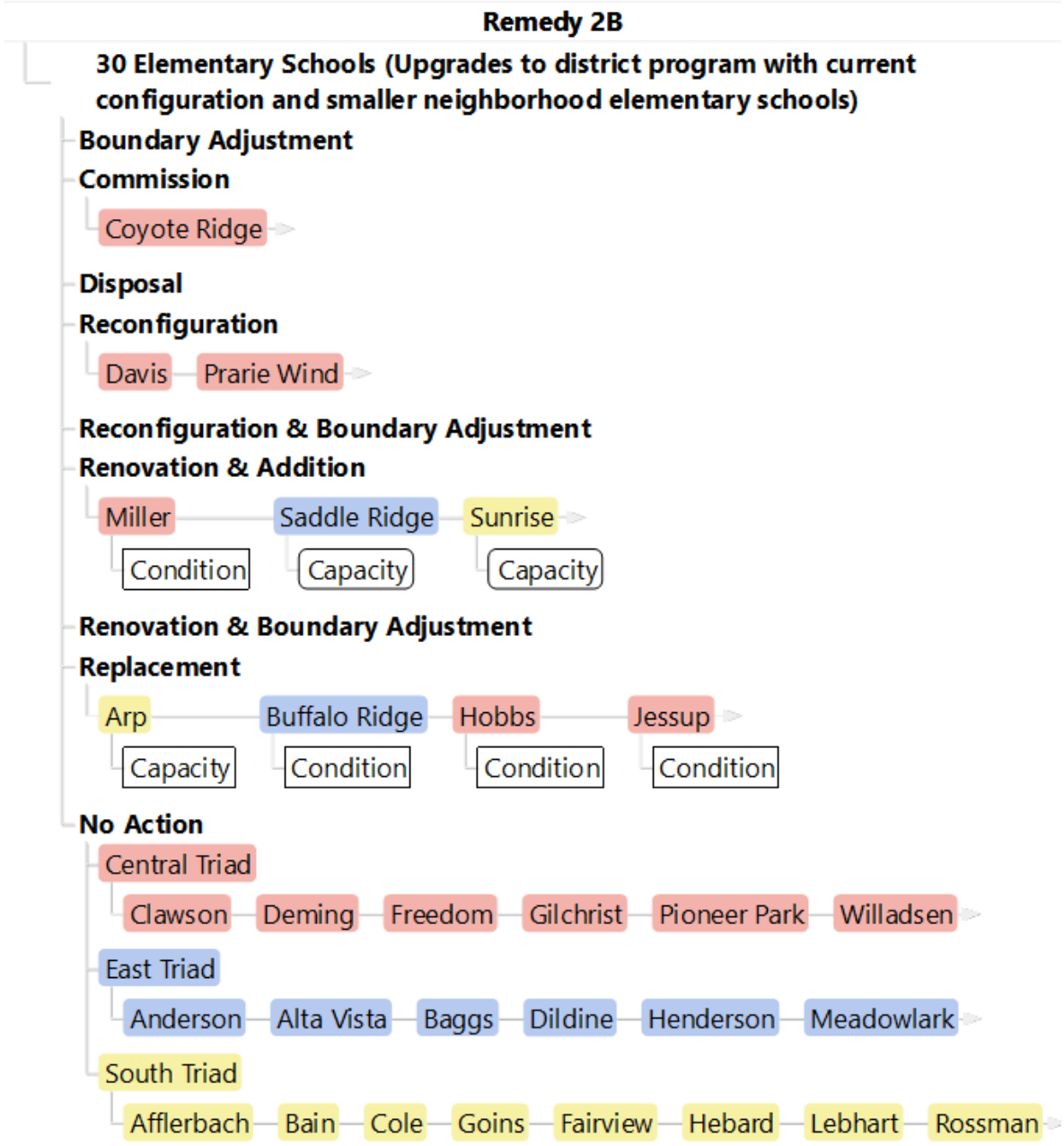


Potential Remedy 1B

Upgrades to district program for the 7 elementary schools identified as capacity or condition concerns. A total of 30 elementary Schools considered with this potential remedy. Proposed actions will result in 30 schools used for the delivery of the educational program,total building gross area of 1,276,302 SF, projected enrollment of 6,659 and a design capacity of 8,124.

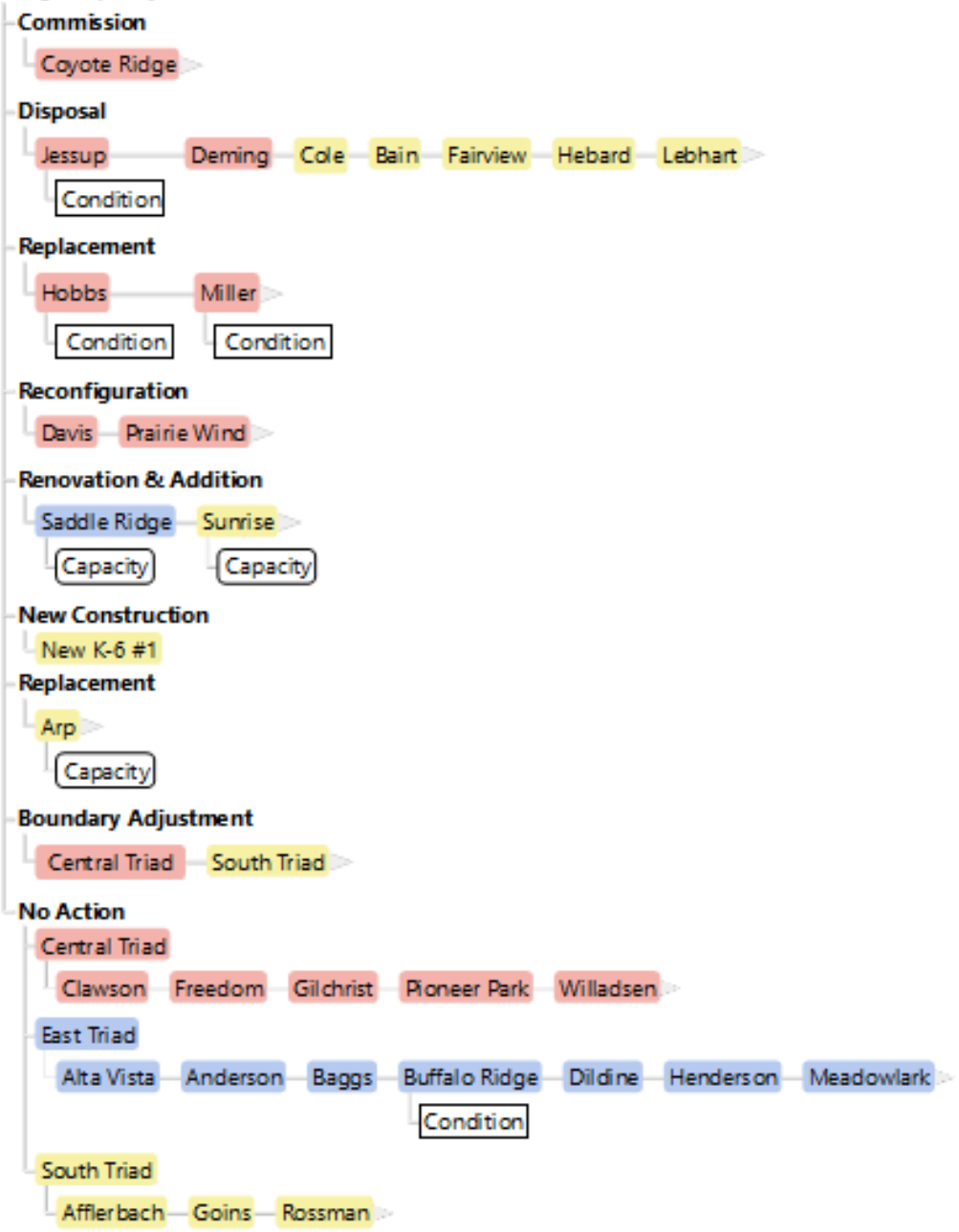


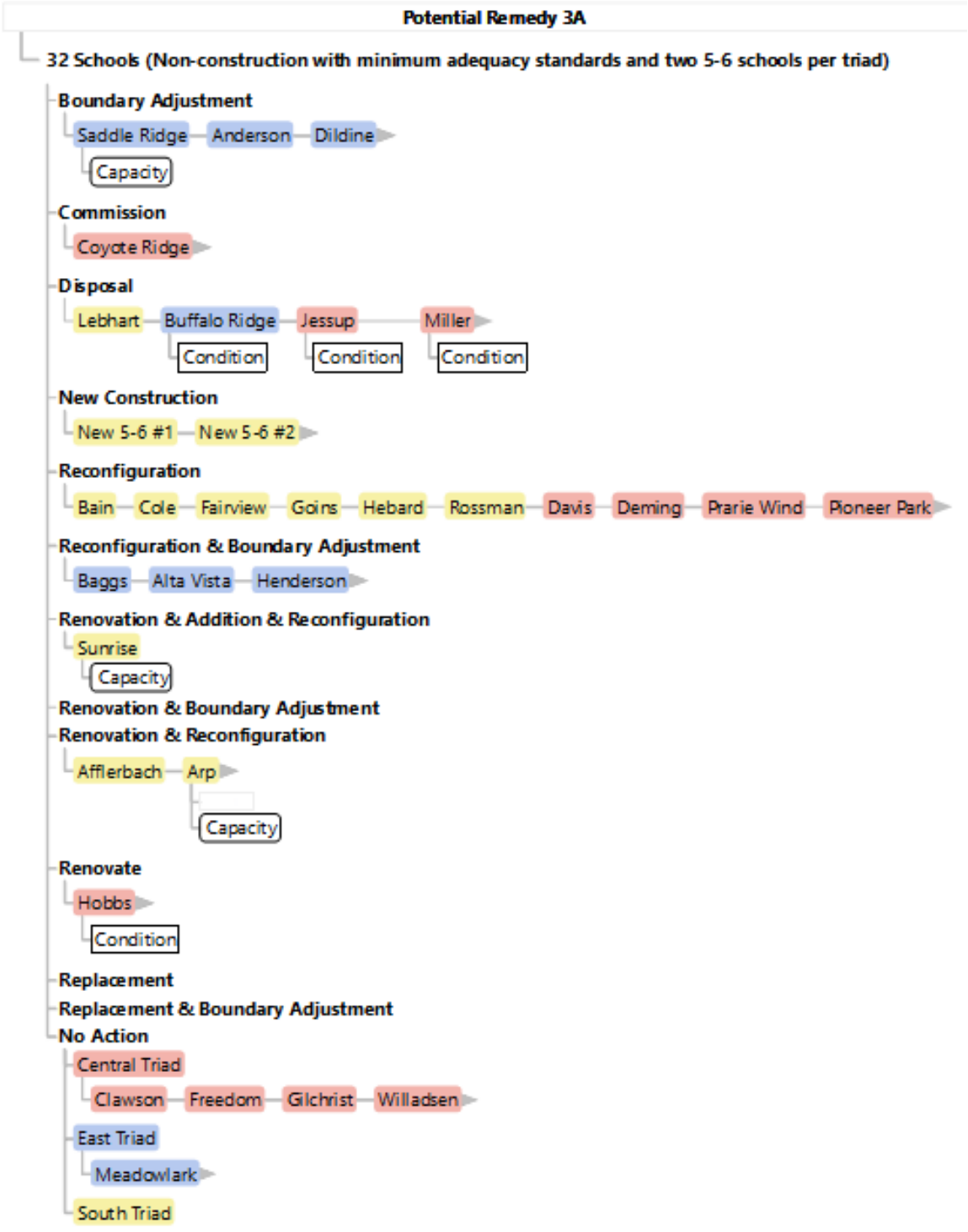

Potential Remedy 2A
30 Elementary Schools (Non-construction with current configurations and minimum adequacy requirements)
Boundary Adjustment
Arp
Capacity
Bain
Fairview
Hebard
Lebhart
Rossman
Sunrise
Capacity
Anderson
Dildine
Saddle Ridge
Capacity
Commission
Coyote Ridge
Disposal
Miller
Condition
Jessup
Condition
Reconfiguration
Davis
Deming
Reconfiguration & Boundary Adjustment
Prarie Wind
Buffalo Ridge
Condition
Renovation & Addition
Renovation & Reconfiguration
Hobbs
Condition
Replacement
No Action
Central Triad
Clawson
Freedom
Gilchrist
Pioneer Park
Willadsen
East Triad
Alta Vista
Baggs
Henderson
Meadowlark
South Triad
Afflerbach
Cole
Goins


Remedy 2B
30 Elementary Schools (Upgrades to district program with current configuration and smaller neighborhood elementary schools)
Boundary Adjustment
Commission
Coyote Ridge
Disposal
Reconfiguration
Davis
Prarie Wind
Reconfiguration & Boundary Adjustment
Renovation & Addition
Miller
Condition
Saddle Ridge
Capacity
Sunrise
Capacity
Renovation & Boundary Adjustment
Replacement
Arp
Capacity
Buffalo Ridge
Condition
Hobbs
Condition
Jessup
Condition
No Action
Central Triad
Clawson
Deming
Freedom
Gilchrist
Pioneer Park
Willadsen
East Triad
Anderson
Alta Vista
Baggs
Dildine
Henderson
Meadowlark
South Triad
Afflerbach
Bain
Cole
Goins
Fairview
Hebard
Lebhart
Rossman

Potential Remedy 2C

Upgrades to district program with current configuration and fewer larger elementrary schools A total of 30 elementary Schools considered with this potential remedy. Proposed actions will result in 24 schools used for the delivery of the educational program,total building gross area of 1,159,817 SF, projected enrollment of 6,659 and a design capacity of 7,589.




Potential Remedy 3A
32 Schools (Non-construction with minimum adequacy standards and two 5-6 schools per triad)
Boundary Adjustment
Saddle Ridge
Anderson
Dildine
Capacity
Commission
Coyote Ridge
Disposal
Lebhart
Buffalo Ridge
Condition
Jessup
Condition
Miller
Condition
New Construction
New 5-6 #1
New 5-6 #2
Reconfiguration
Bain
Cole
Fairview
Goins
Hebard
Rossman
Davis
Deming
Prarie Wind
Pioneer Park
Reconfiguration & Boundary Adjustment
Baggs
Alta Vista
Henderson
Renovation & Addition & Reconfiguration
Sunrise
Capacity
Renovation & Boundary Adjustment
Renovation & Reconfiguration
Afflerbach
Arp
Capacity
Renovate
Hobbs
Condition
Replacement
Replacement & Boundary Adjustment
No Action
Central Triad
Clawson
Freedom
Gilchrist
Willadsen
East Triad
Meadowlark
South Triad

Potential Remedy 3B

34 Schools (Upgrades to district program with two 5-6 schools per triad and smaller neighborhood elementary schools)

- **Boundary Adjustment**
  - Saddle Ridge
    - Capacity
- **Commission**
  - Coyote Ridge
- **Disposal**
  - Fairview
  - Hebard
  - Miller
    - Condition
- **New Construction**
  - New 5-6 #1
  - New 5-6 #2
  - New 5-6 #3
  - New 5-6 #4
- **Reconfiguration**
  - Davis
  - Prarie Wind
  - Goins
  - Rossman
  - Deming
  - Pioneer Park
  - Afflerbach
- **Reconfiguration & Boundary Adjustment**
  - Baggs
- **Renovation & Addition & Reconfiguration**
  - Sunrise
    - Capacity
- **Renovation & Boundary Adjustment**
  - Dildine
- **Renovation & Reconfiguration**
  - Bain
- **Space Improvements**
  - Henderson
- **Replacement**
  - Arp
    - Capacity
  - Cole
  - Lebhart
  - Hobbs
    - Condition
  - Jessup
    - Condition
- **Replacement & Boundary Adjustment**
  - Buffalo Ridge
    - Condition
- **No Action**
  - Central Triad
    - Clawson
    - Freedom
    - Gilchrist
    - Willadsen
  - East Triad
    - Meadowlark
    - Alta Vista
    - Anderson
  - South Triad

Potential Remedy 3C

34 Schools (Upgrades to district program with two 5-6 schools per triad and fewer larger neighborhood elementary schools)

- **Boundary Adjustment**
- **Commission**
  - Coyote Ridge
- **Disposal**
  - Bain
  - Fairview
  - Hebard
  - Lebhart
  - Buffalo Ridge
    - Condition
  - Henderson
  - Deming
  - Jessup
    - Condition
  - Miller
    - Condition
- **New Construction**
  - New 5-6 #1
  - New 5-6 #2
  - New 5-6 #3
  - New 5-6 #4
- **Reconfiguration**
  - Afflerbach
  - Goins
  - Rossman
  - Sunrise
    - Capacity
  - Alta Vista
  - Baggs
  - Davis
  - Prarie Wind
- **Reconfiguration & Boundary Adjustment**
- **Renovation & Addition**
  - Dildine
  - Saddle Ridge
    - Capacity
- **Renovation & Boundary Adjustment**
- **Renovation & Reconfiguration**
  - Pioneer Park
- **Space Improvements**
- **Replacement**
  - Arp
  - Cole
  - Hobbs
    - Condition
- **Replacement & Boundary Adjustment**
- **No Action**
  - Central Triad
    - Clawson
    - Freedom
    - Gilchrist
    - Willadsen
  - East Triad
    - Anderson
    - Meadowlark
  - South Triad

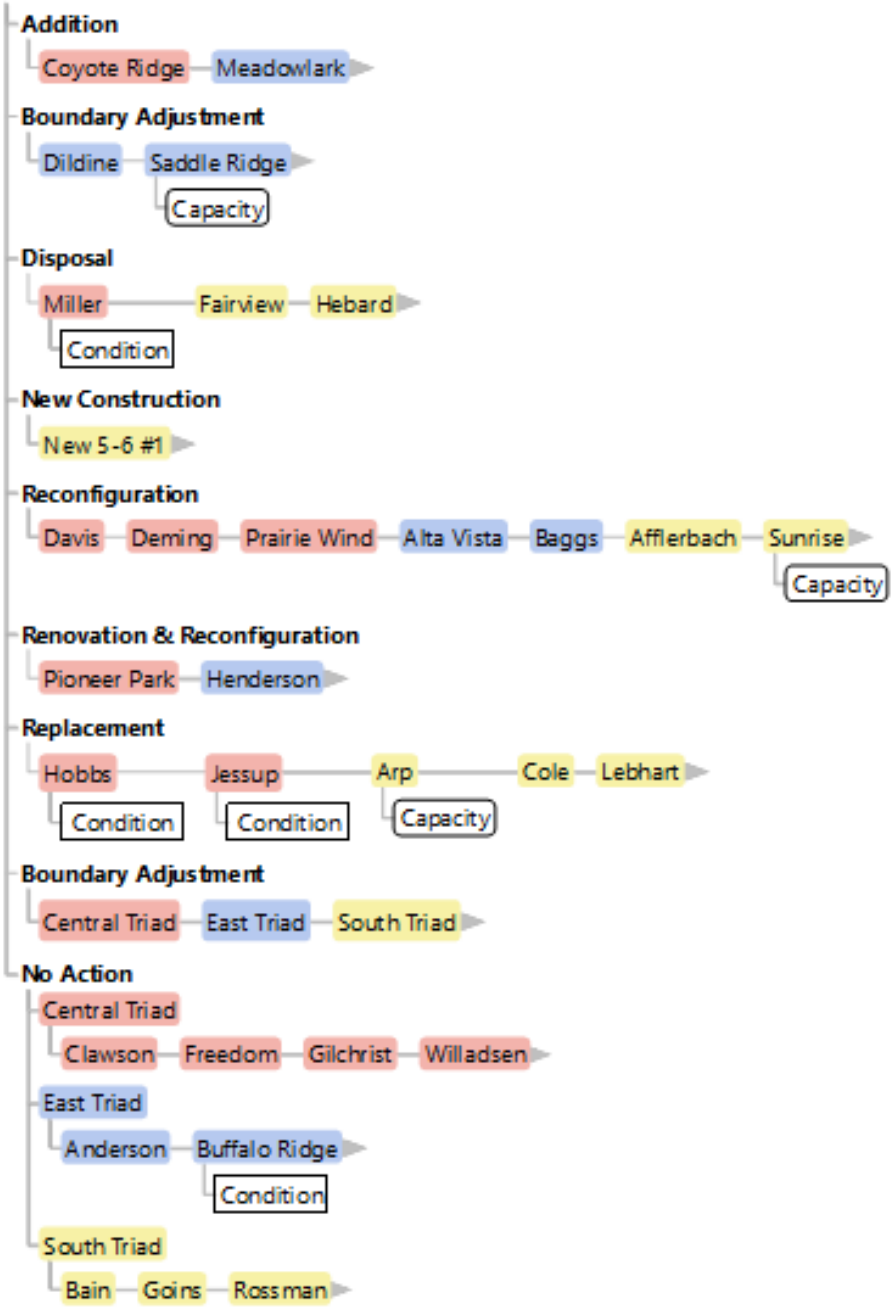
Potential Remedy 4A

Non-construction focus to meet minimum adequacy standards with one 5-6 school per triad. A total of 30 elementary Schools considered with this potential remedy. Proposed actions will result in 26 schools used for the delivery of the educational program,total building gross area of 1,235,224 SF, projected enrollment of 6,659 and a design capacity of 8,457.

- **Addition**
  - Coyote Ridge
  - Meadowlark
- **Boundary Adjustment**
  - Anderson
  - Dildine
  - Saddle Ridge
    - Capacity
- **Disposal**
  - Jessup
    - Condition
  - Miller
    - Condition
  - Fairview
  - Lebhart
- **Reconfiguration**
  - Davis
  - Deming
  - Pioneer Park
  - Prairie Wind
  - Afflerbach
  - Bain
  - Cole
  - Goins
  - Hebard
  - Rossman
- **Reconfiguration**
  - Alta Vista
  - Baggs
  - Henderson
- **Renovation & Addition & Reconfiguration**
  - Sunrise
    - Capacity
- **Renovation & Reconfiguration**
  - Hobbs
    - Condition
  - Arp
    - Capacity
- **Boundary Adjustment**
  - Central Triad
  - East Triad
  - South Triad
- **No Action**
  - Central Triad
    - Clawson
    - Freedom
    - Gilchrist
    - Willadsen
  - East Triad
    - Buffalo Ridge
      - Condition
  - South Triad

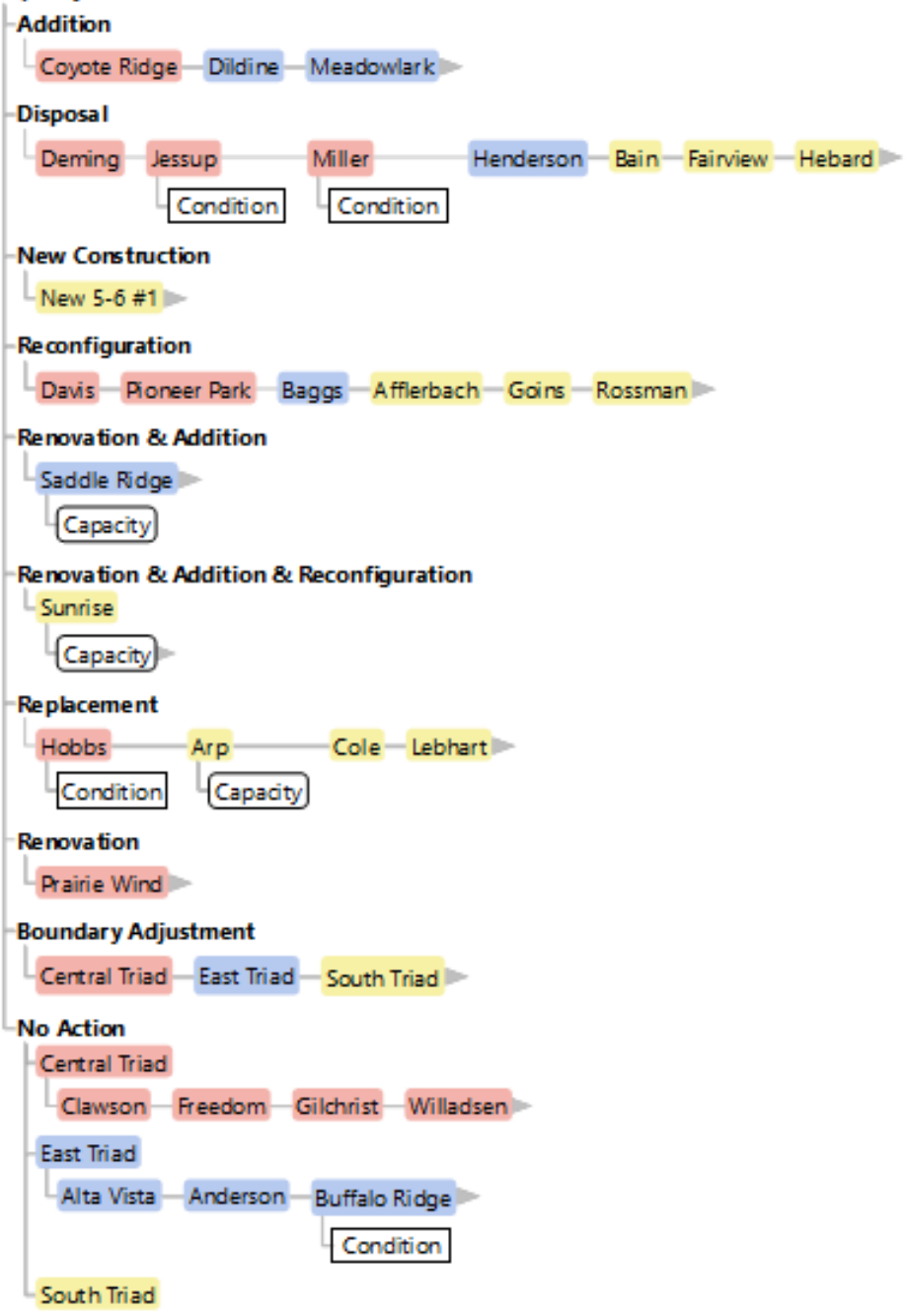
Potential Remedy 4B

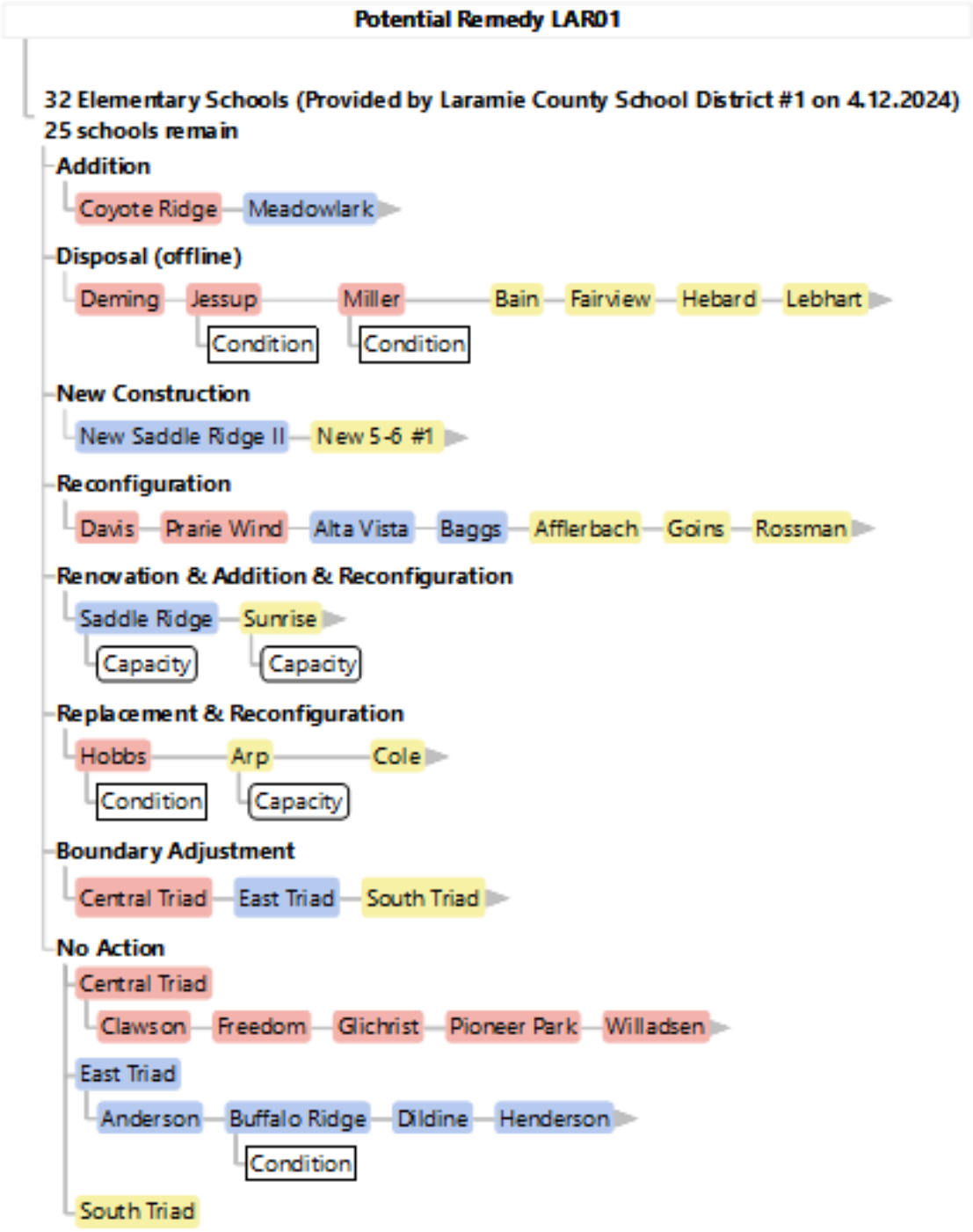
Upgrades to district program with one 5-6 school per triad and smaller neighborhood elementary schools. A total of 31 elementary Schools considered with this potential remedy. Proposed actions will result in 25 schools used for the delivery of the educational program, total building gross area of 1,335,336 SF, projected enrollment of 6,659 and a design capacity of 8,820.



Potential Remedy 4C

Upgrades to district program with one 5-6 school per triad and fewer larger neighborhood elementary schools. A total of 31 elementary Schools considered with this potential remedy. Proposed actions will result in 23 schools used for the delivery of the educational program, total building gross area of 1,302,637 SF, projected enrollment of 6,659 and a design capacity of 8,795.




Potential Remedy LAR01
32 Elementary Schools (Provided by Laramie County School District #1 on 4.12.2024)
25 schools remain
Addition
Coyote Ridge
Meadowlark
Disposal (offline)
Deming
Jessup
Condition
Miller
Condition
Bain
Fairview
Hebard
Lebhart
New Construction
New Saddle Ridge II
New 5-6 #1
Reconfiguration
Davis
Prarie Wind
Alta Vista
Baggs
Afflerbach
Goins
Rossman
Renovation & Addition & Reconfiguration
Saddle Ridge
Capacity
Sunrise
Capacity
Replacement & Reconfiguration
Hobbs
Condition
Arp
Capacity
Cole
Boundary Adjustment
Central Triad
East Triad
South Triad
No Action
Central Triad
Clawson
Freedom
Glichrist
Pioneer Park
Willadsen
East Triad
Anderson
Buffalo Ridge
Condition
Dildine
Henderson
South Triad

A02 Enrollment Projections

A02.1 Summary

Enrollment was projected using various methods across different time periods of historical data. Multiple enrollment projection models were created and back-tested for accuracy, including those explicitly referred to in Chapter 8 Section 4(a)(i-iii), SFC Enrollment Projection Methodology, per W.S. § 21-15-116(a). It would not be reasonable to conclude, given the back-tested error rates on projections, that enrollment would decline indefinitely. Said differently, the back-testing of these models meant the possibility of moderate growth over the study period could not be eliminated.

Moreover, the cyclical nature of enrollment over the past 30 years requires the consideration of a broader historical context where enrollment has both grown and declined. To account for this, an Auto-Regressive Moving Average (ARMA) model was created to supplement the required models. The ARMA model incorporates additional historical data per Section 4(d) of the SFC Enrollment Projection Methodology and forecasts a period of decline before increasing toward the District's average historic enrollment.

In the short term, all models demonstrate comparable Mean Absolute Percentage Error (MAPE). Over the long term, linear models show higher-than-average errors, and projections become more divergent, generally trending downward. Selecting one model over another does not offer a particularly conservative approach.

For the purposes of the study, near-term declines used to project long-term enrollment risk under-building capacity. Since reducing capacity is less burdensome than adding it, and models diverge in their enrollment projections over the study period, it is recommended the Most Cost-Effective Remedy enrollment projections use the most recent enrollment data.

A02.2 Methodology Overview

FEA has applied several different forecasting methods to study how school enrollment for the District changes over time. The data sources utilized include the U.S. Census, the American Community Survey Population 1-Year Estimates, and the Wyoming Department of Education, all of which provided detailed information on population and school enrollment. A statistical technique was used to estimate kindergarten enrollment numbers, and several tests were run to establish the accuracy and reliability of the model. All analyses were done using Python's statsmodels and SciPy Stats libraries, which are tools for working with data and performing statistical calculations.

This report presents projected enrollment totals for Laramie County School District 1 from 2024 to 2041. The following methods were applied to the school district's historical enrollment data to generate the projections:

- Linear Regression

- Grade Progression: Exponential Smoothing versus Linear Regression
- Average Percentage Increase
- Cohort Survival Rate
- Auto-Regressive Moving Average (ARMA)

Linear Regression Model

A linear regression model fits a straight line that best matches the relationship between to variables through a set of data points. This line helps predict one value (e.g., enrollment) based on another variable (e.g., year). By using this model, an estimate of the number of students can be developed to show change over time and predict future enrollment based on past trends. The line shows the general pattern of how enrollment might increase or decrease in the coming years, but it does not provide much nuance. For this study, historical enrollment data was used to calculate the line of best fit between time (independent variable) and student enrollment (dependent variable). In other words, a forecast using a linear regression can be used to predict future enrollment based on only past enrollment.

Average Percentage Increase Model

This model uses the average percentage increase year over year to forecast future enrollment. The historical average percentage was calculated using the following formula:

$$Historical\ Average\ Percentage\ by\ Grade = \ average\left(\frac{E_T - E_{T-1}}{E_{T-1}} \times 100\right)$$

where E_T = enrollment at year T and E_{T-1} = enrollment at year T -1 (previous year).

The calculated historical average percentage was then used to predict future enrollment by multiplying the percentage with the prior year's enrollment.

$$Projected\ Enrollment\ by\ Grade = Historical\ Average\ Percentage\ \times\ E_{T-1}$$

Cohort Survival Model

This model is based on the progression of students from one grade to the next. The grade progression rate, also known as the survival rate, is calculated using the following formula:

$$cohort\ survival\ rate\ = \frac{E_T\ at\ Grade_X}{E_{T-1}\ at\ Grade_{X-1}}$$

where E_T = enrollment at year T at grade X and,
E_{T-1} = enrollment at year T-1 (previous year) and previous grade (X-1).

To calculate the historical survival rate, the progression ratio of students advancing from one grade to the next was determined using data from 1991 to 2023. Projected enrollment was then

calculated by applying both a 5-year and 10-year average survival rate to the 2023 enrollment totals for each grade. Future enrollment for both models was projected by multiplying the average survival rate by the previous year's enrollment for the prior grade:

$$Projected\ Enrollment\ at\ Grade_X = Cohort\ Survival\ Rate \times E_{T-1}\ at\ Grade_{X-1}$$

Due to the unique nature of kindergarten enrollment, a different methodology was required. A kindergarten enrollment model was developed by analyzing county and school district population estimates generated from the American Community Survey (ACS) 1-Year Estimates and the United States Census.

The ACS 1-Year Estimates from 2009 to 2022 provided population estimates by school districts across the United States. Specifically, the estimated populations of children aged 0-4 and 5-9 within Laramie County School District 1 were used to establish a correlation with historical kindergarten enrollment for that district.

Additionally, U.S. Census population estimates, available at the county level from 2000 to 2023, were incorporated into the model. To refine the projections, birth data from 2009 to 2022 were also analyzed to further correlate birth trends with historical kindergarten enrollment within the District.

To test the correlation between the population estimates and the kindergarten enrollment, an Ordinary Least Squares (OLS) model was created. OLS is a method used in statistics to find the best-fitting line through a set of data points. It is used in linear regression to determine the relationship between the outcome one wants to predict, and the factors used to make the prediction.

The model showed that kindergarten enrollment variance is largely explained by the population of children aged 0-4 and the number of births, with an R-squared of 95.3%, indicating a strong fit, and a statistically significant p-value of 2.77e-06. Kindergarten enrollment rates were projected using single exponential smoothing and linear regression by applying the enrollment rate (kindergarten enrollment divided by the number of 0-4-year-olds in the District) to the projected population in each age group for each forecast year.

Grade Progression Model

The grade progression model shares similarities with the cohort survival rate model, as both are based on the progression of students from one grade to the next. However, the grade progression model generates projected enrollment using single exponential smoothing, which places greater emphasis on more recent data, with the influence of older data diminishing exponentially over time. The rate at which the weight of older observations declines is determined by a smoothing constant, which is automatically generated by the model and ranges between 0 and 1.

Unlike other methods, single exponential smoothing creates one forecast that applies to all years in the prediction period. This method works best for data that stays steady over time, like

the grade progression trends in Laramie County School District 1, as shown in the graph below. As a result, the percentage of change was assumed to stay the same throughout the projection period. For comparison, a linear regression model, which looks at how grade progression changes over time, was also used.

Kindergarten enrollment was estimated using the same OLS model described in the cohort survival model section.

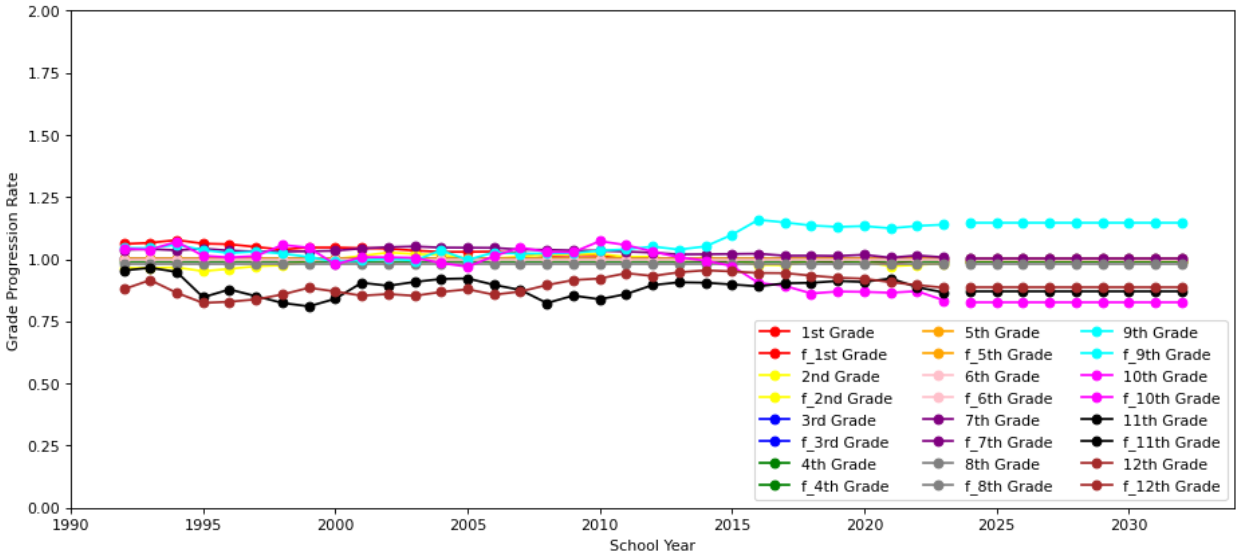


Figure 1: Cohort Survival Rates 1st to 12th Grade

Auto-Regressive Moving Average (ARMA) Model

After the prior models were created, analyzed, and interpreted, it was determined an Auto-Regressive Moving Average (ARMA) model should also be fit to the District level data. An ARMS model is a time series forecasting method that accounts for both the historical data and the inherent cyclical patterns in enrollment. The model is designed to capture the relationship between current enrollment and both its past values (auto-regressive component) and the moving averages of past errors (moving average component). This makes it especially useful for projecting future enrollment based on historical seasonality, where periods of increased enrollment tend to follow periods of decreased enrollment.

A02.3 Data Sources

- Historical Enrollment Data
  - Stat 2 - School District Enrollment and Staffing Data - Wyoming Department of Education (Retrieved July 24th, 2024)

- Population and Birth Rates Estimates
  - U.S. Census Data – Population Estimates by County
    - Accessed through the Census FTP site
    - Data was filtered for Laramie County, WY
    - Annual Resident Population Estimates, Estimated Components of Resident Population Change, and Rates of the Components of Resident Population Change for States and Counties: April 1, 2000, to July 1, 2009
    - Annual Resident Population Estimates, Estimated Components of Resident Population Change, and Rates of the Components of Resident Population Change for States and Counties: April 1, 2010, to July 1, 2020
    - Annual Resident Population Estimates, Estimated Components of Resident Population Change, and Rates of the Components of Resident Population Change for States and Counties: April 1, 2020, to July 1, 2023
  - ACS Population 1-Year Estimates
    - American Community Survey 1-Year Data (2009-2022)
      - Table: B01001 – Sex by Age
      - Retrieved by year and school district through the Census API
      - Example url: https://api.census.gov/data/{year}/acs/acs5?get=NAME,B01001_001E,B01001_003E,B01001_027E,B01001_004E,B01001_028E&for=school%20district%20(unified):*&in=state:{state}&key={api_key}"

A02.4 Model Accuracy

A 5-year and 10-year historical analysis was conducted to evaluate the accuracy of enrollment forecasts using various models, including the Linear Regression Model, Average Percent Increase Model, the Cohort Survival Model, the Grade Progression Models (Exponential Smoothing and Linear Regression), and the mean of all the models combined.

Each model was run using the available historical enrollment data from 2006 to 2023 to generate forecasts for the next 5 years. The forecasted values were then used to calculate the Mean Absolute Percentage Error (MAPE) using the following formula:

$$MAPE = \frac{1}{n}\sum_{i=1}^{n}\left|\frac{A_i - F_i}{A_i}\right| \times 100$$

where:

- n is the number of observations (data points).
- A_i is the actual value at observation i.
- F_i is the forecasted value at observation i.
- | . | denotes the absolute value.

MAPE is expressed as a percentage, and it measures the accuracy of a forecasting method by averaging the absolute percentage errors over all observations. Lower MAPE values indicate better forecasting accuracy.

Key findings:

- Higher MAPE (Less Accurate Models): Models like the Average Percent Increase Model – 10 Year and Linear Regression Model consistently have higher MAPE values, ranging from 1.7% in year 1 to 8.8% in year 5 of the projections, meaning they are less accurate in predicting enrollment compared to other models.

- Lower MAPE (More Accurate Models): Models like the Cohort Survival Model - 5 Year Average, Average Percent Increase Model - 5 Year, Grade Progression Models, and the mean of all models show lower MAPE values, ranging from approximately 0.6% to 6.7%, indicating higher accuracy in predictions.

- Performance Over Time: As time progresses (from Year 1 to Year 5), there is a general increase in MAPE for most models, indicating that the prediction accuracy tends to decline over time. This trend is typical as the uncertainty in projections generally increases the further out the forecast extends.

Implications for findings:

- Model Selection: When choosing a model for enrollment forecasting, one should consider models with consistently lower MAPE values for more accurate predictions. The Cohort Survival Models and Grade Progression Models are better performers in this case.

- Forecast Horizon: The increase in MAPE over time suggests that predictions become less reliable as the forecast horizon extends. Policymakers and planners should take this into account and possibly rely on short-term forecasts for more critical decision-making, while long-term forecasts should be interpreted with greater caution.

- Model Averaging: Using the mean of all models as a benchmark might provide a balanced approach, offering a middle-ground accuracy level and reducing the impact of any single model's outlier errors.

A02.5 Projections

The methodology used to create the models presented below assumes that the variables influencing school enrollment in Laramie County School District 1 will behave in a manner consistent with historical patterns. These methods implicitly account for the effects of population changes such as births, deaths, net migration, student grade retention, transfers to other school systems, graduation rates, and dropout rates.

Projections by Model

Figure 2 below depicts total enrollment in Laramie County School District 1 over time, from 1991 to 2041, showing both historical data (from 1991 to 2023) and forecasted values from several statistical models (from 2024 to 2041).

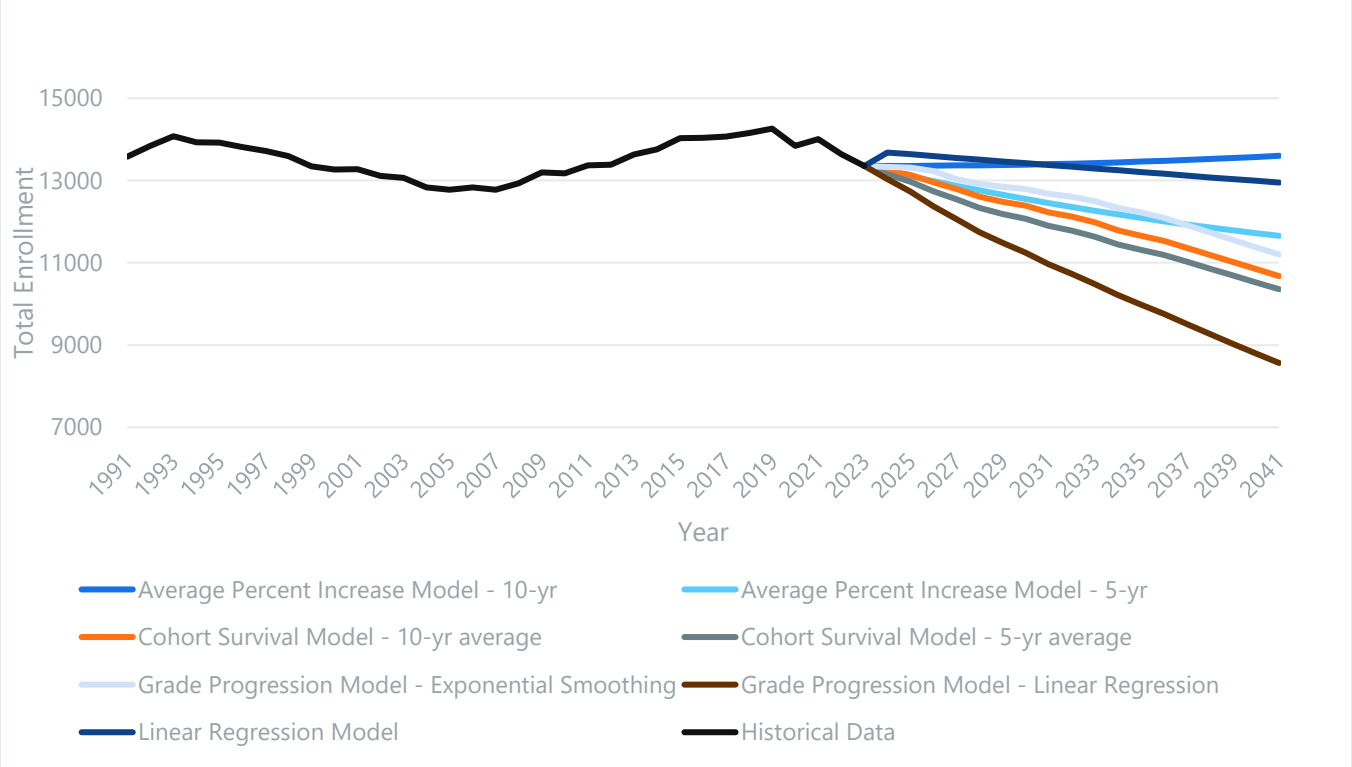


Figure 2: Enrollment Projections by Model

In the short term, all models show a comparable average percentage error (MAPE). Over the long term, the linear models show above average errors. However, models are divergent in their projections over extended periods. It is not particularly conservative to choose one model over another.

Historical Data (1991-2023):

- The black solid line represents the historical enrollment data.

- We can observe several trends:
    - A peak around 1993, followed by a steady decline until around 2010.
    - After 2010, enrollment gradually increased until approximately 2019, where it peaked again before declining slightly until 2023.

Forecast Models (2024-2041):
Starting in 2024, various forecasting models project future enrollment. Each line corresponds to a different model:

1. **Average Percent Increase Model - 10 Year** (blue):
    - This model uses the average percentage increase over the last 10 years to forecast future enrollment.
    - It projects a gradual increase in enrollment at a slow rate.
2. **Average Percent Increase Model - 5 Year** (light blue):
    - Like the 10-year average percent model but using data from the last 5 years.
    - It projects a decrease in enrollment similar to the Cohort Survival Model.
3. **Cohort Survival Model - 10 Year Average** (orange):
    - This model tracks the year-over-year survival of cohorts (students progressing from one grade to the next) using a 10-year historical average.
    - It projects a moderate decline in enrollment over time.
4. **Cohort Survival Model - 5 Year Average** (dark gray):
    - This model also tracks cohort progression but based on the most recent 5 years.
    - It projects a slightly steeper decline compared to the 10-year cohort survival model.
5. **Grade Progression Model - Exponential Smoothing** (blue gray):
    - This model uses exponential smoothing to predict future enrollment by assigning greater weight to more recent data, allowing the model to respond more sensitively to recent changes in trends.
    - The gray line represents a forecast that smooths out fluctuations from the historical data while still showing a gradual decline in enrollment over the forecast period.
    - The decline is moderate, indicating that while the model expects enrollment to decrease, it anticipates this happening at a more controlled and steadier pace compared to models like the cohort survival or linear regression models, which show sharper drops.
6. **Grade Progression Model - Linear Regression** (brown):
    - This model uses linear regression on grade progression data to predict future enrollment.
    - It shows a more significant decline compared to other models, indicating a sharp drop in enrollment over time.
7. **Linear Regression Model** (dark blue):
    - This model fits a linear trend to the historical data to project future enrollment.

- Like the grade progression linear regression model, it predicts a decline in enrollment but at a slower rate than the Grade Progression Model – Linear Regression.

8. ARMA Model
   - Additionally, if you use an Auto-Regressive Moving Average model to account for the historical seasonality of the data (periods of increased enrollment follow periods of decreased enrollment) as shown below in Figure 03 we're seeing an increase in enrollment over the near term followed by a period converging on the District's average enrollment.

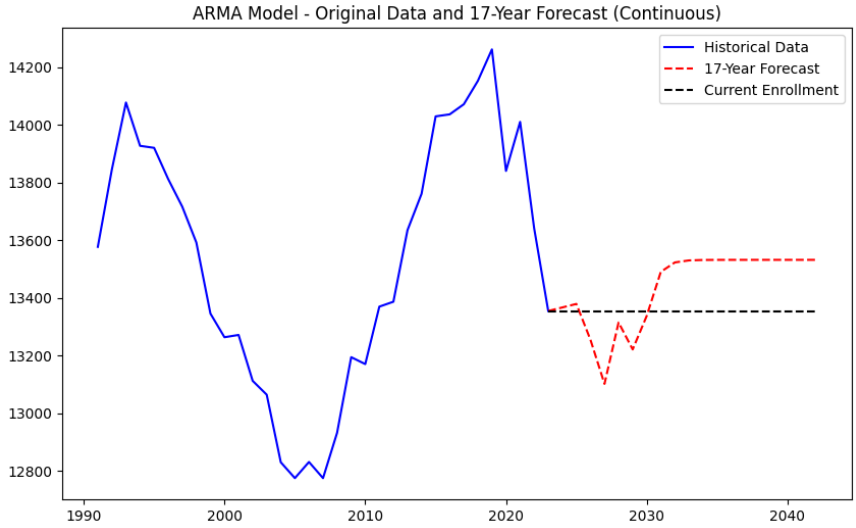


Figure 3: Auto-Regressive Moving Average (ARMA) Model

Overall Average Projections

Most models forecast an average decline in enrollment over the projection period (2024-2041) for schools in Laramie County School District 1 at various rates. The projected mean is shown on the chart below (blue line inside the shaded area), which shows a decrease in enrollment of approximately 115 students per year. The main projection line shows a gradual decline in enrollment numbers, suggesting that, if current trends continue, total enrollment may decrease to levels below 12,000 students by 2041. The shaded area around the projected line, known as the mean absolute error, represents the range of possible outcomes. The upper bound of this area suggests that, under more optimistic conditions, total enrollment could remain closer to current levels, potentially stabilizing at around 13,000 to 14,000 students by 2041. Conversely, the lower bound indicates a more pessimistic scenario where enrollment could decrease more sharply.

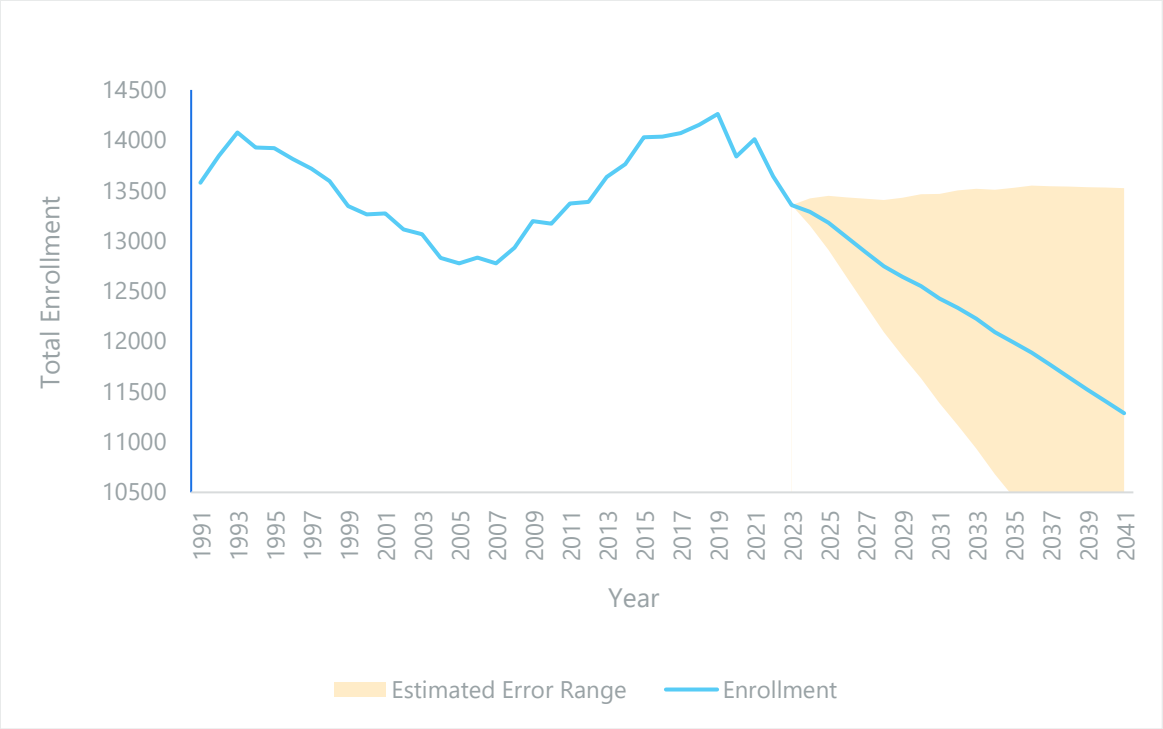


Figure 4: Mean Model Projection with Estimated Error Range

The summary table of value for the mean model, displayed in Figure 4, is include at the end of this report in the "District-wide" section of the Enrollment Estimates. It includes the values for both the projection and the historically projected MAPE. Incidentally, the model that deviates the least from the mean projection is the "Grade Projection Model – Exponential Smoothing". The following table displays the deviation from the mean of all models by model.

Percent deviation from mean by model: Overall							
Year	Average Percent Increase Model - 10-yr	Average Percent Increase Model - 5-yr	Cohort Survival Model - 10-yr average	Cohort Survival Model - 5-yr average	Grade Progression Model - Exponential Smoothing	Grade Progression Model - Linear Regression	Linear Regression Model
2024	0.5%	-0.4%	-0.3%	-1.0%	0.3%	-1.9%	2.9%
2025	1.3%	-0.6%	-0.3%	-1.6%	1.0%	-3.4%	3.5%
2026	2.5%	-0.4%	-0.6%	-2.2%	1.5%	-5.1%	4.3%
2027	3.7%	-0.1%	-0.8%	-2.7%	1.1%	-6.4%	5.1%
2028	4.9%	0.1%	-1.1%	-3.3%	1.3%	-7.9%	6.0%
2029	5.8%	0.1%	-1.3%	-3.6%	1.6%	-9.2%	6.5%
2030	6.7%	0.0%	-1.3%	-3.8%	1.9%	-10.4%	7.0%
2031	7.8%	0.2%	-1.6%	-4.3%	2.0%	-11.8%	7.7%

2032	8.7%	0.2%	-1.7%	-4.5%	2.2%	-13.0%	8.1%
2033	9.8%	0.3%	-2.0%	-4.9%	2.2%	-14.2%	8.7%
2034	11.1%	0.7%	-2.5%	-5.4%	2.0%	-15.5%	9.6%
2035	12.2%	0.8%	-2.8%	-5.6%	1.9%	-16.7%	10.1%
2036	13.4%	1.0%	-3.0%	-5.9%	1.7%	-17.9%	10.7%
2037	14.7%	1.4%	-3.4%	-6.3%	1.3%	-19.2%	11.5%
2038	16.1%	1.8%	-3.9%	-6.8%	0.8%	-20.4%	12.3%
2039	17.6%	2.3%	-4.4%	-7.2%	0.3%	-21.7%	13.1%
2040	19.0%	2.8%	-4.9%	-7.7%	-0.2%	-22.9%	13.9%
2041	20.5%	3.3%	-5.4%	-8.2%	-0.7%	-24.1%	14.7%

Table 1: Percent Deviation from Mean by Model

Elementary School Projections

Most models forecast a slight decline in elementary school enrollment over the projection period (2024-2041) for schools in Laramie County School District 1 at various rates. The projected mean is shown on the chart below (blue line inside the shaded area) which shows a decline of approximately 88 students per year. The main projection line shows a gradual decline in enrollment numbers, suggesting that, if current trends continue, total enrollment may decrease to levels below 3,300 students by 2041. The shaded area around the projected line, known as the mean absolute error, represents the range of possible outcomes. The upper bound of this area suggests that, under more optimistic conditions, total enrollment in elementary schools could remain closer to current levels, potentially stabilizing at around 7,000 to 8,000 students by 2041. Conversely, the lower bound indicates a more pessimistic scenario where enrollment could decrease more sharply.

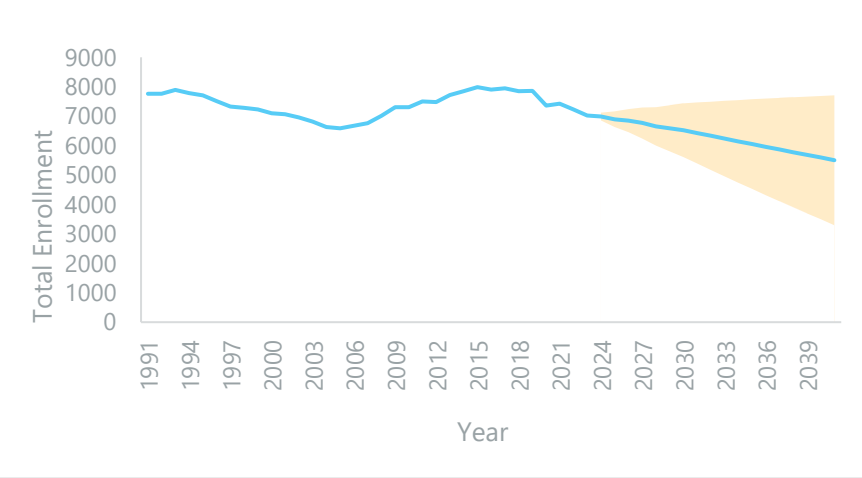


Figure 5: Mean Model Projected Enrollment for Elementary

The models that deviate the least from the mean projection are the "Cohort Survival Models".

Percent deviation from mean by model: Elementary Schools							
Year	Average Percent Increase Model - 10-yr	Average Percent Increase Model - 5-yr	Cohort Survival Model - 10-yr average	Cohort Survival Model - 5-yr average	Grade Progression Model - Exponential Smoothing	Grade Progression Model - Linear Regression	Linear Regression Model
2024	-0.3%	-1.5%	0.2%	-0.2%	0.9%	-0.5%	1.4%
2025	0.2%	-2.3%	0.4%	-0.2%	1.7%	-0.9%	1.2%
2026	0.2%	-3.6%	1.0%	0.1%	2.8%	-0.9%	0.4%
2027	0.6%	-4.5%	1.2%	0.1%	3.6%	-1.2%	0.1%
2028	1.6%	-4.8%	0.9%	-0.2%	4.0%	-1.7%	0.2%
2029	1.8%	-5.8%	1.2%	0.1%	4.7%	-1.8%	-0.2%
2030	2.1%	-6.8%	1.6%	0.6%	5.2%	-1.8%	-0.8%
2031	2.8%	-7.3%	1.7%	0.6%	5.2%	-2.0%	-1.0%
2032	3.6%	-7.8%	1.7%	0.7%	5.3%	-2.3%	-1.1%
2033	4.4%	-8.3%	1.7%	0.7%	5.3%	-2.6%	-1.2%
2034	5.2%	-8.7%	1.8%	0.7%	5.3%	-2.9%	-1.4%
2035	6.1%	-9.2%	1.8%	0.7%	5.3%	-3.3%	-1.5%
2036	7.0%	-9.6%	1.8%	0.7%	5.3%	-3.6%	-1.7%
2037	7.9%	-10.0%	1.8%	0.7%	5.3%	-3.9%	-1.9%
2038	8.9%	-10.4%	1.8%	0.7%	5.3%	-4.2%	-2.1%
2039	9.9%	-10.7%	1.8%	0.7%	5.3%	-4.6%	-2.3%
2040	10.9%	-11.0%	1.8%	0.6%	5.3%	-4.9%	-2.6%
2041	11.9%	-11.3%	1.7%	0.6%	5.3%	-5.3%	-2.8%

Table 2: Percent Deviation from Mean by Model: Elementary Schools

Middle School Projections

Most models forecast a slight decline in middle school enrollment over the projection period (2024-2041) for schools in Laramie County School District 1 at various rates. The projected mean is shown on the chart below (blue line inside the shaded area) which shows a decline of approximately 10 students per year. The main projection line shows a relatively stable enrollment trend for middle schools with only a slight decline expected in the years leading up to 2041. Enrollment numbers are expected to remain close to current levels, hovering around 2,000 students. The shaded area around the projection line represents the mean percent error. The upper bound of the shaded area suggests that, under more optimistic conditions, total enrollment could remain stable or even experience a slight increase, maintaining numbers above

2,000 students. Conversely, the lower bound of the shaded area indicates a scenario where enrollment could dip slightly below the expected levels, although not drastically.

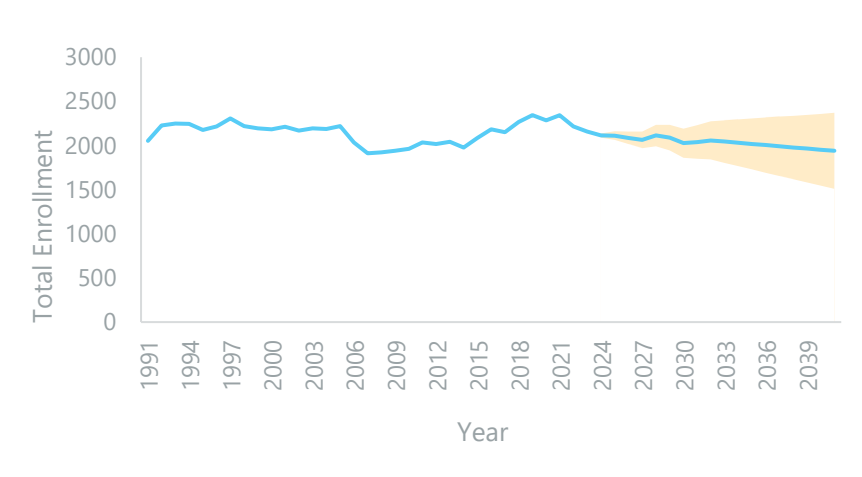


Figure 6: Mean Model Projection for Middle School

The models that deviate the least from the mean projection is the "Average Percent Increase Model - 5-yr".

Percent deviation from mean by model: Middle Schools							
Year	Average Percent Increase Model - 10-yr	Average Percent Increase Model - 5-yr	Cohort Survival Model - 10-yr average	Cohort Survival Model - 5-yr average	Grade Progression Model - Exponential Smoothing	Grade Progression Model - Linear Regression	Linear Regression Model
2024	2.8%	1.3%	-3.4%	-3.8%	-2.9%	-4.2%	10.2%
2025	3.6%	0.5%	-3.5%	-4.5%	-1.6%	-5.9%	11.3%
2026	5.5%	0.9%	-4.2%	-5.7%	-2.0%	-8.2%	13.8%
2027	7.5%	1.3%	-5.1%	-6.7%	-2.9%	-10.2%	16.1%
2028	5.6%	-1.9%	-2.8%	-5.0%	-0.5%	-10.0%	14.5%
2029	7.6%	-1.4%	-3.5%	-6.5%	-0.8%	-12.3%	17.0%
2030	11.6%	0.9%	-6.7%	-9.6%	-2.1%	-15.9%	21.7%
2031	11.6%	-0.4%	-6.5%	-9.4%	-0.4%	-16.9%	22.0%
2032	11.4%	-1.8%	-5.8%	-8.7%	0.3%	-17.3%	22.1%
2033	12.9%	-1.8%	-6.5%	-9.4%	-0.4%	-18.9%	24.0%
2034	14.5%	-1.6%	-7.1%	-10.1%	-1.1%	-20.5%	26.0%
2035	16.0%	-1.5%	-7.8%	-10.8%	-1.8%	-22.0%	28.0%

2036	17.6%	-1.4%	-8.5%	-11.4%	-2.6%	-23.6%	29.9%
2037	19.2%	-1.2%	-9.3%	-12.1%	-3.4%	-25.2%	32.0%
2038	20.8%	-1.0%	-10.1%	-12.9%	-4.2%	-26.6%	34.0%
2039	22.4%	-0.8%	-10.9%	-13.6%	-5.0%	-28.2%	36.1%
2040	24.0%	-0.6%	-11.7%	-14.3%	-5.8%	-29.7%	38.2%
2041	25.6%	-0.4%	-12.4%	-15.2%	-6.6%	-31.2%	40.2%

Table 3: Percent Deviation from Mean by Model: Middle Schools

High School Projections

Most models forecast a slight decline in high school enrollment over the projection period (2024-2041) for schools in Laramie County School District 1 at various rates. The projected mean is shown on the chart below (gray line) which shows a decline of approximately 17 students per year. The main projection line indicates a slight decline in enrollment numbers in high schools, suggesting that by 2041, total enrollment may see a modest decrease. However, the decline is minimal, and the numbers are expected to remain relatively stable, hovering around 4,000 students. The shaded area around the projection line represents the mean percent error, which shows the range within which the actual enrollment figures are likely to fall. The upper bound of this area suggests that, under more favorable conditions, enrollment could remain slightly above 4,000 students.

The lower bound, on the other hand, indicates that enrollment could potentially dip below 4,000 students but not significantly so.

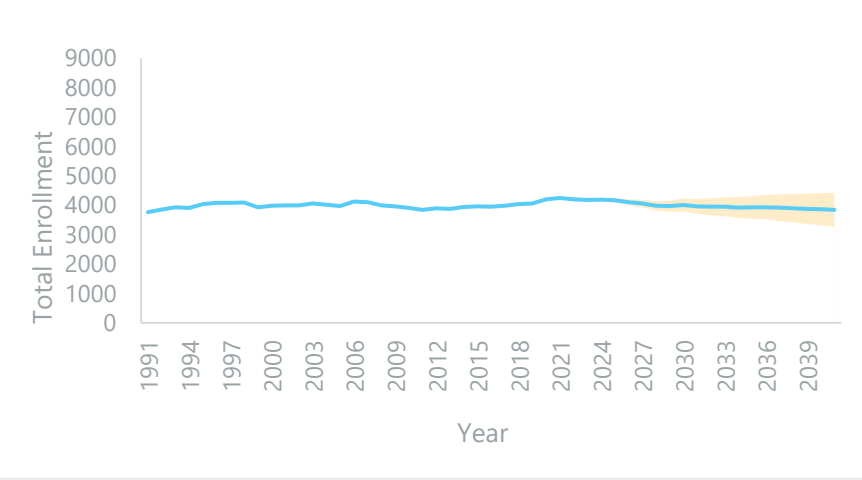


Figure 7: Mean Model Projections for High School

The models that deviate the least from the mean projection are the "Grade Projection Model – Exponential Smoothing".

Percent deviation from mean by model: High Schools							
Year	Average Percent Increase Model - 10-yr	Average Percent Increase Model - 5-yr	Cohort Survival Model - 10-yr average	Cohort Survival Model - 5-yr average	Grade Progression Model - Exponential Smoothing	Grade Progression Model - Linear Regression	Linear Regression Model
2024	0.6%	0.5%	0.2%	-1.1%	0.9%	-3.1%	2.0%
2025	2.0%	1.8%	0.1%	-2.3%	1.3%	-6.2%	3.3%
2026	4.8%	4.4%	-1.4%	-4.4%	1.0%	-10.5%	5.9%
2027	6.9%	6.4%	-1.8%	-5.3%	-1.0%	-13.1%	7.9%
2028	10.1%	9.4%	-3.6%	-7.5%	-2.1%	-17.1%	11.0%
2029	11.5%	10.6%	-4.2%	-8.3%	-2.2%	-19.7%	12.2%
2030	11.7%	10.6%	-3.3%	-8.0%	-1.4%	-21.7%	12.2%
2031	13.9%	12.7%	-4.4%	-9.5%	-1.9%	-24.9%	14.3%
2032	15.5%	14.1%	-5.1%	-10.6%	-1.6%	-27.8%	15.6%
2033	16.7%	15.0%	-5.5%	-11.3%	-1.2%	-30.2%	16.5%
2034	18.7%	16.7%	-6.8%	-12.5%	-1.6%	-32.6%	18.2%
2035	19.8%	17.5%	-7.2%	-12.8%	-1.4%	-34.8%	19.0%
2036	20.9%	18.3%	-7.5%	-13.1%	-1.6%	-36.8%	19.7%
2037	22.7%	19.8%	-8.3%	-13.9%	-2.5%	-39.0%	21.2%
2038	24.6%	21.4%	-9.2%	-14.7%	-3.4%	-41.3%	22.7%
2039	26.4%	22.9%	-10.1%	-15.6%	-4.4%	-43.4%	24.1%
2040	28.3%	24.5%	-11.1%	-16.4%	-5.4%	-45.5%	25.6%
2041	30.2%	26.0%	-12.1%	-17.4%	-6.4%	-47.5%	27.1%

Table 4: Percent Deviation from Mean by Model: High Schools

Summary of Projection Findings

- The historical data suggests some fluctuations, with periods of both decline and growth, peaking around 1993 and again around 2019.
- Most models forecast a decline in enrollment over the projection period (2024-2041), but they vary in the steepness of the decline:
    - The Average Percent Increase Model (5-year) shows a moderate decline, projecting a gradual reduction in enrollment as does the Linear Regression Model while the Average Percent Increase Model (10-year) shows a slight increase in enrollment.
    - The Cohort Survival Models (5-year and 10-year averages) predict a more pronounced decline, though they remain more conservative than the Grade Progression - Linear Regression Model.

- The Grade Progression Model - Linear Regression forecasts the most dramatic drop in enrollment, predicting a sharp and consistent decrease over the coming decade on the overall enrollment.
- The Grade Progression Model - Exponential Smoothing anticipates a steady and controlled decline, smoothing out historical fluctuations while placing more weight on recent trends, thus reflecting a more gradual downward trend compared to sharper declines predicted by some other models.

A02.6 Enrollment Estimates

Elementary Schools

Year	Historical Enrollment	Year	Enrollment Estimates (Mean of models)	Extrapolated Mean Absolute Percent Error (MAPE)
2006	6679	**2024**	6986	±1.89%
2007	6764	**2025**	6897	±3.82%
2008	7016	**2026**	6848	±5.78%
2009	7300	**2027**	6768	±7.78%
2010	7307	**2028**	6655	±9.81%
2011	7502	**2029**	6587	±11.89%
2012	7481	**2030**	6523	±14.00%
2013	7716	**2031**	6428	±16.16%
2014	7844	**2032**	6333	±18.35%
2015	7986	**2033**	6238	±20.59%
2016	7903	**2034**	6144	±22.87%
2017	7942	**2035**	6051	±25.19%
2018	7847	**2036**	5958	±27.56%
2019	7862	**2037**	5865	±29.97%
2020	7355	**2038**	5774	±32.43%
2021	7425	**2039**	5683	±34.93%
2022	7228	**2040**	5593	±37.48%
2023	7023	**2041**	5503	±40.08%

Table 5: Elementary Enrollment Estimates

Middle Schools

Year	Historical Enrollment	Year	Enrollment Estimates (Mean of models)	Extrapolated Mean Absolute Percent Error (MAPE)
2006	2036	**2024**	2113	±1.12%
2007	1912	**2025**	2112	±2.25%
2008	1922	**2026**	2087	±3.40%
2009	1940	**2027**	2063	±4.56%
2010	1964	**2028**	2113	±5.73%
2011	2033	**2029**	2089	±6.91%
2012	2016	**2030**	2026	±8.11%
2013	2042	**2031**	2040	±9.32%
2014	1976	**2032**	2058	±10.54%
2015	2086	**2033**	2044	±11.78%

2016	2185	**2034**	2030	±13.03%
2017	2151	**2035**	2017	±14.30%
2018	2266	**2036**	2004	±15.58%
2019	2344	**2037**	1991	±16.87%
2020	2285	**2038**	1977	±18.18%
2021	2342	**2039**	1965	±19.51%
2022	2216	**2040**	1952	±20.85%
2023	2157	**2041**	1940	±22.20%

Table 6: Middle School Enrollment Estimates

High Schools

Year	Historical Enrollment	Year	Enrollment Estimates (Mean of models)	Extrapolated Mean Absolute Percent Error (MAPE)
2006	4117	**2024**	4189	±0.78%
2007	4100	**2025**	4170	±1.57%
2008	3995	**2026**	4098	±2.36%
2009	3955	**2027**	4058	±3.16%
2010	3900	**2028**	3980	±3.96%
2011	3835	**2029**	3966	±4.77%
2012	3890	**2030**	4000	±5.59%
2013	3877	**2031**	3960	±6.41%
2014	3941	**2032**	3943	±7.24%
2015	3957	**2033**	3944	±8.08%
2016	3948	**2034**	3919	±8.92%
2017	3978	**2035**	3923	±9.77%
2018	4039	**2036**	3928	±10.63%
2019	4055	**2037**	3910	±11.49%
2020	4200	**2038**	3893	±12.36%
2021	4243	**2039**	3877	±13.24%
2022	4197	**2040**	3860	±14.12%
2023	4175	**2041**	3844	±15.01%

Table 7: High School Enrollment Estimates

District-wide

Year	Historical Enrollment	Year	Enrollment Estimates (Mean of models)	Extrapolated Mean Absolute Percent Error (MAPE)
2006	12832	**2024**	13287	±1.01%
2007	12776	**2025**	13179	±2.03%
2008	12933	**2026**	13033	±3.06%
2009	13195	**2027**	12889	±4.10%
2010	13171	**2028**	12748	±5.15%
2011	13370	**2029**	12642	±6.22%
2012	13387	**2030**	12550	±7.29%
2013	13635	**2031**	12427	±8.37%
2014	13761	**2032**	12334	±9.47%
2015	14029	**2033**	12225	±10.57%
2016	14036	**2034**	12094	±11.69%
2017	14071	**2035**	11991	±12.82%
2018	14152	**2036**	11890	±13.96%
2019	14261	**2037**	11766	±15.11%
2020	13840	**2038**	11644	±16.27%
2021	14010	**2039**	11524	±17.44%
2022	13641	**2040**	11405	±18.63%
2023	13355	**2041**	11287	±19.83%

Table 8: District-wide Enrollment Estimates

A03 Most Cost-Effective Remedy Details

A03.1 Prioritization of Remedies Workshop

The prioritization of remedies workshop was a structured interactive workshop facilitated by FEA on August 27, 2024. The workshop included representatives from the District and the SCD. The workshop focused on analyzing each proposed remedy's anticipated actions to determine an order of priorities to accomplish the actions that address the building need identified for the study. Representatives from the District and the SFD collaborated in developing a priority-based approach for each remedy based on the seven schools that are the identified building need for the study, overlaying the District's priorities, prospective timing of funding, and other economic factors specific to Laramie County.

The first step of this process utilized the outline of actions for each remedy from the previous workshop. Each remedy was laid out using building blocks with each school's name, placing them from left to right, in line, or groups, indicating what action could happen first with dependencies and projected milestones. After each remedy was laid out in order of priorities, a schedule was established with anticipated milestones relative to anticipated funding and local economic factors that should be considered. These local economic factors included concerns about having multiple major capital improvement projects underway at the same time and the ability to find qualified contractors to perform the work.

A hybrid remedy (Remedy 4) was developed after the three remedy concept schedules were established. One additional remedy (Remedy 5) was later considered based on a slight variation of Remedy 4. Both the Remedy 3 and Remedy 4 were suggested as offering additional advantages and were anticipated to be financially favorable. The outcome of the CBA workshop and prioritization workshop identified the following Preferred remedy.

The following is a description of the Preferred remedy with justifications for how remedy elements were prioritized.

PHASE 1: Utilizes existing appropriated funding to make the most significant impact across the District and impact the largest number of elementary schools. This Phase addresses six of the seven schools with identified building needs for the MCER and remedies the following schools: Arp, Buffalo Ridge, Hobbs, Jessup, Miller, and Sunrise.

1. South Triad – Phase 1:

a. Design and Construction Actions: With the release of currently appropriated State funding, the following actions could commence upon release:

i. New 5-6 Elementary School. This new school will be constructed first in Phase 1, next to Afflerbach Elementary School. It is anticipated that funding for design and construction for this project can be allocated from funding currently in place, pending the approval of this MCER study. The District has an architect under contract for the design, and the design will take advantage of a prototype

previously developed for Coyote Ridge. With an architect already in place, procurement of design services for this school will not be required, and design may proceed with the release of funding following the approval of the Commission. It is anticipated that this school can be designed, permitted, constructed, and commissioned to be online for the 2027-28 school year. Refer to the test-fit site plan for the New 5-6 Elementary School, which is attached in Appendix A06, Site Diagrams.

ii. Replacement Arp Elementary School (capacity need). Completion of this school will follow soon after completion of the New 5-6 School. Funding for design and construction is in place pending approval of this MCER study. Upon Commission approval, the District will be required to solicit design services for this project. It is anticipated that this school can be designed, permitted, constructed, and commissioned to be online for the 2028-29 school year. The students from Arp are currently located in the swing space at Eastridge (the old Carrie Junior High School). When the new Arp comes online, Eastridge swing space will become available for future projects. Refer to the test-fit site plan for the replacement of Arp Elementary School, which is attached in Appendix A06, Site Diagrams.

b. Non-Construction Actions: Several schools do not require construction actions but will require non-construction actions. The non-construction actions have been scheduled to minimize nonfinancial impacts.

i. Reconfigurations/Boundary Adjustments: These Elementary Schools will be reconfigured to K-4 schools and the 5-6 students will move to the New 5-6 School when the new school comes online for the 2027-28 school year. Anticipated future needs are consistent with buildings of similar age. Therefore, application of block grant and major maintenance funding will be required to continue to sustain these buildings.

1. Afflerbach Elementary (constructed 1986)
2. Goins Elementary (constructed 2012)
3. Rossman Elementary (constructed 2009)
4. Sunrise Elementary (capacity need; constructed 2007)

ii. Offline: These Elementary Schools will be taken offline when the Replacement Arp School comes online for the 2028-29 school year. The District will determine where the students will go from each offline school.

1. Bain Elementary (current K-6) (Constructed 1961)
2. Lebhart Elementary (current K-2) (Constructed 1959
3. Hebard Elementary (current K-6) (Constructed 1945)
4. Fairview Elementary (current 3-6) (Constructed 1956)

2. Central Triad – Phase 1:

a. Design and Construction Actions:

i. Replacement Hobbs Elementary School (condition need). A request for funding for design and construction is anticipated to be made in 2026, and design will commence once the funding is approved and released. The replacement school will be designed to be built on the same site as and adjacent to the existing Hobbs building. It is anticipated that this school can be designed, permitted, constructed, and commissioned to be online for the 2030-31 school year. No swing space is anticipated to be required. Refer to the test-fit site plan for the replacement of Hobbs Elementary School, which is attached in Appendix A06, Site Diagrams.

b. Non-Construction Actions: Several schools do not require action or do not require construction actions. The non-construction actions have been scheduled to minimize nonfinancial impacts.

i. No Action: The following elementary schools are all rural schools, with no needs identified for this MCER study. Therefore, no modifications are anticipated for these schools. Clawson and Willadsen serve very small populations, with total 2023/2024 enrollment of 4 and 5 students respectively. However, application of block grant and major maintenance funding will be required to sustain these buildings as they continue to age:

1. Clawson Elementary (constructed in 1939)
2. Gilchrist Elementary (constructed in 1984)
3. Willadsen Elementary (constructed in 1955)

ii. No Action: This elementary school's function is for the K-6 students of the Air Force Base's families and no needs were identified for this MCER study. Therefore, no modifications were anticipated for this school. Anticipated future sustainment needs are consistent with buildings of similar age. Therefore, application of block grant and major maintenance funding will be required to continue to sustain this building.

1. Freedom Elementary (constructed in 2005)

iii. Reconfiguration/Boundary Adjustments: With Coyote Ridge now in operation, the following schools have been reconfigured to K-4 schools for the 2024/25 school year, and boundary adjustments will be made to balance the capacity. The 5-6 students are now at Coyote Ridge from the following schools.

1. Davis Elementary (constructed 2015)
2. Prairie Wind Elementary (constructed 2015)

iv. Boundary Adjustments: The District recommends that this reconfiguration be implemented for the 2027-28 school year to align with taking Jessup Elementary offline.

1. Pioneer Park Elementary (constructed 1955)

v. Offline: The following Elementary Schools will be taken offline, which the District anticipated executing in steps. At the end of the school year, the District will determine where the students will go from each offline school. A demolition budget has been included for the removal of these buildings.

1. Miller Elementary (condition need; offline 2025) (constructed in 1965)
2. Deming Elementary (offline 2026) (constructed in 1945)
3. Jessup Elementary (condition need; offline 2027) (constructed in 1961)

3. East Triad – Phase 1:

a. Design and Construction Actions: None

b. Non-Construction Actions: The schools in the East Triad do not require construction actions in Phase 1. A review of Buffalo Ridge Elementary (condition need) confirmed it had been recently renovated. The District confirmed the immediate condition needs that were identified in the 2023 facility condition assessment could be remedied through commissioning (or re-commissioning) of HVAC systems. Addressing capacity needs will require reconfiguration and boundary adjustments, as described below.

i. No Action: None.

ii. Reconfiguration/Boundary Adjustments: To address capacity needs, the following schools will undergo some changes. The 5-6 students from Henderson (current capacity of 117%) will be moved to Meadowlark, which can accommodate them, but they will put Meadowlark at full capacity. The K-4 students in Saddle Ridge (current capacity of 130%) will require boundary adjustments. Although this will relieve the capacity needs for the Triad, it will temporarily leave Alta Vista and Baggs as K-6 schools. It is anticipated that Alta Vista and Baggs will be remedied in Phase 2 to complete the K-4 / 5-6 reconfiguration in this Triad. The following schools would be considered in the K-4 boundary adjustments, with final disposition of student movement to be determined by the District. Anticipated future sustainment needs are consistent with buildings of similar age. Therefore, application of block grant and major maintenance funding will be required to continue to sustain this building.

1. Alta Vista Elementary (constructed 1987)
2. Anderson Elementary (constructed 1983)
3. Baggs Elementary (constructed 2008)
4. Buffalo Ridge Elementary (constructed 1959; recently renovated)

5. Dildine Elementary (constructed 1959)
6. Henderson Elementary (constructed 1950)
7. Saddle Ridge Elementary (constructed 2009)

PHASE 2: Requires future requests for design and construction. These requests have been planned to stagger projects to alleviate local economic factors, including concerns about having multiple major capital improvement projects underway at the same time and the ability to find qualified contractors to perform the work. This Phase addresses one of the seven schools with identified building need for the MCER and remedies the following school: Saddle Ridge.

1. South Triad – Phase 2:

a. Design and Construction Actions: With the release of future requested and appropriated State funding, the following actions will commence:

i. Replacement Cole Elementary School request for funding for design and construction will be made in 2030, and design will commence once the funding is approved and released. The replacement school will be designed to be built on the same site adjacent to the existing building. No swing space is anticipated to be required. It is anticipated that this school can be designed, permitted, constructed, and commissioned to be online for the 2034-35 school year. Refer to the test-fit site plan for the replacement Cole Elementary School, which is in Appendix A06, Site Diagrams.

b. Non-Construction Actions: None

2. Central Triad – Phase 2:

a. Design and Construction Actions: With the release of future requested and appropriated State funding, the following actions will commence:

i. Addition Coyote Elementary School request for funding for design and construction will be made in 2031, and design will commence once the funding is approved and released. The addition will be designed to extend classrooms off the end of each section. Swing space is not anticipated to be required. It is anticipated that this addition can be designed, permitted, constructed, and commissioned to be online for the 2033-34 school year. Refer to the test-fit site plan for the addition to Coyote Ridge Elementary School, which is attached in Appendix A06, Site Diagrams.

b. Non-Construction Actions: None

3. East Triad – Phase 2:

a. Design and Construction Actions: With the release of future requested and appropriated State funding, the following actions will commence:

i. A New K-4 Saddle Ridge II Elementary School will be constructed at the Three Hearts Drive site. A request for funding for design and construction will be made in 2028, and design will commence once the funding is approved and released. No swing space is anticipated to be required. It is expected this school can be designed, permitted, constructed, and commissioned to be online for the 2032-

33 school year. Refer to the test-fit site plan for the new Saddle Ridge II Elementary School, which is attached in Appendix A06, Site Diagrams.

ii. Addition Meadowlark Elementary School request for funding for design and construction will be made in 2029, and design will commence once the funding is approved and released. The addition will be designed to extend classrooms off the end of each section. No swing space is anticipated to be required. It is expected this addition can be designed, permitted, constructed, and commissioned to be online for the 2033-34 school year. Refer to the test-fit site plan for the addition to Meadowlark Elementary School, which is attached in Appendix A06, Site Diagrams.

c. Non-Construction Actions: Several schools do not require action or do not require construction actions. The non-construction actions have been scheduled to minimize nonfinancial impacts.

i. Boundary Adjustment: This school will have a boundary adjustment to balance the capacity.

1. Saddle Ridge Elementary 2032

ii. Reconfiguration/Boundary Adjustments: These schools will be reconfigured to K-4 schools, and boundary adjustments will be made to balance the capacity. The 5-6 students will go to Meadowlark. The District recommends that this reconfiguration be implemented for the 2032-33 school year.

1. Alta Vista Elementary 2032
2. Baggs Elementary 2032

iii. Offline: This Elementary School will be taken offline. At the end of the school year, the District will determine where the students will go from the offline school. A demolition budget has been included for the removal of these buildings.

1. Henderson Elementary 2033

A03.2 Implementation plan and timeline for the recommended remedy.

The following information explains the details provided in the following infographic in Figure 1.

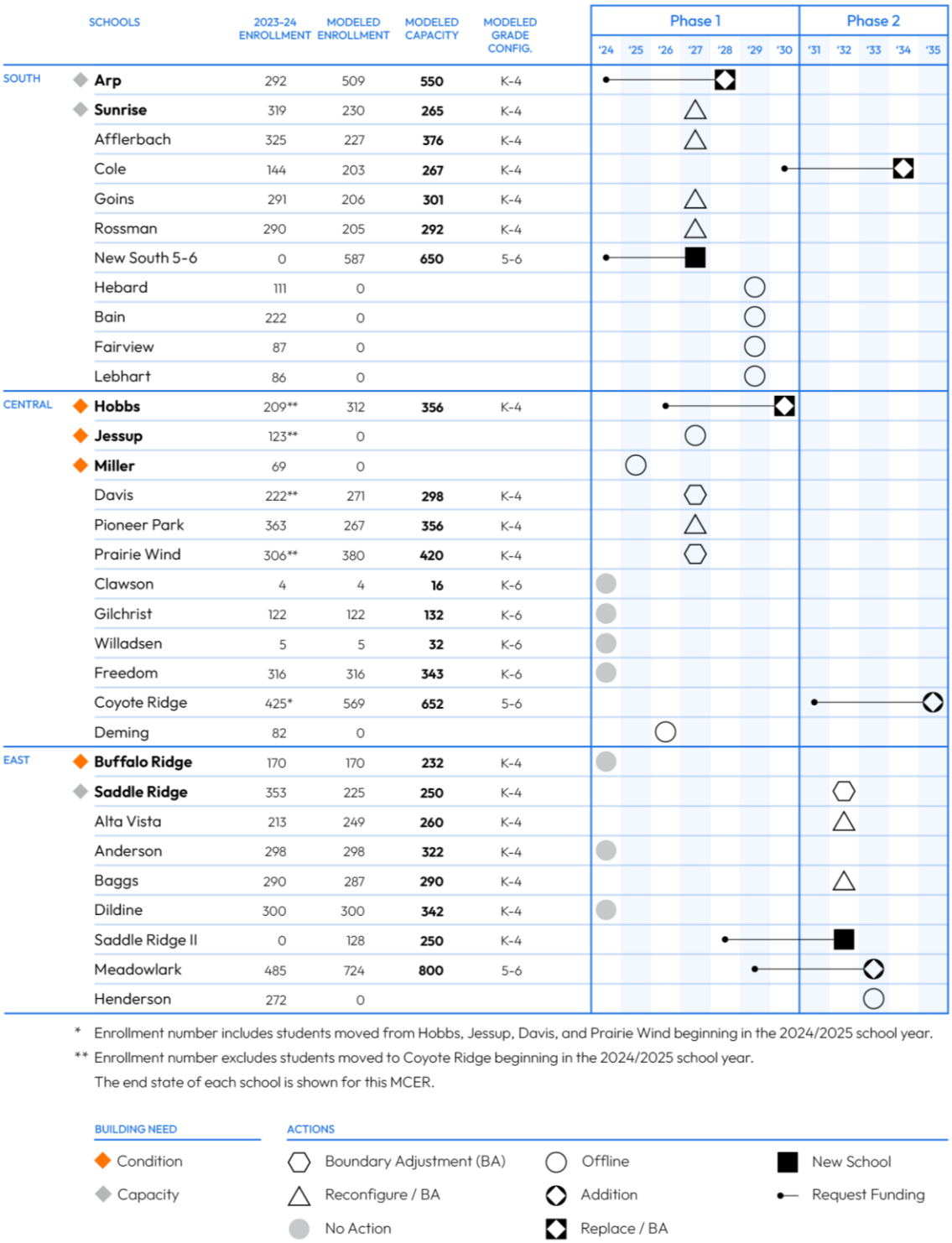


Figure 1: Most Cost-Effective Remedy Infographic

The Condition and Capacity Needs included in this MCER study have been identified as impeding the delivery of the prescribed statewide educational program. This directly relates to Wyoming Statute 21-15-117(a) which states, "Under each of the two (2) schedules the commission shall prioritize educational building and facility needs that impede the delivery of the prescribed statewide educational program."

To address these needs, the MCER implementation schedule for the District is broken into two phases:

- Phase 1 (2024-2030)
- Phase 2 (2031-2035)

Each phase outlines a sequence of construction, reconfigurations, and school closures, targeting the South, Central, and East Triads to address capacity and condition needs. Completion of identified construction activities allows the execution of reconfigurations and school closures, which will require some attendance boundary adjustments, as indicated in Figure 1. However, current triad boundaries are not anticipated to change, and all attendance boundary adjustments will be within each triad—not across triads or districts.

The following explains the specific actions included in each execution phase of this MCER study and how each of the condition and capacity need schools will be remedied as illustrated in the infographic in Figure 1. At the conclusion of these actions, the condition and capacity needs identified for this MCER will be remedied, thereby addressing the current identified needs that impact the delivery of the statewide educational program.

Explanation of Activities in Phase 1 (2024-2030) by Triad

South Triad (top of infographic table):

- Primary Construction:
  - New 5-6 School: As part of addressing the capacity issue at Arp, a new 5-6 school will be constructed in the South Triad, which will allow for the reconfiguration of the grade structure across the triad. All 5-6 students across the triad will move to the New 5-6 School, and the K-4 grades will be redistributed via boundary adjustments.
  - Replacement ARP School: Replacement of the existing ARP building also addresses the Arp capacity need. Completion will also open the Eastridge building for future swing space.
- Reconfiguration of the Triad:
  - Once the New 5-6 School and Replacement Arp School are operational, the South Triad will fully transition to a K-4 and 5-6 configuration, completing the District's long-term reconfiguration strategy in this triad and across the District. This reconfiguration aims to alleviate both capacity and condition concerns at ARP and the capacity concern at Sunrise school.
- Buildings to be Taken Offline:
  - As part of this reconfiguration, several older buildings are shown as offline to minimize maintenance costs and optimize resource allocation. This will be necessary

to execute a District-wide Most Cost-Effective Remedy, and the schools can be taken offline as soon as the Replacement Arp School is operational. At the conclusion of these actions, The following schools will be offline from operation.
    - Hebard
    - Bain
    - Fairview
    - Lebhart
  - Please note, as of the time of this writing, research for the MCER study indicates some buildings listed as offline may be on the historic registry (e.g., Hebard). For the purposes of the MCER study, these buildings have been modeled to be removed from use for educational purposes and an allowance for the cost of demolition has been included in the present value analysis. The District will need to review the buildings modeled as going offline as the MCER is implemented and proceed appropriately.
- Additional Actions in the South Triad:
  - Toward the end of Phase 1, funding will be requested for the replacement of Cole School (anticipated in Phase 2), though construction will not begin until later. This will replace the third oldest building in the District, which is projected to have a 10-year FCI of .44. Source: SFD 2023 FCI Analysis Report (assetworks.com).

Central Triad (middle of infographic table):

- Replacement of Hobbs School:
  - In Phase 1, Hobbs School will be replaced with a larger facility to accommodate boundary adjustments, consolidating students from other nearby schools. The larger school size will enable the District to take additional buildings offline, reducing operating costs. The District will apply major maintenance funds as needed to maintain Hobbs until replacement is completed.
- Boundary Adjustments:
  - Boundary adjustments will be implemented to shift student populations to the newly constructed Hobbs and other reconfigured schools. These adjustments are essential to optimize building utilization and accommodate projected enrollment growth.
- Buildings to be Taken Offline:
  - Some older and aging buildings in the Central Triad will be offline to align with the new capacity configurations and boundary adjustments are made. Please note, as of the time of this writing, research for the MCER study indicates some buildings listed as offline may be on the historic registry (e.g., Deming). For the purposes of the MCER study, these buildings have been modeled to be removed from use for educational purposes and an allowance for the cost of demolition has been included in the present value analysis. The District will need to review the buildings modeled as going offline as the MCER is implemented and proceed appropriately.

- Expansion of Coyote Ridge School:
  - Coyote Ridge 5-6 School, which began operations in the 2024-2025 academic year, will continue to fill with 5-6 students throughout Phase 1. By the end of the phase, Coyote Ridge will be fully operational, serving the majority of 5-6 students in the Central Triad.
- Exempted Schools:
  - A few schools will not be involved in boundary adjustments due to their geographic location or unique population:
    - Freedom Elementary (serving a military base)
    - Clawson, Gilchrist, and Wilson (rural schools)
- Future Growth Contingency:
  - Should the Central Triad experience enrollment growth during Phase 1, the District has projected the need for a four-section addition to an existing school to accommodate an additional 100 students. Funding for this addition would be requested in Phase 2, though the planning and determination will take place during Phase 1.

East Triad (bottom of infographic table):

- Saddle Ridge School Expansion:
  - Saddle Ridge II, a new school to address capacity issues, will be funded in Phase 1 and constructed in Phase 2. This school will serve students in a K-4 configuration and will help resolve overcrowding at Saddle Ridge I.
- Non-Construction remedy for Buffalo Ridge:
  - Buffalo Ridge School was initially identified for condition concerns but, after further review, FEA determined that no major construction was required. Instead, the mechanical systems will be fully commissioned to improve operations, making this a non-construction remedy.
- Addition to Meadowlark School:
  - To accommodate the full transition to a K-4 and 5-6 configuration in the East Triad, Meadowlark 5-6 school will be expanded. Funding for this addition will be requested late in Phase 1, with construction taking place in the middle of Phase 2.
- Henderson School Closure:
  - Henderson School, one of the oldest buildings in the District, will come offline once the Meadowlark addition is complete, furthering the cost-effective consolidation strategy. The 5-6 students from Henderson will be reallocated to Meadowlark. Attendance boundary adjustments within the Triad will be to redistribute K-4 students.

Explanation of Activities in Phase 2 (2031-2035) by Triad

South Triad (top of infographic table):

- Replacement of Cole School:
  - The replacement of Cole School, for which funding was requested at the end of Phase 1, will take place in Phase 2. The new Cole building will be constructed with a K-4 configuration.

Central Triad (middle of infographic table):

- Potential Four-Section Addition to Coyote Ridge:
  - Should the four-section addition be required based on enrollment trends from Phase 1, construction will begin early in Phase 2. This addition will be completed by the end of the phase and will add capacity for 100 additional students.

East Triad (bottom of infographic table):

- Completion of Saddle Ridge II and Meadowlark Expansion:
  - The expansion of Meadowlark 5-6 school, begun in Phase 1, will be completed early in Phase 2. This will allow the full transition to a K-4 and 5-6 configuration across the East Triad.
- Ongoing Operations:
  - After the closure of Henderson and the expansion of Meadowlark, the East Triad will operate under the new grade structure, optimizing capacity and reducing operational inefficiencies.

A04 Present Value Analysis

The present value analysis calculates the present value of capital construction, block grant, and major maintenance costs over a 20-year analysis period for this MCER study. Since the block grant funding is a guarantee by the State through the Wyoming School Foundation Program, the full amount of the block grant has been modeled. However, it is understood that the amount paid by the State to each school district may be reduced—by the amount of local resources available to the District.

For Laramie County School District No. 1, the following chart provides an historical accounting of the block grant funds provided by the State versus those provided by local resources. Although the portion of the guarantee paid by the state varies year to year, the outcome of the most cost-effective remedy does not change across the range of historical percentages indicate to be provided via State Resources.

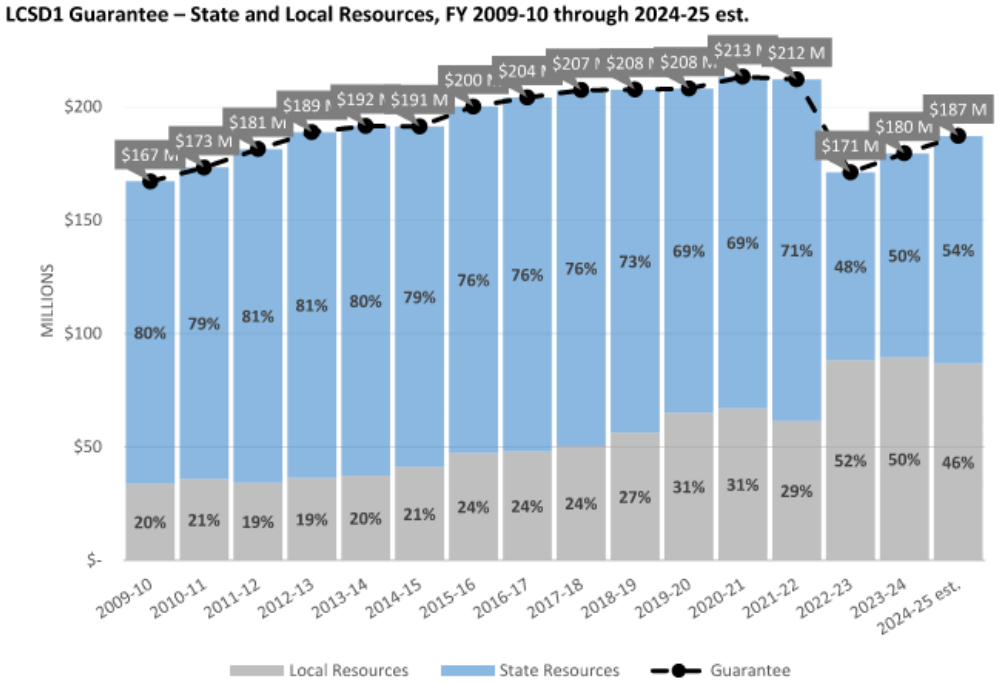


Figure 1: District Historical Block Grant Funding

Source:https://laramie1.sharepoint.com/Departments/Technology/IS/Public%20Website%20Content/Forms/AllItems.aspx?id=%2FDepartments%2FTechnology%2FIS%2FPublic%20Website%20Content%2FFinance%2FFinal%5FFY25%5FBudget%5F7%2D15%2D24jc%2Epdf&parent=%2FDepartments%2FTechnology%2FIS%2FPublic%20Website%20Content%2FFinance&p=true&ga=1

The following table presents a summary of the projected cost in each year of the study for each potential remedy. The cost in each year of the study for each remedy is the summation of potential capital construction, block grant, and major maintenance costs for that remedy in that year.

MODELED ANNUAL REMEDY COSTS

REMEDY	1	2	3	4	5
Year 0	$145,904,948	$145,904,948	$145,904,948	$145,904,948	$145,904,948
Year 1	$145,904,948	$145,904,948	$145,904,948	$145,904,948	$145,904,948
Year 2	$145,904,948	$145,904,948	$145,904,948	$146,039,721	$145,904,948
Year 3	$146,039,721	$146,182,828	$146,182,828	$199,910,721	$200,850,705
Year 4	$223,744,467	$242,487,681	$246,245,385	$197,284,429	$198,594,264
Year 5	$145,147,752	$148,444,177	$149,957,401	$149,817,969	$151,601,126
Year 6	$173,223,612	$182,456,468	$182,878,993	$178,076,826	$184,405,382
Year 7	$166,828,797	$166,854,431	$189,019,050	$144,230,485	$144,263,749
Year 8	$170,710,683	$199,479,284	$176,084,765	$174,171,156	$185,876,258
Year 9	$192,325,510	$144,221,267	$146,454,799	$166,417,390	$148,923,252
Year 10	$162,676,264	$160,881,540	$159,135,778	$174,610,826	$177,856,098
Year 11	$145,957,253	$144,162,529	$147,991,227	$157,624,123	$158,972,113
Year 12	$172,454,111	$183,988,514	$147,991,227	$146,479,572	$147,827,562
Year 13	$146,869,409	$145,544,679	$147,991,227	$146,479,572	$147,827,562
Year 14	$146,869,409	$145,530,860	$147,991,227	$146,479,572	$147,827,562
Year 15	$146,869,409	$143,608,760	$147,991,227	$146,479,572	$147,827,562
Year 16	$146,869,409	$143,608,760	$147,991,227	$146,479,572	$147,827,562
Year 17	$146,869,409	$143,608,760	$147,991,227	$146,479,572	$147,827,562
Year 18	$146,869,409	$143,608,760	$147,991,227	$146,479,572	$147,827,562
Year 19	$146,869,409	$143,608,760	$147,991,227	$146,479,572	$147,827,562
Year 20	$146,869,409	$143,608,760	$147,991,227	$146,479,572	$147,827,562
Present Value	**$3,021,431,014**	**$3,022,138,963**	**$3,025,032,862**	**$3,011,287,064**	**$3,030,413,495**

Analysis Summary

The costs shown in the table are in 2024 dollars. For each Remedy, each cost (by year) is inflated to the year indicated in the lefthand column (e.g., Year 5) using the inflation rate below, and then discounted back to present using the disount rate below. The total sum of those calculations represents the Present Value of the Remedy.

Analysis Inputs

The inflation rate used for the present value analysis is 5.6%, which represents the annualized inflation rate from January 2006 to January 2024, based on U.S. Bureau of Labor Statistics (BLS), Producer Price Index data for new school building construction, not seasonally adjusted. This is represented in BLS data Series ID PCU236222236222; https://data.bls.gov/timeseries/pcu236222236222.

The discount rate used to discount future values back to present is 6.6%, which represents the annualized return over the last 10 years of the Common School Permanent Land Fund as provided by Wyoming State Treasurer's Office as of July 31, 2024. The ten year rate was selected because the period is greater than the period between this study and the final year of funding allocation required to fund the activities in the proposed study.

A05 MCER Cost Estimate

The following cost estimates represent first-time costs and are developed for each identified action in the MCER. The cost estimates are in 2024 dollars. The cost of each action is inflated to the anticipated year of construction (and discounted back to present) as part of the Present Value Analysis based on the assumed timing of each action. The total present value of the MCER is presented in Appendix A04 Present Value Analysis.

Location Summary

Arp Replacement

K-MACK CONSULTING LLC *Conceptual Estimate* *September 20, 2024*

Location	Individual Elements	Total Amount
1- Building Construction		
	A1010StandardFoundtn	1,230,469
	A1030SlabOnGrade	660,830
	B1010FloorConst	889,592
	B1020RoofConst	3,061,643
	B2010ExteriorWalls	4,027,096
	B2020ExteriorWindows	948,815
	B2030ExteriorDoors	123,763
	B3010RoofCoverings	1,011,323
	B3020RoofOpenings	130,196
	C1010Partitions	1,461,212
	C1020InteriorDoors	540,551
	C1030Specialties	385,446
	C2010StairConstructn	65,400
	C3010WallFinishes	442,456
	C3020FloorFinishes	680,987
	C3030CeilingFinishes	720,884
	D1010Elevators&Lifts	130,000
	D4090OthrFireProtSys	436,890
	D4910MechComplete	5,097,050
	D5910ElecComplete	4,004,825
	E1020InstitutEquip	17,383
	E1090OtherEquipment	359,528
	E2010FixedFurnishing	919,167
	X1010Field/SiteSetup	1,330,000
		28,675,507
2 - Sitework		
	G1030SiteEarthwork	300,000
	G2010Roadways	599,300
	G2020ParkingLots	658,500
	G2030PedestrianPvmt	360,000
	G2040SiteDevelopment	377,438
	G2050Landscaping	442,605
	G3010WaterSupply	100,000
	G3020SanitarySewer	100,000
	G3030StormSewer	200,000
		3,137,843
3 - Asbestos Abatement		
	F2020HazardAbatement	75,000
	X1010Field/SiteSetup	35,000
		110,000
4 - Building & Site Demo		
	G1020SiteDemolition	505,212
	X1010Field/SiteSetup	175,000
		680,212

Estimate Totals

Description	Amount	Totals	Hours	Rate
Labor	498,970		8,415.447 hrs	
Material	3,595,791			
Subcontract	26,959,301			
Other	1,549,500			
	32,603,562	**32,603,562**		
Design Contingency	3,260,356			10.000 %
Sales / Use Tax	215,747			6.000 %
General Liability	180,398			0.500 %
Builder's Risk	114,112			0.350 %
Building Permit	102,334			
Plan Check Fee	66,517			65.000 %
Public Safety Impact Fee	13,000			
CM/GC Bonds	273,360			
	4,225,824	**36,829,386**		
GC Profit	1,473,175			4.000 %
	1,473,175	**38,302,561**		
Owner Contingency	1,915,128			5.000 %
Arch./Engr. Fee	3,064,205			8.000 %
Owner FF&E	1,663,984			4.344 %
Owner's Representative	367,000			
Commissioning	229,815			0.600 %
Utility Tap Fees	887			
Independent Testing	120,000			
Geotech Survey	20,000			
Auditing	25,000			
	7,406,019	**45,708,580**		
Total		***45,708,580***		

Location Summary

Hobbs Replacement

K-MACK CONSULTING LLC *Conceptual Estimate* *September 20, 2024*

Location	Individual Elements	Total Amount
1 - Building Construction		
	A1010StandardFoundtn	878,907
	A1030SlabOnGrade	472,021
	B1010FloorConst	637,829
	B1020RoofConst	2,214,865
	B2010ExteriorWalls	2,876,497
	B2020ExteriorWindows	724,715
	B2030ExteriorDoors	88,402
	B3010RoofCoverings	675,383
	B3020RoofOpenings	130,196
	C1010Partitions	1,076,357
	C1020InteriorDoors	386,108
	C1030Specialties	285,516
	C2010StairConstructn	65,400
	C3010WallFinishes	317,184
	C3020FloorFinishes	488,291
	C3030CeilingFinishes	527,798
	D1010Elevators&Lifts	130,000
	D4090OthrFireProtSys	302,388
	D4910MechComplete	3,527,860
	D5910ElecComplete	2,771,890
	E1020InstitutEquip	17,383
	E1090OtherEquipment	295,095
	E2010FixedFurnishing	594,633
	X1010Field/SiteSetup	1,120,000
		20,604,717
2 - Sitework		
	G1030SiteEarthwork	350,000
	G2020ParkingLots	658,500
	G2030PedestrianPvmt	360,000
	G2040SiteDevelopment	324,128
	G2050Landscaping	442,605
	G3010WaterSupply	100,000
	G3020SanitarySewer	100,000
	G3030StormSewer	200,000
		2,535,233
3 - Asbestos Abatement		
	F2020HazardAbatement	75,000
	X1010Field/SiteSetup	70,000
		145,000
4 - Building & Site Demo		
	G1020SiteDemolition	551,164
	X1010Field/SiteSetup	210,000
		761,164

Estimate Totals

Description	Amount	Totals	Hours	Rate
Labor	367,344		6,263.452 hrs	
Material	2,639,576			
Subcontract	19,630,194			
Other	1,409,000			
	24,046,114	**24,046,114**		
Design Contingency	2,404,611			10.000 %
Sales / Use Tax	158,375			6.000 %
General Liability	133,046			0.500 %
Builder's Risk	84,161			0.350 %
Building Permit	100,509			
Plan Check Fee	65,331			65.000 %
Public Safety Impact Fee	13,000			
CM/GC Bonds	204,559			
	3,163,592	**27,209,706**		
GC Profit	1,088,388			4.000 %
	1,088,388	**28,298,094**		
Owner Contingency	1,414,905			5.000 %
Arch./Engr. Fee	2,263,848			8.000 %
Owner FF&E	1,216,818			4.300 %
Owner's Representative	317,000			
Commissioning	169,789			0.600 %
Utility Tap Fees	887			
Independent Testing	120,000			
Geotech Survey	20,000			
Auditing	25,000			
	5,548,247	**33,846,341**		
Total		***33,846,341***		

Location Summary

Jessup Demolition

K-MACK CONSULTING LLC | *Conceptual Estimate* | *September 20, 2024*

Location	Individual Elements	Total Amount
1 - Asbestos Abatement		
	F2020HazardAbatement	75,000
	X1010Field/SiteSetup	25,000
		100,000
2 - Building & Site Demo		
	G1020SiteDemolition	412,460
	X1010Field/SiteSetup	125,000
		537,460
3 - Site Reclamation		
	G1030SiteEarthwork	217,500
	G2050Landscaping	253,981
	X1010Field/SiteSetup	50,000
		521,481

Estimate Totals

Description	Amount	Totals	Hours	Rate
Labor				
Material				
Subcontract	958,941			
Other	200,000			
	1,158,941	**1,158,941**		
Contingency	173,841			15.000 %
General Liability	6,664			0.500 %
Builder's Risk	4,056			0.350 %
Building Permit	7,434			
Plan Check Fee	4,832			65.000 %
CM/GC Bonds	13,360			
	210,187	**1,369,128**		
GC Profit	109,530			8.000 %
	109,530	**1,478,658**		
Owner Contingency	73,933			5.000 %
Arch./Engr. Fee	103,506			7.000 %
Independent Testing	35,000			
	212,439	**1,691,097**		
Total		***1,691,097***		

Location Summary

Miller Demolition

K-MACK CONSULTING LLC | *Conceptual Estimate* | *September 20, 2024*

Location	Individual Elements	Total Amount
1 - Asbestos Abatement		
	F2020HazardAbatement	50,000
	X1010Field/SiteSetup	25,000
		75,000
2 - Building & Site Demo		
	G1020SiteDemolition	251,520
	X1010Field/SiteSetup	75,000
		326,520
3 - Site Reclamation		
	G1030SiteEarthwork	110,000
	G2050Landscaping	161,000
	X1010Field/SiteSetup	50,000
		321,000

Estimate Totals

Description	Amount	Totals	Hours	Rate	
Labor					
Material					
Subcontract	572,520				
Other	150,000				
	722,520	**722,520**			
Contingency	108,378			15.000	%
General Liability	4,154			0.500	%
Builder's Risk	2,529			0.350	%
Building Permit	5,609				
Plan Check Fee	3,646			65.000	%
CM/GC Bonds	8,449				
	132,765	**855,285**			
GC Profit	68,423			8.000	%
	68,423	**923,708**			
Owner Contingency	46,185			5.000	%
Arch./Engr. Fee	64,660			7.000	%
Independent Testing	35,000				
	145,845	**1,069,553**			
Total		***1,069,553***			

Location Summary

New 5-6 South Triad

K-MACK CONSULTING LLC *Conceptual Estimate* *September 20, 2024*

Location	Individual Elements	Total Amount
1 - Building Construction		
	A1010StandardFoundtn	1,556,271
	A1030SlabOnGrade	1,034,700
	B1010FloorConst	53,975
	B1020RoofConst	2,146,972
	B2010ExteriorWalls	2,707,093
	B2020ExteriorWindows	809,825
	B2030ExteriorDoors	154,566
	B3010RoofCoverings	1,437,590
	B3020RoofOpenings	44,589
	C1010Partitions	2,172,199
	C1020InteriorDoors	852,795
	C1030Specialties	398,345
	C2010StairConstructn	82,032
	C2020StairFinishes	15,656
	C3010WallFinishes	460,903
	C3020FloorFinishes	715,284
	C3030CeilingFinishes	926,207
	D4090OthrFireProtSys	516,324
	D4910MechComplete	6,023,780
	D5910ElecComplete	4,806,890
	E1020InstitutEquip	3,924
	E1090OtherEquipment	465,605
	E2010FixedFurnishing	887,297
	X1010Field/SiteSetup	1,700,000
		29,972,819
2 - Sitework		
	G1030SiteEarthwork	449,295
	G2010Roadways	720,329
	G2020ParkingLots	588,581
	G2030PedestrianPvmt	705,583
	G2040SiteDevelopment	554,397
	G2050Landscaping	1,176,606
	G3010WaterSupply	202,136
	G3020SanitarySewer	206,545
	G3030StormSewer	346,869
		4,950,340

Estimate Totals

Description	Amount	Totals	Hours	Rate
Labor	427,568		5,984.628 hrs	
Material	2,909,727			
Subcontract	29,876,614			
Other	1,709,250			
	34,923,159	**34,923,159**		
Contingency	3,492,316			10.000 %
Sales / Use Tax	174,584			6.000 %
General Liability	192,950			0.500 %
Builder's Risk	52,385			0.150 %
Building Permit	147,959			
Plan Check Fee	96,173			65.000 %
Public Safety Fee	22,625			
CM/GC Bonds	291,802			
	4,470,794	**39,393,953**		
GC Profit	1,575,758			4.000 %
	1,575,758	**40,969,711**		
Owner Contingency	2,048,486			5.000 %
Arch./Engr. Fee	3,277,577			8.000 %
Owner FF&E	1,761,698			4.300 %
Owner's Representative	333,000			
Commissioning	225,333			0.550 %
Utility Tap Fees	77,502			
Independent Testing	150,000			
Geotech Survey	20,000			
Auditing	25,000			
	7,918,596	**48,888,307**		
Total		**48,888,307**		

Location Summary

Henderson Demolition

K-MACK CONSULTING LLC | *Conceptual Estimate* | *September 20, 2024*

Location	Individual Elements	Total Amount
1 - Asbestos Abatement		
	F2020HazardAbatement	75,000
	X1010Field/SiteSetup	50,000
		125,000
2 - Building & Site Demo		
	G1020SiteDemolition	542,844
	X1010Field/SiteSetup	100,000
		642,844
3 - Site Reclamation		
	G1030SiteEarthwork	225,000
	G2050Landscaping	270,481
	X1010Field/SiteSetup	50,000
		545,481

Estimate Totals

Description	Amount	Totals	Hours	Rate
Labor				
Material				
Subcontract	1,113,325			
Other	200,000			
	1,313,325	**1,313,325**		
Contingency	196,999			15.000 %
General Liability	7,552			0.500 %
Builder's Risk	4,597			0.350 %
Building Permit	7,799			
Plan Check Fee	5,069			65.000 %
CM/GC Bonds	15,092			
	237,108	**1,550,433**		
GC Profit	124,035			8.000 %
	124,035	**1,674,468**		
Owner Contingency	83,723			5.000 %
Arch./Engr. Fee	117,213			7.000 %
Independent Testing	35,000			
	235,936	**1,910,404**		
Total		***1,910,404***		

Location Summary

Lebhart Demolition

K-MACK CONSULTING LLC | *Conceptual Estimate* | *September 20, 2024*

Location	Individual Elements	Total Amount
1 - Asbestos Abatement		
	F2020HazardAbatement	75,000
	X1010Field/SiteSetup	50,000
		125,000
2 - Building & Site Demo		
	G1020SiteDemolition	352,756
	X1010Field/SiteSetup	100,000
		452,756
3 - Site Reclamation		
	G1030SiteEarthwork	195,000
	G2050Landscaping	204,481
	X1010Field/SiteSetup	50,000
		449,481

Estimate Totals

Description	Amount	Totals	Hours	Rate
Labor				
Material				
Subcontract	827,237			
Other	200,000			
	1,027,237	1,027,237		
Contingency	154,086			15.000 %
General Liability	5,907			0.500 %
Builder's Risk	3,595			0.350 %
Building Permit	6,521			
Plan Check Fee	4,239			65.000 %
CM/GC Bonds	11,872			
	186,220	1,213,457		
GC Profit	97,077			8.000 %
	97,077	1,310,534		
Owner Contingency	65,527			5.000 %
Arch./Engr. Fee	91,737			7.000 %
Independent Testing	35,000			
	192,264	1,502,798		
Total		***1,502,798***		

Location Summary

Cole Replacement

K-MACK CONSULTING LLC *Conceptual Estimate* *September 20, 2024*

Location	Individual Elements	Total Amount
1 - Building Construction		
	A1010StandardFoundtn	878,907
	A1030SlabOnGrade	472,021
	B1010FloorConst	173,471
	B1020RoofConst	2,214,865
	B2010ExteriorWalls	2,531,317
	B2020ExteriorWindows	637,749
	B2030ExteriorDoors	74,002
	B3010RoofCoverings	675,383
	B3020RoofOpenings	130,196
	C1010Partitions	913,667
	C1020InteriorDoors	328,174
	C1030Specialties	267,067
	C2010StairConstructn	65,400
	C3010WallFinishes	291,540
	C3020FloorFinishes	436,457
	C3030CeilingFinishes	465,934
	D1010Elevators&Lifts	130,000
	D4090OthrFireProtSys	245,622
	D4910MechComplete	2,865,590
	D5910ElecComplete	2,251,535
	E1020InstitutEquip	17,383
	E1090OtherEquipment	254,495
	E2010FixedFurnishing	527,859
	X1010Field/SiteSetup	1,152,000
		18,000,634
2 - Sitework		
	G1030SiteEarthwork	350,000
	G2020ParkingLots	504,500
	G2030PedestrianPvmt	300,000
	G2040SiteDevelopment	324,128
	G2050Landscaping	442,605
	G3010WaterSupply	100,000
	G3020SanitarySewer	100,000
	G3030StormSewer	200,000
		2,321,233
3 - Asbestos Abatement		
	F2020HazardAbatement	75,000
	X1010Field/SiteSetup	72,000
		147,000
4 - Building & Site Demo		
	G1020SiteDemolition	393,864
	X1010Field/SiteSetup	144,000
		537,864

Estimate Totals

Description	Amount	Totals	Hours	Rate
Labor	329,918		5,719.685 hrs	
Material	2,312,191			
Subcontract	16,987,621			
Other	1,377,000			
	21,006,730	**21,006,730**		
Design Contingency	2,100,673			10.000 %
Sales / Use Tax	138,731			6.000 %
General Liability	116,231			0.500 %
Builder's Risk	73,524			0.350 %
Building Permit	102,334			
Plan Check Fee	66,517			65.000 %
Public Safety Impact Fee	13,000			
CM/GC Bonds	180,104			
	2,791,114	**23,797,844**		
GC Profit	951,914			4.000 %
	951,914	**24,749,758**		
Owner Contingency	1,237,488			5.000 %
Arch./Engr. Fee	1,979,981			8.000 %
Owner FF&E	1,064,240			4.300 %
Owner's Representative	304,000			
Commissioning	148,499			0.600 %
Utility Tap Fees	1,000			
Independent Testing	100,000			
Geotech Survey	20,000			
Auditing	25,000			
	4,880,208	**29,629,966**		
Total		***29,629,966***		

Location Summary

Meadowlark Addition

K-MACK CONSULTING LLC *Conceptual Estimate* *September 20, 2024*

Location	Individual Elements	Total Amount
1 - Building Construction		
	A1010StandardFoundtn	555,988
	A1030SlabOnGrade	517,475
	B1020RoofConst	1,462,969
	B2010ExteriorWalls	1,483,199
	B2020ExteriorWindows	259,200
	B2030ExteriorDoors	41,922
	B3010RoofCoverings	571,745
	B3020RoofOpenings	94,196
	C1010Partitions	696,268
	C1020InteriorDoors	144,890
	C1030Specialties	143,316
	C3010WallFinishes	113,367
	C3020FloorFinishes	248,100
	C3030CeilingFinishes	261,325
	D4090OthrFireProtSys	196,998
	D4910MechComplete	2,626,640
	D5910ElecComplete	1,805,815
	E1020InstitutEquip	3,482
	E2010FixedFurnishing	275,700
	X1010Field/SiteSetup	888,000
		12,390,594
2 - Sitework		
	G1020SiteDemolition	110,000
	G1030SiteEarthwork	250,000
	G2030PedestrianPvmt	180,000
	G2040SiteDevelopment	68,544
	G2050Landscaping	188,640
	G3020SanitarySewer	50,000
	G3030StormSewer	200,000
		1,047,184

Estimate Totals

Description	Amount	Totals	Hours	Rate
Labor	260,380		4,509.126 hrs	
Material	1,570,557			
Subcontract	10,710,340			
Other	896,500			
	13,437,777	**13,437,777**		
Design Contingency	2,015,667			15.000 %
Sales / Use Tax	94,233			6.000 %
General Liability	77,738			0.500 %
Builder's Risk	47,032			0.350 %
Building Permit	96,494			
Plan Check Fee	62,721			65.000 %
Public Safety Impact Fee	10,440			
CM/GC Bonds	123,717			
	2,528,042	**15,965,819**		
GC Profit	638,633			4.000 %
	638,633	**16,604,452**		
Owner Contingency	830,223			5.000 %
Arch./Engr. Fee	1,394,774			8.000 %
Owner FF&E	713,991			4.300 %
Owner's Representative	200,000			
Commissioning	99,627			0.600 %
Independent Testing	50,000			
Auditing	15,000			
	3,303,615	**19,908,067**		
Total		***19,908,067***		

Location Summary

Coyote Ridge Addition

K-MACK CONSULTING LLC *Conceptual Estimate* *September 20, 2024*

Location	Individual Elements	Total Amount
1 - Building Construction		
	A1010StandardFoundtn	335,725
	A1030SlabOnGrade	184,558
	B1020RoofConst	871,505
	B2010ExteriorWalls	844,686
	B2020ExteriorWindows	200,000
	B2030ExteriorDoors	28,800
	B3010RoofCoverings	239,800
	B3020RoofOpenings	64,196
	C1010Partitions	352,022
	C1020InteriorDoors	139,247
	C1030Specialties	79,888
	C3010WallFinishes	76,281
	C3020FloorFinishes	137,200
	C3030CeilingFinishes	111,325
	D4090OthrFireProtSys	81,018
	D4910MechComplete	1,080,240
	D5910ElecComplete	742,665
	E1020InstitutEquip	6,953
	E2010FixedFurnishing	199,962
	X1010Field/SiteSetup	840,000
		6,616,071
2 - Sitework		
	G1020SiteDemolition	110,000
	G1030SiteEarthwork	250,000
	G2030PedestrianPvmt	180,000
	G2040SiteDevelopment	65,797
	G2050Landscaping	188,640
	G3030StormSewer	100,000
		894,437

Estimate Totals

Description	Amount	Totals	Hours	Rate
Labor	121,056		2,130.390 hrs	
Material	931,717			
Subcontract	5,609,735			
Other	848,000			
	7,510,508	**7,510,508**		
Design Contingency	1,126,576			15.000 %
Sales / Use Tax	55,903			6.000 %
General Liability	43,465			0.500 %
Builder's Risk	26,287			0.350 %
Building Permit	40,649			
Plan Check Fee	26,422			65.000 %
Public Safety Impact Fee	3,654			
CM/GC Bonds	72,888			
	1,395,844	**8,906,352**		
GC Profit	356,254			4.000 %
	356,254	**9,262,606**		
Owner Contingency	463,130			5.000 %
Arch./Engr. Fee	778,059			8.000 %
Owner FF&E	398,292			4.300 %
Owner's Representative	78,732			0.850 %
Commissioning	78,732			0.850 %
Independent Testing	75,000			
Geotech Survey	10,000			
	1,881,945	**11,144,551**		
Total		***11,144,551***		

Location Summary

Bain Demolition

K-MACK CONSULTING LLC | *Conceptual Estimate* | *September 20, 2024*

Location	Individual Elements	Total Amount
1 - Asbestos Abatement		
	F2020HazardAbatement	75,000
	X1010Field/SiteSetup	50,000
		125,000
2 - Building & Site Demo		
	G1020SiteDemolition	453,204
	X1010Field/SiteSetup	100,000
		553,204
3 - Site Reclamation		
	G1030SiteEarthwork	207,500
	G2050Landscaping	231,981
	X1010Field/SiteSetup	50,000
		489,481

Estimate Totals

Description	Amount	Totals	Hours	Rate
Labor				
Material				
Subcontract	967,685			
Other	200,000			
	1,167,685	**1,167,685**		
Contingency	175,153			15.000 %
General Liability	6,714			0.500 %
Builder's Risk	4,087			0.350 %
Building Permit	6,799			
Plan Check Fee	4,419			65.000 %
CM/GC Bonds	13,447			
	210,619	**1,378,304**		
GC Profit	110,264			8.000 %
	110,264	**1,488,568**		
Owner Contingency	74,428			5.000 %
Arch./Engr. Fee	104,200			7.000 %
Independent Testing	35,000			
	213,628	**1,702,196**		
Total		***1,702,196***		

Location Summary

Fairview Demolition

K-MACK CONSULTING LLC *Conceptual Estimate* *September 20, 2024*

Location	Individual Elements	Total Amount
1 - Asbestos Abatement		
	F2020HazardAbatement	75,000
	X1010Field/SiteSetup	50,000
		125,000
2 - Building & Site Demo		
	G1020SiteDemolition	336,974
	X1010Field/SiteSetup	100,000
		436,974
3 - Site Reclamation		
	G1030SiteEarthwork	165,000
	G2050Landscaping	125,000
	X1010Field/SiteSetup	50,000
		340,000

Estimate Totals

Description	Amount	Totals	Hours	Rate	
Labor					
Material					
Subcontract	701,974				
Other	200,000				
	901,974	**901,974**			
Contingency	135,296			15.000	%
General Liability	5,186			0.500	%
Builder's Risk	3,157			0.350	%
Building Permit	5,930				
Plan Check Fee	3,855			65.000	%
CM/GC Bonds	10,462				
	163,886	**1,065,860**			
GC Profit	85,269			8.000	%
	85,269	**1,151,129**			
Owner Contingency	57,556			5.000	%
Arch./Engr. Fee	80,579			7.000	%
Independent Testing	35,000				
	173,135	**1,324,264**			
Total		***1,324,264***			

Location Summary

Hebard Demolition

K-MACK CONSULTING LLC | *Conceptual Estimate* | *September 20, 2024*

Location	Individual Elements	Total Amount
1 - Asbestos Abatement		
	F2020HazardAbatement	75,000
	X1010Field/SiteSetup	50,000
		125,000
2 - Building & Site Demo		
	G1020SiteDemolition	497,910
	X1010Field/SiteSetup	100,000
		597,910
3 - Site Reclamation		
	G1030SiteEarthwork	207,500
	G2050Landscaping	231,981
	X1010Field/SiteSetup	50,000
		489,481

Estimate Totals

Description	Amount	Totals	Hours	Rate
Labor				
Material				
Subcontract	1,012,391			
Other	200,000			
	1,212,391	**1,212,391**		
Contingency	181,859			15.000 %
General Liability	6,971			0.500 %
Builder's Risk	4,243			0.350 %
Building Permit	7,069			
Plan Check Fee	4,595			65.000 %
CM/GC Bonds	13,952			
	218,689	**1,431,080**		
GC Profit	114,486			8.000 %
	114,486	**1,545,566**		
Owner Contingency	77,278			5.000 %
Arch./Engr. Fee	108,190			7.000 %
Independent Testing	35,000			
	220,468	**1,766,034**		
Total		***1,766,034***		

Location Summary

Deming Demolition

K-MACK CONSULTING LLC *Conceptual Estimate* *September 20, 2024*

Location	Individual Elements	Total Amount
1 - Asbestos Abatement		
	F2020HazardAbatement	75,000
	X1010Field/SiteSetup	25,000
		100,000
2 - Building & Site Demo		
	G1020SiteDemolition	324,140
	X1010Field/SiteSetup	75,000
		399,140
3 - Site Reclamation		
	G1030SiteEarthwork	165,000
	G2050Landscaping	138,481
	X1010Field/SiteSetup	50,000
		353,481

Estimate Totals

Description	Amount	Totals	Hours	Rate	
Labor					
Material					
Subcontract	702,621				
Other	150,000				
	852,621	**852,621**			
Contingency	127,893			15.000	%
General Liability	4,903			0.500	%
Builder's Risk	2,984			0.350	%
Building Permit	5,609				
Plan Check Fee	3,646			65.000	%
CM/GC Bonds	9,905				
	154,940	**1,007,561**			
GC Profit	80,605			8.000	%
	80,605	**1,088,166**			
Owner Contingency	54,408			5.000	%
Arch./Engr. Fee	76,172			7.000	%
Independent Testing	35,000				
	165,580	**1,253,746**			
Total		***1,253,746***			

Location Summary

Saddle Ridge II (New Construction)

K-MACK CONSULTING LLC *Conceptual Estimate* *September 20, 2024*

Location	Individual Elements	Total Amount
1 - Building Construction		
	A1010StandardFoundtn	944,826
	A1030SlabOnGrade	472,021
	B1020RoofConst	2,443,201
	B2010ExteriorWalls	2,531,317
	B2020ExteriorWindows	637,749
	B2030ExteriorDoors	74,002
	B3010RoofCoverings	710,627
	B3020RoofOpenings	130,196
	C1010Partitions	910,451
	C1020InteriorDoors	328,174
	C1030Specialties	267,067
	C3010WallFinishes	284,220
	C3020FloorFinishes	424,457
	C3030CeilingFinishes	449,934
	D4090OthrFireProtSys	233,928
	D4910MechComplete	2,729,160
	D5910ElecComplete	2,144,340
	E1020InstitutEquip	17,383
	E1090OtherEquipment	289,495
	E2010FixedFurnishing	527,859
	X1010Field/SiteSetup	1,152,000
		17,702,407
2 - Sitework		
	G1030SiteEarthwork	400,000
	G2020ParkingLots	504,500
	G2030PedestrianPvmt	300,000
	G2040SiteDevelopment	395,698
	G2050Landscaping	442,605
	G3010WaterSupply	100,000
	G3020SanitarySewer	100,000
	G3030StormSewer	200,000
		2,442,803

Estimate Totals

Description	Amount	Totals	Hours	Rate
Labor	329,968		5,760.035 hrs	
Material	2,343,610			
Subcontract	16,310,633			
Other	1,161,000			
	20,145,211	**20,145,211**		
Design Contingency	2,014,521			10.000 %
Sales / Use Tax	140,617			6.000 %
General Liability	111,502			0.500 %
Builder's Risk	70,508			0.350 %
Building Permit	102,334			
Plan Check Fee	66,517			65.000 %
Public Safety Impact Fee	13,000			
CM/GC Bonds	173,502			
	2,692,501	**22,837,712**		
GC Profit	913,508			4.000 %
	913,508	**23,751,220**		
Owner Contingency	1,187,561			5.000 %
Arch./Engr. Fee	1,900,098			8.000 %
Owner FF&E	1,021,302			4.300 %
Owner's Representative	267,000			
Commissioning	142,507			0.600 %
Utility Tap Fees	77,000			
Independent Testing	100,000			
Geotech Survey	20,000			
Auditing	25,000			
	4,740,468	**28,491,688**		
Total		***28,491,688***		

A06 Site diagrams

Concept site diagrams are for test-fit purposes only and therefore only intended to show a concept that the building size and other site requirements fit on the site. These diagrams are not a representation of the final site layout and design.

PROJECT NOTES:

SUBJECT WEST SITE INFORMATION:

1. PIDN: 13661730501400
2. NAME: LARAMIE COUNTY SCHOOL DIST NO 1
3. MAIL ADDR: 2810 HOUSE AVE
4. MAIL ADDR: CHEYENNE, WY 82001
5. ST ADDR: 402 W WALLICK RD
6. LOCATION: AFFLERBACH ADDITION: LOT 2, BLOCK 1
7. TYPE: EXEMPT
8. ACRES: 29.20 ACRES
9. TAX DISTRICT: 0130

SUBJECT EAST SITE INFORMATION:

1. PIDN: 13661730501300
2. NAME: LARAMIE COUNTY SCHOOL DIST NO 1
3. MAIL ADDR: 2810 HOUSE AVE
4. MAIL ADDR: CHEYENNE, WY 82001
5. ST ADDR: 400 W WALLICK RD
6. LOCATION: AFFLERBACH ADDITION: LOT 1, BLOCK 1
7. TYPE: EXEMPT
8. ACRES: 20.63 ACRES
9. TAX DISTRICT: 0130

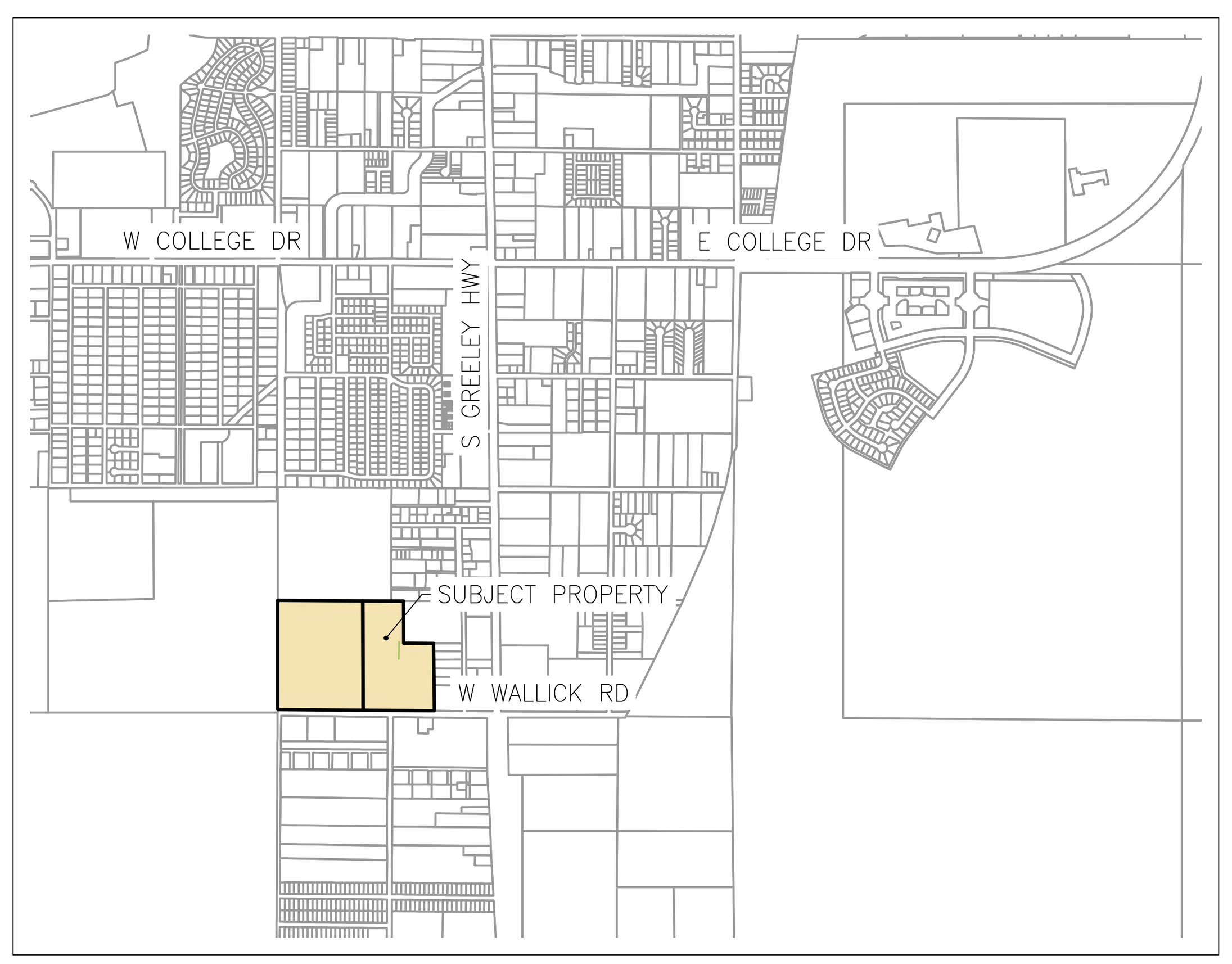
THIS CONCEPT DIAGRAM IS INTENDED TO SHOW THE CONCEPT THAT THE BUILDING SIZE AND OTHER SITE REQUIREMENTS FIT ON THE SITE. THIS DIAGRAM IS NOT A REPRESENTATION OF THE FINAL SITE LAYOUT AND DESIGN.

MAP DATA SOURCES AND NOTES:

1. NO SITE SURVEY WAS CONDUCTED.
2. DATA SOURCES UTILIZED FOR MAP GENERATION:
   - 2.1. LOT DIMENSIONS SHOWN HEREIN ARE DERIVED USING LARAMIE COUNTY GIS DATA.
   - 2.2. AERIAL IMAGERY SHOWN HEREIN DERIVED FROM LARAMIE COUNTY IMAGERY COLLECTED IN 2020.
   - 2.3. ELEVATION CONTOUR INFORMATION SHOWN HEREIN ARE DERIVED FROM USGS LIDAR DATA COLLECTED IN 2021.
   - 2.4. EXISTING SITE UTILITIES APPROXIMATE PER CHEYENNE BOARD OF PUBLIC UTILITIES MUNICIPAL SYSTEM GIS VIEWER.
   - 2.5. PROPERTY EASEMENTS GENERATED FROM AFFLERBACH ADDITION PLAT MAP DATED MAY 1986.
3. LARAMIE COUNTY LAND DEVELOPMENT REGULATIONS FOR P-PUBLIC ZONING WERE REFERENCED FOR PROPERTY SETBACKS.
4. UNDERGROUND UTILITIES AND SUBSURFACE IMPROVEMENTS ARE APPROXIMATE LOCATIONS ONLY. ADDITIONAL SUBSURFACE IMPROVEMENTS NOT SHOWN HEREON MAY EXIST.
5. ALL ELEVATIONS ARE ASSUMED BASED ON COUNTY LIDAR DATA.
6. ALL PROPERTY AND DEVELOPMENT SETBACKS ARE TO BE VERIFIED.
7. EASEMENTS OF SIGHT AND RECORD NOT SHOWN HEREON MAY EXIST.
8. SUBJECT SITE DESIGNATED AS ZONE X, AREA OF MINIMAL FLOOD HAZARD, PER NATIONAL FLOOD HAZARD FIRM PANEL 56021C1358F EFF. 1/17/2007.

PLAN ACCURACY DISCLAIMER

THIS SITE PLAN IS CONCEPTUAL ONLY AND BASED ON PUBLICLY AVAILABLE DATA AND OTHER DOCUMENTS REFERENCED WITH KNOWN INACCURACIES. THIS PLAN IS NOT TO BE UTILIZED FOR CONSTRUCTION OR PERMITTING PURPOSES. ALL MEASUREMENTS AND LOCATIONS ARE APPROXIMATE AND SUBJECT TO CHANGE.



VICINITY MAP

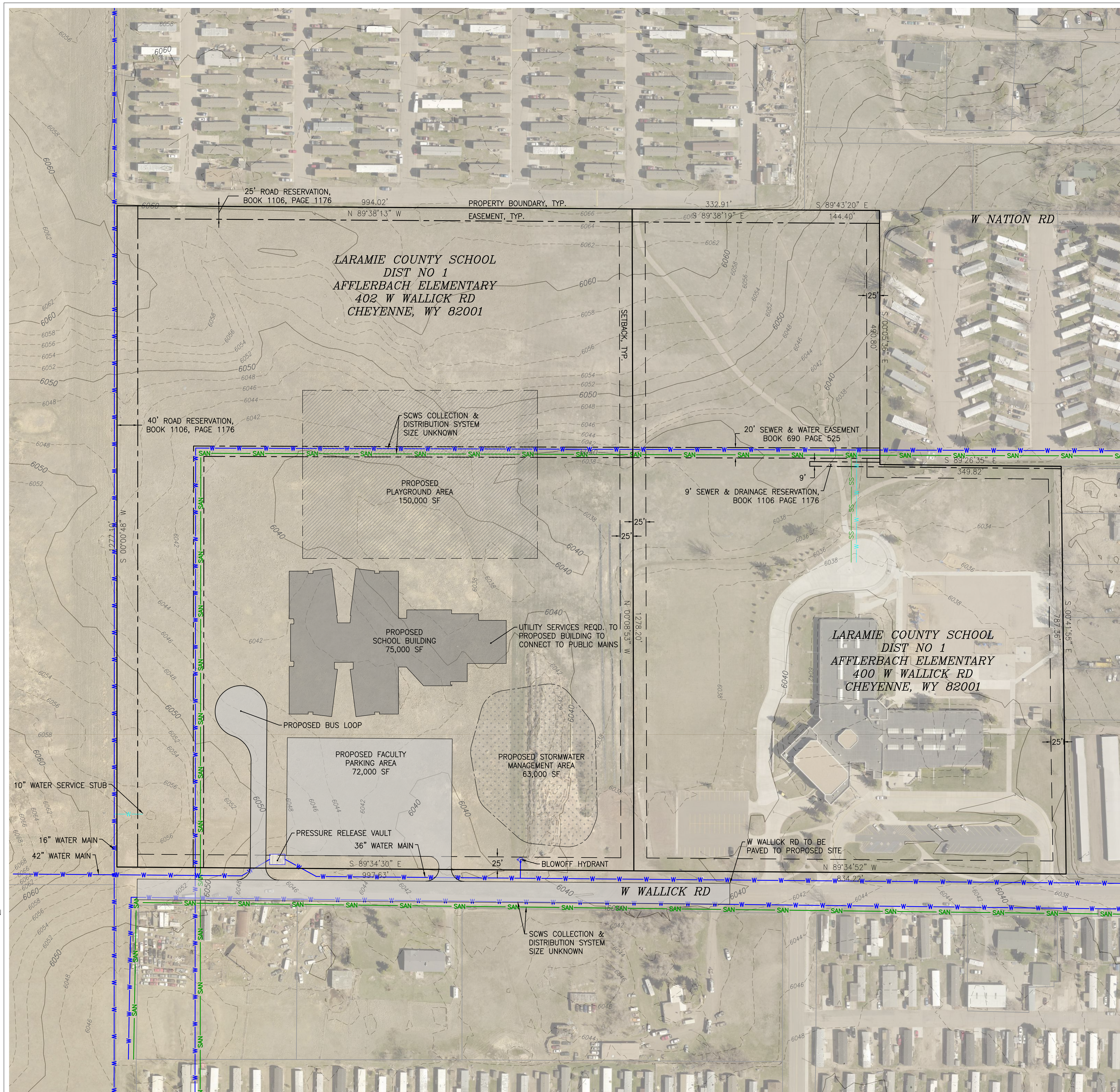
2000' 0 2000' 4000'
1" = 2000' (24x36 SHEET)

LEGEND
(E) - EXISTING (P) - PROPOSED

- (E) INDEX CONTOUR LINE
- (E) INTERMEDIATE CONTOUR LINE
- SUBJECT PROPERTY BOUNDARY
- NEIGHBORING PROPERTY BOUNDARY
- EASEMENT LINE
- SETBACK LINE
- (P) STRUCTURE
- (P) EDGE OF ASPHALT
- (E) WATER MAIN
- (E) WATER SERVICE
- (E) SEWER MAIN
- (E) SEWER SERVICE
- (E) STORM DRAIN

LEGEND

- HYDRANT
- MANHOLE – STORM DRAIN
- MANHOLE – SEWER
- MANHOLE – WATER
- (P) ASPHALT
- (P) STORMWATER AREA
- (P) PLAYGROUND AREA



100' 0 100' 200'
1" = 100' (24x36 SHEET)

NEW SOUTH 5-6
NEW SITE OVERVIEW

Job No.	24020
Drafter:	TK
Reviewer:	SH

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307 733 2999

LCSD1-ES MCER
LARAMIE COUNTY SCHOOL DISTRICT
LARAMIE COUNTY
WYOMING

Set Title:
CONCEPT SITE DIAGRAMS

Plot Date:	PLOT DATE
Desc.	Date
PROGRESS SET	9/23/24

AFFLERBACH ELEMENTARY 5-6 NEW

C1.2

PROJECT NOTES:

THIS CONCEPT DIAGRAM IS INTENDED TO SHOW THE CONCEPT THAT THE BUILDING SIZE AND OTHER SITE REQUIREMENTS FIT ON THE SITE. THIS DIAGRAM IS NOT A REPRESENTATION OF THE FINAL SITE LAYOUT AND DESIGN.

SUBJECT SITE INFORMATION:

1. PIDN: 13660920202600
2. NAME: LARAMIE COUNTY SCHOOL DIST NO 1
3. MAIL ADDR: 2810 HOUSE AVE
4. MAIL ADDR: CHEYENNE, WY 82001
5. ST ADDR: 1216 REINER CT
6. LOCATION: ARP ELEMENTARY SCHOOL, 1ST FILING: LOT 1, BLOCK 1
7. TYPE: EXEMPT
8. ACRES: 16.86 ACRES
9. TAX DISTRICT: 0130

MAP DATA SOURCES AND NOTES:

1. NO SITE SURVEY WAS CONDUCTED.
2. DATA SOURCES UTILIZED FOR MAP GENERATION:
   - 2.1. LOT DIMENSIONS SHOWN HEREIN ARE DERIVED USING LARAMIE COUNTY GIS DATA.
   - 2.2. AERIAL IMAGERY SHOWN HEREIN DERIVED FROM LARAMIE COUNTY IMAGERY COLLECTED IN 2020.
   - 2.3. ELEVATION CONTOUR INFORMATION SHOWN HEREIN ARE DERIVED FROM USGS LIDAR DATA COLLECTED IN 2021.
   - 2.4. EXISTING SITE UTILITIES APPROXIMATE LOCATION PER BOARD OF PUBLIC UTILITIES MUNICIPAL SYSTEM GIS VIEWER.
   - 2.5. ARP ELEMENTARY SCHOOL 1ST FILING PLAT MAP DATED 10/2012 REFERENCED FOR PROPERTY EASEMENTS.
3. LARAMIE COUNTY LAND DEVELOPMENT REGULATIONS FOR P-PUBLIC ZONING WERE REFERENCED FOR PROPERTY SETBACKS.
4. UNDERGROUND UTILITIES AND SUBSURFACE IMPROVEMENTS ARE APPROXIMATE LOCATIONS ONLY. ADDITIONAL SUBSURFACE IMPROVEMENTS NOT SHOWN HEREON MAY EXIST.
5. ALL ELEVATIONS ARE ASSUMED BASED LIDAR DATA.
6. ALL PROPERTY AND DEVELOPMENT SETBACKS ARE TO BE VERIFIED.
7. EASEMENTS OF SIGHT AND RECORD NOT SHOWN HEREON MAY EXIST.
8. SUBJECT SITE IS IN FEMA FLOODPLAIN AS IDENTIFIED ON MAP AND NOTED BELOW:
   - 8.1 100 YR FLOODPLAIN, ZONE AE, PER NATIONAL FLOOD HAZARD FIRM PANEL 56021C1356F EFFECTIVE DATE 1/2007; REVISED 9/27/12.
   - 8.2 500 YR FLOODPLAIN, ZONE X, PER NATIONAL FLOOD HAZARD FIRM PANEL 56021C1356F EFFECTIVE DATE 1/2007; REVISED 9/27/12.

PLAN ACCURACY DISCLAIMER

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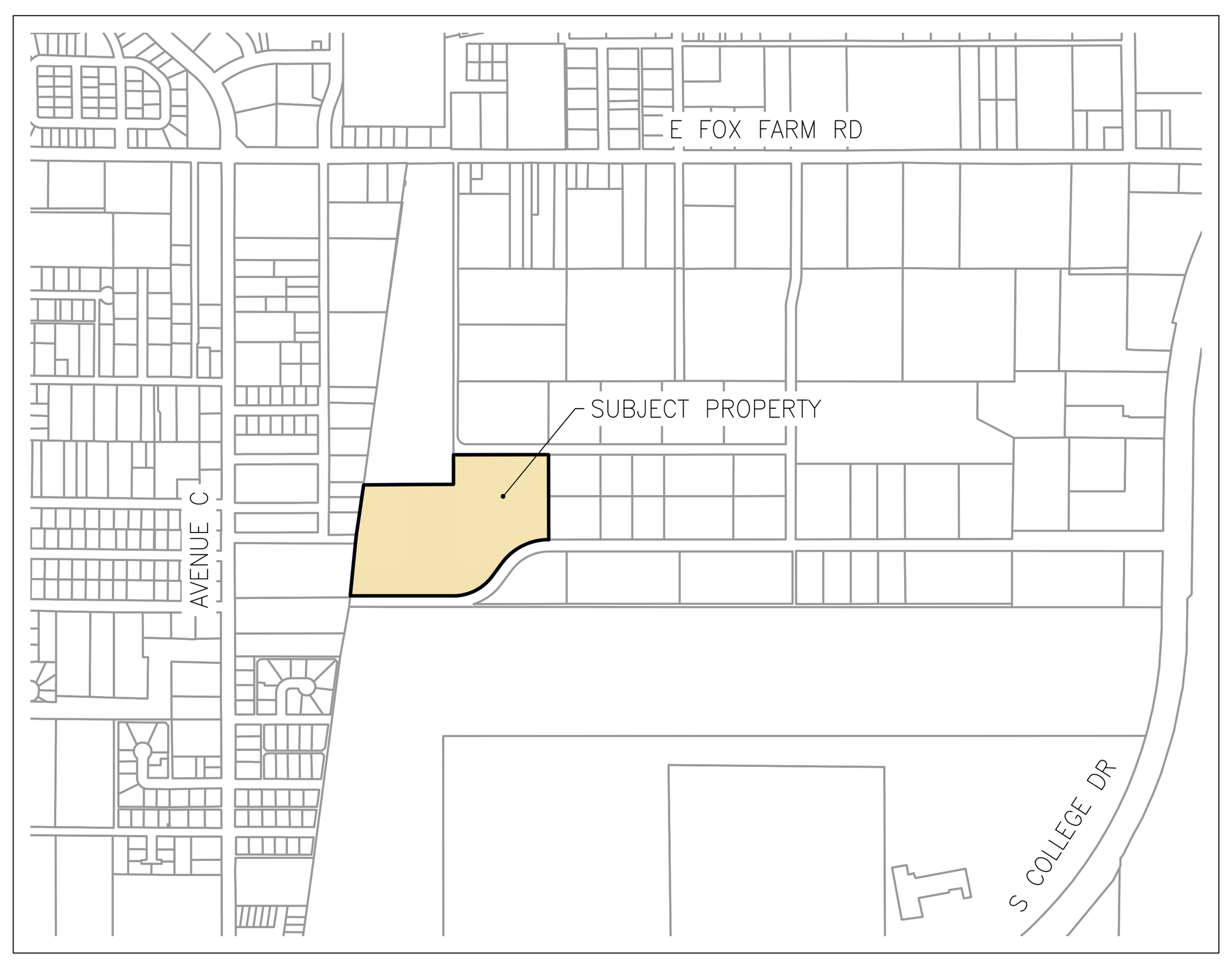

VICINITY MAP

1000' 0 1000' 2000'
1" = 1000' (24x36 SHEET)

North

LEGEND

(E) - EXISTING (P) - PROPOSED

- (E) INDEX CONTOUR LINE
- (E) INTERMEDIATE CONTOUR LINE
- SUBJECT PROPERTY BOUNDARY
- NEIGHBORING PROPERTY BOUNDARY
- EASEMENT LINE
- SETBACK LINE
- (P) STRUCTURE
- (P) EDGE OF ASPHALT
- (E) WATER MAIN
- (E) WATER SERVICE
- (E) SEWER MAIN
- (E) SEWER SERVICE
- (E) STORM DRAIN

LEGEND

- HYDRANT
- MANHOLE – STORM DRAIN
- MANHOLE – SEWER
- MANHOLE – WATER
- (P) ASPHALT
- (P) STORMWATER AREA
- (P) PLAYGROUND AREA
- FEMA FLOODWAY ZONE AE
- FEMA 100 YR FLOODPLAIN ZONE AE
- FEMA 500 YR FLOODPLAIN ZONE X

60' 0 60' 120'
1" = 60' (24x36 SHEET)

ARP ELEMENTARY REPLACEMENT SITE OVERVIEW

Job No.	24020
Drafter:	TK
Reviewer:	SH

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NATURAL RESOURCE SERVICES
y2consultants.com
307 733 2999

LCSD1-ES MCER
LARAMIE COUNTY SCHOOL DISTRICT
LARAMIE COUNTY
WYOMING

Set Title:
CONCEPT SITE DIAGRAMS

Plot Date: PLOT DATE

Desc.	Date
PROGRESS SET	9/23/24

ARP ELEMENTARY REPLACEMENT

C1.4

PROJECT NOTES:

THIS CONCEPT DIAGRAM IS INTENDED TO SHOW THE CONCEPT THAT THE BUILDING SIZE AND OTHER SITE REQUIREMENTS FIT ON THE SITE. THIS DIAGRAM IS NOT A REPRESENTATION OF THE FINAL SITE LAYOUT AND DESIGN.

SUBJECT SITE INFORMATION:

1. PIDN: 14661910401400
2. NAME: LARAMIE COUNTY SCHOOL DIST NO 1
3. MAIL ADDR: 2810 HOUSE AVE
4. MAIL ADDR: CHEYENNE, WY 82001
5. ST ADDR: 5710 SYRACUSE RD
6. LOCATION: AIRPORT VALLEY TRACTS: SOUTH 56.95 TRACT 8; ALL TRACT 13 AND 18
7. TYPE: EXEMPT
8. ACRES: 9.22 ACRES
9. TAX DISTRICT: 0150

MAP DATA SOURCES AND NOTES:

1. NO SITE SURVEY WAS CONDUCTED.
2. DATA SOURCES UTILIZED FOR MAP GENERATION:
   2.1. LOT DIMENSIONS SHOWN HEREIN ARE DERIVED USING LARAMIE COUNTY GIS DATA.
   2.2. AERIAL IMAGERY SHOWN HEREIN DERIVED FROM LARAMIE COUNTY IMAGERY COLLECTED IN 2020.
   2.3. ELEVATION CONTOUR INFORMATION SHOWN HEREIN ARE DERIVED FROM USGS LIDAR DATA COLLECTED IN 2021.
   2.4. EXISTING SITE UTILITIES APPROXIMATE LOCATION PER SITE AS-BUILT SURVEY CONDUCTED MARCH 1986 AND PER CHEYENNE BOARD OF PUBLIC UTILITIES MUNICIPAL SYSTEM GIS VIEWER.
   2.5. AIRPORT VALLEY TRACT PLAT MAT REFERENCED TRACT PLATS.
3. LARAMIE COUNTY LAND DEVELOPMENT REGULATIONS FOR P-PUBLIC ZONING WERE REFERENCED FOR PROPERTY SETBACKS.
4. UNDERGROUND UTILITIES AND SUBSURFACE IMPROVEMENTS ARE APPROXIMATE LOCATIONS ONLY. ADDITIONAL SUBSURFACE IMPROVEMENTS NOT SHOWN HEREON MAY EXIST.
5. ALL ELEVATIONS ARE ASSUMED BASED LIDAR DATA.
6. ALL PROPERTY AND DEVELOPMENT SETBACKS ARE TO BE VERIFIED.
7. EASEMENTS OF SIGHT AND RECORD NOT SHOWN HEREON MAY EXIST.
8. SUBJECT SITE DESIGNATED AS ZONE X, AREA OF MINIMAL FLOOD HAZARD, PER NATIONAL FLOOD HAZARD FIRM PANEL 56021C1087F EFF. 1/17/2007.

PLAN ACCURACY DISCLAIMER

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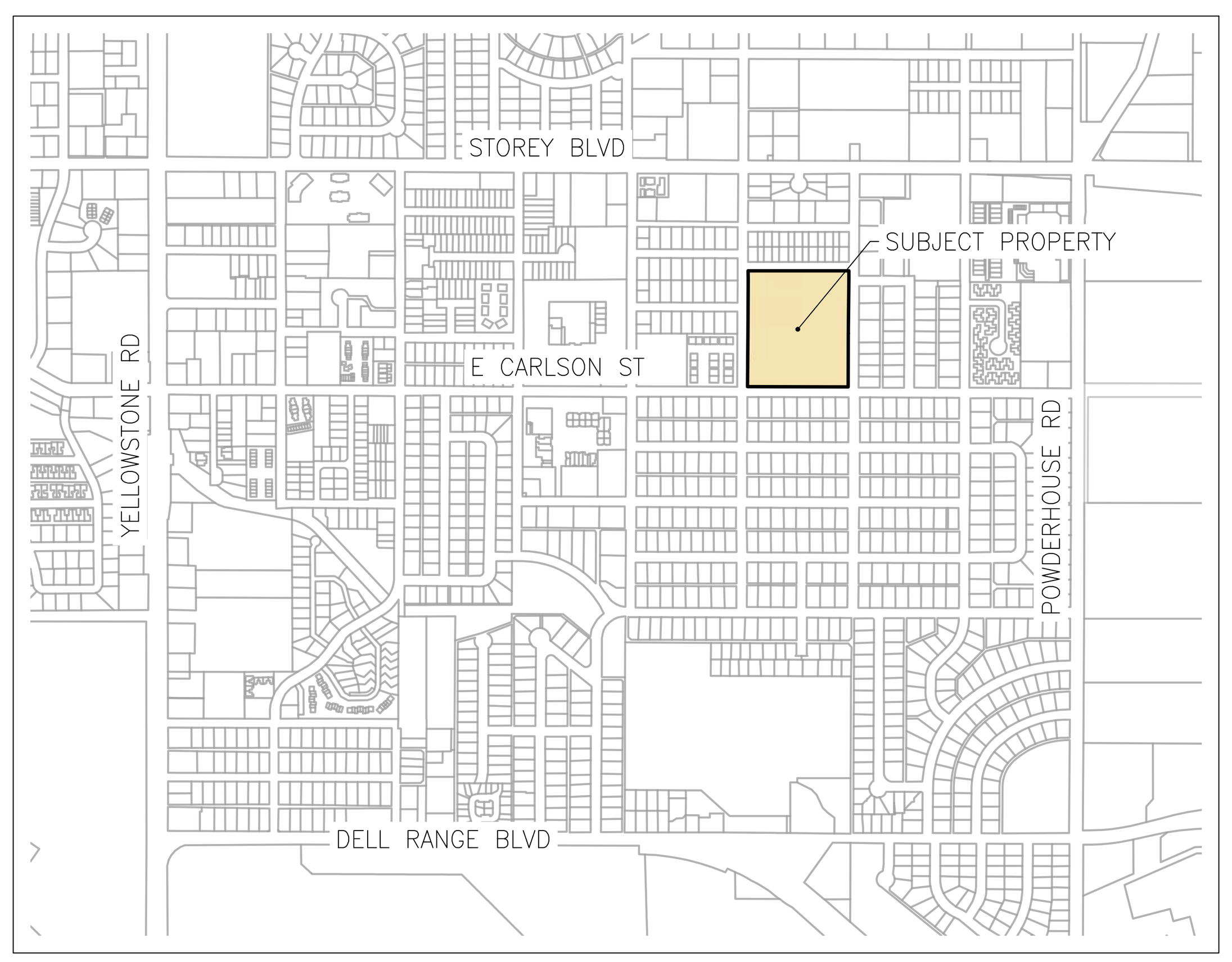


VICINITY MAP

1000' 0 1000' 2000'
1" = 1000' (24x36 SHEET)

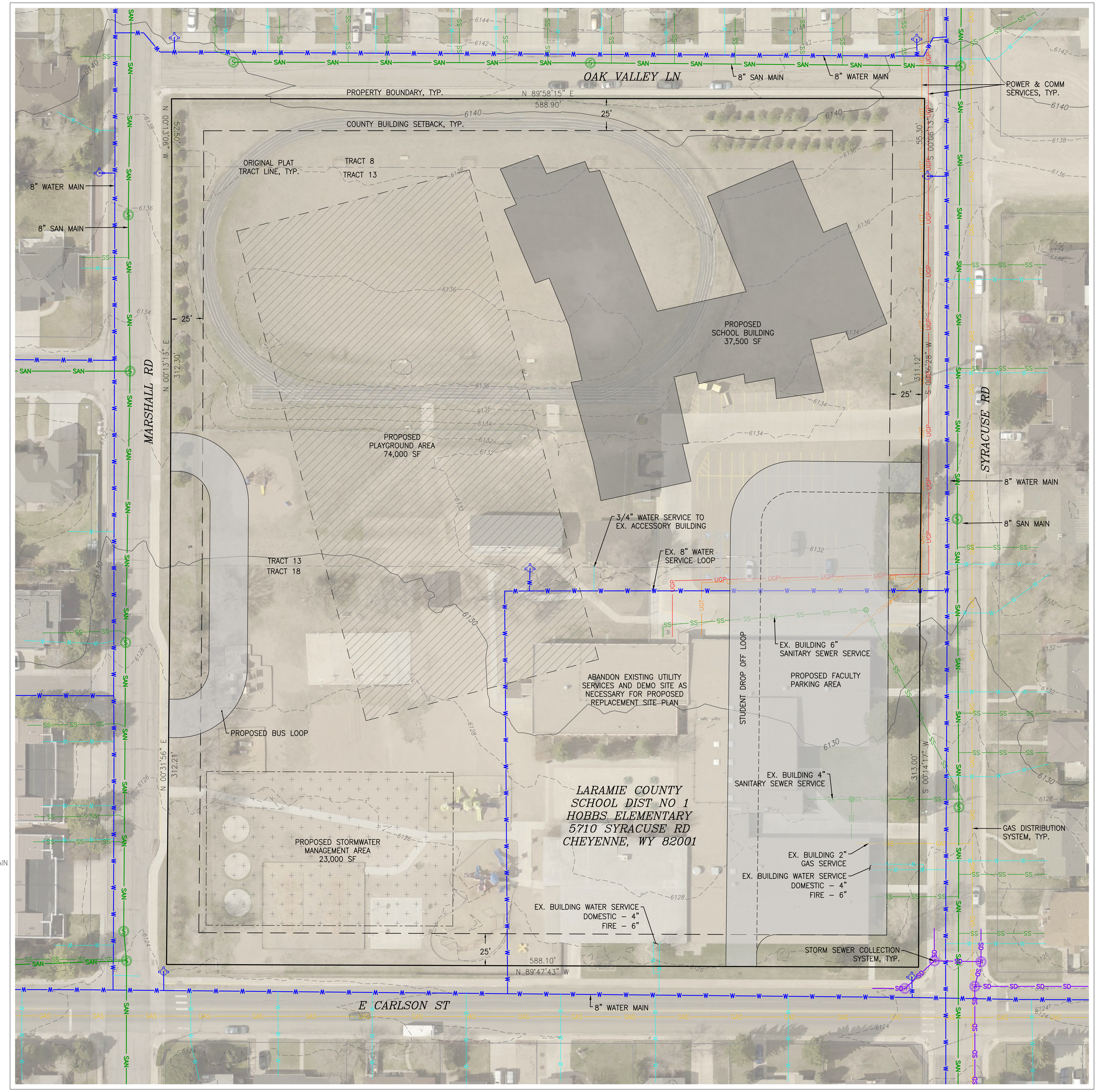
LEGEND

(E) - EXISTING (P) - PROPOSED

- (E) INDEX CONTOUR LINE
- (E) INTERMEDIATE CONTOUR LINE
- SUBJECT PROPERTY BOUNDARY
- NEIGHBORING PROPERTY BOUNDARY
- EASEMENT LINE
- SETBACK LINE
- (P) STRUCTURE
- (P) EDGE OF ASPHALT
- (E) WATER MAIN
- (E) WATER SERVICE
- (E) SEWER MAIN
- (E) SEWER SERVICE
- (E) STORM DRAIN
- (E) GAS LINE
- (E) TELEPHONE LINE
- (E) UNDERGROUND ELECTRICAL LINE

LEGEND

- HYDRANT
- MANHOLE - STORM DRAIN
- MANHOLE - SEWER
- MANHOLE - WATER
- (P) ASPHALT
- (P) STORMWATER AREA
- (P) PLAYGROUND AREA



40' 0 40' 80'
1" = 40' (24x36 SHEET)

HOBBS ELEMENTARY REPLACEMENT SITE OVERVIEW

Job No.	24020
Drafter:	TK
Reviewer:	SH

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NATURAL RESOURCE SERVICES
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LCSD1-ES MCER
LARAMIE COUNTY SCHOOL DISTRICT
LARAMIE COUNTY
WYOMING

Set Title:
CONCEPT SITE DIAGRAMS

Plot Date:	PLOT DATE
Desc.	Date
PROGRESS SET	9/23/24

HOBBS ELEMENTARY REPLACEMENT

C1.1

PROJECT NOTES:

THIS CONCEPT DIAGRAM IS INTENDED TO SHOW THE CONCEPT THAT THE BUILDING SIZE AND OTHER SITE REQUIREMENTS FIT ON THE SITE. THIS DIAGRAM IS NOT A REPRESENTATION OF THE FINAL SITE LAYOUT AND DESIGN.

SUBJECT SITE INFORMATION:

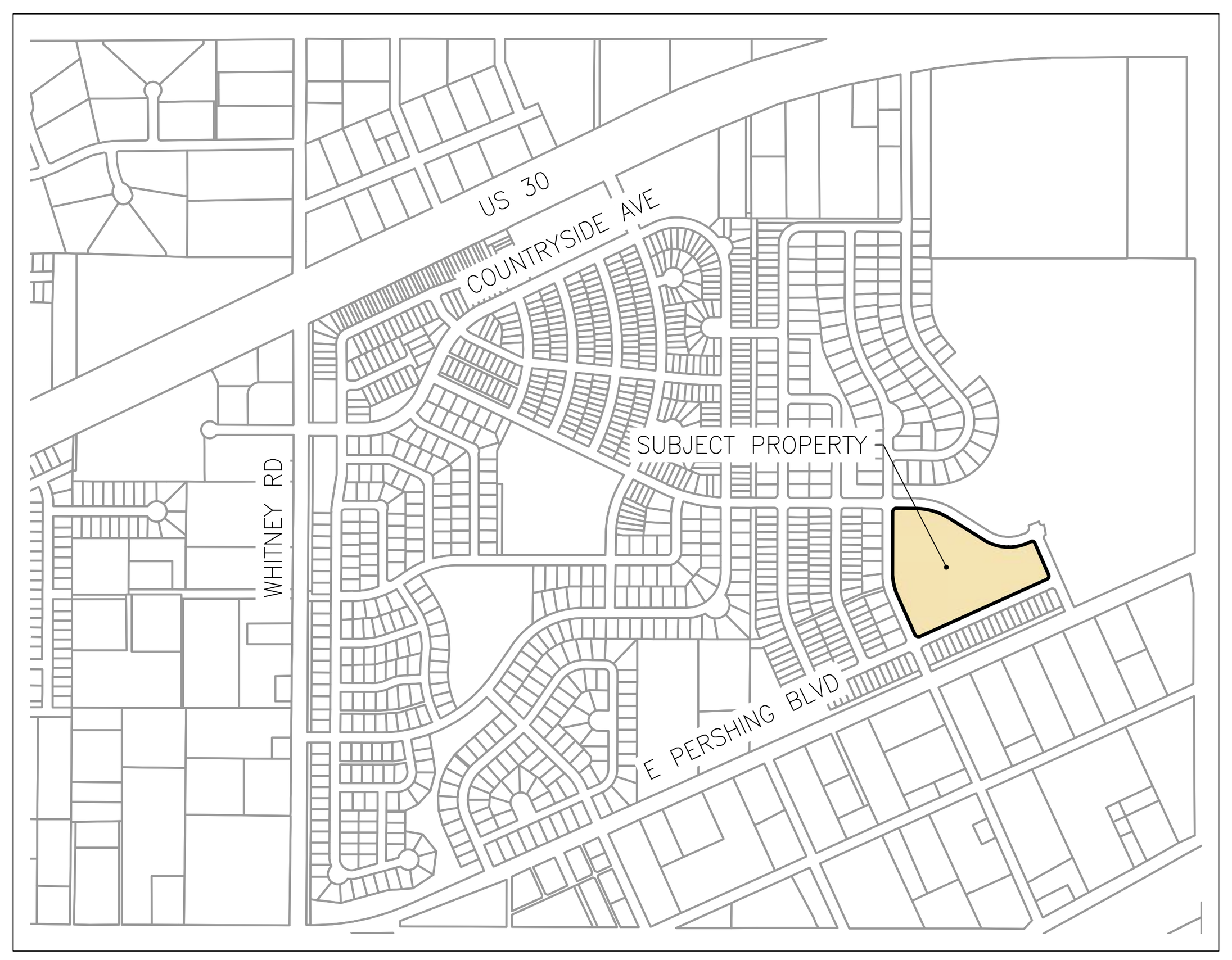
1. PIDN: 14662542100100
2. NAME: LARAMIE COUNTY SCHOOL DISTRICT NO 1
3. MAIL ADDR: 2810 HOUSE AVE
4. MAIL ADDR: CHEYENNE, WY 82001
5. ST ADDR: FARTHING RD
6. LOCATION: SADDLE RIDGE, 13TH FILING: LOT 1, BLOCK 6
7. TYPE: EXEMPT
8. ACRES: 9.56 ACRES
9. TAX DISTRICT: 0150

MAP DATA SOURCES AND NOTES:

1. NO SITE SURVEY WAS CONDUCTED.
2. DATA SOURCES UTILIZED FOR MAP GENERATION:
   - 2.1. LOT DIMENSIONS SHOWN HEREIN ARE DERIVED USING LARAMIE COUNTY GIS DATA.
   - 2.2. AERIAL IMAGERY SHOWN HEREIN DERIVED FROM LARAMIE COUNTY IMAGERY COLLECTED IN 2022.
   - 2.3. ELEVATION CONTOUR INFORMATION SHOWN HEREIN ARE DERIVED FROM USGS LIDAR DATA COLLECTED IN 2021.
   - 2.4. EXISTING SITE UTILITIES APPROXIMATE LOCATION PER CHEYENNE BOARD OF PUBLIC UTILITIES MUNICIPAL SYSTEM GIS VIEWER.
   - 2.5. PROPERTY EASEMENTS GENERATED FROM SADDLE RIDGE 13TH FILING PLAT MAP DATED 5/1/2018.
3. LARAMIE COUNTY LAND DEVELOPMENT REGULATIONS FOR P-PUBLIC ZONING WERE REFERENCED FOR PROPERTY SETBACKS.
4. UNDERGROUND UTILITIES AND SUBSURFACE IMPROVEMENTS ARE APPROXIMATE LOCATIONS ONLY. ADDITIONAL SUBSURFACE IMPROVEMENTS NOT SHOWN HEREON MAY EXIST.
5. ALL ELEVATIONS ARE ASSUMED BASED ON COUNTY LIDAR DATA.
6. ALL PROPERTY AND DEVELOPMENT SETBACKS ARE TO BE VERIFIED.
7. EASEMENTS OF SIGHT AND RECORD NOT SHOWN HEREON MAY EXIST.
8. SUBJECT SITE DESIGNATED AS ZONE X, AREA OF MINIMAL FLOOD HAZARD, PER NATIONAL FLOOD HAZARD FIRM PANEL 56021C1114F EFF. 1/17/2007.

PLAN ACCURACY DISCLAIMER

THIS SITE PLAN IS CONCEPTUAL ONLY AND BASED ON PUBLICLY AVAILABLE DATA AND OTHER DOCUMENTS REFERENCED WITH KNOWN INACCURACIES. THIS PLAN IS NOT TO BE UTILIZED FOR CONSTRUCTION OR PERMITTING PURPOSES. ALL MEASUREMENTS AND LOCATIONS ARE APPROXIMATE AND SUBJECT TO CHANGE.



VICINITY MAP

1000' 0 1000' 2000'
1" = 1000' (24x36 SHEET)

LEGEND

(E) - EXISTING (P) - PROPOSED

- (E) INDEX CONTOUR LINE
- (E) INTERMEDIATE CONTOUR LINE
- SUBJECT PROPERTY BOUNDARY
- NEIGHBORING PROPERTY BOUNDARY
- EASEMENT LINE
- SETBACK LINE
- (P) STRUCTURE
- (P) EDGE OF ASPHALT
- (E) WATER MAIN
- (E) WATER SERVICE
- (E) SEWER MAIN
- (E) SEWER SERVICE
- (E) STORM DRAIN

LEGEND

- HYDRANT
- MANHOLE – STORM DRAIN
- MANHOLE – SEWER
- MANHOLE – WATER
- (P) ASPHALT
- (P) STORMWATER AREA
- (P) PLAYGROUND AREA

50' 0 50' 100'
1" = 50' (24x36 SHEET)

SADDLE RIDGE II ELEMENTARY ADDITION SITE OVERVIEW

Job No.	24020
Drafter:	TK
Reviewer:	SH

Y2 CONSULTANTS
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LANDSCAPE ARCHITECTURE, GIS
NATURAL RESOURCE SERVICES
y2consultants.com
307 733 2999

LCSD1-ES MCER
LARAMIE COUNTY SCHOOL DISTRICT
LARAMIE COUNTY
WYOMING

Set Title:
CONCEPT SITE DIAGRAMS

Plot Date:	PLOT DATE
Desc.	Date
PROGRESS SET	9/23/24

SADDLE RIDGE II ELEMENTARY NEW

C1.8

PROJECT NOTES:

THIS CONCEPT DIAGRAM IS INTENDED TO SHOW THE CONCEPT THAT THE BUILDING SIZE AND OTHER SITE REQUIREMENTS FIT ON THE SITE. THIS DIAGRAM IS NOT A REPRESENTATION OF THE FINAL SITE LAYOUT AND DESIGN.

SUBJECT SITE INFORMATION:

1. PIDN: 14661640500100
2. NAME: LARAMIE COUNTY SCHOOL DIST NO 1 % HICKEY & EVANS–TIM BUSH
3. MAIL ADDR: PO BOX 467
4. MAIL ADDR: CHEYENNE, WY 82003–0467
5. ST ADDR: 6325 CHIEF WASHAKIE
6. LOCATION: NORTH CHEYENNE COMMUNITY PARK, 2ND FILING: LOT 1, BLOCK 1
7. TYPE: EXEMPT
8. ACRES: 40.63 ACRES
9. TAX DISTRICT: 0150

MAP DATA SOURCES AND NOTES:

1. NO SITE SURVEY WAS CONDUCTED.
2. DATA SOURCES UTILIZED FOR MAP GENERATION:
   - 2.1. LOT DIMENSIONS SHOWN HEREIN ARE DERIVED USING LARAMIE COUNTY GIS DATA.
   - 2.2. AERIAL IMAGERY SHOWN HEREIN DERIVED FROM LARAMIE COUNTY IMAGERY COLLECTED IN 2020.
   - 2.3. ELEVATION CONTOUR INFORMATION SHOWN HEREIN ARE DERIVED FROM USGS LIDAR DATA COLLECTED IN 2021.
   - 2.4. EXISTING SITE UTILITIES APPROXIMATE LOCATION PER PER CHEYENNE BOARD OF PUBLIC UTILITIES MUNICIPAL SYSTEM GIS VIEWER.
   - 2.5. NORTH CHEYENNE COMMUNITY PARK SECOND FILING PLAT MAP DATED DECEMBER 2011 REFERENCED FOR SITE EASEMENTS.
3. LARAMIE COUNTY LAND DEVELOPMENT REGULATIONS FOR P–PUBLIC ZONING WERE REFERENCED FOR PROPERTY SETBACKS.
4. UNDERGROUND UTILITIES AND SUBSURFACE IMPROVEMENTS ARE APPROXIMATE LOCATIONS ONLY. ADDITIONAL SUBSURFACE IMPROVEMENTS NOT SHOWN HEREON MAY EXIST.
5. ALL ELEVATIONS ARE ASSUMED BASED LIDAR DATA.
6. ALL PROPERTY AND DEVELOPMENT SETBACKS ARE TO BE VERIFIED.
7. EASEMENTS OF SIGHT AND RECORD NOT SHOWN HEREON MAY EXIST.
8. SUBJECT SITE DESIGNATED AS ZONE X, AREA OF MINIMAL FLOOD HAZARD, PER NATIONAL FLOOD HAZARD FIRM PANEL 56021C1092F REVISED 4/14/2011.

PLAN ACCURACY DISCLAIMER

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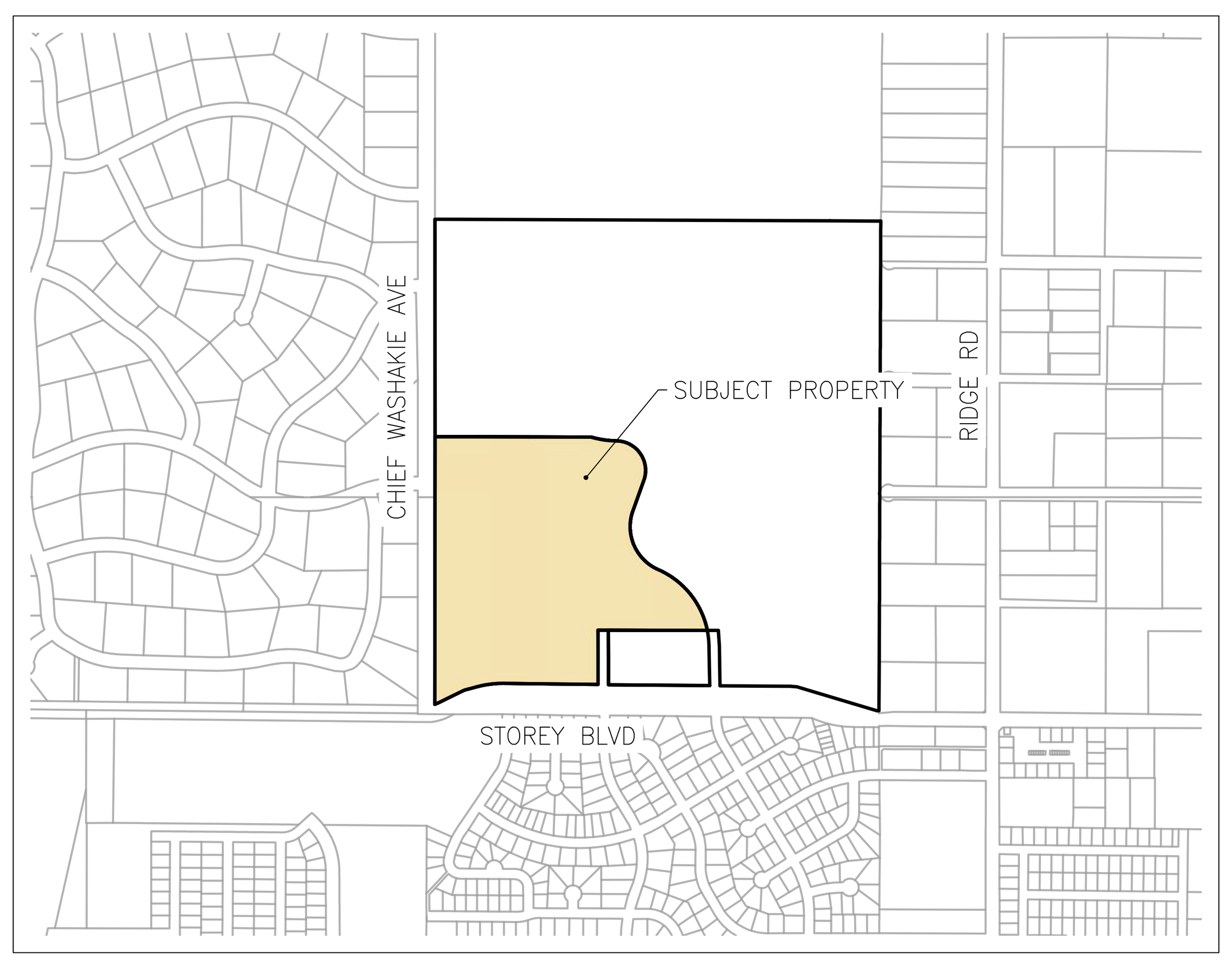


VICINITY MAP

1000' 0 1000' 2000'
1" = 1000' (24x36 SHEET)

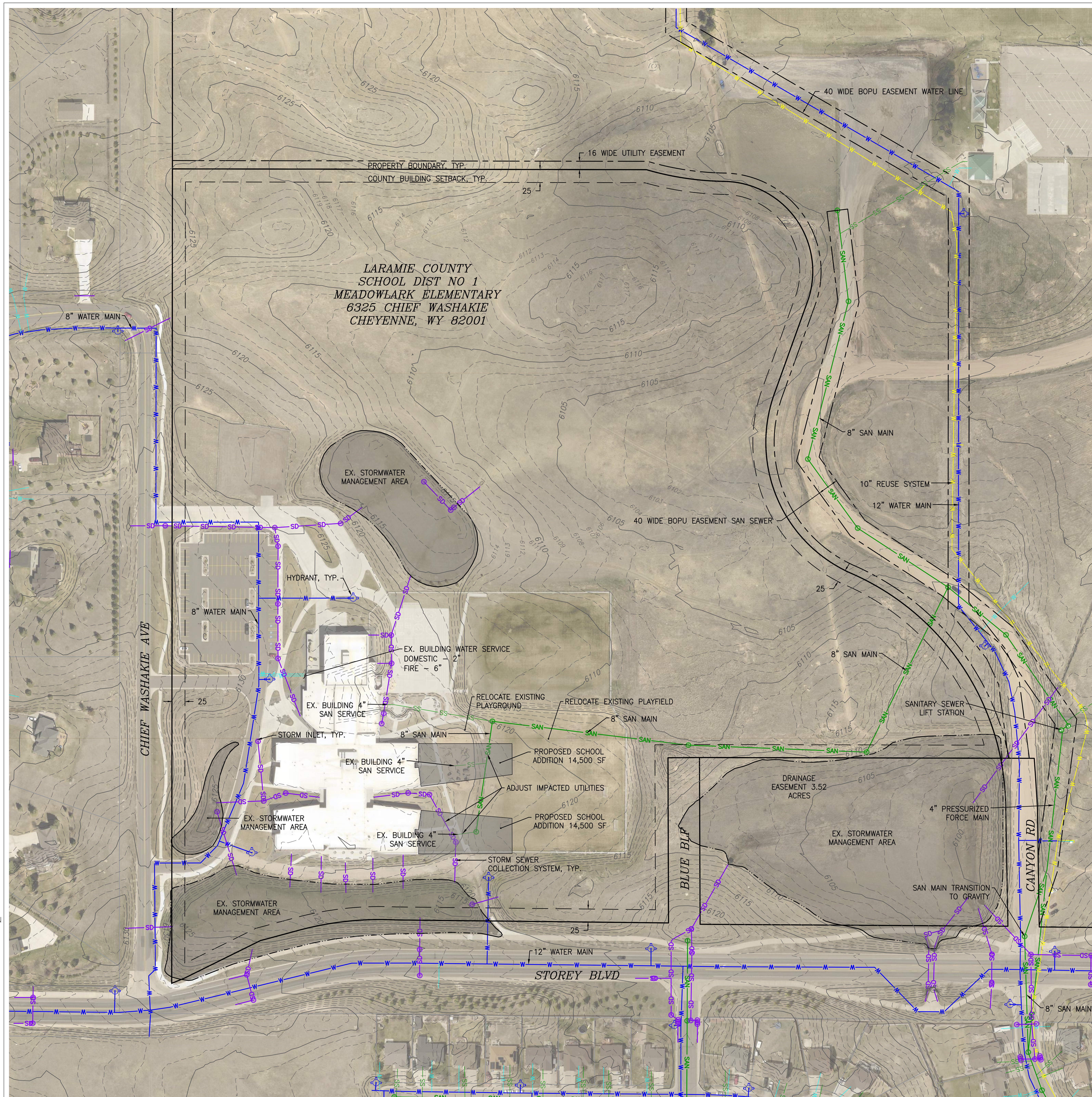
LEGEND

(E) - EXISTING (P) - PROPOSED

(E) INDEX CONTOUR LINE
(E) INTERMEDIATE CONTOUR LINE
SUBJECT PROPERTY BOUNDARY
NEIGHBORING PROPERTY BOUNDARY
EASEMENT LINE
SETBACK LINE
(P) STRUCTURE
(P) EDGE OF ASPHALT
(E) WATER MAIN
(E) WATER SERVICE
(E) WATER REUSE MAIN
(E) SEWER MAIN
(E) SEWER SERVICE
(E) STORM DRAIN

LEGEND

HYDRANT
MANHOLE – STORM DRAIN
MANHOLE – SEWER
MANHOLE – WATER
(P) ASPHALT
(P) STORMWATER AREA
(P) PLAYGROUND AREA



MEADOWLARK ELEMENTARY ADDITION SITE OVERVIEW

100' 0 100' 200'
1" = 100' (24x36 SHEET)

Job No.	24020
Drafter:	TK
Reviewer:	SH

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LANDSCAPE ARCHITECTURE, GIS
NATURAL RESOURCE SERVICES
y2consultants.com
307 733 2999

LCSD1-ES MCER
LARAMIE COUNTY SCHOOL DISTRICT
LARAMIE COUNTY
WYOMING

Set Title:
CONCEPT SITE DIAGRAMS

Plot Date:	PLOT DATE
Desc.	Date
PROGRESS SET	9/23/24

MEADOWLARK ELEMENTARY ADDITION

C1.7

PROJECT NOTES:

THIS CONCEPT DIAGRAM IS INTENDED TO SHOW THE CONCEPT THAT THE BUILDING SIZE AND OTHER SITE REQUIREMENTS FIT ON THE SITE. THIS DIAGRAM IS NOT A REPRESENTATION OF THE FINAL SITE LAYOUT AND DESIGN.

SUBJECT SITE INFORMATION:

1. PIDN: 13660613400100
2. NAME: LARAMIE COUNTY SCHOOL DIST NO 1
3. MAIL ADDR: 2810 HOUSE AVE
4. MAIL ADDR: CHEYENNE, WY 82001
5. ST ADDR: 610 W 7TH ST
6. LOCATION: COLE SCHOOL ADDITION: LOT 1, BLOCK 1
7. TYPE: EXEMPT
8. ACRES: 5.45 ACRES
9. TAX DISTRICT: 0150

MAP DATA SOURCES AND NOTES:

1. NO SITE SURVEY WAS CONDUCTED.
2. DATA SOURCES UTILIZED FOR MAP GENERATION:
   - 2.1. LOT DIMENSIONS SHOWN HEREIN ARE DERIVED USING LARAMIE COUNTY GIS DATA.
   - 2.2. AERIAL IMAGERY SHOWN HEREIN DERIVED FROM LARAMIE COUNTY IMAGERY COLLECTED IN 2020.
   - 2.3. ELEVATION CONTOUR INFORMATION SHOWN HEREIN ARE DERIVED FROM USGS LIDAR DATA COLLECTED IN 2021.
   - 2.4. EXISTING SITE UTILITIES APPROXIMATE LOCATION PER CHEYENNE BOARD OF PUBLIC UTILITIES MUNICIPAL SYSTEM GIS VIEWER.
   - 2.5. COLE SCHOOL ADDITION PLAT MAP DATED JUNE 2020 REFERENCED FOR PROPERTY EASEMENTS.
3. LARAMIE COUNTY LAND DEVELOPMENT REGULATIONS FOR P-PUBLIC ZONING WERE REFERENCED FOR PROPERTY SETBACKS.
4. UNDERGROUND UTILITIES AND SUBSURFACE IMPROVEMENTS ARE APPROXIMATE LOCATIONS ONLY. ADDITIONAL SUBSURFACE IMPROVEMENTS NOT SHOWN HEREON MAY EXIST.
5. ALL ELEVATIONS ARE ASSUMED BASED LIDAR DATA.
6. ALL PROPERTY AND DEVELOPMENT SETBACKS ARE TO BE VERIFIED.
7. EASEMENTS OF SIGHT AND RECORD NOT SHOWN HEREON MAY EXIST.
8. SUBJECT SITE IS IN FEMA AND CITY FLOODWAYS AS IDENTIFIED ON MAP AND NOTED BELOW:
   - 8.1. REGULATORY FLOODWAY, FLOOD ZONE AE, PER NATIONAL FLOOD HAZARD FIRM PANEL 56021C1089F & 56021C1352F REVISED 9/27/2012.
   - 8.2. 100 YR FLOODPLAIN, ZONE AE, PER NATIONAL FLOOD HAZARD FIRM 56021C1089F & 56021C1352F REVISED 9/27/2012.
   - 8.3. 500 YR FLOODPLAIN, ZONE X, PER NATIONAL FLOOD HAZARD FIRM 56021C1089F & 56021C1352F REVISED 9/27/2012.
   - 8.4. CITY/CNTY 100 YR FLOODPLAIN PER LARAMIE COUNTY GIS MAPPING SYSTEM.

PLAN ACCURACY DISCLAIMER

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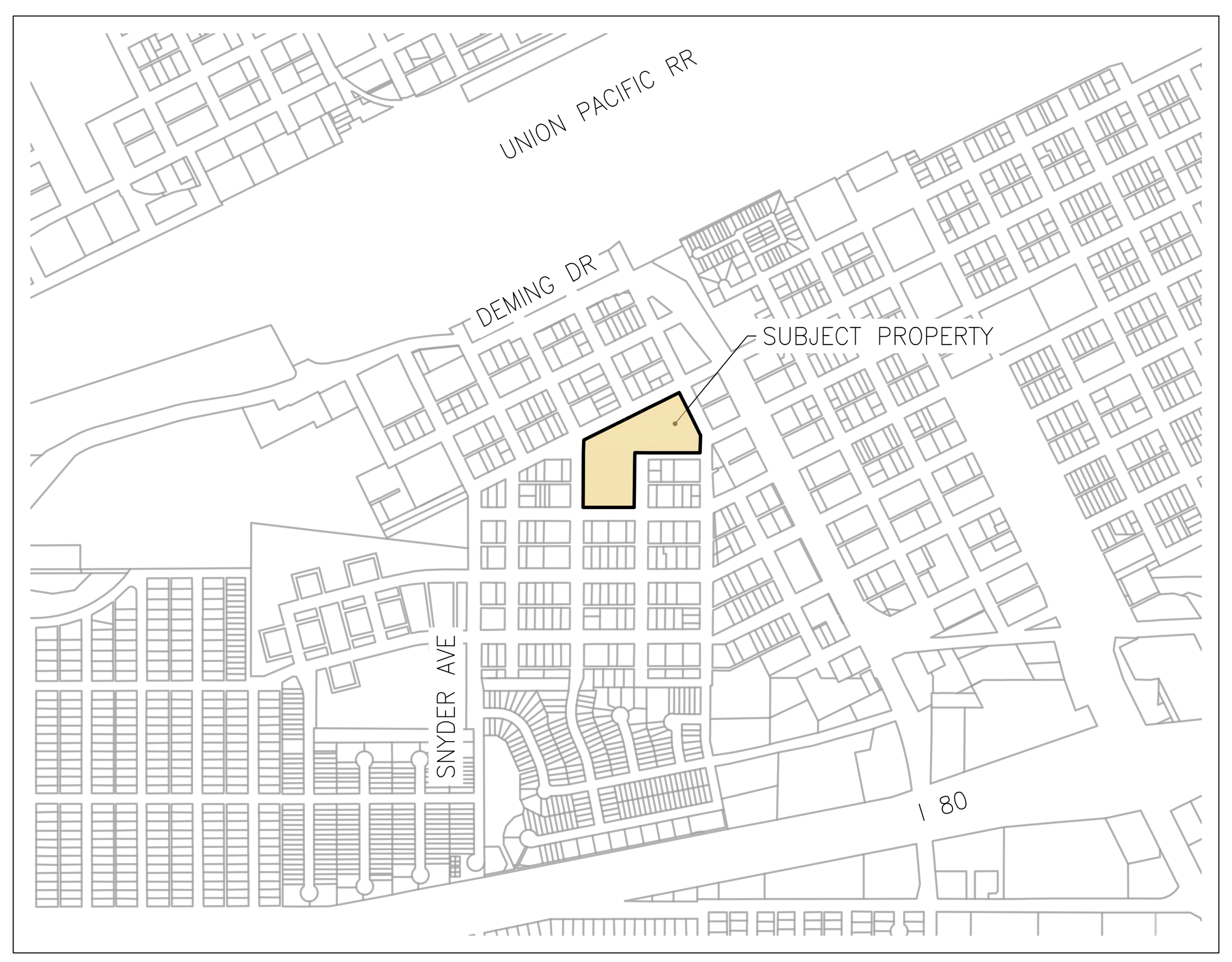
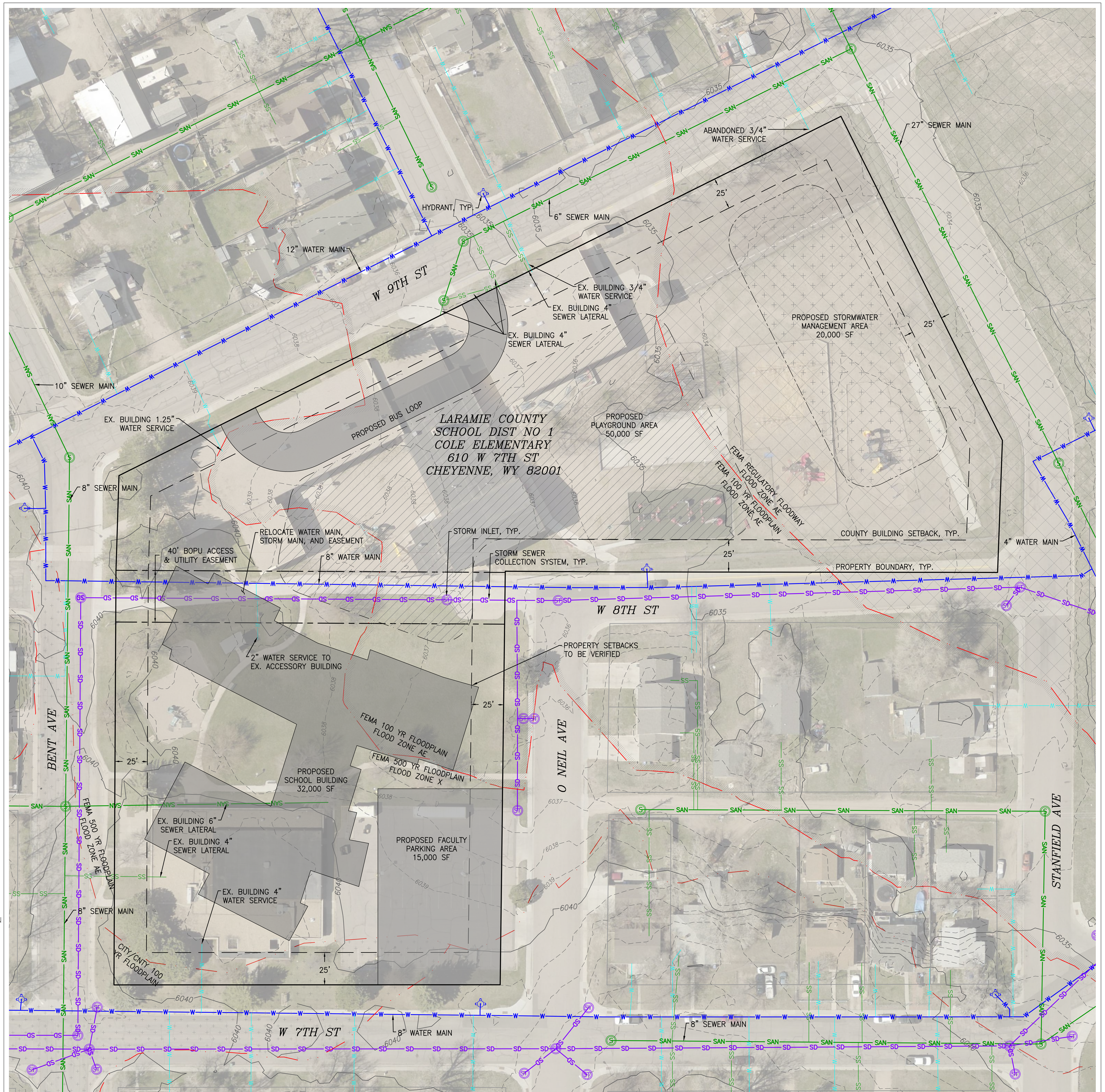


VICINITY MAP

1000' 0 1000' 2000'
1" = 1000' (24x36 SHEET)



LEGEND

(E) - EXISTING (P) - PROPOSED

- (E) INDEX CONTOUR LINE
- (E) INTERMEDIATE CONTOUR LINE
- SUBJECT PROPERTY BOUNDARY
- NEIGHBORING PROPERTY BOUNDARY
- EASEMENT LINE
- SETBACK LINE
- (P) STRUCTURE
- (P) EDGE OF ASPHALT
- (E) WATER MAIN
- (E) WATER SERVICE
- (E) SEWER MAIN
- (E) SEWER SERVICE
- (E) STORM DRAIN

LEGEND

- HYDRANT
- MANHOLE – STORM DRAIN
- MANHOLE – SEWER
- MANHOLE – WATER
- (P) ASPHALT
- (P) STORMWATER AREA
- (P) PLAYGROUND AREA
- FEMA FLOODWAY ZONE AE
- FEMA 100 YR FLOODPLAIN ZONE AE
- FEMA 500 YR FLOODPLAIN ZONE X
- CITY/CNTY 100 YR FLOODPLAIN

40' 0 40' 80'
1" = 40' (24x36 SHEET)

COLE ELEMENTARY REPLACEMENT SITE OVERVIEW

Job No.	24020
Drafter:	TK
Reviewer:	SH

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LCSD1-ES MCER
LARAMIE COUNTY SCHOOL DISTRICT
LARAMIE COUNTY
WYOMING

Set Title:
CONCEPT SITE DIAGRAMS

Plot Date:	PLOT DATE
Desc.	Date
PROGRESS SET	9/23/24

COLE ELEMENTARY REPLACEMENT

C1.5

PROJECT NOTES:

SUBJECT SITE INFORMATION:

1. PIDN: 14662020400100
2. NAME: LARAMIE COUNTY SCHOOL DIST #1
3. MAIL ADDR: 2810 HOUSE AVE
4. MAIL ADDR: CHEYENNE, WY 82001
5. ST ADDR: POWDERHOUSE RD
6. LOCATION: COYOTE RIDGE: TRACT 1
7. TYPE: EXEMPT
8. ACRES: 14.74 ACRES
9. TAX DISTRICT: 0150

THIS CONCEPT DIAGRAM IS INTENDED TO SHOW THE CONCEPT THAT THE BUILDING SIZE AND OTHER SITE REQUIREMENTS FIT ON THE SITE. THIS DIAGRAM IS NOT A REPRESENTATION OF THE FINAL SITE LAYOUT AND DESIGN.

MAP DATA SOURCES AND NOTES:

1. NO SITE SURVEY WAS CONDUCTED.
2. DATA SOURCES UTILIZED FOR MAP GENERATION:
   - 2.1. LOT DIMENSIONS SHOWN HEREIN ARE DERIVED USING LARAMIE COUNTY GIS DATA.
   - 2.2. AERIAL IMAGERY SHOWN HEREIN DERIVED FROM LARAMIE COUNTY IMAGERY COLLECTED IN 2022.
   - 2.3. ELEVATION CONTOUR INFORMATION SHOWN HEREIN ARE DERIVED FROM USGS LIDAR DATA COLLECTED IN 2021.
   - 2.4. EXISTING SITE UTILITIES APPROXIMATE LOCATION PER CHEYENNE BOARD OF PUBLIC UTILITIES MUNICIPAL SYSTEM GIS VIEWER.
   - 2.5. COYOTE RIDGE PLAT MAT DATED OCTOBER 2020 REFERENCED FOR EASEMENTS.
3. LARAMIE COUNTY LAND DEVELOPMENT REGULATIONS FOR P-PUBLIC ZONING WERE REFERENCED FOR PROPERTY SETBACKS.
4. UNDERGROUND UTILITIES AND SUBSURFACE IMPROVEMENTS ARE APPROXIMATE LOCATIONS ONLY. ADDITIONAL SUBSURFACE IMPROVEMENTS NOT SHOWN HEREON MAY EXIST.
5. ALL ELEVATIONS ARE ASSUMED BASED LIDAR DATA.
   - 5.1. LIDAR DATA REFERENCED IS BASED ON SITE CONDITIONS PRIOR TO DEVELOPMENT AND MAY NOT REFLECT EXISTING TOPOGRAPHY AFTER DEVELOPMENT.
6.]ALL PROPERTY AND DEVELOPMENT SETBACKS ARE TO BE VERIFIED.
7. EASEMENTS OF SIGHT AND RECORD NOT SHOWN HEREON MAY EXIST.
8. SUBJECT SITE DESIGNATED AS ZONE X, AREA OF MINIMAL FLOOD HAZARD, PER NATIONAL FLOOD HAZARD FIRM PANEL 56021C1091F EFF. 1/17/2007.

PLAN ACCURACY DISCLAIMER

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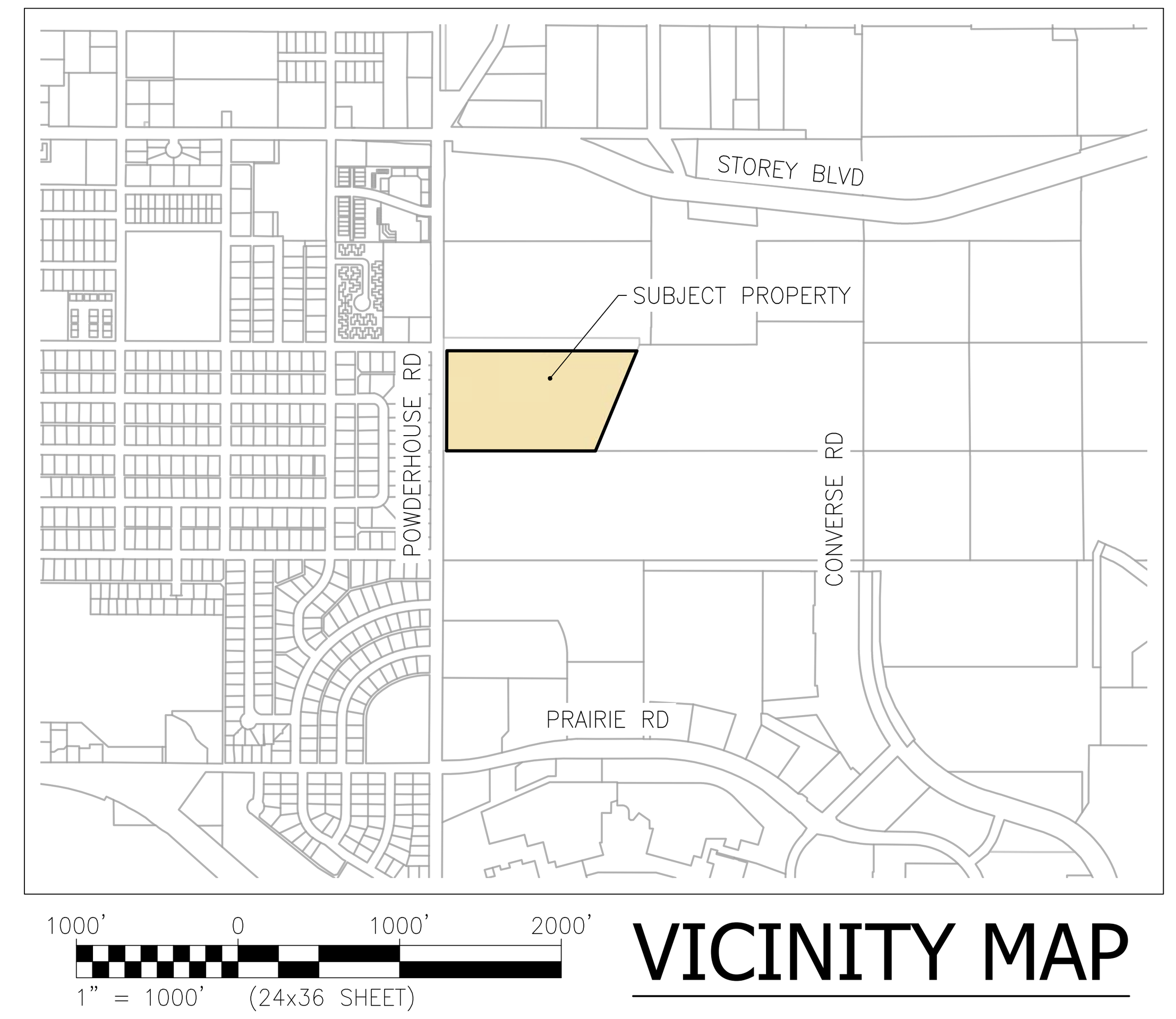


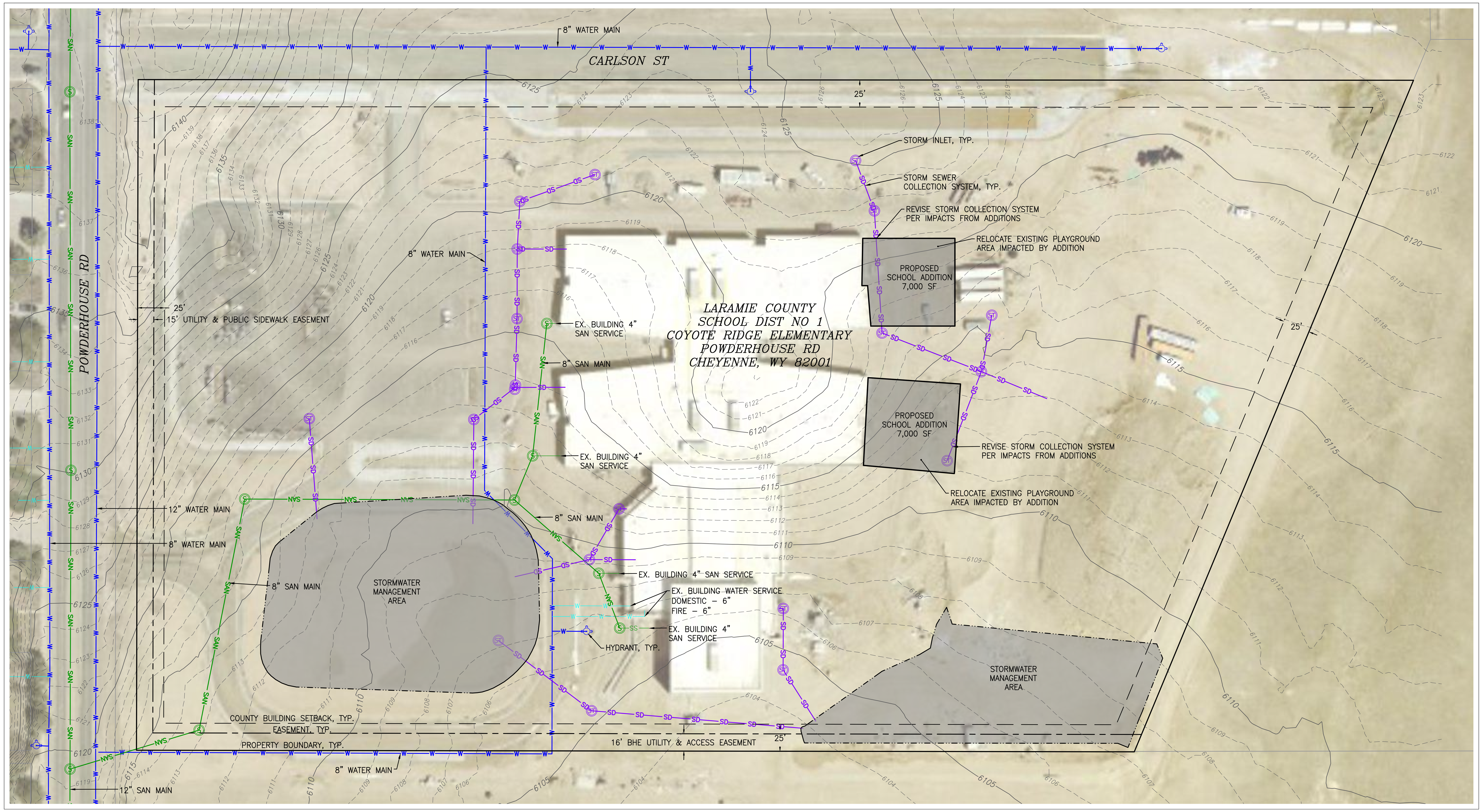
VICINITY MAP

LEGEND
(E) - EXISTING (P) - PROPOSED

- (E) INDEX CONTOUR LINE
- (E) INTERMEDIATE CONTOUR LINE
- SUBJECT PROPERTY BOUNDARY
- NEIGHBORING PROPERTY BOUNDARY
- EASEMENT LINE
- SETBACK LINE
- (P) STRUCTURE
- (P) EDGE OF ASPHALT
- (E) WATER MAIN
- (E) WATER SERVICE
- (E) SEWER MAIN
- (E) SEWER SERVICE
- (E) STORM DRAIN

LEGEND

- HYDRANT
- MANHOLE – STORM DRAIN
- MANHOLE – SEWER
- MANHOLE – WATER
- (P) ASPHALT
- (P) STORMWATER AREA
- (P) PLAYGROUND AREA



COYOTE RIDGE ELEMENTARY ADDITION SITE OVERVIEW

50' 0 50' 100'
1" = 50' (24x36 SHEET)

Job No.	24020
Drafter:	TK
Reviewer:	SH

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LCSD1-ES MCER
LARAMIE COUNTY SCHOOL DISTRICT
LARAMIE COUNTY
WYOMING

Set Title:
CONCEPT SITE DIAGRAMS

Plot Date:	PLOT DATE
Desc.	Date
PROGRESS SET	9/23/24

COYOTE RIDGE ELEMENTARY ADDITION

C1.6

Glossary

Glossary of Terms

This glossary is provided to clarify terms used specifically within the context of this report. The definitions provided are not meant to provide comprehensive explanations but rather as descriptions of how these terms apply to the Most Cost-Effective Remedy study for Laramie County School District.

4-6	A grade configuration consisting of 4th and 6th grades only.
5-6	A grade configuration consisting of 5th and 6th grades only.
Actions	Specific actions taken to address identified building needs as part of a remedy. These may include construction, renovation, boundary adjustments, grade reconfigurations, or taking facilities offline.
ARMA	ARMA (Auto-Regressive Moving Average): A statistical model used to predict future values based on past data, which has been applied to enrollment projections in this study. Model combines autoregression and moving average to account for cyclical enrollment trends.
Back Test	A method of applying a forecasting model to historical data to evaluate its accuracy in predicting future outcomes.
Bidding	The process by which contractors submit proposals for performing work on a project, often evaluated on cost, schedule, and technical qualifications.
Boundary Adjustments	Modifications to school attendance zones to optimize student distribution across schools and address capacity issues. Adjustments are assumed to be contained within "Triads" for this study.
Capacity	The number of students a school building can accommodate based on state adequacy standards and as calculated according to SFC, Capacity Calculation Methodology.
CBA	Choosing by Advantages: A decision-making framework designed to ensure that choices are made based on comparing the advantages of alternatives. Used in this study to evaluate potential remedies for relative benefit and cost-effectiveness.
Cost-Benefit Analysis	A financial analysis that compares the projected costs and benefits of different remedies to determine which option provides the greatest value.
District	Laramie County School District Number 1

Enrollment Projections	Forecasts of student enrollment numbers over a future period, used to assess extent of capacity needs and action or actions required as part of a remedy to address capacity needs.
FCI	Per SFC Rules Chapter 1: Facility Condition Index (FCI) means a numerical rating or building condition score based on measured data or assessment of physical components or systems. The condition of a building is expressed as a ratio of the Cost to Repair Deficiencies, or "Deferred Maintenance" (DM) divided by the Current Replacement Value (CRV) of the building. The formula is: $FCI = \sum DM \div \sum CRV$
Funding	Financial support provided by the State of Wyoming for implementing solutions to identified needs, including capital construction and major maintenance.
K-4	A school configuration that includes kindergarten through 4th grade.
K-6	A school configuration that includes kindergarten through 6th grade.
Life-cycle Costs	Total costs associated with building, such as: first-time costs/initial construction; life cycle sustainment cost, including ongoing operations and major maintenance; and end-of-life costs (e.g., demolition).
Major Maintenance	Per SFC Rules Chapter 1: "Major Maintenance" is a common reference term that means "Major building and facility repair and replacement" as that term is defined in W.S. § 21-15-109(a)(iii).
MCER	"Most Cost-Effective Remedy" as per SFC Rule Chapter 8, Section 5. Identification and Determination of the Most Cost-Effective Remedy to meet the requirements of W.S. 21-15-117(b).
MAPE	Mean Absolute Percentage Error, expressed as a percentage, measures the accuracy of a forecasting method by averaging the absolute percentage errors over all observations.
Offline	For the purposes of the MCER study, offline is meant to indicate buildings modeled to be removed from use for educational purposes. The final disposition of buildings indicated to be offline has not been determined as part of this study; however, an allowance for the cost of demolition has been included in the present value analysis for cost purpose only.

Present Value	The current value of a future cash flow, which accounts for time value of money and is used to compare the long-term costs of different remedies. Present value is calculated by inflating a current value to a future value and discounting the future value back to a present value. Inflation and discount rates are not equivalent.
Procurement	The process of acquiring products, services or materials (e.g., construction).
Reconfiguration	The process of changing the grade configuration of a school (e.g., from K-6 to K-4).
Remedy	Solution or correction comprised of a series of actions to address and identified building need. Wyoming Statute: WS 25-15-111(v) "Remedy" or "remediation" means a course of action addressing identified building and facility needs in accordance with statewide adequacy standards developed under this act, consisting of building or facility construction, replacement, renovation, repair or any combination thereof.
ROM	ROM (Rough Order of Magnitude): A preliminary estimate of the cost of a project, used during the initial stages of planning to provide a ballpark figure for budgeting purposes. In the context of this study, ROM estimates are meant to provide a relative comparison of preliminary costs, which may not vary by orders of magnitude.
SCD	State Construction Department
SF	Area unit of measure in Square Feet
SFC	School Facilities Commission
SFD	School Facilities Division
Triad	A grouping of schools within a specific geographic area of the District.