2023 FACILITY AUDIT

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PALMER PUBLIC SCHOOLS

PALMER, NE

AUGUST 29th, 2023

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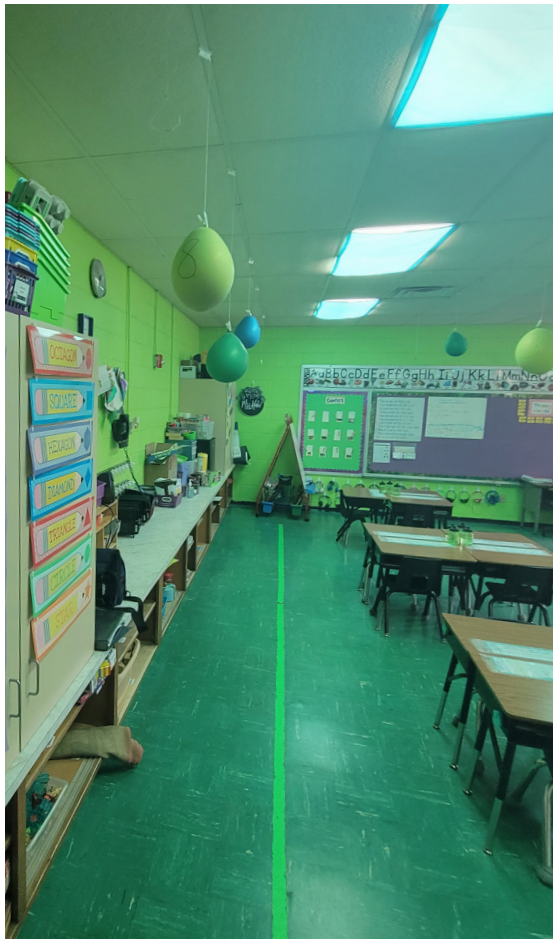
Chapter Two tells the story of the district's history. It takes a look at current student enrollment, demographics, comparison to peer districts, and taxes.

03

ANALYSIS

Chapter Three seeks to gain an understanding of the district's current facilities. Listing current strengths and weaknesses.



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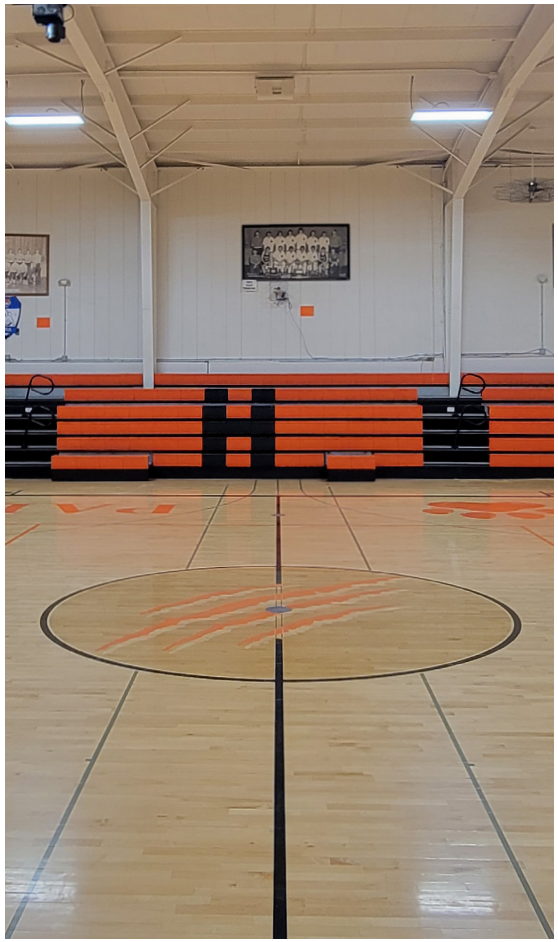
FUTURE NEEDS

Chapter Four lists the future programmatic needs of Palmer Public Schools that are missing from Chapter Three's analysis. It details proposed program needs for both space and equipment at the public school and the Public Gymnasium.



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PROPOSED MASTER PLAN

Chapter Five takes into consideration of the anticipated growth of the school district, existing deficiencies in current spaces, and the necessary programs. By proposing two alternative Master Plans.

06

NEXT STEPS

Chapter Six identifies the next steps forward for Palmer Public Schools, including an estimated project cost for the proposed alternatives, and what a potential timeline might be moving forward.

INTRODUCTION

01

1.1 PURPOSE + OBJECTIVES

Fig. 1.1.1: Palmer Public Schools Community Meeting, 2023.

Fig. 1.1.2: Palmer Public Schools Community Meeting, 2023.

PURPOSE

Palmer Public Schools has spent the last year considering the need for facility improvements within the district. With the original school being built in 1961, overall from an architectural perspective, the facility is in good condition. The original school is located at the center of the facility and still holds the majority of the school's functions. As the district continued to grow, multiple additions and renovations were done, with the latest being in 2015.

In an effort to understand the current conditions of the school and its facilities, CWP Architects was hired to complete this facility audit and master plan. This book will draw attention to the conditions of the existing facilities, and identify how those conditions compare to current building codes, life safety codes, energy codes, MEP codes (mechanical, electrical, and plumbing) and design standards typically utilized when building a new facility. Along with presenting those conditions, a proposed master plan will accompany this analysis, to provide an outlook which will highlight the future goals and wishes of the district.

OBJECTIVES

Overall, the objective of this study is to look at the existing facilities and student population of Palmer Public Schools, and provide an assessment, in hopes of helping the school district and its constituents make an informed decision on the best direction forward in the coming decade. This objective can be broken down into the following goals:

1. Understand the school district's history and current demographic make-up; one has to know where they have been in order to know how to move forward and shape what/who they want to be.
2. Analyze the existing facilities of the school district, including the strengths, weaknesses, and opportunities of Palmer Public Schools.
3. Identify any site constraints that would prohibit any future development or additions.
4. While not suggesting major program changes or additions, the analysis will include some maintenance recommendations or further in-depth assessment suggestions.
5. Illustrate a series of possible future additions for the school, based on needs and wishes.
6. Propose a potential timeline that emphasizes the start and end dates of major milestones.

1.2 PROCESS

Fig. 1.2.1: Palmer Public Schools Halloween, 2022.

Fig. 1.2.2: Palmer Public Schools Elementary Concert, 2022.

PROCESS

To understand the current trends, needs and wants of the district, this study was a collaborative effort that included site visits to record and evaluate existing facilities. The design professionals who led the study have been working in collaboration with the school district to provide an accurate evaluation of the current facilities. The design team consists of Architects, Mechanical, and Electrical Engineers who provide a broad knowledge base to cover major aspects of the district facilities.

Along with the analysis, A series of master plans will be provided. With the involvement of the school district, these master plans will highlight the wants and needs of the school at a conceptual level. Showing the potential of what could happen if a bond is pursued.

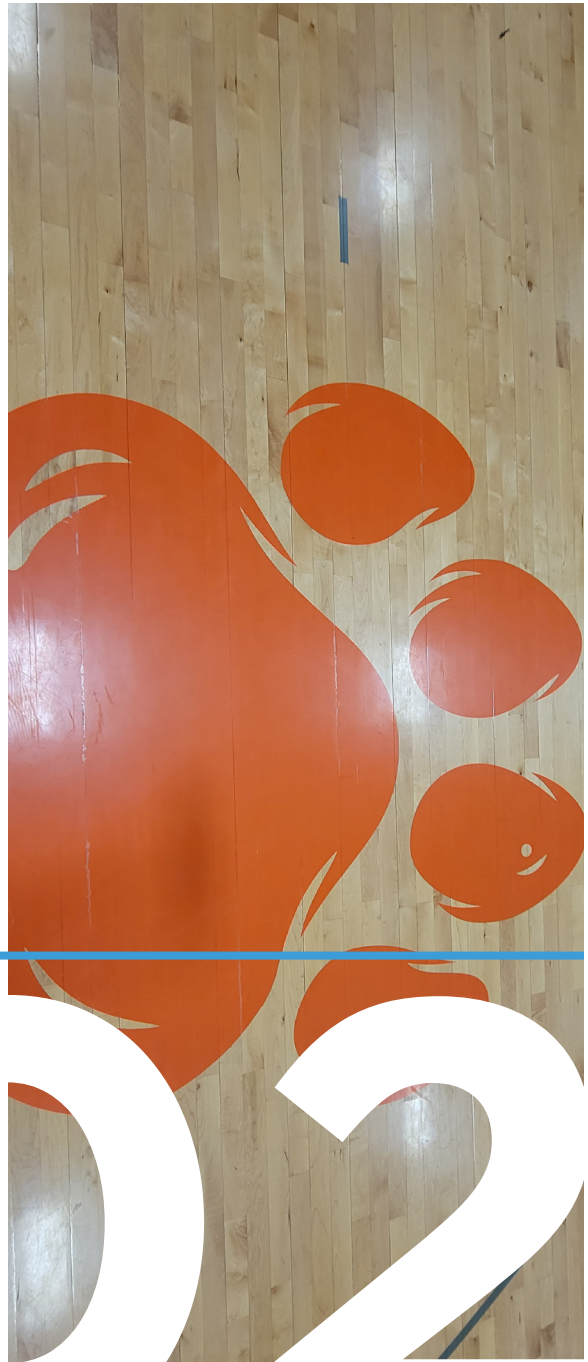
The purpose of a master plan is not intended to be a final solution or project direction. We consider the program and community needs as well as site constraints to look at possible size and location of future projects. The purpose of these master plans is to look beyond the immediate needs and suggest project locations that do not inhibit future growth.

MISSION STATEMENT

Palmer Public Schools mission statement:

“A community that prides itself on commitment, growth, and achievement”

BACKGROUND



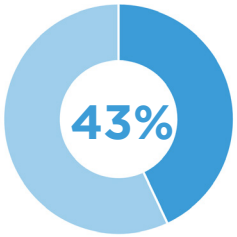
02

2.1 SCHOOL DEMOGRAPHICS

District Student Population

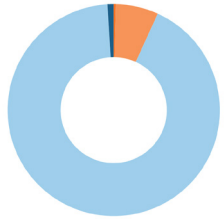
- Elementary School (52%)
- Jr/Sr High School (36%)
- Pre-K. (12%)

Fig. 2.2.1: Comparatively, the Elementary makes up the largest percentage of the District's population.



Free/Reduced Lunch 2022

- Receive Free or Reduced Lunch (43%)



Student Membership by Race and Ethnicity 2022

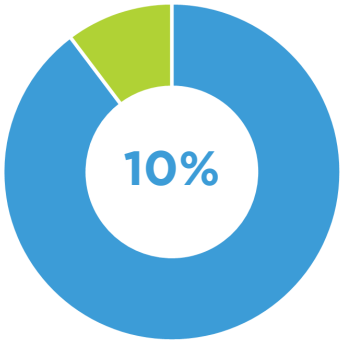
- Am. Indian or Native Alaskan (0%)
- Asian (0%)
- African American or Black (0%)
- Hispanic or Latino (7%)
- Native Hawaiian or Pacific Islander (0%)
- White (92%)
- Two or more races (1%)

Fig. 2.1.1: Palmer Public School Activity, 2023.

Fig. 2.1.2: Palmer Public School Classroom Activity, 2023.

Fig. 2.1.3: Palmer Public School FFA Banquet, 2023.

Figure 2.1.4: Student Enrollment



Student Population Growth

- Student Population
- Students who joined in the last five years

Fig. 2.2.2: Student enrollment has increased 06% in the last five years, with a peak population of 323 students in 2022.

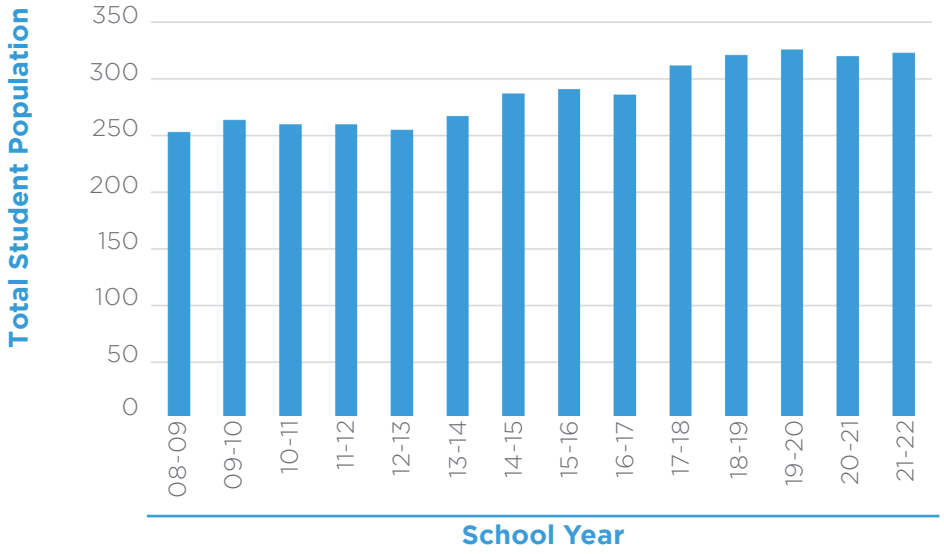


Table 2.1.5: Student Enrollment by Grade

Year	08-09	09-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	**22-23**
Pre-K.	17	14	16	23	21	23	28	30	35	30	37	50	48	40	**32**
Kinder.	14	13	13	16	19	25	15	16	24	21	20	24	21	21	**23**
Grade 1	16	19	14	15	14	16	20	25	14	20	24	21	20	24	**33**
Grade 2	8	19	18	18	13	14	16	18	23	16	20	24	21	21	**25**
Grade 3	17	9	17	21	19	14	16	18	15	26	19	20	28	22	**22**
Grade 4	18	19	12	20	25	19	15	15	15	21	26	17	21	28	**21**
Grade 5	11	19	20	11	20	27	20	20	14	17	19	27	19	22	**29**
Grade 6	19	13	17	20	14	21	25	22	18	14	19	21	25	18	**23**
Grade 7	22	23	11	18	20	16	24	28	26	21	14	19	21	24	**15**
Grade 8	23	22	25	9	16	19	20	23	27	24	19	14	18	20	**25**
Grade 9	18	27	24	26	9	19	23	21	24	33	23	20	14	17	**20**
Grade 10	21	18	29	25	25	9	19	25	21	25	32	23	16	15	**18**
Grade 11	25	23	19	25	22	26	8	19	19	23	26	27	19	19	**18**
Grade 12	16	25	25	16	21	25	28	12	19	18	24	26	27	20	**18**
Total	**253**	**264**	**260**	**260**	**255**	**267**	**287**	**291**	**286**	**312**	**321**	**326**	**320**	**323**	**322**

2.2 COMPARISON TO PEER DISTRICTS

For Merrick County, since 2010, the county population has been steady. In 2010, the Census population was 7,845. In 2022, the Census population estimate is at 7,721. While for the village of Palmer, the current population is at 439, as of 2020. For the village, the number of households is at 164, with a median household income of $56,000.

Palmer student population averages out to 20-22 students per grade. Currently the smallest class size is 15 students in grade 7 for the 2022-2023 school year. While the largest class size is 33 students in grade 1 for the 2022-2023 school year. As of 2023, Palmer employs 27 full time teachers and 1 full time technology coordinator. The district also 3 administrators, 2 secretaries, 1 book keeper, 8 paraeducators, 4 bus drivers, 4 cooks, and 3 custodians. Bringing the total employed by Palmer to 53 staff members.

From the 2022-2023 School year, Palmer has seen a 67 student population increase in the last ten years. To have a better understanding of the student population over the years, refer to page 6 and 7 of this booklet.

The Nebraska Board of Education provides a comparative metric between school districts and their regional peers. Those statistics for Palmer are shown in Table 2.2.1. What stands out from these statistics is the fact that Palmer Public Schools is larger than other schools in the region in student population, but has fewer total teachers.

Table 2.2.1: Public School 2022

	PPS	Peers
Total Students	**323**	295
Total Teachers	**28**	29
Free/Reduced Lunch	**43%**	44%
Gifted Students	**31%**	11%

Statistics from Nebraska Board of Education

Fig. 2.2.2: Palmer Public School State Capitol Tour, 2023.

Fig. 2.2.3: Palmer Public School Activity, 2023.

Fig. 2.2.4: Palmer Public School Activity, 2022.

2.3 TAX LEVIES & LAND VALUATION

TAX LEVIES IN MERRICK COUNTY

Palmer School District is primarily funded through millage taxes levied against property. Table 2.3.1 shows the history of the yearly tax levy set for Palmer Public School as well as the associated valuation of property contained within the school district. Over the last 4 years the levy has slightly increased while land values have plateaued. Increasing property values typically allow school districts to lower the tax levy while still receiving similar funding levels of tax dollars. However, agricultural land is not taxed at the same rate as residential and commercial property so a direct correlation cannot be made without further study of the existing land valuations by property type.

Table 2.3.1: History of Tax Levies For Palmer Public Schools

Year	Tax Levy Amount	Valuation
2019-2020	$00.89	$307,084,487
2020-2021	$00.94	$298,967,836
2021-2022	$00.96	$303,516,421
2022-2023	$00.97	$308,876,429

Fig. 2.4.1: Palmer Downtown, 2023.

Fig. 2.4.2: Palmer Downtown, 2023.

ANALYSIS OF THE EXISTING FACILITIES

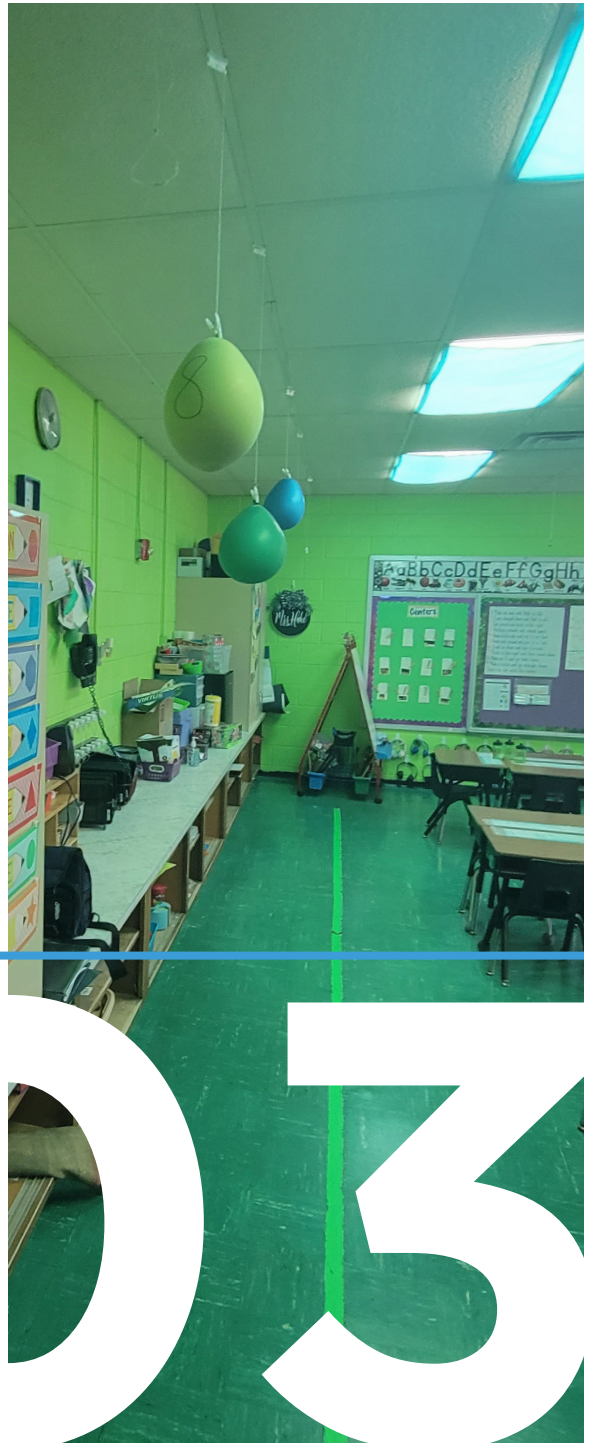


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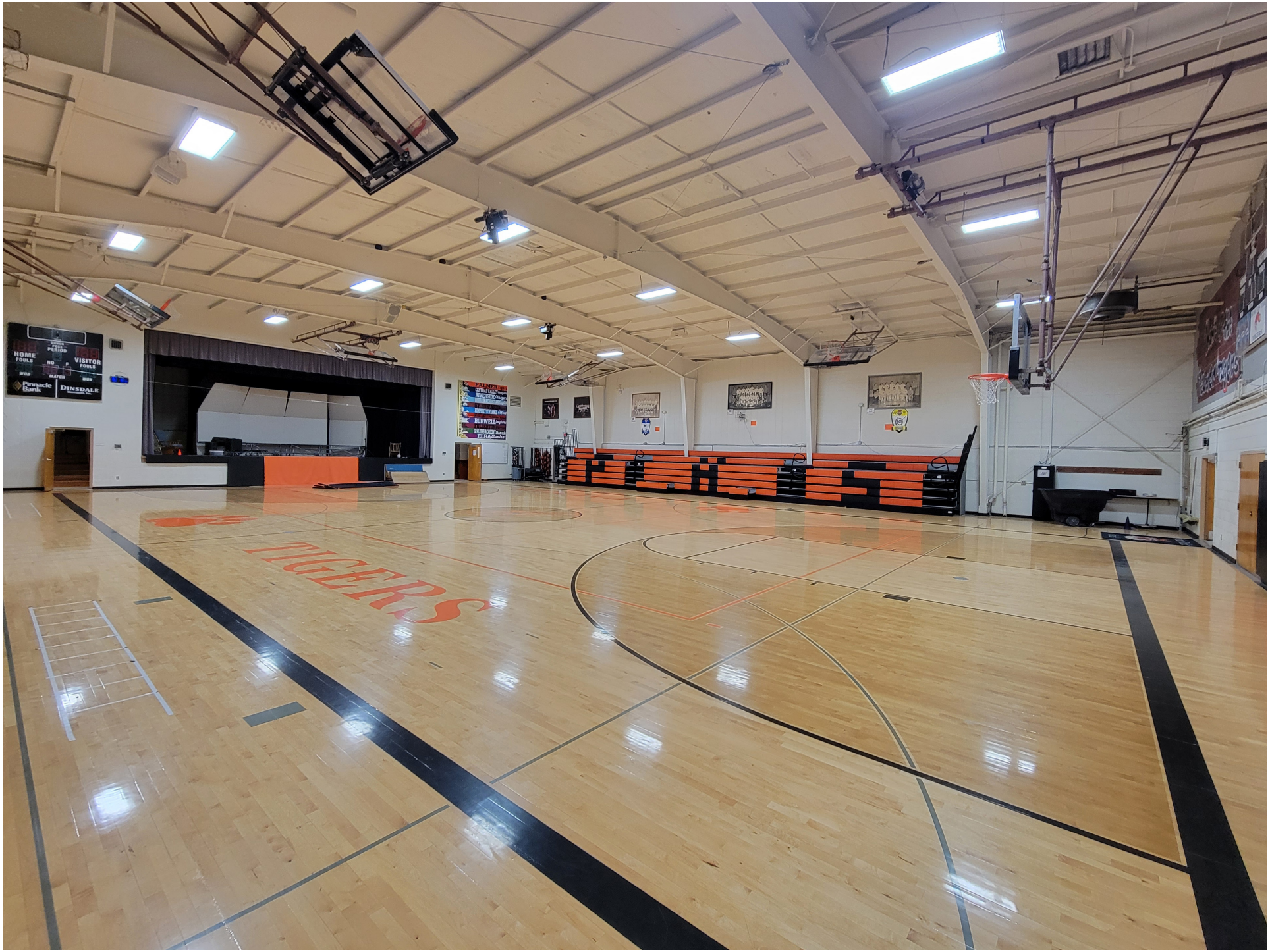
FIGURE 3.0.1: AERIAL MAP OF DISTRICT FACILITIES

Aerial map courtesy of Google Maps, circa 2022.

Key

A. Palmer Public Schools
B. Early Learning Center
C. Old Gym and Wellness Center


HOME
FOULS
PERIOD
VISITOR
FOULS
Pinnacle Bank
DINSDALE
TIGERS

3.1 SITE CONSTRAINTS

When considering any future growth possibilities, looking at the site constraints help inform where additions can and cannot go. Local zoning regulations play an important part in this analysis. Zoning ordinances define the permitted uses on a property, the amount of the site that can be covered, setbacks from the property line, maximum building heights, and other constraints. The Palmer High School and Elementary building is zoned R1 Low Density Residential District. Based on the listed height and setback requirements, the existing buildings are within these boundaries and future additions likely won't be an issue.

Utility easements are an important site constraint we consider. But, based on the available drawings provided by the school, there are no recorded easements. It appears all public utilities are within the street right-of-way and none cross the site. To fully understand what easements are located around the Palmer site, our office would recommend a survey and title search to be commissioned. This would identify those constraints and provide a better understanding of what would be possible on the site. Private utilities that feed the school such as electrical service, gas, water or sanitary sewer can be modified or adjusted to work with any future project. A site survey will also identify and locate the routing of these utilities.

Site grading is a prevalent aspect to the Palmer School property with little grade change across the property. Flat sites pose a challenge in draining water away from the building and pavements. Ponding, mud and ice buildup are common when there is not adequate drainage away from a site. Any additions or improvements, will need to take this into account through drainage swales, inlets, storm piping, strategic paving, or storm detention. Strategies such as a detention pond or underground detention to promote water infiltration down into the soil, or creative solutions such as rain gardens, french drains or dry wells can be incorporated to mitigate the drainage challenges.

Use	Lot Area (Sq. Ft.)	Lot Width (Feet)	Front Yard (Feet)	Side Yard (Feet)	Rear Yard (Feet)	Max Height (Feet)	Max Building Coverage (%)
R-1 Residential District - Single Family Dwelling	10,000	80	25	8	10	35	35
R-1 Residential District - Other Permitted Uses	**10,000**	**100**	**25**	**8**	**10**	**35**	**35**
R-1 Residential District - Conditional Uses	10,000	100	25	8	10	35	35
R-1 Residential District - Accessory Structures	-	-	25	8	10	15	-

3.2 OLD GYM AND WELLNESS CENTER

OVERVIEW

The Palmer Old Gym is an important asset to the Palmer community and Palmer Public School. Gym space is at a premium and scheduling practices for High School and youth teams become a challenge. Without this second gym available, practices would be scheduled late into the evenings. The Palmer Wellness Center on the old stage is an excellent use of the space and an asset available to the community. While the court floor and hoops are in good condition, the current gym can only be used for one court of practice. There is not enough space to have two cross-courts going simultaneously. The gym also can not be used for competition space as there is not adequate space for spectator seating or enough restroom fixtures for assembly occupancy. Therefore, youth tournaments or boys/girls games can't occur at the same time as a game at the High School. The gym is not air conditioned which makes it uncomfortable utilizing the space for summer camps, conditioning, or early fall practices.

There are many challenges to having a remote property including safety, security, maintenance, and budgeting for improvements. Without staff regularly on-site, the property is susceptible to vandalism, theft or maintenance and improvements being a priority. Transportation between the two sites for kids without a permit or access to their own transportation can be a burden for families.

The rear exit doors need to have the egress path remain clear. The stored items blocking the doors need to be removed

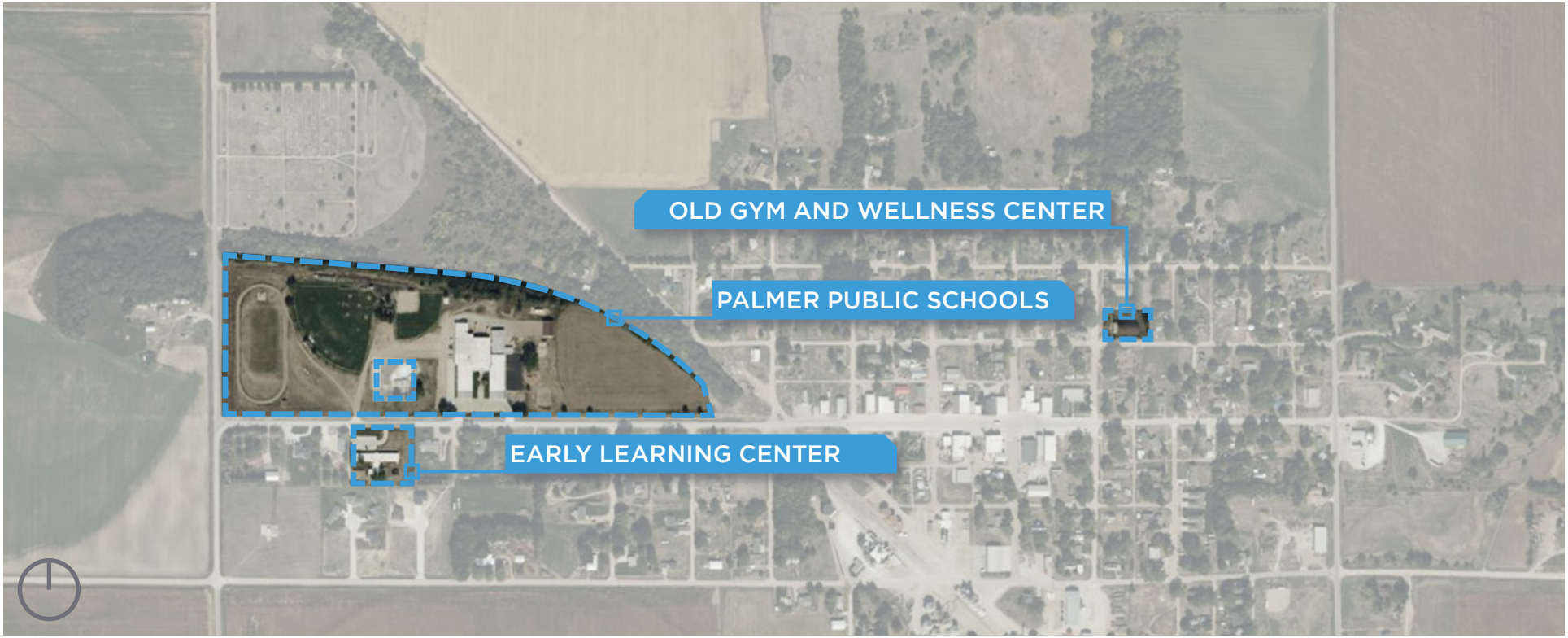


Fig. 3.2.1: Palmer Gymnasium 2023.

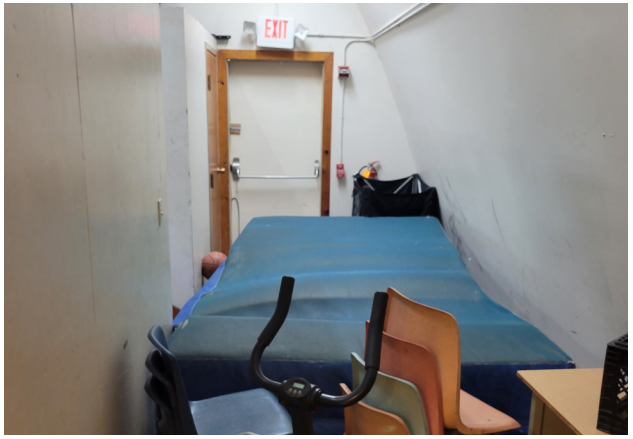


Fig. 3.2.2: Interior Exit, 2023.


Fig. 3.2.5: Gymnasium, 2023.


Fig. 3.2.3: Mechanical Lower Level, 2023.


Fig. 3.2.4: Exterior Pavement 2023.

Fig. 3.2.6: Entryway, 2023.


Fig. 3.2.7: Men's Bathroom, 2023.

Fig. 3.2.8: Stage Weight Room, 2023.

3.3 PALMER EARLY LEARNING CENTER

OVERVIEW

Having access to safe, dependable, and affordable childcare is important to the vitality and growth of any small community. The forethought and dedication of Palmer Public to have this facility is an asset for young families. There has been extensive work and money dedicated to acquire, improve and maintain this facility that makes up the Tiny Tigers Early Learning Center.

Continual maintenance and improvements could be considered. The interior spaces are in good condition and function well for their needs. There is ample space with a kitchen, dedicated eating area, storage space and generous classroom sizes to meet the current and future needs. Since kids spend a lot of time on the floor, a padded carpet could be considered in the classroom spaces. High School wrestling utilizes the east portion of this facility which doubles nicely for an interior play space during bad weather days.

The exterior envelope is in good condition with brick veneer and recently replaced windows. The gutters and downspouts are showing signs of distress and could be considered for replacement when the roof is replaced next. The roof has been spray coated to gain some years on the overall lifespan. While adding additional layers of coatings solves an immediate need, it isn't a long term 30-40 year solution. Roof replacement could be budgeted for within the next 10 years.

Site pavings, sidewalks, pickup/dropoff, playground, fencing and parking is in good shape. Due to the alignment of the parking drive with the High School drive to the north, there could be some confusion with younger drivers with who has the right-of-way. Re-aligning the High School access drive to the Tiny Tiger's drive could be beneficial. There is no pedestrian access to the community or the main Palmer school property. A sidewalk from the main door to the street could be considered. A marked crosswalk with signage would add to the safety for kids and families walking between the school. Adding a sidewalk on the north side of Commerce Street would complete the connection to the east into Palmer and to the Elementary and High School building.

Rooms	
01.	Vestibule
02.	Superintendent
03.	Wrestling Room
04.	Main Office
05.	Nurse
06.	Work Room
07.	Cafeteria

Rooms	
08.	Kitchen/Dish
09.	Janitorial
10.	Storage
11.	Mechanical
12.	Daycare
13.	Commons Room

Key

- Classroom
- Physical Education
- Music/Computer Lab/Media/Art
- Kitchen
- Administration
- Circulation
- Storage/MEP

Fig. 3.3.1: Exterior Facade, 2023.

Fig. 3.3.2: Roof Drain 2023.

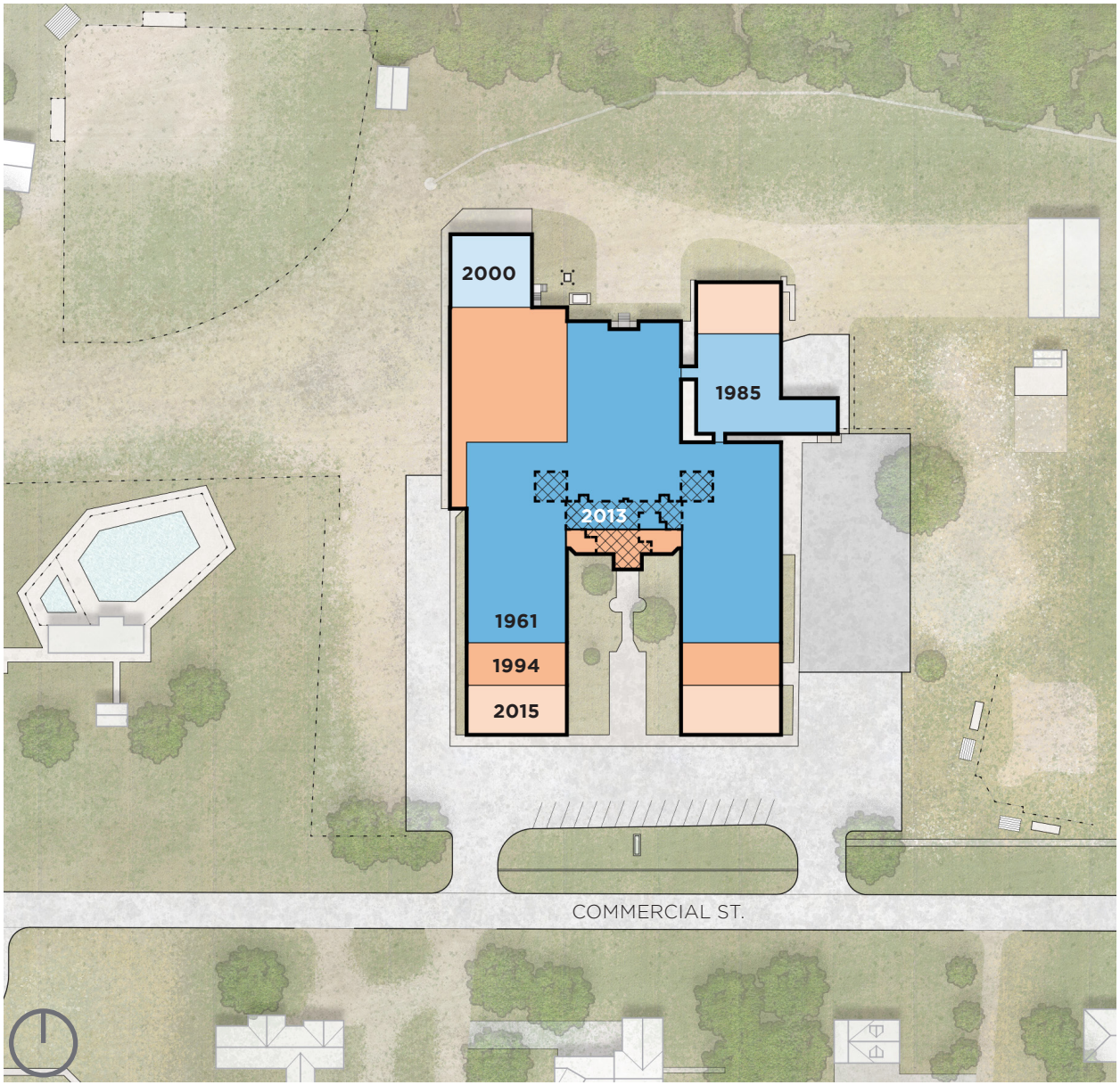
Fig. 3.3.3: Roof, 2023.

Fig. 3.3.4: Restroom, 2023.

Fig. 3.3.5: Kitchen, 2023.

Fig. 3.3.6: Wrestling Room, 2023.

3.4 PALMER PUBLIC SCHOOLS



OVERVIEW

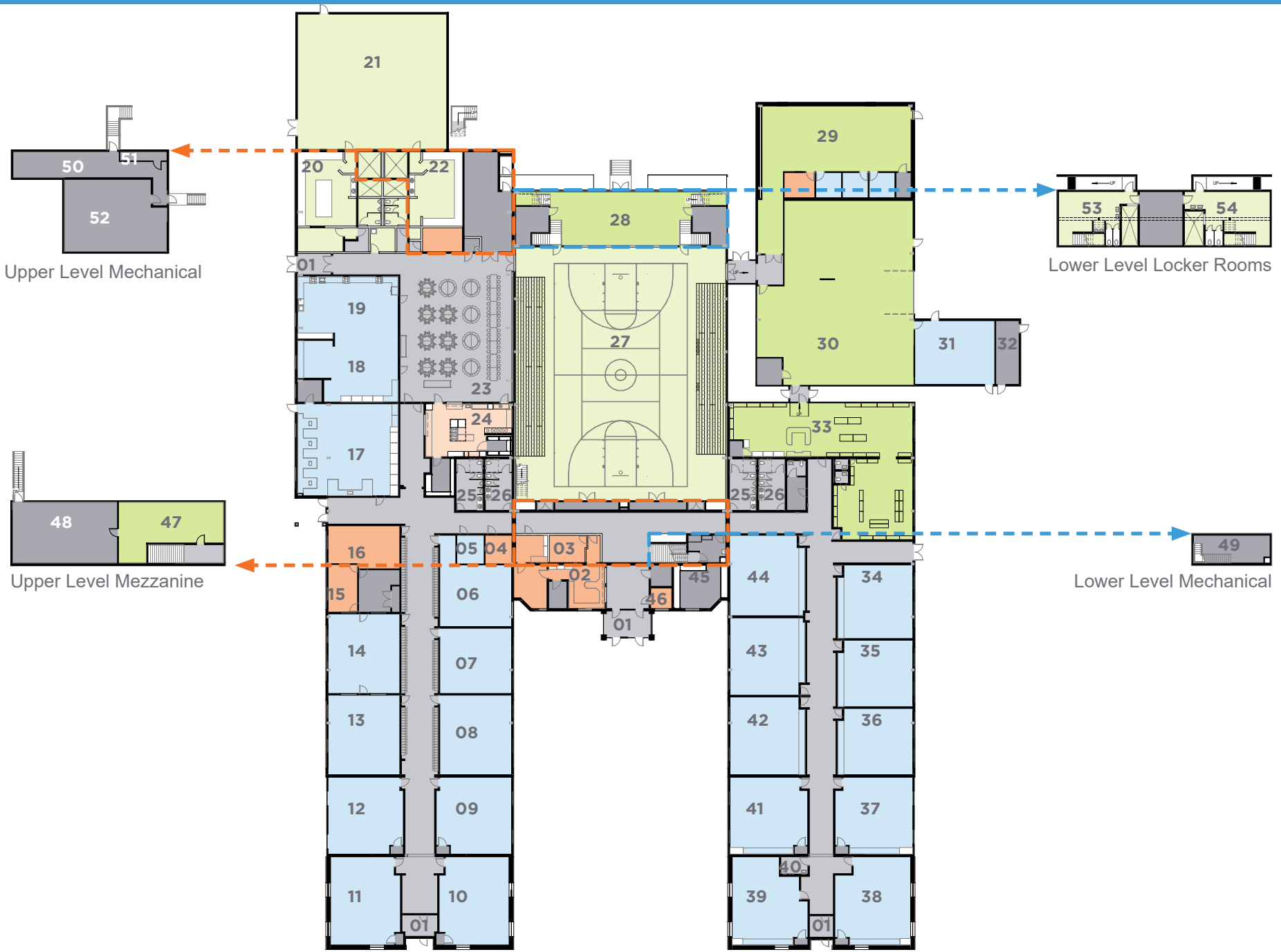
The High School / Elementary building is generally in good condition and there are no major structural or life safety concerns. The facility audit will go into greater detail of the specific areas within the building, but most items noted in this report can be addressed with general maintenance.

The building is not fire sprinkled and generally a facility this size, we recommend developing a plan to get that accomplished. Fire sprinkling a building has life safety benefits, building code benefits and possible building insurance premium reductions. This facility analysis will go into further detail on fire sprinkler requirements, but small towns on water tower service like Palmer could require a dedicated fire service line into the building and a booster pump to increase the pressure.

Table 3.4.1: Renovations and Additions Timeline

Year	Project
1961	Original School
1985	Shop Addition
1994	Additions & Alterations
2000	Weight Room Addition
2013	Admin. & Restroom Renovation
2015	Classroom Addition

FIGURE 3.4.1: SCHOOL FLOOR PLAN



Rooms	
01.	Vestibule
02.	Main Office
03.	Elementary Principal
04.	Counselors Office
05.	Detention
06.	College/Career
07.	Foreign Language
08.	Language Arts
09.	Social Studies
10.	Resource
11.	Math/Science
12.	Language Arts
13.	Math
14.	Business Tech.
15.	Secondary Principal
16.	Conference Room
17.	Science
18.	Art
19.	FCS
20.	HS Boy's Locker Room
21.	Weight Room
22	HS Girl's Locker Room
23.	Multi-purpose
24.	Kitchen
25.	Boy's RR
26.	Girl's RR

Rooms	
27.	Gym
28.	Stage
29.	Music
30.	Shop
31.	Ag/FFA Classroom
32.	Storage
33.	Library
34.	1st Grade
35.	1st Grade
36.	Title 1
37.	2nd Grade
38.	6th Grade
39.	5th Grade
40.	RR
41.	Resource
42.	4th Grade
43.	3rd Grade
44.	Kindergarten
45.	Janitorial
46.	Nurse
47.	Business
48.	Mezzanine Storage
49.	Boiler Room
50.	Storage
51.	Electrical
52.	Mechanical
53.	JH Boy's Locker Room
54.	JH Girl's Locker Room
55.	
56.	
57.	
58.	

Key

- Classroom
- Physical Education
- Music / Computer Lab / Media / Art
- Kitchen
- Administration
- Circulation
- Storage / MEP

Fig. 3.4.2: Palmer Public Schools Corridor, 2022.

Fig. 3.4.3: Palmer Public Schools Cafeteria, 2022.

Fig. 3.4.4: Palmer Public Schools Classroom, 2022.

SITE

REVIEW

The school entrance is set deep within a courtyard and has minimal parking at this main entrance. It doesn't allow for a natural flow for students, staff or visitors into the main entrance. Most students and staff will enter a side door near where the majority of parking is on the west side of the building. Spectators for basketball or volleyball will also use this side door. When managing safety and security, this separation between receptionist and a highly used side door can be a challenge.

The city owned pool property is a major piece to the site and the school's future plans. It's been noted that the pool's infrastructure of pumps and filtration system is nearing the end of its lifespan. The pool and locker room building is nearing the point of needing some major upgrades. The pool is losing patrons to neighboring community pools and staffing has become a challenge. There have been discussions on building a new pool facility at a different location and recapturing this space for the school's future needs. Further work and leadership is needed to determine if this is a possibility.

The pavements around the building are in good condition with general cracks which are typical in our freeze/thaw climate. Continuous maintenance with sealants to cracks and joints will prolong their life.

The flat nature of the site causes drainage, stormwater management and ice issues. Ponding and mud holes are consistent issues that the maintenance staff contends with. Some improvements have been made with directing downspouts below grade and daylighting at a swale to the north. Paving the parking lot could alleviate and better control and direct the runoff.

The parking lots are gravel and do not have a clearly defined parking layout or direction. Gravel also poses ongoing maintenance issues with snow removal, erosion, and loss of gravel. An uneven, muddy or loose gravel poses a safety concern for slips and falls. A paved parking lot would have painted parking stalls and can be spaced more efficiently together and allow more parking availability. Along with safety and maintenance, a paved parking lot would reduce the amount of mud, dirt and gravel that is tracked into the building.

There is an exterior gap between the gym building and the shop building causing function and maintenance issues. The space is catching debris, leaves, trash, ice and snow. The space has downspouts and concrete swale to direct and manage runoff around and to the east. This is a problematic space that could be infilled with construction to create a watertight interior space that has a usable function.

Palmer, being in the heart of an ag based community, we want to consider the strength of the FFA and Ag program. There have been discussions about having livestock on-site. Any future site layout considerations should include items such as livestock, small animals, greenhouse, or test plots.

The Elementary playground has undergone recent improvements with new playground equipment and asphalt play surface. Both are in good condition. Some components could be added to make the equipment more inclusive and ADA accessible.

Fig. 3.4.5: Parking Lot, 2023.

Fig. 3.4.6: Exterior Site, 2023.

Fig. 3.4.7: City Pool, 2023.

Fig. 3.4.8: City Basketball Court, 2023.

Fig. 3.4.9: Exterior Drainage, 2023.

Fig. 3.4.10: School Entry Exterior, 2023.

Fig. 3.4.11: Playground, 2023.

Fig. 3.4.12: Agriculture Building, 2023.

Fig. 3.4.13: Bus Barn, 2023.

OUTDOOR FACILITY REVIEW

Palmer has a mix of athletic fields that is unique to other peer districts. There is a softball field and baseball field on site. Competition football plays in the outfield of the baseball field where bleachers, benches, and goal posts have to be set up and removed in order to have home football games.

Palmer does not have a track which is lacking compared to the peer districts. Without a dedicated hard surface track and field events, it is difficult to properly have track practice and host track meets. It has been discussed with community groups about a desire for a walking path around the perimeter of the school property. If a track is constructed, there could be a cost share where walking path funds are directed to the track costs. That would allow Palmer community members to utilize the track for walking.

Accessory structures that support the athletic fields include a brick restroom/concessions building between the baseball and softball fields, which is in good condition. This is utilized for football games. There is a pressbox structure at center field and is in good condition.

Fig. 3.4.14: Track, 2023.

Fig. 3.4.15: Concession and Restrooms, 2023.

Fig. 3.4.16: Press Box, 2023.

Fig. 3.4.17: Google Earth - Track, 2023.

Fig. 3.4.18: Google Earth Baseball and Softball Fields, 2023.

Fig. 3.4.19: Maintenance Shed, 2023.

Fig. 3.4.20: Baseball Field, 2023.

Fig. 3.4.21: Softball Field, 2023.

EXTERIOR

REVIEW

The High School and Elementary building exterior construction consists of multiple materials due to the various additions and renovations that have been completed throughout the years. Primary material includes pre-engineered metal building structures with metal panel exterior material. At the main entry and classroom wings, brick veneer wainscot is incorporated and is in good condition. Windows have been recently replaced with vinyl casement windows. Vinyl windows have a lower lifespan than other options on the market and typical for school building construction. Vinyl windows expand and contract at a higher rate than other materials where seals, weather stripping and sealants can fail. It is recommended to annually inspect and observe the windows knowing these product limitations. Overall, the exterior materials are well maintained and in good condition.

Continual maintenance on sealant joints is recommended at brick expansion joints, windows, penetrations, and changes in materials. The metal panel at the rear of the original gym structure is weathered and losing its painted finish. Replacement metal panels or re-painting could be considered. Exterior hollow metal doors are susceptible to rust and deterioration. Continual maintenance and painting will prolong their life.

Fig. 3.4.22: School Exterior, 2023.

Fig. 3.4.23: School Exterior, 2023.

Fig. 3.4.24: School Exterior, 2023.

Fig. 3.4.25: School Exterior, 2023.

Fig. 3.4.26: School Exterior, 2023.

Fig. 3.4.27: Exterior Stairs, 2023.

Fig. 3.4.28: Exterior Ramp, 2023.

Fig. 3.4.29: Roof Spray Coating, 2023.

Fig. 3.4.30: Exterior Soffit and Door, 2023.

Fig. 3.4.31: Exterior Ramp, 2023.

Fig. 3.4.32: Exterior Stairs, 2023.

ROOF

REVIEW

Roofs are consistent with surface fastener metal panels typical with pre-engineered metal buildings. The roofs have been spray coated over the entire facility with a urethane foam coating system. While adding additional layers of coatings solves an immediate need, it isn't a long term 30-40 year solution. Spray coatings are susceptible to impact damage and it is difficult to identify where leaks are occurring. Other than adding additional layers of coating, repairs are difficult to perform. Repairs are weather dependent and have to be performed by a company with specialized equipment.

A typical low-slope roofing material used in modern school construction practices consists of a fully adhered TPO or EPDM membrane roof. A roof system such as this can have warranty periods of 25-30+ years and lifespans of 40+ years. A recommended re-roof plan could include replacement with either of these single ply roofing options. Roof insulation is typically added during a roof replacement which reduces utility bills and thermal comfort. Code minimum is R-30 when insulation is entirely above the roof deck.

In order to provide proper storm water management and prevent water infiltration into the building, cleaning gutters and downspouts should be preformed. With vegetation growing in gutters, it is likely they haven't been cleaned in a while.

Fig. 3.4.33: Metal Roof, 2023.

Fig. 3.4.34: Metal Roof, 2023.

Fig. 3.4.35: Metal Roof, 2023.

Fig. 3.4.36: Roof Tree, 2023.

Fig. 3.4.37: Water build up, 2023.

Fig. 3.4.38: Water build up, 2023.

Fig. 3.4.39: Roof Tree , 2023.

Fig. 3.4.40: Water build up, 2023.

Fig. 3.4.41: Metal Roof, 2023.

Fig. 3.4.42: Water build up, 2023.

Fig. 3.4.43: Metal Roof, 2023.

INTERIOR

REVIEW

The interior construction consists of CMU, brick and gypsum board wall partitions. Ceilings are typically an acoustic ceiling tile. Flooring throughout the facility varies between vinyl composition tile (VCT) and carpet. VCT of this age is consistent with containing asbestos. In general, the finishes are well maintained and in good condition. When we see finishes that are around 25+ years old, they are appearing dated and showing age with general wear. Modern flooring systems typically used in schools would include carpet tiles, luxury vinyl tile (LVT), or rubber sheet flooring. Carpet tiles can be replaced in small sections when stained or damaged. LVT flooring does not require waxing like VCT tiles utilized in older school construction.

The kitchen is in good condition, but it was indicated the district is short on freezer space. The cafeteria is in good condition but doubles as a multi-purpose or commons space. Quick turn-around for cleaning and setup can be a concern. There is not a dedicated concessions area and that has been noted as a concern and not ideal to share a space with the kitchen.

The administration office area seems small for supporting a K-12 facility. The teacher workroom and staff lounge is on the small side. Administration offices are spread throughout the facility and student services are wherever space is found. Having a larger staff workroom/lounge with staff restrooms is becoming prevalent in school design. Having dedicated staff areas are important amenities for attracting and retaining staff.

There are not many accessibility concerns that were apparent. The main restrooms have been recently updated and appear to meet ADA accessibility standards. There are a few single use restrooms near the Library that do not meet ADA.

Fig. 3.4.44: Admin Entry, 2023.

Fig. 3.4.45: Entry Display, 2023.

Fig. 3.4.46: Trophy Case, 2023.

Fig. 3.4.47: Kitchen 2023.

Fig. 3.4.48: Cafeteria, 2023.

Fig. 3.4.49: Interior Door, 2023.

Fig. 3.4.50: Bathroom, 2023.

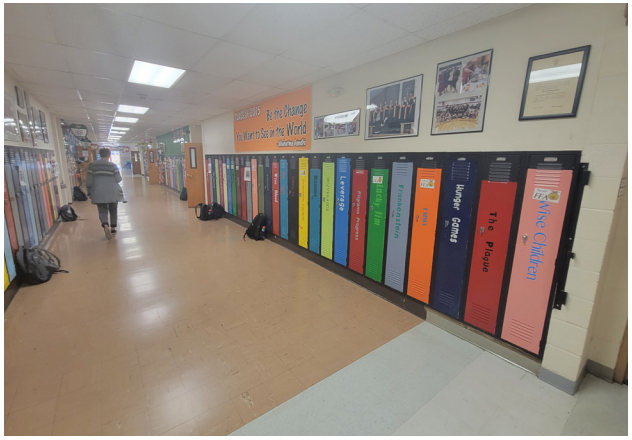


Fig. 3.4.51: Corridor, 2023.

Fig. 3.4.52: Elementary Storage, 2023.

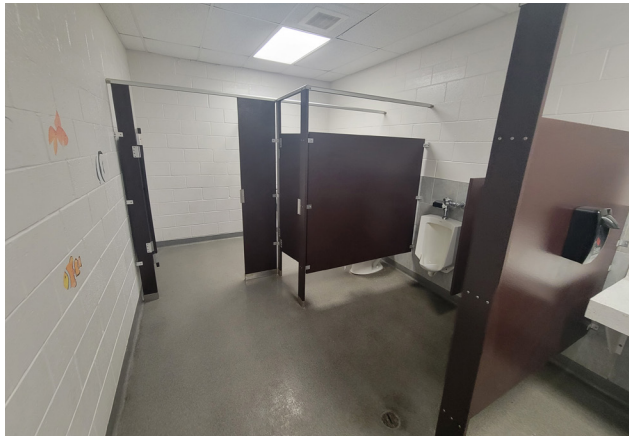


Fig. 3.4.53: Men's Restroom, 2023.

CLASSROOM

REVIEW

The general condition of the classrooms are in good condition with some materials, finishes, casework and furniture showing general wear due to age. High School and Elementary classrooms average between 700 - 820 square feet. This size is adequate for the class sizes and functions. For lower Elementary grades, we would recommend the larger size for these spaces. Depending on class sizes, a Kindergarten classroom should be around 900-1000 square feet and have dedicated restrooms. The current quantity of classrooms is just meeting the needs of the school, however, if there is a bubble class or enrollment increases, there will be a classroom shortage.

To access the Band/Music, Woods/Metals and Ag classroom, students must travel through the gym as a corridor to get to those spaces. While it is manageable, it is not an ideal flow of traffic.

The current woods, and metal shop is adequate for their equipment and program needs. It is on the large size based on the amount of equipment and floor space available. There is room to grow and expand the curriculum. A proper woods dust collection is not provided. There are not adequate welding booths and a welding gas exhaust system that is typical in current school design.

The Ag classroom is small at only 720 sq/ft. We are seeing Ag classrooms function and provide amenities similar to Science classrooms with lab tables, sinks and much more storage. Modern Ag programs incorporate plants and animal sciences, natural resources, water, soils, animal dissection, and more. A proper Ag classroom could be 1200 sq/ft.

The current band and vocal room currently meets the needs of the school. The location is in a good location that is remote from other classroom spaces to keep sound disruptions to a minimum. The Art and Home Ec classrooms share a combined space. At one time, there was an operable partition, but it has since been removed. Having dedicated spaces could be beneficial, but it does currently meet the needs.

Fig. 3.4.54: Welding Station, 2023.

Fig. 3.4.55: Woodshop, 2023.

Fig. 3.4.56: Classroom, 2023.

Fig. 3.4.57: Library, 2023.

Fig. 3.4.58: Classroom, 2023.

Fig. 3.4.59: Classroom, 2023.

Fig. 3.4.60: Library Storage, 2023.

Fig. 3.4.61: Storage, 2023.

Fig. 3.4.62: Home Economics/Art Classroom, 2023.

Fig. 3.4.63: Classroom, 2023.

Fig. 3.4.64: Home Economics/Art Classroom, 2023.

Fig. 3.4.65: Band Storage, 2023.

ATHLETICS

REVIEW

The gym is in good condition and serves its purpose for a 1960's facility. The wood court flooring, hoops and bleachers are in very good condition giving this space a fresh and updated appearance. The overall gym size is smaller than current High School design standards. When the bleachers are extended, there is minimal room between the out-of-bounds line where spectators have to walk on the court surface when going to their seats. Also, the cross-court practice length is too short including when used for youth games.

The High School locker rooms appear to meet ADA. The finishes are dated and showing age with general wear. Locker rooms in current school design are incorporating more privacy in the spaces with individual shower stalls and changing areas. The current Junior High locker rooms under the stage in the original 1960s building are not accessible, the finishes and fixtures are in poor condition, and the stairs down to the space do not meet current codes. The stage has similar concerns with ADA access and current stair dimensions. The locker rooms and stage would need extensive modifications to make them finished and accessible spaces.

The weight room is a recent addition, it's in good condition and appears to meet the program needs. The weight room does not have access to the rest of the school without traveling through the locker rooms. While it does function, it is not ideal for privacy and traffic patterns. There is a single door between the weight room and the locker room interior with a single screen wall. A vestibule with two offset doors would be better suited for this condition and eliminating any sight line issues.

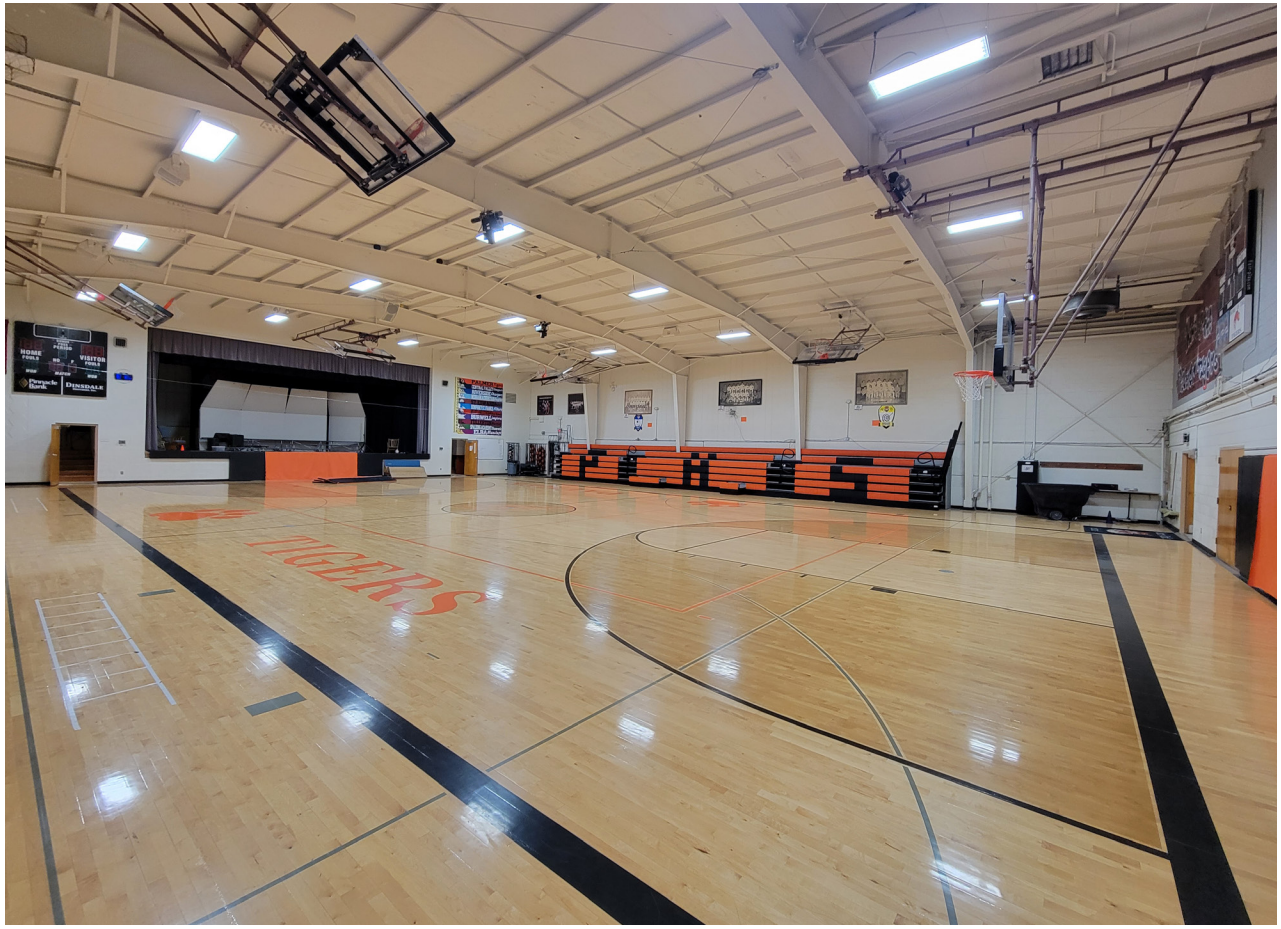


Fig. 3.4.66: Gymnasium, 2023.

Fig. 3.4.67: Stage, 2023.

Fig. 3.4.68: Stairs, 2023.

Fig. 3.4.69: Lower Level Locker Room, 2023.

Fig. 3.4.70: Lower Level Locker Room, 2023.

Fig. 3.4.73: Lower Level Showers, 2023.

Fig. 3.4.71: Lower Level Locker Room, 2023.

Fig. 3.4.72: Lower Level Toilet, 2023.

Fig. 3.4.74: Locker Room, 2023.

Fig. 3.4.75: Shower Room, 2023.

Fig. 3.4.76: Weight Room, 2023.

3.5 MECHANICAL ANALYSIS | TINY TIGERS

By: Taylor Roan, of Engineering Technologies Inc.

INTRODUCTION

Fire Protection:

The facility is provided with a fire sprinkler system that is throughout the entire building. The fire sprinkler service enters the building on the west exterior wall of the mechanical room and is a combination fire sprinkler / domestic water service.

Plumbing:

The building domestic water service is part of a combination fire service. The domestic water service is a 2 inch service that tees off of the fire sprinkler service and is provided with a 2 inch water meter and 2 inch RPZ backflow preventer. It appears that the building has been converted from galvanized piping to a combination of copper and pex piping. Although there is still galvanized piping remaining on both sides of the water meter.

The building contains (1) instantaneous gas fired domestic hot water heater located in the mechanical room. The water heater appears to be newer and in decent condition. The water heater input capacity is 199,000 btu/h. There is a mixing valve allowing for 140°F water to be delivered to the kitchen and 110°F delivered to the rest of the building plumbing fixtures. There is not a domestic hot water recirculation system in this building.

The plumbing fixtures in the restrooms appear to be old and are in need of replacement. Toilets are floor mounted tank type toilets.

The kitchen plumbing fixtures consists of a stainless steel 3-bowl sink, 2-bowl prep sink with disposer, dishwasher for glass ware only and a vitreous china hand sink. The kitchen plumbing fixtures appear to be in good shape. The faucets should be replaced. The 3-bowl and 2-bowl sinks would be more functional if a spray rinse would be added to the sinks. It does not appear that a grease trap has been installed.

A natural gas service is located on the outside of the building next to the mechanical room on the west side of the building Natural gas enters the mechanical room and travels throughout the building through the ceiling space. Natural gas extends to the domestic hot water heater, kitchen, and rooftop units.

The building consists of flat roof with tapered insulation that sloped to the exterior wall and drains utilizing gutters that route along the exterior face brick.

Fig. 3.5.1: Natural Gas Service, 2023.

Deficiencies are classified in terms of severity as follows:

Critical:

Item needs to be addressed as soon as possible. Item has a direct code or life safety concerns.

Serious:

Item needs to be corrected. Item can be master planned for correction within the next 5 years or included in the next major renovation of the respective area.

Minor:

Item is a suggestion to improve system performance or extend system life. Item can be addressed at any time and is not connected to any code or life safety concerns.

Fig. 3.5.2: 2-Bowl Sink, 2023.

PLUMBING DEFICIENCIES

Serious:

The galvanized piping surrounding the water meter contains lead. Piping that contains lead is not an acceptable piping material for potable domestic water.

Serious:

The domestic hot water system does not contain a recirculation system. It will require a long period of time for hot water to reach the lavatory hand sinks towards the end of the building resulting in not being able to adequately wash your hands with warm water which is required by code.

Serious:

The domestic hot water heater is a high efficiency condensing water heater that discharges acidic condensate to the floor drain. The sanitary system is assumed to be cast iron in which acidic discharge from the water heat can erode the cast iron sanitary piping.

Serious:

The kitchen does not contain a grease trap. A grease trap will collect grease and protect the sanitary system from clogging.

Serious:

The restroom plumbing fixtures are old and in need of replacement.

Fig. 3.5.3: Combination Fire/Water Service Entrance, 2023.

Fig. 3.5.4: Domestic Hot Water Heater, 2023.

Fig. 3.5.5: Typical Restroom Plumbing Fixture, 2023.

Fig. 3.5.6: 3-Bowl Sink, 2023.

3.5 MECHANICAL ANALYSIS | TINY TIGERS

By: Taylor Roan, of Engineering Technologies Inc.

HVAC:

The building contains a mixture of rooftop units and “thru the wall” packaged terminal air conditioners (PTAC).

The east wing is served by a single zone rooftop unit. This rooftop unit also serves portions of the main entrance. The rooftop unit appears to be newer and in decent condition. If the east wing of the building was to be changed from wrestling to office or classroom space, then a different system would be recommended to provide better zone control.

The west wing contains classrooms that are served by “thru the wall” package terminal air conditioners (PTAC). The PTACs appear to be old and near the end of their life expectancy. Also, PTACs do not bring in the required amounts of fresh air for current classroom ventilation code requirements. The west wing also contains a newer rooftop unit that serves the corridor and provides some fresh air into the classrooms. This unit appears to be in decent condition.

The lunchroom is served by a dedicated single zone Carrier rooftop unit. This unit appears to be old and nearing its life expectancy. It is recommended that this unit be scheduled for replacement in the near future.

The kitchen is served by a dedicated single zone Bryant rooftop unit. This unit appears to be old a nearing its life expectancy. It is recommended that this unit be scheduled for replacement in the near future.

The restrooms are provided with dedicated ceiling mounted exhaust fans. During review of the building, none of the exhaust fans appear to be operable. Replacement of these exhaust fans is recommended for proper ventilation.

The kitchen contains an island type 1 grease hood overtop of the gas fired oven/range and overtop of the double stacked combi-ovens. The hood appears to be original to the building and does not meet the current code. The grease hood is not large enough to extend overtop of the combi-oven. The only makeup air for the kitchen exhaust hood can be through the rooftop units and does not contain a dedicated makeup air unit. It is doubtful that the building is provided with enough makeup air to meet the exhaust flow rate of the grease hood exhaust fan.

Deficiencies are classified in terms of severity as follows:

Critical:

Item needs to be addressed as soon as possible. Item has a direct code or life safety concerns.

Serious:

Item needs to be corrected. Item can be master planned for correction within the next 5 years or included in the next major renovation of the respective area.

Minor:

Item is a suggestion to improve system performance or extend system life. Item can be addressed at any time and is not connected to any code or life safety concerns.

Serious:

Rooftop units serving the lunchroom and kitchen appear to be old and at the end of their life expectancy. These (2) units should be replaced in the near future.

Serious:

The packaged terminal air conditioners serving the classroom appear to be old and at the end of their life expectancy. These units should be replaced in the near future.

Serious:

The kitchen type 1 grease hood is original to the building and does not meet the current code. The grease hood also does not extend 6 inches beyond the cooking appliances. Replacement of this hood should be considered.

Serious:

The ceiling mounted exhaust fans are not operable. These exhaust fans should be replaced with new.

Serious:

Overall ventilation of the building should be verified. Makeup air for the kitchen should be provided.

HVAC DEFICIENCIES

Fig. 3.5.7: Lunch Room & Kitchen Rooftop Units, 2023.

Fig. 3.5.8: Packaged Terminal Air Conditioner (PTAC), 2023.

Fig. 3.5.9: Kitchen Hood Doesn't Extend Over Combi. Oven, 2023.

Fig. 3.5.10: East & West Wing Rooftop Units, 2023.

Fig. 3.5.11: Typical Ceiling Mounted Exhaust Fan, 2023.

3.5 MECHANICAL ANALYSIS | SCHOOL

By: Derek Kotschwar, of Engineering Technologies Inc.

Fire Protection:

The facility is not fire sprinkled expect (2) Janitor Closets that are fire sprinkled and supplied from the domestic water system.

Fire Protection Deficiencies:

Potentially Serious – A code analysis of the building should be performed to determine if a fire sprinkler system would be required. If so, a fire sprinkler system should be implemented in the next building project.

Prior to installing a fire sprinkler system into a building, a flow test shall be performed to determine available water pressure and flowrate available from the City. The Owner should be aware that along with the cost of a new fire entrance, other items of cost may be required if the City pressure and flowrates are not adequate; such as a fire pump if pressure is to low, backup generator if the electrical grid is not determined reliable, and possibly a large fire tank if the flow rate is inadequate.

Plumbing:

The building domestic water service entrance is located in the 1994 addition in a Janitor Closet east of the main lobby entrance near the boiler room. The water entrance is a 3" service with water meter and backflow preventer. Copper piping is distributed throughout the facility.

The building contains (2) separate domestic hot water heating systems. The first domestic hot water system is located in the lower-level boiler room and serves the original 1961 building. This system consists of (2) 100 gallon electric water heaters which replaced gas water heater in 2005. The electric water heaters store and deliver water at 110°F and does not contain a mixing valve to allow the water to be stored at a higher temperature. The second domestic hot water system is located in the 1994 addition upper-level mechanical room. This system serves the 1994 addition which consists of Boys/ Girls Locker Rooms and Kitchen. The equipment is comprised of a single copper finned tube gas fired water heater with an external storage tank. Water is stored at 140°F and delivered to the kitchen. Also, a mechanical mixing valve is installed which mixes the high temperature water down to 110°F and is delivered to the plumbing fixtures throughout the 1994 addition. The natural gas water heater was recently replaced and appears to be in good condition. The 1994 domestic hot water system is routed through a water softening system while the system serving the original building does not contain a softening system.

The main restrooms on the east and west sides of the gymnasium appear to have been updated recently. Toilets are floor mounted vitreous china, battery operated senor flush valves. Urinals are vitreous china, wall mount, battery operated sensor flush valves. Lavatories consist of a solid surface countertop with integral bowls and manual faucets. Restrooms contain floor drains for emergency and cleaning.

Locker rooms are equipped with multiple wall mounted shower heads with each shower room containing (1) ADA shower.

The kitchen consists of multiple stainless steel plumbing fixtures (3-bowl sink with disposer and pre-rinse, prep sink, dishwasher with electric booster heater, and hand sink). The fixtures appear to be in decent working condition. It does not appear that a grease trap has been installed.

A natural gas service is located on the outside of the building to the east of the main entrance. Natural gas enters the building and extends down to the original building boilers. Natural gas also extends below grade and is routed out and around the building for gas service on the north side of the building which serves the 1994 addition boilers and water heaters. Gas pressure inside the building is low pressure (5" to 9" W.C.).

The building consists of pitched metal roofs with gutters and down spouts. There are no roof drains or storm water piping within the building.

Deficiencies are classified in terms of severity as follows:

Critical:

Item needs to be addressed as soon as possible. Item has a direct code or life safety concerns.

Serious:

Item needs to be corrected. Item can be master planned for correction within the next 5 years or included in the next major renovation of the respective area.

Minor:

Item is a suggestion to improve system performance or extend system life. Item can be addressed at any time and is not connected to any code or life safety concerns.

PLUMBING DEFICIENCIES

Minor:
Installation of a water softener to protect the domestic hot water system in the 1961 building should be considered.

Serious:
Installation of a grease trap to serve the kitchen should be considered in any future project.

Serious:
The domestic hot water heating system in the basement of the 1961 building should be changed to storage hot water at 140°F and install a mixing valve to deliver hot water at 110°F to reduce the change of bacteria growth (Legionella Pneumophila) within the system.

Fig. 3.5.12: 1994 Addition: Domestic Hot Water Heater & Storage Tank, 2023.

Fig. 3.5.13: 1994 Addition: Domestic Hot Water Mixing Valve, 2023.

Fig. 3.5.14: 1961 Original Building: Domestic Hot Water Heaters, 2023.

Fig. 3.5.15: Natural Gas Service, 2023.

3.5 MECHANICAL ANALYSIS | SCHOOL

By: Derek Kotschwar, of Engineering Technologies Inc.

HVAC

The building contains a mixture of multiple different types of heating and cooling equipment throughout the facility as the building expanded over the years.

The original 1961 building operates utilizing boilers and perimeter fintube heating. Although the original classrooms have been modified to include split system air source heat pumps for cooling and heating of the classroom spaces. Perimeter hot water fintube heating is utilized during the coldest times of the year. The gym is not currently air conditioned. The gym is heated with (4) hot water unit heaters. It is unknown if the unit heaters are original to the building or if they have been replaced. The unit heaters appear to be in decent condition.
Classrooms have been added to the south side of the building twice during the life of this building. (4) classrooms were added in 1994 and then another (4) classrooms in 2015. All of the original building classrooms and the 1994 south addition classrooms had the split system air source heat pumps replaced in 2013. The (8) classrooms that have been added to the south end of the building utilize hydronic hot water heating coils in the supply ductwork for a backup heating source.

The administration area is served by (2) gas fired split system furnaces that were installed in 1994. One of the units appears to be original to the 1994 addition while the other appears to have been replaced. It is unknown what year the newer of the two units was replaced.

In 1994 a (locker room, multi-purpose, FCS, and kitchen) addition was added to the west side of the building. An upper mechanical mezzanine overtop of the locker rooms was created for a multi-zone air handling unit and hydronic heating water system. The air handling unit contains (8) zones and delivers heating and cooling to the addition. The air handling unit was also designed to extend and serve the original locker rooms located below the gymnasium stage. The DX coil and condensing unit was replaced in approximately 2015.

The kitchen is heated and cooled by a dedicated 4-ton rooftop unit. This rooftop unit appears to be new within the last 3 years and is in good condition.

A weight room addition was added to the northwest side of the building in 2000. This space is currently served by a 12.5-ton gas fired rooftop unit. This unit appears to be original to the 2000 addition.

The shop is heated by (2) gas fired unit heaters. The shop is not air conditioned. The unit heater in the southeast corner appears to be original to the shop and the northeast unit heater appears to be new. The Ag classroom is served by a gas fired split system furnace and air conditioning unit. The split system appears to be original to the shop.

A music room addition was built in 2015 and is served by a split system air source heat pump with natural gas backup heating. The equipment appears to be original to the addition and in good working condition.

Deficiencies are classified in terms of severity as follows:

Critical:
Item needs to be addressed as soon as possible. Item has a direct code or life safety concerns.

Serious:
Item needs to be corrected. Item can be master planned for correction within the next 5 years or included in the next major renovation of the respective area.

Minor:
Item is a suggestion to improve system performance or extend system life. Item can be addressed at any time and is not connected to any code or life safety concerns.

HVAC DEFICIENCIES

Minor:
The gymnasium is not air conditioned. Consider providing equipment to air condition the gymnasium in future projects.

Minor:
Many of the split system heat pumps are 10 years old. Split system units have a life expectancy of 15 years. The school should start budgeting for replacement of these unit in approximately 5 years.

Serious:
The existing Trane temperature control system is original to the 1994 addition. Upgrades of the temperature control system should be carried out.

Serious:
The dishwasher exhaust fan did not operate when the wall switch was enabled. The operation of this exhaust fan should be verified by the School.

Serious:
The Weight Room does not have in any fresh air brought into the space. When the rooftop unit serving this space is replaced, it should be replaced with a unit that has the ability to bring in fresh air.

Fig. 3.5.16: Typical Split System Indoor Units, 2023.

Fig. 3.5.17: 1994 Addition: Multi-Zone Air Handling Unit, 2023.

Fig. 3.5.18: Typical Split System Outdoor Air Source Heat Pumps, 2023.

Fig. 3.5.19: Shop: Ag Classroom Split System A/C & Shop Unit Heater, 2023.

3.5 MECHANICAL ANALYSIS | SCHOOL

By: Derek Kotschwar, of Engineering Technologies Inc.

Ventilation

Fresh air ventilation is introduced into each of the south classrooms through dedicated wall louvers. Fresh air extends from the louver and is ducted into the return side of the indoor split system.

Restrooms are provided with dedicated roof mounted exhaust fans.

The 1994 boys and girls locker rooms are exhausted with a dedicated roof mounted exhaust fan. The lower-level locker rooms are exhausted through a side wall mounted exhaust fan located on the east side of the lockers. Fresh air is introduced into the locker rooms from the multi-zone air handling unit located in the upper mechanical mezzanine.
The remaining 1994 addition has fresh air ventilation introduced into each space through the multi-zone air handling unit.

The kitchen contains a type 2 condensate hood overtop of the dishwasher and a type 1 island grease hood overtop of the cooking appliances. Makeup air is introduced into the space via the short circuit kitchen hood from a dedicated gas fired makeup air unit located on the roof. The type 1 grease hood is a fully welded hood and appears to meet current code and is in decent condition. They type 2 hood exhaust fan would not operate when the wall switch is turned on.

The weight room is not provided with fresh air as the rooftop unit does not contain an outdoor intake or relief louver.

The gymnasium does not have conditioned fresh air delivered into the space. The gym does have (3) roof mounted exhaust fans to move air through the space. There is no equipment installed to makeup the air being exhausted.

Deficiencies are classified in terms of severity as follows:

Critical:
Item needs to be addressed as soon as possible. Item has a direct code or life safety concerns.

Serious:
Item needs to be corrected. Item can be master planned for correction within the next 5 years or included in the next major renovation of the respective area.

Minor:
Item is a suggestion to improve system performance or extend system life. Item can be addressed at any time and is not connected to any code or life safety concerns.

Fig. 3.5.20: Type 1 Kitchen Grease Hood, 2023.

HVAC DEFICIENCIES

Minor:
All exhaust fans should be verified for operation and airflow quantity.

Serious:
The gymnasium is not supplied with fresh air. It is recommended that equipment be installed to supplied conditioned fresh air into the gymnasium.

3.5 MECHANICAL ANALYSIS | SCHOOL

By: Derek Kotschwar, of Engineering Technologies Inc.

Mechanical

The boilers located in the basement of the original 1961 building are (2) Peerless atmospheric, cast iron, gas-fired hot water boilers. These boilers supply perimeter fintube heating and corridor console wall mounted unit heaters throughout the 1961 building as well as the unit heaters in the gymnasium. The boilers were installed in 1985 (38 years old) and have meant their useful life span. The hydronic piping in the 1961 building is steel piping and original to the building. The hydronic zone pumps in the basement boiler room appear to be newer and in decent condition.

The 1994 addition contains (3) LES V-78 gas fired, vertical fire tube boilers that serve the multi-zone air handling unit and serve multiple backup heating hot water coils to the air source heat pump split system unit in the south classrooms. These boilers are original to the 1994 addition (29 years old) and appear to operate in decent condition. The piping and insulation appear to be good condition.

Deficiencies are classified in terms of severity as follows:

Critical:

Item needs to be addressed as soon as possible. Item has a direct code or life safety concerns.

Serious:

Item needs to be corrected. Item can be master planned for correction within the next 5 years or included in the next major renovation of the respective area.

Minor:

Item is a suggestion to improve system performance or extend system life. Item can be addressed at any time and is not connected to any code or life safety concerns.

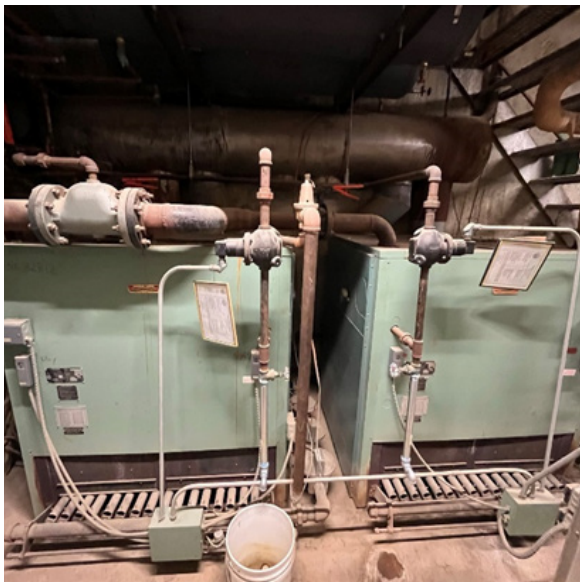


Fig. 3.5.21: 1961 Original Building: Hydronic Hot Water Boilers, 2023.

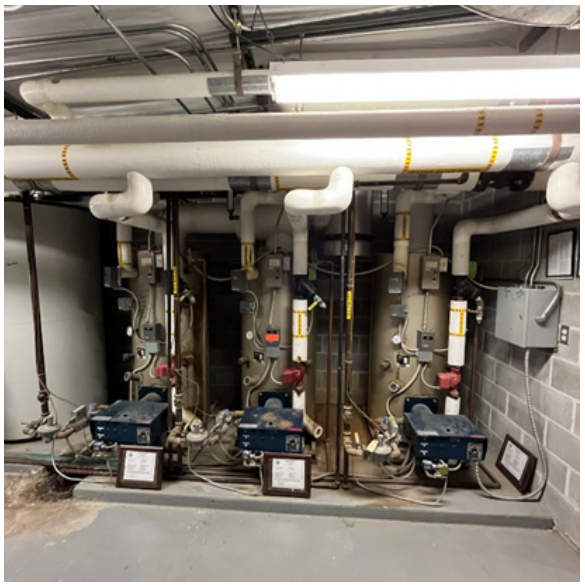


Fig. 3.5.22: 1994 Addition: Hydronic Hot Water Boilers, 2023.

HVAC DEFICIENCIES

Minor:
A further evaluation of the existing hydronic piping and insulation should be performed to determine the condition of the piping in the 1961 original building.

Serious:
The boilers in the 1994 addition are nearing 30 years and coming up on their life expectancy. The school should consider budgeting for the replacement of these boilers.

Serious:
The boilers in the 1961 original building are nearing 40 years old and beyond their life expectancy. Consider replacement of these boilers in the near future.

3.6 ELECTRICAL ANALYSIS | TINY TIGERS

By: Taylor Roan, of Engineering Technologies Inc.

INTRODUCTION

The intent of the facility audit is to indicate general conditions of the electrical systems at the Palmer Public Schools facilities.

A comprehensive code and ADA compliance review is outside the scope of this study. Code issues are included if they were observed during the walkthrough. Some items may have been compliant at the time of construction, but would not be acceptable under current codes.

Deficiencies are classified in terms of severity as follows:

Critical:
Item needs to be addressed as soon as possible. Item has a direct code or life safety concern.

Serious:
Item needs to be corrected. Item can be master planned for correction within the next 5 years or included in the next major renovation of the respective area.

Minor:
Item is a suggestion to improve system performance or extend system life. Item can be addressed at any time and is not connected to any code or life safety concerns.

Electrical Service:
The facility is served overhead from pole-mounted transformers. The building is served by an 800A, 208V/120, 3-PH service. The Main Panel is manufactured by Westinghouse and seems to be original to the building and has a single main breaker and numerous branch breakers. The panel seems to be past its useful life expectancy.

The Main panel seems to have space capacity for additional loads, but spare parts may be difficult to come by.

There is no surge protection device on the service equipment. No visible main ground bar was observed.

Electrical Distribution:
There are 6 branch circuit panelboards through the building. The panels are all 208V/120, 3-PH, with varying amperage ratings. The panel are all manufactured by Westinghouse and seem to be original to the building. These panels serve lighting, receptacle, and HVAC loads. All the panelboards are past their useful life expectancy.

There is one small load center fed from a branch circuit panelboard. The load center manufactured by Square D, a manufacturing date could not be determined, but seems to be older than 30 years.

Most panels are full, with only a few having space capacity for additional loads

Lighting:
Lighting throughout the building comprises mostly of fluorescent lamp fixtures, some LED fixtures were observed. Classrooms and corridors have 2x4 lensed troffers. The multipurpose room has surface mounted wraparound fixtures. Mechanical, Electrical, Storage, and other similar areas have strip lights. The Kitchen has enclosed, gasketed, watertight fixtures.

Lighting controls throughout typically consists of local toggle switches.

Emergency lighting consists combination exit signs with lamp head. The fixtures have integral batteries. Coverage was present at egress doors, but some areas seemed to be lacking in emergency lighting.

Fire Alarm:
The facility contains a fire alarm system manufactured by Potter. The Fire Alarm Control Panel is located near the main entrance, other remote annunciator panels were not observed.

The building's primary initiation and detection is utilizing the fire sprinkler system throughout the facility. Some smoke and heat detectors were observed. The fire alarm notification devices comprise of horn/strobes.

Both detection and notification throughout the facility seemed to be adequate.

ELECTRICAL DEFICIENCIES

Structured Cabling for Voice and Data:
The facility has one main telecom equipment wall rack located near the main electrical gear All cabling for the facility is fed from here. There is available space for additional patch panels and switches. The existing cabling is Category 6 type.

Access Controls:
Access controls were present at the front entry doors and at some side entry doors. A few other exterior doors had monitoring hardware. The front entry did seem to be a secured entry with a Video Intercom present for visitor entry.

Video Surveillance:
Video Surveillance was present and manufactured by Hikvision. The system seems to only cover the front entrance. Exterior coverage was not observed.

Serious:
Expand emergency lighting coverage throughout building

Minor:
Electrical Service and Distribution replacement. The existing Switchboard and branch panels are nearing the end of its useful life.

Minor:
Update to meet GFCI requirements in Kitchen and other similar areas. Newer codes have expanded requirements of GFCI protection in these areas.

Minor:
Provide tamper-resistant receptacles throughout. Newer codes have additional requirements for educational facilities for tamper-resistant receptacles

Minor:
LED Lighting upgrade and controls upgrade. Existing lighting and controls do not meet current energy codes.

Minor:
Provide monitoring equipment for all exterior doors for a more comprehensive security system.

Minor:
Provide additional video surveillance coverage throughout the school and around the exterior.

Fig. 3.6.4: Main Panelboard and Branch Panelboards, 2023.

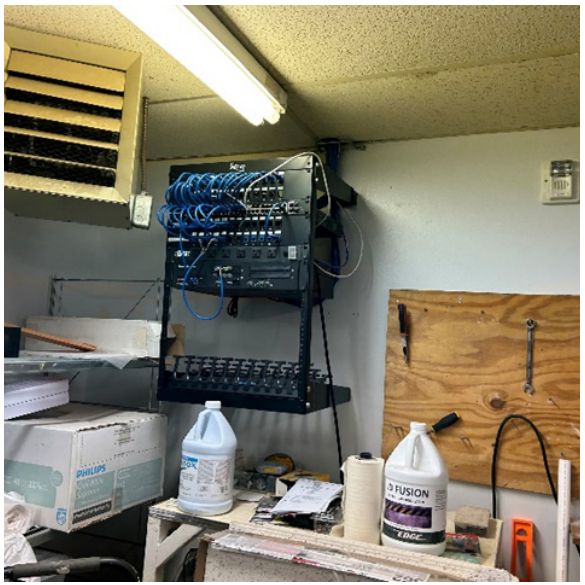


Fig. 3.6.5: Main Telecom Equipment Rack, 2023.

3.6 ELECTRICAL ANALYSIS | SCHOOL

By: Taylor Roan, of Engineering Technologies Inc.

Electrical Service:

The facility is served from a 150kVA pad mounted transformer located on the north side of the school. This transformer is subsequently fed underground from a utility power pole near the baseball field to the west.

Per Southern Power District, the utility service provider, the maximum demand of the service is 195kVA, or approximately 541-amps.

The building is served by a 1600A, 208V/120, 3-PH service. The Main Switchboard is manufactured by Siemens and was installed in 1995. The Switchboard has a single main switch, but does not have an energy reduction maintenance switch as mandated by current codes.

While the Main Switchboard has plenty of amperage capacity, it does not have any physical space for additional loads.

There is a surge protection device on the service equipment. No visible main ground bar was observed.

The Main Switchboard has been enclosed in a wood/wire fenced structure. This fencing is in violation of code and does not provide adequate working clearances. The doors leaving the space are not provided with panic hardware per code requirements.

Lighting:

Lighting throughout the building comprises of all fluorescent lamp fixtures. Classrooms and corridors have 2x4 lensed troffers. The gym and multipurpose room have high bay fixtures. Locker rooms consists of enclosed, gasketed watertight fixtures or surface mounted wraparound fixtures. Mechanical, Electrical, Storage, and other similar areas have strip lights.

Lighting controls throughout typically consists of local toggle switches.

The stage has mostly LED directional theatrical lighting, with some non-LED fixtures. Color changing functionality was not observed. Theatrical Lighting control seems to be flipping circuit breakers on and off. Theatrical lighting controls were not present.

Classrooms and Corridor light levels are adequate. The gym light levels were in the range of 30-44fc, which is low for high school level competitions.

Emergency lighting consists of “bug-eye” wall pack with integral batteries. Coverage throughout the school seemed adequate. A few of the wall packs that were tested for operation did not turn on. Exit Sign coverage seem to be adequate.

Exterior lighting consists mostly of building mounted fixtures, with a few pole-lights. Fixtures seem to be a mix of LED and non-LED fixtures.

Electrical Distribution:

There are 14 branch circuit panelboards through the building. Most of the panels are 208V/120, 3-PH, while a few are 208V/120, 1-PH. These panels serve lighting, receptacle, and HVAC loads.

Ten of the panels were installed / upgraded in 1995. The remaining were installed as part of projects in 2008, 2013, and 2015. The panels seems to be in good condition. Damage, rust, etc. was not observed. The panels installed in 1995 are approaching their 30-year useful life expectancy.

Half of the panels are full, with no available space for additional loads. The other half are nearly full with limited room for additional loads.

Power/Wiring Devices:

The receptacles seem to be grounding type, but do not seem to be tamper-resistant type as required by newer codes. Classrooms that have been built in recent additions seem to have adequate receptacle quantities, while the older, original classroom seem to be lacking some. The Kitchen, Home Economics, and Shop areas do not meet current GFCI protection requirements.

ELECTRICAL DEFICIENCIES

Serious:
Remove fencing around existing Main Switchboard or verify with local Electrical Inspector that fencing is acceptable. Fencing does not allow code required working clearances.

Serious:
Test all existing emergency lighting and replace batteries / fixtures for non-operational units.

Minor:
Electrical Service and Distribution replacement. The existing Switchboard and branch panels are nearing the end of its useful life.

Minor:
Update to meet GFCI requirements in Kitchen, Home Economics, Shop, and other similar areas. Newer codes have expanded requirements of GFCI protection in these areas.

Minor:
Provide tamper-resistant receptacles. Much of the facility does not have tamper-resistant receptacles. Newer codes have additional requirements for educational facilities for tamper-resistant receptacles.

Minor:
LED Lighting upgrade and controls upgrade. Existing lighting and controls do not meet current energy codes. Lighting levels in some areas do not meet current industry standards.

Minor:
Upgrade theatrical lighting controls to a architectural dimming cabinet with On/Off/Dim functionality.

Fig. 3.6.6: Main Switchboard, 2023.

Fig. 3.6.7: Typical Classroom, 2023.

Fig. 3.6.8: Typical Corridor, 2023.

3.6 ELECTRICAL ANALYSIS | SCHOOL

By: Taylor Roan, of Engineering Technologies Inc.

Fire Alarm System:

The facility contains a fire alarm system manufactured by Notifier and installed in 1995. The Fire Alarm Control Panel is located near the main entrance, other remote annunciator panels were not observed.

The building's primary initiation and detection is utilizing smoke and heat detectors throughout. The fire alarm notification devices comprise of horn/strobes, voice evacuation was not present.

Both detection and notification throughout the facility seemed to be adequate.

Structured Cabling for Voice and Data:

The facility has one main telecom equipment rack located on the second level, near the main entrance area. All cabling for the facility is fed from here. All cabling seems to be able to remain under the 300ft maximum distance limitation, but some are nearing that limit.

The existing equipment rack is a 4-post rack. There is available space for additional patch panels and switches.

The existing cabling is mostly Category 6 type, with some Category 5E. The cabling seems to be plenum rated.

Public Address System:

The entire building is covered with a Public Address System. The main system is located in the lower-level boiler room and is manufactured by Panasonic with a variety of parts and pieces that have been upgraded over time.

The PA System seems to be tied to their VOIP phone system, with phones in every classroom.

Clock System:

There is a centralized, wired clock system, with the main equipment being located in the main office area. Most of the classrooms have analog style clocks.

The Gym and Multipurpose rooms have digital clocks and are not part of the centralized system.

Audio-Video Systems:

Typical classrooms are combination projector / smartscreens. Classrooms did not seem to have audio-enhancement features for hearing-impaired individuals.

The gym has a sound system with the equipment rack located in a corner in the gym. The speakers are ceiling mounted located throughout. XLR microphone inputs were observed next to the rack.

Access Controls:

Access controls were present at the front entry doors and at some side entry doors. A few other exterior doors had monitoring hardware. The access control system is manufactured by Hikvision. The front entry did seem to be a secured entry with a AiPhone Video Intercom present for visitor entry.

Video Surveillance:

Video Surveillance was present and manufactured by Hikvision. The system seems to provide adequate coverage throughout the facility. Corridor, Gym, Shops, Weight Room, etc. are covered. Numerous exterior cameras were observed that seem to cover the entire exterior.

SPECIAL SYSTEMS DEFICIENCIES

Minor:
Fire Alarm Upgrade. Newer codes have additional notification requirements such as voice-evacuation for gymnasiums.

Minor:
Replace existing clock system with new. System would have all clocks tied together. System could be wireless for ease of installation and expandability.

Minor:
Relocate gym sound system equipment to protected area to minimize risk of damage.

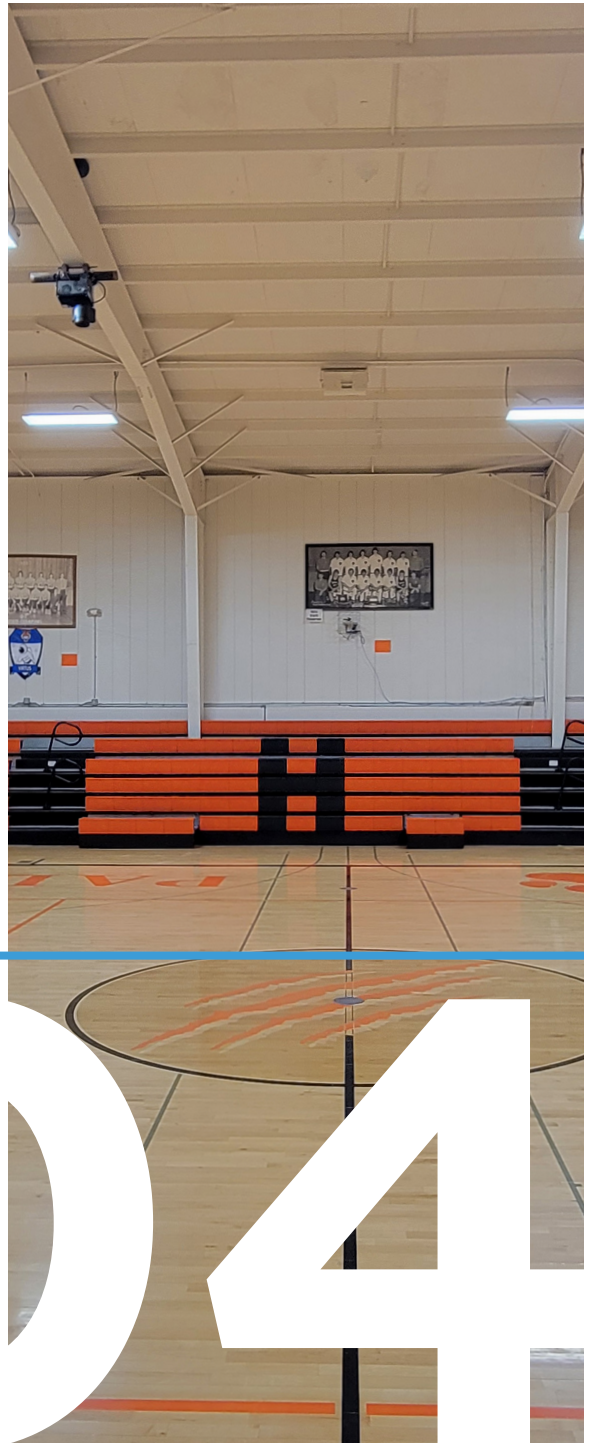
Minor:
Provide monitoring equipment for all exterior doors for a more comprehensive security system.

Fig. 3.6.9: Fire Alarm Control Panel, 2023.

Fig. 3.6.10: Main Telecom Equipment Rack, 2023.

Fig. 3.6.11: Main Clock System, 2023.

FUTURE NEEDS



04

4.1 PROGRAM INPUT

In order to determine the future needs of the facility, several planning sessions were held to further explore the needs and desires of the community and staff. These were high-level master planning exercises to determine long range planning options.

April 4, 2023
Joint Board Meeting, 6:00 p.m. Legion
Economic Development, PYSA, Palmer Village, and Palmer School

The purpose of this session was to discuss the capitol improvement projects that each group is working on or have a desire to work toward. Each group provided a status, timeline, location and potential land-use options, and ways other organizations can cooperate on projects together.

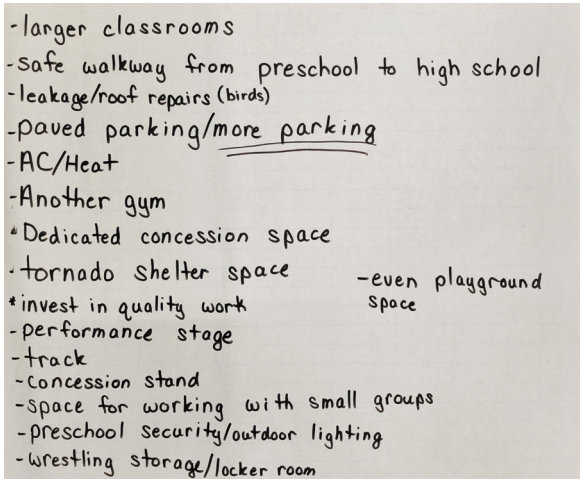
May 8, 2023
Parent Group, 5:00 p.m.
Community Group & School Board, 7:00 p.m.

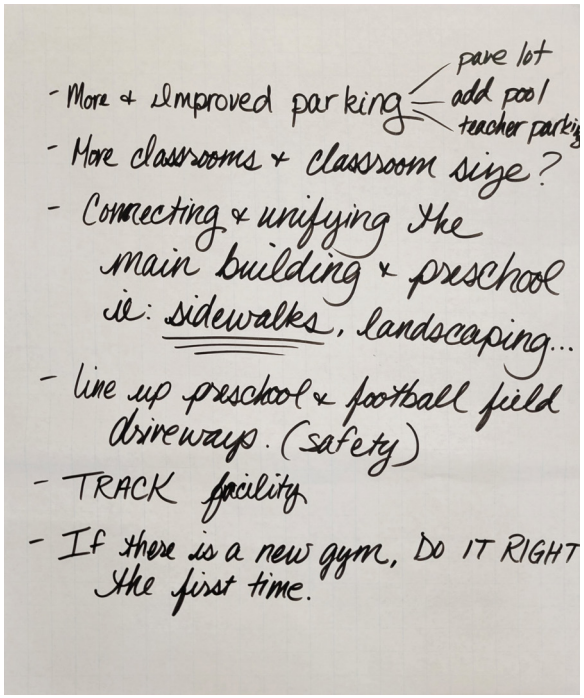
May 17, 2023
Non-Certified Staff, 1:00 p.m.
Certified Staff, 3:30 p.m.

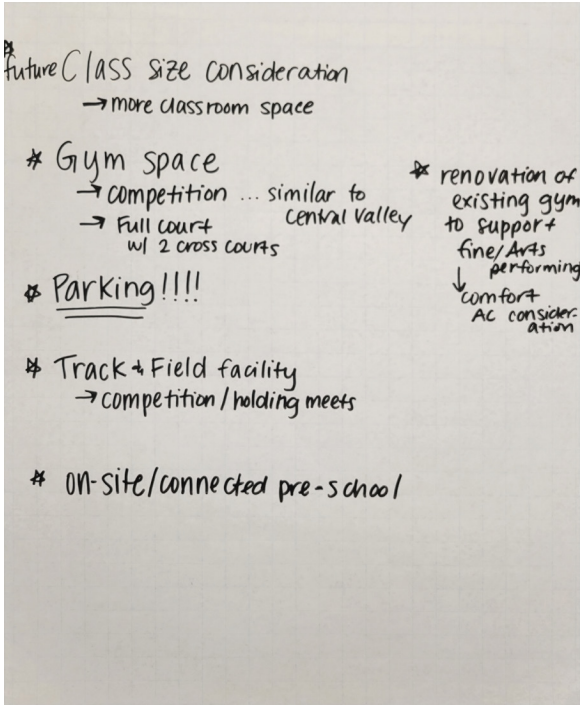
August 14, 2023
Joint Board Meeting, 7:00 p.m. Legion
Economic Development, PYSA, Palmer Village, and Palmer School

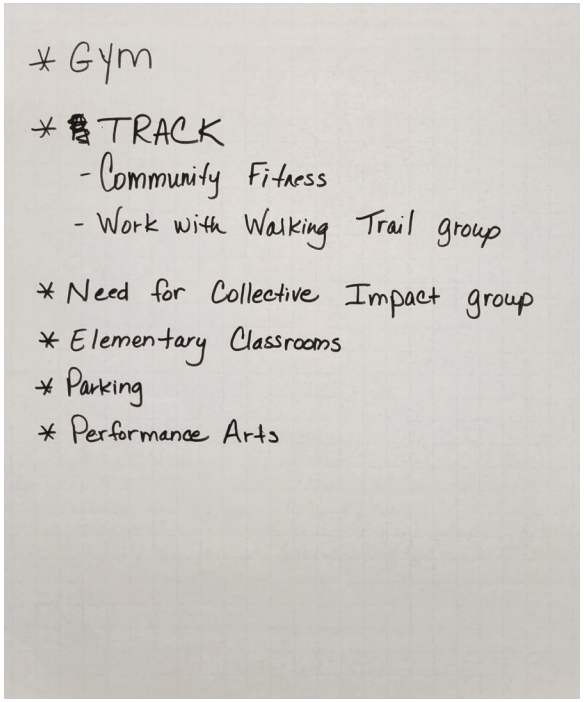
CWP provided a Facility Study overview, Master Plan options, and described the next steps. The session was an opportunity to provide and receive feedback and to spur dialogue between the respective Palmer groups. Craig Jones with First National Capital Markets, provided an overview of the bond process.

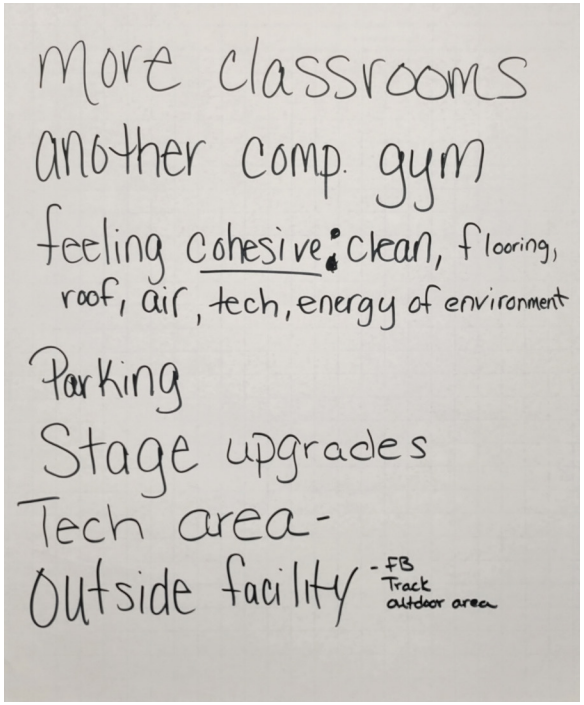

PALMER TIGERS
PALMER ENDOWMENT FUND

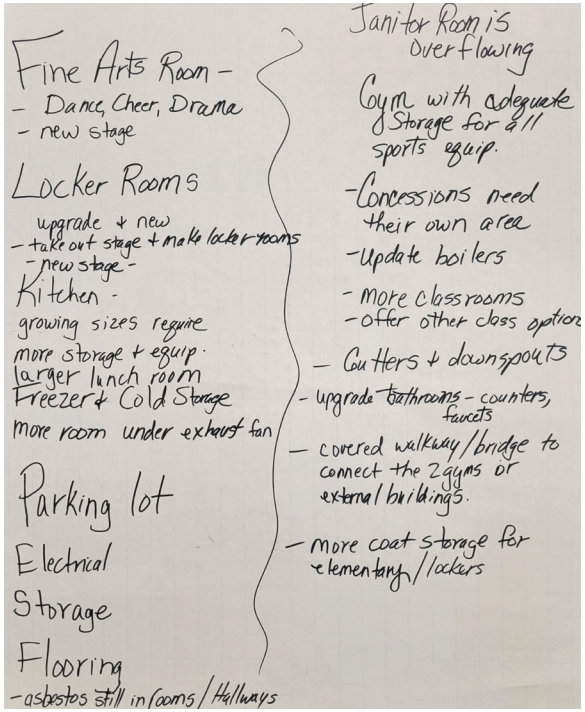






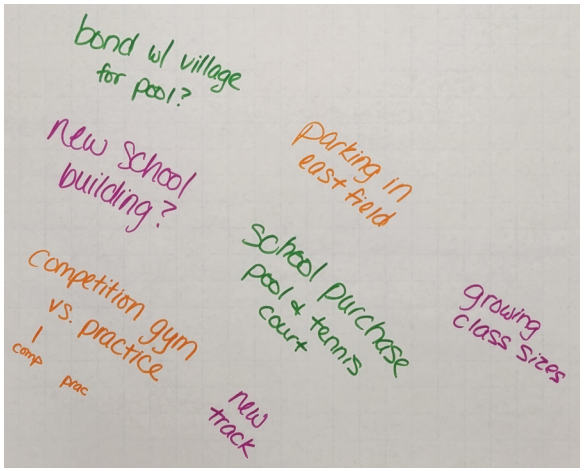






- Second Gym / Multi-Purpose Room
  - For activities & Hosting events/games
  - Indoor Recess
- consistent flooring throughout bldg.
- Elementary lockers/hooks
- Sink in classroom - especially Elementary
- Intervention Rooms -
- Specialized Teachers' Room (currently uses Library)
- More Elementary classrooms -
- Updated Stage
- Tornado Shelter -
- Leaking roof/ceiling tiles (mismatched, moldy, leaking)
- Exterior doors shutting properly; safety issue - large gaps;
- Event Parking!!!! - Handicap Parking

- Shaded Areas on playground
- Additional playground equipment.



- Private intervention rooms (speech/haley/PT/OT)
- New gym - (competition) w/ indoor walking track
  - indoor concessions
  - Sensory room - SPED/Title
    - counseling
    - climbing, jumping, pressure
  - lockers → elem.
  - Storage → for everyone
  - Staff bathroom - classrooms
  - full size teacher's lounge - meeting room

- Prek back with elem
- Parking lot - concrete
- Playground

Classroom space
Competition Gym
Paved Parking / Drainage
Admin/Office space
Greenhouse
Welding Class upgrade
Track/Football Field

- Competitive new gym (like Central Valley's) to hold GRC games, etc. (Coaches "lockerroom")
- More classrooms
- new library - tech. space maker space
- new kitchen cafeteria - meals for all the kiddos
- Consistent flooring!!!!
- offices/room s for specialists
- amount of 'out of bounds' space in our existing gym
- Concession stand - outdoors & more bathrooms indoors - gym space!
- teacher bathroom sec. side
- Anna wants a BIG - LONG stage
- weight room
- wrestling area/room

- Percussion Storage Room
- Practice Rooms
- Custodial Storage
- parking lot
- training room
- visitors locker room "only"
- new milking room
- quality landscaping that looks attractive
- bigger elem classrooms - lots of kids / room
- base boards that are consistent throughout the building
- update front office area

4.2 PROGRAM NEEDS

One main item that consistently came up in the planning sessions was the need for additional gym space. A single gym that is shared by all K-12 students becomes an issue with scheduling and many conflicts for use of the space. Indoor recess, P.E., girls and boys practices, programs, stage and play setup. It is in constant use and a high demand space. While a practice size gym could serve the immediate needs of the district, it was evident through the planning sessions that a competition size gym should be the priority. Sized appropriately to allow three wrestling mats the length of the gym to host tournaments. Also, wide enough to provide cross courts and retractable curtain between for practices and tournaments.

Along with the gym space, the school is lacking a dedicated concessions space. A concession stand would alleviate the need for using the kitchen with setup and clean up that is required. Also, the existing junior high locker rooms are in poor condition where a future expansion could address these two concerns.

The current quantity of classrooms is just meeting the needs of the school, however, if there is a bubble class or enrollment increases, there will be a classroom shortage. Some classes are approaching 30 students and future planning should include an increase in the quantity of classrooms. The elementary is lacking many of the break out spaces that are incorporated in current school designs. This includes intervention spaces, small group or one-on-one break out spaces, and room for specialists including speech, PT and OT. In current school planning, we would include a dedicated special education space that includes counseling, sensory room, Title, and cool down or dignity spaces.

The district lacks a track where all the peer districts currently have a competition track. This was mentioned many times throughout the planning sessions, but it wasn't ranked as high with other priorities ahead of a track. A track would allow practice, host track meets and could be used by the community as a walking track. Consideration would be needed on the infield space if that would still be utilized as football practice or become a dedicated competition field instead of playing in the baseball outfield.

4.3 COMMUNITY NEEDS

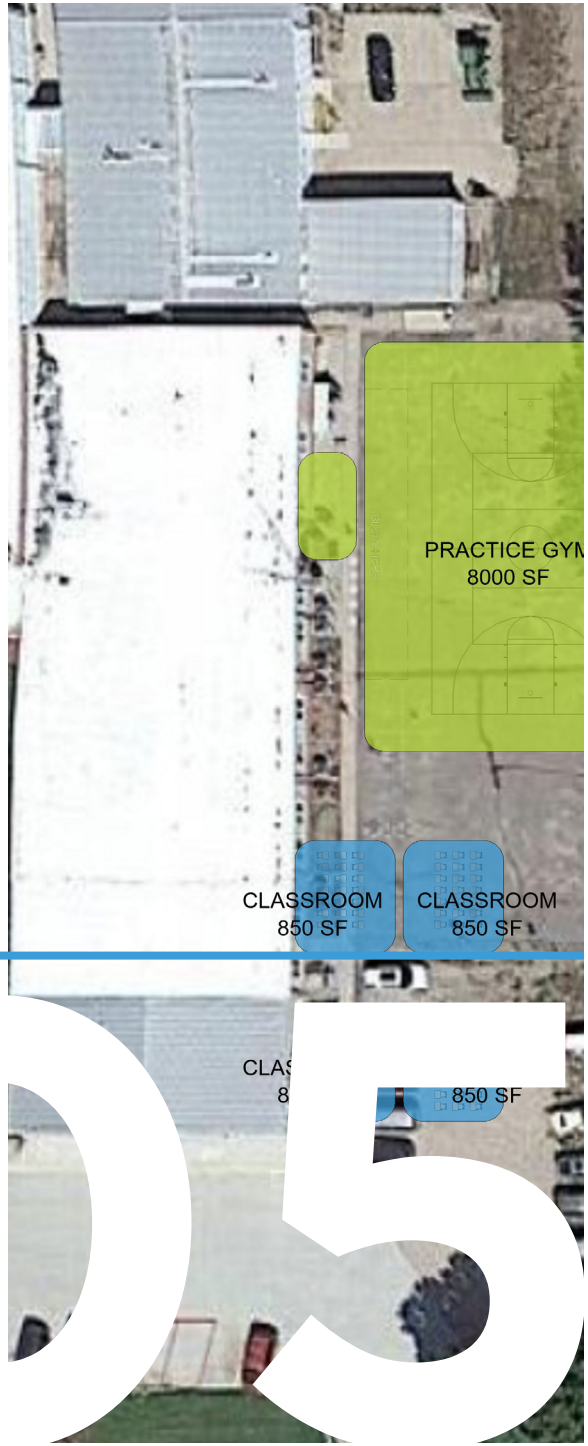
For a small town, having access to amenities is important to the strength of the community and the ability to attract and retain families. Future growth opportunities of the school depend on the status of the City Pool. It is evident the pool is an important component to Palmer, and with the current condition of the existing pool, there are opportunities available that can benefit the community. The pool needs significant improvements to be able to open in the future, or it can be rebuilt at a different location. As the City explores their options, the decisions will influence the school's project direction.

Having access to safe, dependable, and affordable childcare is important to the vitality and growth of any small community. Strengthening the connection between Tiny Tigers and the main facility is seen as an important aspect to the staff. Having pre-K feel they are a part of the school, makes the transition to Kindergarten smooth. Providing a pedestrian connection between the two facilities is important for safety. This could include sidewalks, painted crosswalk, signage and flashing yellow light.

Palmer does not have a city library and the school library serves that purpose. The school library is open to the public, but the location within the school isn't conducive for access. The library is in a series of repurposed classroom spaces deep within the school and doesn't have a public exterior entrance. If the library is to remain open to the public, a better location would be toward the south end of the building and provide a separate exterior entrance.


Ace
Best
Ace
Best
CONGRATS
PHS
CLASS OF
2023

PROPOSED MASTER PLAN



05

5.1 PROPOSED MASTER PLAN: TRACK & FIELD

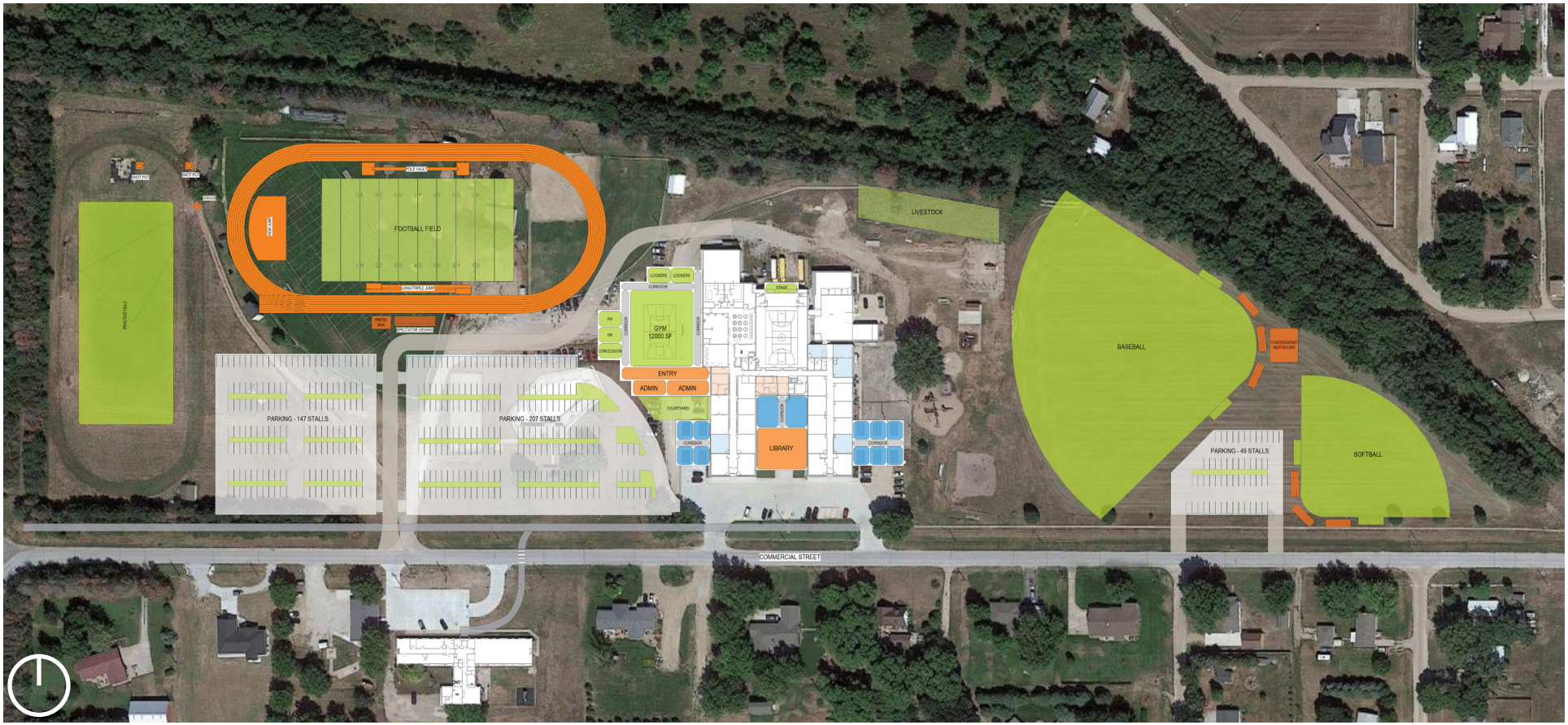
OVERVIEW

This site layout shows how a potential track and field could fit on the existing site. It also demonstrates the maximum quantity of parking that could fit with this layout while maintaining the baseball and softball fields. This layout does not address having separate football practice and competition field. If the track infield becomes the game field, we lose the practice facility. If football practice remains in the track infield, we are still playing on the baseball outfield. The site plan shows a sidewalk extended to the west and a crosswalk to Tiny Tigers ELC.

Table 5.1.1: Area Breakdown

Addition	Area
Gym/Entry	28,704 SF
Elem. Classrooms	5,768 SF
HS Classrooms	3,837 SF
Library	9,494 SF

5.2 PROPOSED MASTER PLAN: ATHLETICS REFRESH



OVERVIEW

This site layout addresses the conflict between football practice and competition fields that the previous layout showed. By relocating the baseball and softball fields, it allows more space and layout opportunities to the west of the school. Parking efficiency is higher with this layout, allowing more available stalls. The site plan shows a sidewalk extended to the west and a crosswalk to Tiny Tigers ELC.

Table 5.2.1: Area Breakdown

Addition	Area
Gym/Entry	29,003 SF
Elem. Classrooms	5,768 SF
HS Classrooms	3,837 SF
Library	9,494 SF

5.3 PROPOSED MASTER PLAN: WEST ADDITION

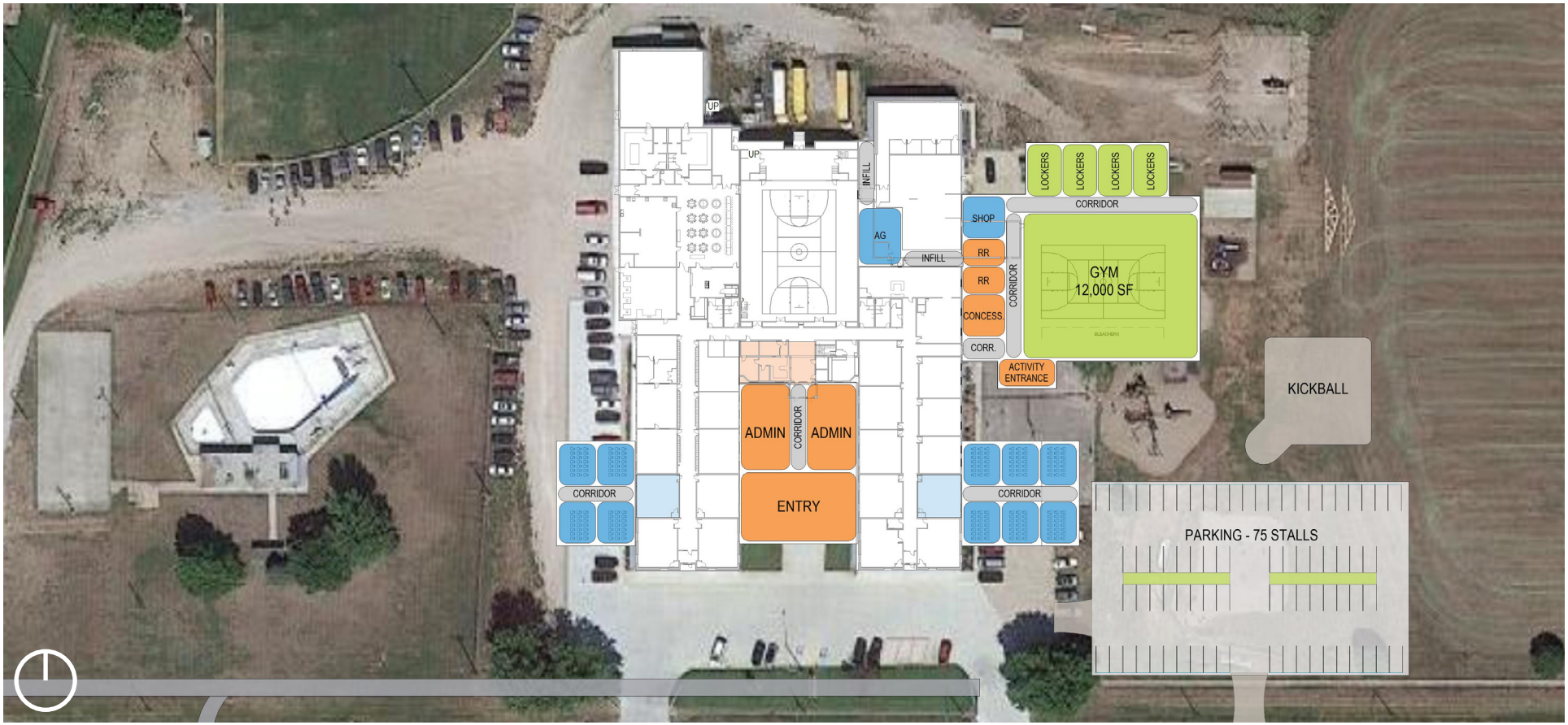
OVERVIEW

A competition gym and new front entry addition as shown on this layout assumes the pool property is acquired from the city. The size of this addition demonstrates that a competition size gym, locker rooms and associated program space can fit in this general area. There is an opportunity to reorient the front entrance of the school to the west where the majority of the parking is at. This layout shows possibilities of addressing the program needs with additional classrooms and a shared community library.

Table 5.3.1: Area Breakdown

Addition	Area
Gym/Entry	28,704 SF
Elem. Classrooms	5,768 SF
HS Classrooms	3,837 SF
Library	9,494 SF

5.4 PROPOSED MASTER PLAN: EAST ADDITION



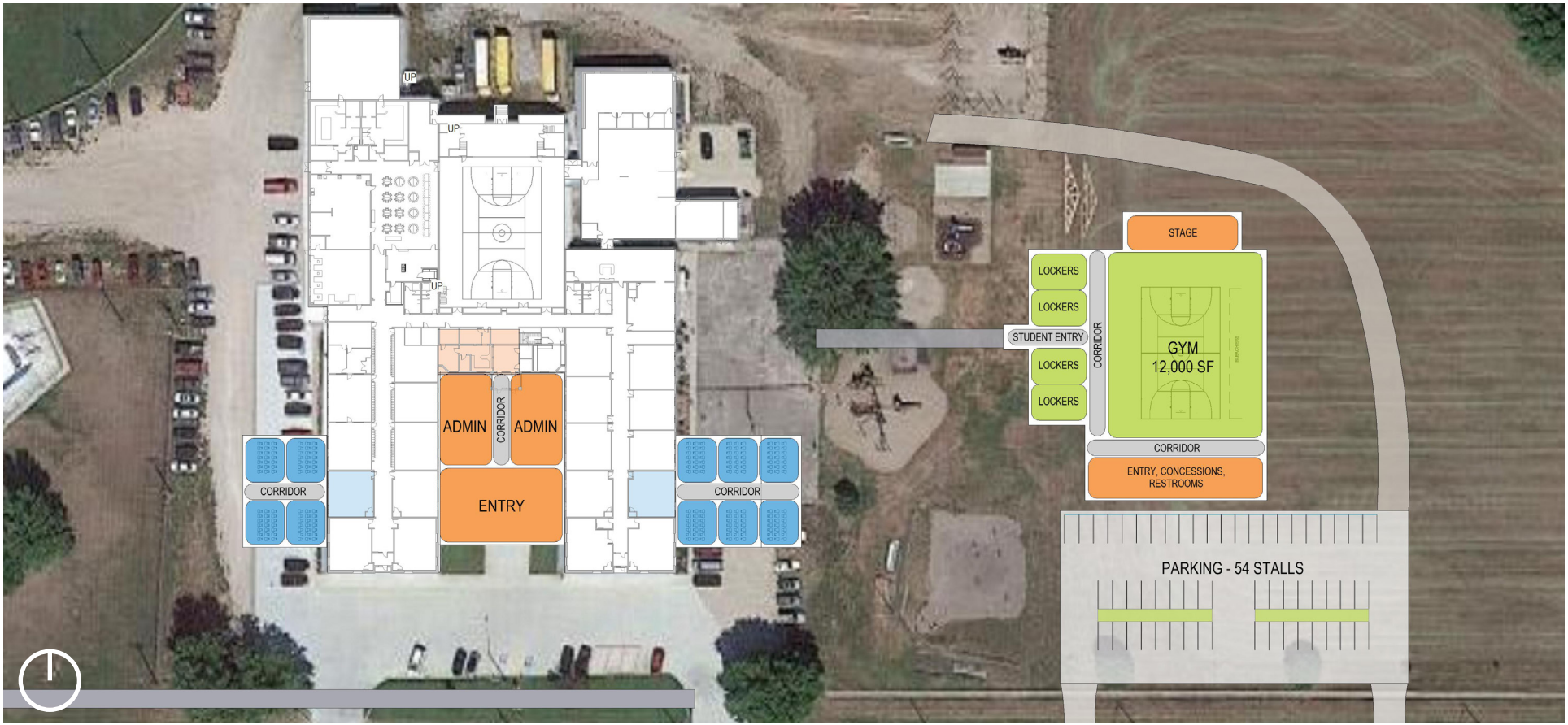
OVERVIEW

If the pool property can't be acquired from the city, this layout shows a competition size gym, locker rooms and associated program space can fit on the east side of the building. There are some downsides to this location in terms of high school student traffic through and around the building. Football, track, and student parking is on the opposite side of the building. This location does impact the elementary playground space. This layout also shows possibilities of addressing the program needs with additional classrooms and administration space.

Table 5.4.1: Area Breakdown

Addition	Area
Gym/Shop	24,921 SF
Elem. Classrooms	5,768 SF
HS Classrooms	3,837 SF
Admin/Entry	8,792 SF

5.5 PROPOSED MASTER PLAN: DETACHED GYM



OVERVIEW

A fully detached athletics facility could be constructed in multiple locations on the site. If the pool property can't be acquired, this location has some of the similar downsides as discussed in 5.4, but doesn't impact the elementary playground. A detached facility has disadvantages of safety, security and traveling between buildings during inclement weather. A separate facility opens up the possibilities of classroom, library, administration and entry additions on the existing school.

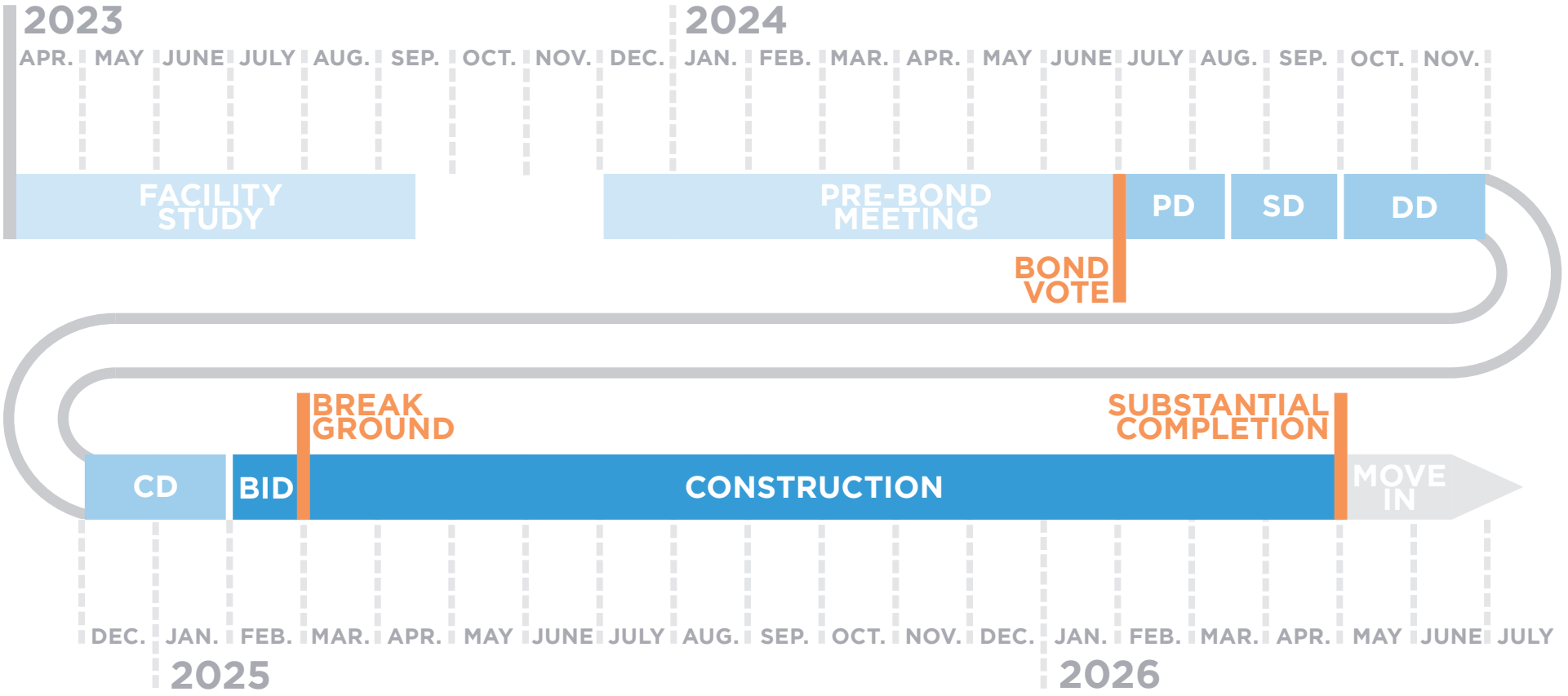
Table 5.5.1: Cost Breakdown

Addition	Area
Gym/Entry	24,672 SF
Elem. Classrooms	5,768 SF
HS Classrooms	3,837 SF
Admin/Entry	8,792 SF

NEXT STEP

06

6.1 ESTIMATED PROJECT TIMELINE



6.2 PROJECT PROCESS

The provided timeline is a typical process that a community could expect for a project. This demonstrates the milestones that would take place and the order they would occur in. As can be seen, this is not a short process.

A typical funding method is a bond referendum. This is a request of voters to increase taxes for the purpose of improving school facilities. We would recommend assembling a building committee separate from the School Board. This should be a cross section of the community and could include: young families, business owners, alumni, older generation, farming family, faculty, board members, etc. The goal of this committee is to identify the needs of the school, determine the dollar amount the community is willing to support, and make a recommendation to the School Board. During this pre-bond work, we recommend soliciting and hiring a construction manager to become a part of the team. Their expertise is invaluable in determining project costs and developing the budget. At the same time, we would involve the fiscal agent where they would analyze district valuations and determine the tax ask to the patrons. At the end of this process, we will have identified the scope, dollar amount and we would have conceptual designs, graphics and renderings for bond promotion.

The School Board would authorize Palmer Public Schools to move forward with the bond referendum. Bond promotion, marketing and community engagement would occur leading up to the mail-in bond vote. This can and will include a website, social media, door knocking, postcards, community coffees, etc. We would propose to have several community meetings which would include a presentation by the Architect, Construction Manager and Fiscal Agent.

After a successful bond vote, the project would move into design. This would include user-group meetings, faculty meetings, community presentations and continual budget checks. This phase of the project is developing the design and producing construction documents that the contractors and subcontractors would build from. The drawings and specifications would then be competitively bid to subcontractors and material suppliers.

A significant amount of work and dedication has gone into the process up to this point. Now construction begins. This is an exciting part of the timeline and rewarding to see the project come to life. Construction can last 14-16 months.

This proposed timeline is not a hard schedule. It can accelerate or extend out to meet the needs of the community and meet the financial goals of the district. This timeline is fluid and this is one example of a path toward a construction completion at the end of spring semester of 2026.