

City of Cordova Multi-Building Condition Assessment: Cordova Jr./Sr. High School

Prepared For:





800 F Street Anchorage, AK 99501

Nicholas Krysinski, PE, Mechanical Dave Booker, PE, SE, Structural Mark Graham, Electrical Derek Tannahill, PE, Civil Dave Dreher, AIA NCARB, Architect Kent Gamble, Estimator

TABLE OF CONTENTS

1.	Intro	oduction	1						
2.	Exec	cutive Summary	1						
3.	Cord	dova Jr/Sr High School	2						
3	.1.	Description and Summary	2						
3	.2.	Building System Assessments	2						
	3.2.1	1. Architectural	2						
	3.2.2	2. Sprinkler System Protection	3						
	3.2.3	3. Accessibility / ADA / ANSI A117 Compliance	3						
	3.2.4	4. Building Exterior	5						
	3.2.5	5. Doors and Windows	5						
	3.2.6	6. Building Interior	7						
	3.2.7	7. Structural)						
	3.2.8	8. Civil1 ⁻	1						
	3.2.9	9. Mechanical)						
	3.2.1	10. Plumbing	5						
	3.2.1	11. Fire Protection	3						
	3.2.1	12. Electrical1 [·]	1						
	3.2.1	13. Deficiencies and Recommendations15	5						
	3.2.1	14. Life Safety Recommendations1	5						
	3.2.1	15. Phase 115	5						
	3.2.1	16. Phase 216	3						
	3.2.1	17. Phase 317	7						
	3.2.1	18. Phase 418	3						
	3.2.1	19. Phase 518	3						
Арр	Appendix A – Equipment Condition and Life Expectancy20								
Appendix B – Routine Maintenance Tasks21									
Appendix C – Cost Estimate									

1. INTRODUCTION

The City of Cordova engaged Coffman Engineers and Burkhart Croft Architects to assess and report on the condition of City-owned buildings and structures to establish a baseline of their current assets, and better forecast future needs.

The team performed a multi-discipline condition assessment of thirteen facilities including:

- 1. Bob Korn Memorial Swimming Pool
- 2. Bidarki Recreation Center
- 3. Eyak Skaters Cabin
- 4. Cordova Jr/Sr High School
- 5. Odiak Pond Gazebo and Boardwalk
- 6. Odiak Camper Park Restroom
- 7. Parks Maintenance Shop
- 8. City Maintenance Shop
- 9. Ballfield Restroom / Concession Stand
- 10. Cordova Chamber of Commerce
- 11. Hollis Heinrichs Park Restroom
- 12. Flemning Spit Restroom
- 13. Fire Department Sub Station

The team also visited the Prince William Sound Science Center and evaluated the feasibility of relocating the building to a new site.

The team consisted of an architect, civil, structural, mechanical, electrical engineers, and a cost estimator.

Due to the amount of information and quantity of sites, a separate report has been developed for each facility. This condition assessment report is for the Jr/Sr High School.

2. EXECUTIVE SUMMARY

The Jr/Sr High School was evaluated by the team on November 16, 2022. This report provides:

- A description and assessment of the various building components.
- A list of deficiencies, ordered by urgency for repair or correction.
- Rough order of magnitude cost estimate for the listed deficiencies, as well as building replacement.
- A routine and preventative maintenance plan.

Overall, the building structure was in good condition. The majority of the recommendations are for code compliance and enhancing the longevity of the building. The only structural recommendation is for preventative repairs by epoxy injection in two locations. The primary mechanical recommendation is for a boiler and fuel tank replacement. Other recommendations are a lighting upgrade, and localized repairs and improvements.

3. CORDOVA JR/SR HIGH SCHOOL

3.1. Description and Summary

Originally built in 1967, the High School has seen various remodels and improvements during its life. Most notably, there was a school-wide renovation in 2001 that replaced major components of most systems. The school includes a gymnasium / auditorium, a basement level locker room, a small kitchen and dining area, a library, a classroom wing, and a vocational-education wing with an automotive, welding, and woodworking shop.

The school has two separate buildings on the back side that share utilities with it. The first building is the Prince William Sound College building. It is owned by the school and leased to the college. The second out-building is a maintenance shop.

3.2. Building System Assessments

- 3.2.1. Architectural
- 3.2.1.1. IBC Code Summary

Model Code Application

The building was constructed in 1967. Some of the major projects would have been executed under the *Uniform Building Code* in effect prior to 2000. Since 2000, the *Uniform Building Code* has been replaced by the *International Building Code (IBC)* family as the acting model building code in Alaska. Assessment below is based on the 2021 IBC (current version adopted by the State). The 2001 renovation was permitted under the 1997 UBC.

The IBC restricts the size of buildings depending on what they are built from and what life safety components they are equipped with. For example, a steel framed building can be as much as 5 times larger than a wood framed building.

The facility is approximately 49,275 square feet overall. This was taken from the code study completed by Jensen Yorba Lott Inc. in 2001. If no separation was present, the building would be over area, but as noted in the 2001 code study, the facility is separated into three distinct areas A, B, & C. Illustration is below.



Fig. 1. Properity Lines / Public Space

Adequate and code compliant facility separation has been provided. There is a 2-hour separation wall between Areas C&B. And 1-hour separation to Area A. Total square footage breakdown:

Area C: 28,883 SF

Area B: 10,824 SF

Area A: 9,568 SF

Total square Footage: 49,275 SF

The walls are constructed out of combustible framing, combustible structural members and frames present that classify the Building as Type V-B Construction. This is the most restrictive assembly for allowable square footage, but is code compliant with exceptions as noted above. But the minimum allowable area for Type V-B Construction is 9,000 sf, without taking into consideration Fire Protection, which this facility is equipped with. There are no deficiencies for building construction type or area.

Occupancy Groups

Educational Areas: All recreation portions of this facility are designated as an "E" Educational Occupancy. All other areas, staff admin area, storage, etc., would be classified as accessory use.

Egress System

The existing egress system appears to be adequate in terms of number of exit points, exiting logic and egress width.

3.2.2. Sprinkler System Protection

General

Fire Protection addresses overall description and condition of the fire suppression systems installed in the building.

Sprinkler System Requirements

Sprinkler system requirements are addressed in Chapter 9 of the IBC. In some cases, Chapter 9 specifically requires the building to be protected due to the type of use and code-defined occupancy group. In this case, all E Occupancies are required to be sprinklered throughout, facility is required to have fire separation per code, and State of Alaska amendments. With the presence of the fire sprinkler system, the facility is in compliance with current fire codes.

3.2.3. Accessibility / ADA / ANSI A117 Compliance

General

Original construction of the facility was completed prior to enactment of the Americans with Disabilities Act (ADA) in 1990. The 2001 renovation would have been subject to the 1990 edition. The IBC now references ANSI A117 (2017) as the recognized design standard for accessibility concerns.

Existing buildings are exempt from current requirements, so long as owners conduct simple and prudent improvements. Full compliance is directly tied to the size and scope of the proposed projects. The IEBC International Existing Building Code drives this level of compliance. For example, the facility can be re-sided and interior finishes replaced without making the toilet facilities ADA accessible. But if there was a building addition or major renovation then the facility would be required to comply. In existing facilities, enforcement of ADA deficiencies is punitive, and if complaints or claims are made against the facility, the City of Cordova might be required to make a reasonable accommodation to correct the deficiency for the public requiring accessibility improvements.

Existing Conditions

The building currently has made reasonable accommodations for ADA accessibility. This extends from the street level, with accessible parking, to the school facility itself. Elevators have been added to make all levels accessible.

Issues noted were all toilet accessory mounting heights and omissions. If any work is conducted in these spaces, they should be adjusted, largely due to existing finishes. Relocating grab bars in tiled areas will create patching issues, etc., they are as follows:

- Add vertical, 18-inch grab bars to all accessible toilets. This includes the single stalls in the main restroom, combined restrooms, and the single use restroom labeled as "Staff" toilets.
- Grab bars are mounted at differing heights in the accessible stalls.
- Provide piping protection at exposed piping in group toilet facilities.



Fig. 2. Existing ADA Stall



Fig. 3. New 18-inch vertical grab bar

3.2.4. Building Exterior

The building is clad with metal siding and wood siding throughout. Some areas were replaced or sheathed during the 2001 renovation, others are original. All roof areas were replaced, that places roof age at 20-years, with service life of the systems at 30-35 years. Most of the items below are where scope items were not included in the 2001 renovation. There are some areas of correction that could be conducted as preventative maintenance:

Areas close to grade where paint is damaged and/or removed. Repaint as required.



Fig. 4. Exit 1





3.2.5. Doors and Windows

As stated earlier, the doors and windows that were not replaced during the 2001 renovation are those now in need of replacement.

- Replace the windows noted in Figure 7 below, located in the hallway to the Voc Ed area. The glazing seal in these windows have failed, and there is also evidence of water infiltration around the frame. Prep CMU walls below, repaint.
- Replace the windows in the Home Economics classroom and Voc Ed. The seals have failed, and units show signs of sealant failure.
- Replace exterior double door out of the existing kitchen.
- Replace single exterior door from the mechanical room.
- Other exterior doors should be inspected for operation when any door replacement project is executed.





Fig. 6.



Fig. 8. Kitchen Doors

Fig. 7. Window Area 1



Fig. 9. Economics Windows





Fig. 10. Voc Ed Windows

Fig. 11. Voc Ed Wing

3.2.6. Building Interior

General

The building interior appears to be in good condition overall. Several renovation and upgrade projects have replaced or improved floor and wall finishes over time, specifically the 2001 renovation. The facility is operating as an educational facility serving the City of Cordova. This facility has a very professional team maintaining the facility, as was evident in our inspection.

Damage and corrective interior work was sporadic, and items of note are listed below:

- Corridors in the Voc Ed basement have areas of spalled paint at the CMU. Remove, prep, and paint as required. Paint is failing due to water infiltration from the block, but did not appear excessive. New paint coating should correct the aesthetic condition for a number of years. (Photos 1&2)
- In this basement there is also a sprinkler pipe that appears to be leaking. (Photo 3)
- At the basement lockers adjacent to the gymnasium there is an area of underground water intrusion, GWB & insulation removed. Excavate grade at this location and add addition drainage means. Monitor correction below. (Photo 4)
- A sink is loose from the wall in both the men's and women's locker rooms, tighten as required.
- Lower metal lockers, in both rooms, are damaged in some locations. Correction is not an immediate action item, but should be considered in any future project.
- The interior door to the mechanical room is badly damaged; replace with 45-minute rated fire door. (Photo 5)



Fig. 12. Photo 1



Fig. 13. Photo 2





Fig. 14. Photo 3

Fig. 15. Photo 4



Fig. 16. Photo 5

3.2.7. Structural

The Cordova Jr-Sr High School was constructed in 1967 and renovated in 2001. The Vocational Building addition on the west end of the original school was constructed sometime between original construction and the renovation, circa 1980's. Record-drawings for the original school and 2001 renovation have been provided by the City of Cordova. No record-drawings are available for the Vocational Building. The building structure is typically covered with finishes. The following description is based on the record-drawings and visual observations where possible.

The original school is primarily a one-story heavy timber building with a single gable roof. The roof framing consists of 4x6 tongue and groove (T&G) decking spanning up to 15-feet between glue-laminated beams which slope up from the exterior walls each side of the main hallway and cantilevering to the ridge which is centered over the hallway. The attached gymnasium has a low-slope roof consisting of 2x6 T&G decking spanning over 48-inch-deep steel open web steel joists spaced at 15-feet on centers. Supports for the roof framing for the classrooms and gymnasium are wide flange columns and posts. The 2001 renovation project included improving the lateral load resist system of the original school with the addition of plywood shear walls between classrooms and along the hallways, the addition of diaphragm collectors and drag strut connections between roof glue-laminated girders and shear walls.

Below the gymnasium is a basement with locker rooms, storage, and gym teacher offices. The basement walls are constructed with reinforced concrete and the stage and practice room floors are 3-inch concrete filled metal decking supported by open-web steel joists spaced at 24-inches on centers. Wide-flange beams and posts support the joists and slabs between locker rooms and

smaller rooms and openings. The 2001 renovation project added an elevator between floors on the west end of the main basement corridor between locker rooms.

The Vocational Building is a detached two-story concrete masonry unit (CMU) building with metal and wood shop rooms on the lower floor and home economics classrooms on the partial upper floor level. There is a connecting walkway with seismic joints between the original school and the Vocational Building.

Structural recommendation for the school include:

- 1. Epoxy injection repair or steel side plates of one roof purlin in the science Classroom 7.
- 2. Epoxy injection of cracks in the concrete chimney in the mechanical room.



Fig. 17. Cracked Purlin in Classroom 7



Fig. 18. Side Plated Roof Purlin in Library



Fig. 19. Cracks in Concrete Chimney.



Fig. 20. Cracks in Concrete Chimney

3.2.8. Civil

The school is located on a parcel owned by the City of Cordova, at 100 Fishermans Avenue. The site consists of typical features of a school including paved parking, vehicle drives, landscaped areas, utilities, and graveled access.

The school is on City water and sewer service and reported no issues with these services. Exterior utilities were not observed as part of this inspection.

Pavement around the school and supporting drives is in adequate condition. Crack sealing and minor repairs are necessary to extend the serviceable life. Concrete walks and aprons exist at the main entrances and appear to be in good condition.

Two ADA accessible parking stalls are present near the main entrance to the school, however there is no striping, accessible aisles, or routes to the main entrance. The stalls are on gravel parking areas. See Figure 213.

Storm drain inlets are present around the site. Positive slopes in these areas allow runoff to be transported to the system with no issues observed. In general, grades slope away from the facility providing positive drainage to storm drain structures. It appears the inlet to the east of the school has erosion present. See Figure 23.

The fuel tank for the school is present to the south of the facility near the mechanical room in a fence enclosure. Issues were reported by maintenance and a temporary tank is currently being used for the single boiler in use. The fuel tank location and supports looks to be adequate and meet code requirements.

A propane tank is present adjacent to the kitchen. The tank appears to be old and starting to rust; however, no issues have been reported.



Fig. 21. School Entrance and ADA Accessible Parking



Fig. 22. Fuel tank

Fig. 23. East storm drain inlet

3.2.9. Mechanical

Most of the mechanical equipment in the school was replaced during a large renovation project in 2001. The building's Direct Digital Control (DDC) system and actuators, control valves, thermostats, and sensors were reported to have been replaced within the last few years. Variable frequency drives (VFDs) for controlling motor speeds were not replaced and are from the 2001 renovation. The control sequences were not found in the available record drawings, however, it was discussed onsite that the DDC system is by Quality Controls Inc. out of Anchorage and was reported to be in working condition.

Heating to the school is provided by a 3,000 gallon aboveground fuel tank and two boilers. During the site visit the 3,000 gallon tank was not in use because there was water and sediment in it. The tank exterior shows stains and mildew, and the coating was failing. The interior of the tank was not inspected. There was a temporary tank placed adjacent with separate fuel lines that is filled about once per week. Only one of the boilers was operational during the site visit, and it was utilizing a borrowed spare burner from the city until a replacement burner can be procured and installed. The newest boiler from the 2001 renovation was not functional during the site visit. A third decommissioned boiler was present and piping was no longer connected to it. The 2001 boiler is the newest and repairing it should be a high priority to provide backup to the older boiler that is operating with a temporary burner.

The boiler heat is circulated through the piping system by four main circulation pumps, two of which are dedicated to the vocational education area. Each boiler has a dedicated circulation pump and three-way valve. The building hydronic system operates on a glycol / water mixture for

freeze protection. The piping system is a mixture of original piping and piping that was replaced in the 2001 renovation. Signs of leaks were observed at pump flanges.

There is a snowmelt circuit for an exterior stairwell that leaks. It is not separated from the main system by a heat exchanger and is currently valved off and not functional. Given the apparent frequency of use for this stair, fixing this snowmelt is not recommended until there is a major HVAC renovation.

There is a mini-split air conditioner that cools the server room, with an outdoor condensing unit mounted on the exterior side of the wall. The unit appeared to be on good working order.

The ventilation system is comprised of seven Air Handling Units (AHUs) and an assortment of supply and exhaust fans, including specialty systems in the vocational education area such as dust collection and welding exhaust. Most of this equipment was replaced in the 2001 renovation and most are operated on a Variable Frequency Drives to reduce energy consumption when full cooling airflow is not needed. The equipment appeared well-maintained and in good condition. AHU-1 which serves the kitchen and dining area, and some of the fans were cleaned and rebalanced, and received a motor replacement instead of complete replacement. An equipment list including ages can be found in Appendix A.

The high school has a full-service kitchen which includes a two-burner propane gas range, grilltop, and two ovens. The range and cooktop have a type 1 grease hood with an Ansul wet chemical fire protection system. It was reported that food is currently cooked off site at the elementary school and driven over, and the kitchen operates as a warming and serving area.

The vocational education rooms contain several specialty systems to support automotive work, welding, and woodworking. Ventilation for the automotive shop and wood shop are provided by AHU-7, a 5,000 CFM ceiling-hung air handling unit and ductwork system. A carbon monoxide (CO) and nitrogen dioxide (NO2) detector were not observed. Further investigation should be performed to determine if one or both are present, and verify AHU-7 provides sufficient airflow if CO or NO2 is detected. The unit has the capability to exceed the code required airflow but the sequence of operation for the DDC system should be obtained and reviewed to verify it is operating accordingly. The automotive shop contains a portable welding snorkel and filtration unit, as well as an in-place welding table with a dedicated welding hood and fan. There are two rooms built within the shop space that have welding booths and additional welding exhaust hoods that are connected to a common welding exhaust fan. This equipment appeared to be functioning and in fair condition. The shop area also contains a vehicle exhaust fan and three snorkel drops for vehicle exhaust. The snorkel drops were bolted to the wall and it did not appear they could be connected to engines that are operated in the shop. This was discussed onsite and engines are generally operated outside and / or the overhead doors are opened. If engines are run in the shop for testing, the vehicle exhaust snorkels should be modified so they can be placed at the exhaust discharge. A lower cost option is to ensure engines are run outside or at the interface of the open overhead door so the exhaust stream is directed outdoors.

The woodworking area contains a dust collection system with a Torit dust collector that is located under a dry-storage shed outside the heated envelope, and a duct system that drops to snorkels and various pieces of woodworking equipment. The system appeared in good condition.

Heat is provided to the shop through a combination of AHU-7 and two vertical unit heaters suspended over the overhead door openings.

The two science lab rooms have a fume hoods mounted along the exterior wall with a sidewall exhaust connection and outdoor sidewall exhaust fans. The equipment appeared to be in good condition, and the fans were installed during the 2001 remodel.

The basement has a laundry room with two washing machines plus a commercial washer and dryer. No deficiencies were noted, however the usage and cleaning frequency of the dryer exhaust is unknown and should be further investigated.

The school has two separate buildings on the back side that share utilities with the main school structure. The first building is the Prince William Sound College building. It is owned by the school and leased to the college.

The Prince William Sound Science building is heated by in-floor radiant heat. There is a radiant manifold and circulation pump in this building that are served by buried glycol / water mixture pipes from the school's boiler room. The building has no ventilation. The building has a residential kitchen with an electric range and no hood. There is a single fixture restroom and exhaust fan. All mechanical equipment appeared in excellent or new condition.

The second building that shares utilities with the school is a maintenance shop. It is heated by a hydronic unit heater which is connected by buried glycol / water mixture pipes from the school's boiler room. The maintenance shop has a waste oil storage tank, and a boiler that is fired on filtered waste oil from the storage tank. The heated water from this boiler is circulated through a plate and frame heat exchanger and transfers heat to the school's hydronic system via the buried piping. The unit heater appeared in very good condition. The oil and boiler system are functional and appear in good condition overall. There was significant corrosion and evidence of leaks on the pipe connections to the heat exchanger.



Fig. 24. 3,000 gal fuel tank



Fig. 25. Temporary fuel tank



Fig. 26. Boilers (middle boiler is the only functional boiler and has borrowed burner)



Fig. 27. Woodshop dust collection



Fig. 28. Automotive shop



Fig. 29. Welding hood



Fig. 30. Welding exhasut fan



Fig. 31. AHU-4, typical good condition of all the AHUs



Fig. 32. Waste oil tanks and boiler in maintenance shop



Fig. 33. Prince William Sound Science Center



Fig. 34. Prince William Sound Science center radiant heating pump and manifold



Fig. 35. Science room fume hood

3.2.10. Plumbing

Plumbing in the school includes a kitchen, male and female locker rooms in the basement, various restrooms, compressed air, and propane piping for the kitchen and science labs.

Domestic hot water is provided by five 120 gallon side-arm water heaters. Hot water is circulated through the building with a domestic hot water circulation pump to reduce wait time for hot water at distant fixtures. The water heaters and pump are from the 2001 remodel and appear in good condition.

The restroom fixtures were in fair condition. Toilets and urinals had flushometer valves which appeared to be well maintained. The basement locker room had three gang shower areas with three shower heads each, from the 2001 remodel. One was in poor condition with a missing valve handle on one shower and a missing nozzle on one of the heads and shows corrosion. The other two gang showers were in better condition and appeared functional. Gang showers are no longer common and given the condition of these, a shower room remodel may be desired.

Plumbing in the kitchen includes propane connections from an exterior above ground tank to a commercial gas fired oven and range. The tank shows corrosion but appears to be functional. A gas shutoff valve was

There is a three-compartment sink with indirect drainage connections to a floor sink. A separate vegetable-prep sink has an InSinkErator garbage disposal and direct drainage. All appeared in good condition. A floor access panel was observed in the kitchen that appears to be a grease interceptor, which had not been opened in some time. It was noted onsite that the kitchen is currently used for warming and not cooking, so the current use of the kitchen would not require a grease interceptor. If the kitchen is intended to be used for cooking in the future, the presence and type of grease interceptor should be reviewed for compliance with the Authority Having Jurisdiction (AHJ).

The automotive shop in vocational education area has a mezzanine with an air compressor and piping down to hose reels in the shop. The hose reel appeared in excellent condition, the piping to it, and the pressure regulator were older but appeared functional. The age of the air compressor is unknown but appeared in fair condition. A much newer compressed air dryer was mounted on the adjacent wall and appeared new. The welding booths have gas piping from the welding tanks to the booths, including regulators. They appeared in good condition. Signage for the gas shutoff valve location was not observed. Signage should be added indicating the location and identity of the shutoff valves per the International Fire Code.

There is a 26 gallon sidearm domestic hot water heater on the mezzanine that appeared in good working order.

An emergency eyewash station was present in the shop with a single water supply pipe that is assumed to be cold water. Modern eyewash stations must meet the requirements of ANSI Z358.1 and have a hot and cold connection and tempering valve to provide warm water for a prescribed duration. This eyewash predates that requirement and appeared to be functional. Operation of the eyewash station should be tested periodically to ensure ongoing function.

The automotive shop has a trench drain with dirty standing water in it. This was discussed onsite and it is believed that there is no oil-water separator present and the drain is piped outside to discharge. This drainage requires further investigation to see if there is a tank that is pumped out, or if oily waste is being discharged without being treated. Likely, an oil-water separator will be required.

The home education room contains kitchen sinks and electric ovens and ranges. No deficiencies were observed.

Other plumbing piping to note includes propane piping to the science lab rooms. There is a propane tank (estimated 100 lb size) outside along the exterior wall of a science lab. It is protected by a large boulder and a steel cage and piped into the building to serve gas connections for table-top Bunsen burners and to a fume hood. The indoor valves and gas connections seem to be in fair condition but appear dated. Periodic inspection of piping connections or a pressure test of the

gas piping is suggested. The current International Fuel Gas code (section 409.6) requires a gasshutoff valve be installed adjacent to the room exit and be labeled. It is not clear when this piping was installed or if it was required to have a master shutoff valve, but it is recommended to verify the existence of a main shutoff valve in the room and, if present, label and keep clear. If not present, one should be installed.



Fig. 36. Kitchen ovens and range



Fig. 38. Eyewash station in vehicle shop



Fig. 37. Trench drain in vehicle shop



Fig. 39. Water heater (blue) and compressed air dryer (above) in shop mezzanine



Fig. 40. Kitchen exterior, propane tank on right



Fig. 41. Laboratory propane tank



Fig. 42. Non-functional shower



Fig. 43. Shower area, overall view

3.2.11. Fire Protection

From the 2021 International Building Code, the school is classified as an Education, Group E occupancy. Group E occupancies are required to be provided with an automatic sprinkler system if the building is greater than 12,000 square feet or an occupant load greater than 300. The school

has an expected occupant load greater than 300 and a fire area of almost 50,000 square feet; therefore, requiring a sprinkler system. There is currently a sprinkler system provided in the school which is code compliant.

The building code requires Group E occupancies to have a manual fire alarm system that initiates an occupant notification signal using an emergency voice/alarm communication system. The building is provided throughout with a manual fire alarm system with an emergency voice/alarm communication system it appears.

The building has manual pull stations, smoke detectors, heat detectors, waterflow switches, supervisory switches, low air, duct detectors, and a code required wet chemical fire suppression system in the commercial kitchen.

- Taylor Fire Protection Services noted on March 26, 2022 that the maintenance shop does not have sprinkler protection when the doors are open. Recommend installing sprinklers above and below these doors for protection.
- Replace sprinkler heads that have been damaged, painted, or not properly orientated.
- Replace escutcheons for sprinklers that are missing or not installed properly.

During the site visit the 3,000-gallon tank was not in use because there was water and sediment in it. The tank exterior shows stains and mildew, and the coating was failing. The interior of the tank was not inspected. There was a temporary tank placed adjacent with separate fuel lines that is filled about once per week.

The *2021 International Fire Code* has a limit of 13,200 gallons allowed for storage and closed and 3,300 gallons in an open system in a control area. The current tank installed does not exceed the maximum allowable quantities.

This tank is required to be equipped with a liquid-level limit control or another approved means to prevent overfilling of the tank. The tank is required to be kept free from weeds, debris, and common combustibles by a minimum of 15 feet. This area should not be closer than 20 feet from a public street, alley, public way, or lot line. This storage area must have spill control by one of the following methods:

- 1. Liquid-tight sloped or recessed floors in indoor locations or similar areas in outdoor locations.
- 2. Liquid-tight floors in indoor locations or similar areas in outdoor locations provided with liquid-tight raised or recessed sills or dikes.
- 3. Sumps and collection systems.
- 4. Other approve engineering systems.

Secondary containment is required for tanks larger than 55 gallons. The tank is required to have a sign that identifies the material being stored. Section 5704.2.9.6.1.5 requires tanks containing Class IIIB liquids to be located in accordance with Table 22.4.1.6 of NFPA 30. If the tank is temporarily out of service it must be disconnected, if it is out of service for 90 days the tank must be safeguarded or removed, and if it is out of service for a year the tank must be removed. NFPA 30 Table 22.4.1.6 calls for tanks less than 12,000 gallons must be placed a minimum of 5 feet from the property line and 5 feet from any public way or from nearest important building.

- Remove the tank if it is out of use.
- Replace the tank and place it a minimum of 5 feet away from the building.
- Provide a tank that has spill control, proper physical protection, and liquid level limit control.

The temporary tank should be provided with physical protection, secondary containment, liquid-level control, and proper distances away from the building.



Fig. 44. Wet chemical fire suppresion system in the commerical kitchen.



Fig. 46. 3,000 gallon tank



Fig. 45. Garage door in the maintenance shop with no sprinkler coverage when the door is open.



Fig. 47. Temporary tank

3.2.12. Electrical

The facility is served by a 208Y/120V, 3-phase, 4-wire, 1200A electrical service provided by Cordova Electric Co-Op. The incoming utility service equipment, including current transformer (CT) cabinet, disconnect switch, and meter are wall-mounted on the west side of the building, outside of the electrical room. Distribution for the building is provided by a 1200A, 208/120V main distribution switchboard (MDP) located in the facility electrical room. The MDP serves branch circuit panels distributed throughout the facility, and a 400A, 208V, 3-phase motor control center (MCC) located in the boiler room. The MCC powers the boiler room large pump and fan motor loads. The MDP also serves a 600A, 208/120V distribution panel (DP) located in the vocational shop area via step up, step down transformers. Panel DP serves multiple branch panels within the shop area and the elevator. The wood shop, auto shop and welding panels are all provided with emergency stop shunt trip push buttons as required by code. The entire electrical distribution system was replaced during an upgrade project in 2001 and is in good condition. Panel schedules appeared to be up to date.

There are no arc flash labels on the electrical panels and equipment. It is recommended that an Arc Flash Risk Assessment be performed on power systems for employee safety and compliance with OSHA regulations. OSHA requires that employers provide a place of employment which is free from recognized hazards that are likely to cause death or serious physical harm to employees. OSHA also requires that employers employ safety-related work practices to prevent electrical shock or other injuries resulting from direct or indirect electrical contact.

In the kitchen, the refrigerator should be relocated because it is in front of Panel K in violation of code working clearance, and the power cord serving the refrigerator is running across a sink. The refrigerator should be relocated.

Lighting throughout the facility is a mix of fluorescent, and fluorescent fixtures converted to light emitting diode (LED) using retrofit TLED lamps. The maintenance staff is in process of converting interior fluorescent fixtures to LED using retrofit TLED lamps. At the time of the site visit, the fixtures in the following rooms had been converted to LED using the TLED lamps: hallways, wood shop, stem room, media room, and one restroom. The classrooms, gym, kitchen, offices, restrooms, locker rooms, mechanical rooms, electrical room, auto shop, home economics, and other miscellaneous spaces are still equipped with fluorescent fixtures. The hallway, locker room, and wood shop light fixtures were replaced during the 2001 upgrade project and are in good condition. The gym and metal shop lights were replaced with high bay T5HO fluorescent lights within last ten years and are in good condition, but they are not providing proper lighting levels to these spaces. The classroom fixtures are older style suspended direct/indirect fluorescent fixtures that are in fair to poor condition. The fluorescent lights in the lower level locker room area are in good condition.

Lighting levels at the time of the site visit were adequate in most areas with exception of the gym and the metal shop. All interior lighting in the facility is switch controlled. There are no automatic lighting controls, such as occupancy sensors, installed at this facility. The maintenance staff walks the facility at end of the day and turns off all the lights.

The exit signs were replaced during the 2001 upgrade project and are in good condition. Emergency lighting is provided by emergency battery packs integrated into the fluorescent light fixtures. The emergency lighting was not tested during the site visit but based on the record drawings from the 2001 upgrade project, it appears the emergency lighting provides proper coverage for the path of egress within the interior of the facility. There is no emergency lighting at exterior door egress locations as required by code.

The exterior lighting appears to have been upgraded recently to LED fixtures, and appears to be in good condition. The exterior lighting is controlled via a photocell and lighting contactor panel located in the electrical room. The exterior lighting appears to provide adequate illumination around the perimeter of the facility for security purposes.

The telecommunications system was also installed in 2001. There are two telecom closets with CAT 5 data racks inter-connected by a fiber backbone. CAT 5 jacks are located in the classrooms, office areas, and other occupied spaces in the facility. Typical classrooms have a single four port CAT 5 outlet. The telecommunications system is functional but operates at a lower bandwidth compared to the current CAT 6 standard. Additional outlet locations and new CAT 6 cabling are desired by the staff operating the equipment.

The intercom system and clock system were also replaced in the 2001 upgrade. The system is outdated and difficult to maintain because sourcing replacement parts has become challenging.

The school has two separate buildings on the back side that share utilities with the main school structure. The first building is the Prince William Sound College Building that is owned by the school and leased to the college.

The Prince William Sound Science Building electrical systems appeared to be in good to excellent condition. The interior lighting is all fluorescent light fixtures with T8 fluorescent lamps. The light fixtures are in good condition but would benefit from a TLED lamp upgrade to save energy and reduce maintenance. It was also noted that the receptacles in the kitchen sink area were not GFCIs as required by NEC code.

The second building that shares utilities with the school is a maintenance shop. The building is served from the main school, via an underground feeder, to a 100A disconnect mounted on the exterior wall. The building has a single 100A, 208V single phase distribution panel that serves power to all the building loads. The electrical power distribution for the building appears adequate and is in fair condition.

The interior lighting in the maintenance shop is old recessed fluorescent light fixtures that have been repurposed and surface mounted on the ceiling. The lights have no lenses, are dirty, and are in poor condition.



Fig. 48. Classroom suspended fluorescent lights



Fig. 49. Classroom fluorescent lights



Fig. 50. Locker room fluorescent lights



Fig. 51. Hallway lights have been retrofit



Fig. 52. Refer in front of kitchen panel



Fig. 53. Kitchen-refrigerator cord crossing sink



Fig. 54. Exterior LED lights at entry- no emergency lights



Fig. 55. Exterior LED light at Shop door



Fig. 56. Intercom/Paging system in telecom closet



Fig. 57. Intercom/paging system phone at teacher desk

3.2.13. Deficiencies and Recommendations

The following list of deficiencies and items requiring maintenance are grouped into four categories: Life Safety, Structural, Code Compliance, and Maintenance or Facility Improvements. A rough order of magnitude cost is included but does not factor into the order in this list. See Appendix C for detailed cost estimate information.

Total building replacement, including demolition of the existing facility is estimated to cost \$82,436,328. The total cost of all recommendations below is \$3,601,260.

3.2.14. Life Safety Recommendations

Some of the recommendations below relate to life safety, however, there are no specific deficiencies warranting immediate action.

3.2.15. Phase 1

1. **Epoxy Injection Classroom**. Epoxy-inject repair or install steel side plates on one roof purlin in the science Classroom 7.

Estimated Cost: \$3,173

2. **Epoxy Injection Mech Room.** Epoxy injection of cracks in the concrete chimney in the mechanical room.

Estimated Cost: \$959

3. **Boiler Repair.** Repair the newest boiler, B-1. Demolish the other two boilers. Install a second boiler to work with boiler B-1. If this is not possible before the 2023-2024 winter, recommend repairing boiler B-1 so there is some redundancy in the building heating.

Estimated Cost: \$987,379

4. Fuel Tank Replacement. Demolish and replace the 3,000 gallon fuel tank and appurtenances. Provide a UL 2085 tank or UL 142 fire resistant tank and install bollards every 4' on sides that vehicles can operate. Remove the temporary 500 gallon tank and temporary fuel lines. This will eliminate the need for weekly fuel delivery and provide the school with a greater buffer of fuel supply, as well as fee up access to the mechanical room and reduce the risk of spills of vehicle collisions with the tank. Include an engineering design to ensure proper setbacks, protection, safety devices, and code compliance.

Estimated Cost: \$224,636

5. **Science Lab Propane Piping.** Install motorized gas shutoff valve at pipe entrance to building, install and label a shutoff switch at classroom exits.

Estimated Cost: \$6,400

6. Localized Leak Repairs. Check for and repair leaks in the pipe connections to the heat exchanger in the maintenance building, as well as the main boiler room. Assume repairs for 10 pieces of equipment (heat exchangers, pumps, etc.).

Estimated Cost: \$9,927

7. **Repair Sprinkler**. Replace sprinkler heads that have been damaged, painted, or not properly oriented. Replace escutcheons for sprinklers that are missing or not installed properly.

Estimated Cost: \$35,399

Total Cost Phase 1: \$1,267,900

3.2.16. Phase 2

8. **Exterior emergency egress lighting.** Current electrical codes require the emergency egress lighting extend to the exterior pathway leading away from the building. Install emergency lighting at the exterior side of exterior egress doors. The emergency lighting can be from remote LED light heads powered from a small battery pack located inside the building or by an emergency inverter which powers the existing LED lights located at the exterior door locations.

Estimated Cost: \$35,522

9. **Prince William Sound Science building.** Replace 6 receptacles in kitchen area with GFCI receptacles.

Estimated Cost: \$1,826

10. **ADA Accessibility Grab Bars.** Add vertical, 18-inch grab bars to all accessible toilets. This includes the single stalls in the main, combined restrooms, and the single use restroom labeled as "Staff" toilets

Estimated Cost: \$14,666

11. **ADA Accessibility Pipe Insulation.** Provide piping protection at exposed piping in group toilet facilities.

Estimated Cost: \$6,665

12. **Kitchen Refrigerator Relocation.** Relocate refrigerator away from panel K to provide 36" clear space in front of panel as required by NEC.

Estimated Cost: \$2,270

Total Cost Phase 2: \$61,000

3.2.17. Phase 3

13. **Remodel Basement Locker Rooms (boys and girls).** Option 1: Demolish the gang shower fixtures and install individual shower stalls. Reconfigure tile, piping, and drainage as needed including buried piping.

Option 2: Alternatively, if a gang shower area is still preferred, simply repair or replace the single broken shower tree fixture.

Estimated Cost Option 1: \$364,892

Estimated Cost Option 2: \$9,628

14. **Replace all interior light fixtures.** Replace or retrofit all interior light fixtures with LED fixtures. The lights that have already been retrofitted with TLED lamps in the hallways, wood shop, stem room, media room should remain. The lower-level locker room lights are in good condition and should be retrofit with TLED lamps. The high bay T5HO fluorescent lights in the gym and metal shop should be replaced with high bay LED lights. The classroom light fixtures should be replaced with suspended direct/indirect LED lights. Light fixtures in all other areas should be replaced with LED fixtures or retrofit using TLED lamps or LED retrofit kits.

Install occupancy sensor control for all areas except mechanical rooms, electrical rooms, telecom rooms and shop rooms. We recommend using a wireless lighting control system to reduce the amount of new wiring required and simplify the installation. Replacement fixtures can be specified with integrated occupancy sensors. The lighting upgrade requires design to optimize energy performance and to provide the proper fixture types and lighting levels. In addition to occupancy sensors, dimmer switches should be used in most occupied spaces to allow maximum flexibility of control. The lighting upgrade will provide reduced energy consumption, reduced maintenance, and improved quality of lighting. The lighting upgrade will impact the emergency lighting system. Replacement fixtures with emergency battery packs will need to be provided with emergency battery packs in kind.

Estimated Cost: \$694,234

15. **Maintenance Shop Lighting** The existing interior lighting in the Maintenance Shop is in poor condition. Replace all interior lights with surface mounted, 1'x4' vaporlume style, dust tight, lensed LED fixtures. Lighting should be designed to provide 50fc of illumination.

Estimated Cost: \$27,261

Total Cost Phase 3: \$1,087,400 or \$731,000 depending on locker option

3.2.18. Phase 4

16. **Replace Telecommunications System**. This includes replacement of all telecom wiring, jacks, patch panels, and associated equipment to upgrade to a CAT 6 system. Additional telecom outlets may be required in the classrooms and office areas. The active equipment like routers, switches, wi-fi routers, and associated active equipment will also need to be evaluated for replacement.

Estimated Cost: \$906,112

Total Cost Phase 4: \$906,000

3.2.19. Phase 5

17. **ADA Parking.** Construct accessible parking stalls and accessible entrances to the building. Construct concrete parking for two stalls. Add access aisle and direct access to building.

Estimated Cost: \$56,724

18. **Intercom Public Address and Clock System.** The intercom public address system should be replaced with new head end equipment, such as new field devices like hand sets and speakers. The clock system should be replaced with a new wireless GPS clock system including new wireless battery operated clocks and GPS enabled master clock.

Estimated Cost: \$368,334

19. Arc Flash Risk Assessment. Recommend an Arc Flash Risk Assessment is performed on power systems for employee safety and compliance with OSHA regulations. Install arc flash hazard labels to all panels and equipment per NEC 110.16.

Estimated Cost: \$26,000

20. **Prince William Sound Science building lighting.** Retrofit all T8 fluorescent lamps in all light fixtures with TLED lamps to reduce energy and maintenance.

Estimated Cost: \$16,047

21. **Exterior Paint Repair at Grade.** Areas close to grade where paint is damaged and/or removed. Repaint as required.

Estimated Cost: \$4,534

22. **Replace Windows, Area 1 and Voc Ed**. Replace the windows noted in Figure 7, in the hallway to the Voc Ed area. The glazing seal in these windows have failed. Prep CMU walls below, repaint.

Estimated Cost: \$49,836

23. **Piping Leak in Voc Ed.** In Voc Ed basement there is a sprinkler pipe that appears to be leaking. Find and correct leak, replace damaged ceiling tiles.

Estimated Cost: \$4,236

24. **Water Intrusion**. At the basement lockers adjacent to the gymnasium there is an area of underground water intrusion, affected GWB & insulation has been removed. Excavate grade at this location and add addition drainage means. Monitor correction below.

Estimated Cost: \$21,746

25. **Door Replacement.** Replace exterior double door out of the existing kitchen and the exterior and interior doors of the mechanical room, interior door to be 45-minute fire rated.

Estimated Cost: \$21,591

26. Voc Ed Interior Paint. Corridors in the Voc Ed basement have areas of spalled paint at the CMU. Remove, prep, and paint as required. Paint is failing due to water infiltration from block, but did not appear excessive. New paint coating should correct the aesthetic condition for a number of years.

Estimated Cost: \$1,263

Total Cost Phase 5: \$570,300

APPENDIX A – EQUIPMENT CONDITION AND LIFE EXPECTANCY

Major HVAC Equipment List									
Equipment	Description	Age (yrs)	Life Expectancy (yrs) ¹	Notes					
Boiler (B-1)	Weil McLain 1288	22	35	Boiler appears in decent condition and was manufacture red in 2001. It is unclear if piping or flue material was replaced at this time. Piping joints may require maintenance, and flue may require replacement at an earlier date depending on leaks and corrosion observations.					
Air Handler (AHU-1)	Pace A12-F-SI, heating coil only, 4030 cfm	Unknown	Fan: 25 Coils: 20 Dampers: 20 Ductwork: 30 Actuators: 15	Motor was replaced in 2001 remodel, remainder of unit appears to be original. Air vent on HC-1 is severely corroded, activates frequently enough to require a catch bucket beneath it.					
Air Handler (AHU-2)	York Series D, preheat and heating coil both with 3 way valves, 10,000 CFM	22	Fan: 25 Coils: 20 Dampers: 20 Ductwork: 30 Actuators: 15	It is unknown which components, if any, have been replaced since install date in 2001.					
Air Handler (AHU-3)	Preheat and heating coil both with 3 way valves, 5,000 cfm	22	Fan: 25 Coils: 20 Dampers: 20 Ductwork: 30 Actuators: 15	It is unknown which components, if any, have been replaced since install date in 2001.					
Air Handler (AHU-4)	York, heating coil only, 2,600 cfm	22	Fan: 25 Coils: 20 Dampers: 20 Ductwork: 30 Actuators: 15	It is unknown which components, if any, have been replaced since install date in 2001.					
Air Handler (AHU-5)	York, heating coil only, 5,400 cfm,	22	Fan: 25 Coils: 20 Dampers: 20 Ductwork: 30 Actuators: 16	It is unknown which components, if any, have been replaced since install date in 2001.					
Air Handler (AHU-6)	Gaylord LogiCare CF-800A, heating coil only with 3 way valve, 1,500 cfm	22	Fan: 25 Coils: 20 Dampers: 20 Ductwork: 30 Actuators: 14	It is unknown which components, if any, have been replaced since install date in 2001. Connected to interior duct that was newly installed in 2001.					
Air Handler (AHU-7)	Preheat and heating coil, 5,000 cfm, supply air only	22	Fan: 25 Coils: 20 Dampers: 20 Ductwork: 30 Actuators: 15	It is unknown which components, if any, have been replaced since install date in 2001. Connected to existing interior duct that appears to be in good condition.					
Hot Water Generator (HMG-1)	Domestic water 270 gallon first hour recovery, heating water 10 gpm	22	20	It is unknown which components, if any, have been replaced since install date in 2001.					
Hot Water Generator (HMG-2)	Domestic water 70 gallon first hour recovery, heating water 3 gpm	22	20	It is unknown which components, if any, have been replaced since install date in 2001.					
Pump (CP-1 Boiler #1 Circ)	200 GPM, 15 ft. W.C.	22	10	Installed in 2001, appears to be in good condition.					
Pump (CP-1 Boiler #2 Circ)	100 GPM, 15 ft. W.C.	22	10	Installed in 2001, appears to be in good condition.					
Pump (CP-1 Boiler #3 Circ)	30 GPM, 15 ft. W.C.	22	10	Installed in 2001, appears to be in good condition.					

Pump (CP-4 Building Heat Circ)	Baldor, model unknown	Unknown	10	Pump inlet flange show signs of severe corrosion				
Pump (CP-5 Building Heat Circ)	Baldor, model unknown	Unknown	10	Pump inlet flange show signs of mild corrosion				
Pump (CP-6 Voc-Ed Heat Circ)	Baldor, model unknown	Unknown	10	Pump inlet and outlet flanges as well as the body of the pump show signs of severe corrosion				
Pump (CP-7 Voc-Ed Heat Circ)	Baldor, model unknown	Unknown	10	Pump inlet flange show signs of mild corrosion				
Exhaust Fan (EF-1)	Serves kitchen exhaust hood	22	25	New motor provided in 2001, cleaned and rebalanced upon install of new motor.				
Exhaust Fan (EF-2)	Serves general kitchen exhaust	Unknown	25	Fans were cleaned and rebalanced in 2001.				
Exhaust Fan (EF-3,4)	Serves admin toilet, classroom toilet	Unknown	25	Fans were cleaned and rebalanced in 2001.				
Exhaust Fan (EF-5)	Serves locker room	Unknown	25	Unknown				
Exhaust Fan (EF-6)	Serves Voc-Ed toilets,	Unknown	25	Fan was cleaned and rebalanced in 2001.				
Exhaust Fan (EF-7)	Serves Voc-Ed vehicle exhaust	Unknown	25	New motor provided in 2001, cleaned and rebalanced upon install of new motor.				
Exhaust Fan (EF-8)	Serves Voc-Ed Parts wash hood	22	25	New motor/fan assembly provided in 2001. It is unknown which components, if any, have been replaced since install date in 2001.				
Exhaust Fan (EF-9)	Serves Voc-Ed weld hood	Unknown	25	Unit appears to be in good condition, unknown when or if parts have been replaces since original install.				
Exhaust Fan (EF-10)	Serves Voc-Ed general shop area	22	25	New motor/fan assembly provided in 2001. Mounted to existing curb. It is unknown which components, if any, have been replaced since install date in 2001.				
Exhaust Fan (EF-11)	Serves fume hood	22	25	New motor/fan assembly provided in 2001. Mounted to existing curb. It is unknown which components, if any, have been replaced since install date in 2001.				
Exhaust Fan (EF-12)	Serves general science area	22	25	New motor/fan assembly provided in 2001. Mounted to new curb. It is unknown which components, if any, have been replaced since install date in 2001.				
Vent Fan (VF-1)	Relief air, serves cafeteria	Unknown	25	New motor provided in 2001, cleaned and rebalanced upon install of new motor.				
Vent Fan (VF-2)	Relief air, serves classrooms	22	25	New motor/fan assembly provided in 2001. It is unknown which components, if any, have been replaced since install date in 2001.				
Dust Collector (DC-1)	Serves shop, wood dust collection	Unknown	25	New motor provided in 2001, cleaned and rebalanced upon install of new motor.				
1. Life expectancy is b Chapter 38, Table 4: C maintenance, usage,	L. Life expectancy is based on the American Society of Heating, Refrigeration, and Air-Conditioning Engineers (ASHRAE) 2019 Applications Handbook, Chapter 38, Table 4: Comparison of Service Life Estimates. These values are based on historical survey data, and are heavily dependent on maintenance, usage, cycling, and application, but form a basis to accompany site observation notes.							

maintenance, usage, cycling, and application, but form a basis to accompany site observation notes.
APPENDIX B – ROUTINE MAINTENANCE TASKS

	Fan Maintenance (Exhaust, Supply, Return)				
Item No.	Inspection Task	Maintenance Task	Frequency	Recommended Action	
	Mechanical				
	Check fan-belt tension, check for belt	Correct tension and sheave		Replace belts and sheaves as needed to ensure	
2	wear, and check sheaves for evidence of	alignment	Semiannually	proper operation.	
a	improper alignment or evidence of		Semiannuarry		
	wear.				
	Check variable-frequency drive for	Correct as needed. Clean		Repair, replace, or restore as needed to ensure	
ь	proper operation, if present.	housing and tighten	Semiannually	proper operation.	
-		connections as needed.	ocimaniaany		
		Clean or replace air filter.			
c	Check control system and devices for	Clean, lubricate, adjust	Semiannually	Repair or replace components as needed to ensure	
-	evidence of improper operation.		,	proper operation.	
	Check fan drive for problems due to	Adjust and lubricate as		Repair or replace components as needed to ensure	
d	poor alignment or poor bearing seating.	necessary	Annually	proper operation.	
е	Check fan blades and fan housing.	Clean as needed.	Annually	Repair or replace components as needed to ensure	
				proper operation.	
t	Assess field-serviceable bearings.	Lubricate as necessary.	Annually	Replace as needed.	
g	Check control box for dirt, debris, and/or	Clean and tighten electrical	Annually	Repair, replace, or restore as needed to ensure	
	loose terminations.	connections as needed.		proper operation.	
h	Check motor contractor for pitting or	Clean and tighten electrical	Annually	Repair, replace, or restore as needed to ensure	
	other signs of damage.	connections as needed.		proper operation.	
	Check Integrity of all panels on	Replace fasteners as needed		Repair or replace damaged panels.	
1	equipment.	to ensure proper integrity	Annually		
		and fit/finish of equipment.			
	Inspect exposed ductwork and external	Record location of damage.		Repair or replace as needed.	
j	piping for insulation and vapor barrier		Annually		
	Integrity.				
k	Check damper for condition, setting, and	Adjust and lubricate as	Annually	Repair or replace as needed to ensure proper	
	operation.	necessary		operation.	
1	Inspect flexible connections.	clean as needed.	Annually	Repair, replace, or restore as needed to ensure	
			l '	proper operation.	

Pumps Maintenance							
Item No.	em No. Inspection Task Maintenance Task Frequency Recommended Action						
	Mechanical						
а	Check variable frequency drive, if present.	Correct as needed. Clean housing, and tighten connection as needed. Clean or replace air filter.	Semiannually	Repair or replace.			
b	Inspect pump and electrical components.	Clean and verify proper operation.	Semiannually	Repair or replace.			
с	Check control system and devices for evidence of improper operation.	Clean, lubricate, adjust.	Semiannually	Repair or replace.			
d	Check motor contractor for signs of damage.	Clean and tighten electrical connections as needed.	Annually	Repair or replace.			
е	Check pump drive for wear or problems based on alignment or bearing seating.	Lubricate and adjust and record evidence of wear.	Annually	Repair or replace.			
f	Check proper fluid flow.	Clean, adjust, as needed to restore proper flow.	Annually	Repair or replace.			
g	Assess field serviceable bearings.	Lubricate as necessary.	Annually	Repair or replace.			
h	Check insulation, vibration isolators, and flexible connections for integrity.	Clean as needed. Record location of damage.	Annually	Repair or replace.			

Air Handling Unit Maintenance				
Item No.	Inspection Task	Maintenance Task	Frequency	Recommended Action
	Mechanical			
а	Check for accumulation on filters.	Clean or replace as needed to ensure proper operation.	Quarterly	Evaluate frequency of change requirement.
b	Check P-trap.	Prime as needed to ensure proper operation.	Quarterly	Replace damage P-trap.
с	Check drain pain, drain line, coil, and other areas of moisture accumulation for visible signs of biological growth.	Clean and verify proper operation.	Quarterly	Disinfect as needed.
d	Check control system and devices for evidence of improper operation.	Clean, lubricate, adjust.	Semiannually	Repair or replace components as needed to ensure proper operation.
e	Check fan-belt tension, check for belt wear, and check sheaves for evidence of improper alignment or evidence of wear.	Correct tension and sheave alignment.	Semiannually	Replace belts and sheaves as needed to ensure proper operation.
f	Check variable-frequency drive for proper operation.	Correct as needed. Clean housing, and tighten connections as needed. Clean or replace air filter.	Semiannually	Repair, replace, or restore as needed to ensure proper operation.
g	Check for damage or evidence of leaks on the refrigeration-cycle indoor heat exchanger, chilled-water-coil heat exchanger, or steam or hot-water-coil heat exchanger surfaces.	Record location of identified leaks.	Semiannually	Repair, replace, or restore as needed to ensure proper operation.
h	Check air filter fit and housing seal integrity.	Clean and verify proper fit/finish.	Annually	Repair, replace, or restore as needed to ensure proper operation.
i	Check control box for dirt, debris, and/or loose terminations.	Clean and tighten electrical connections as needed.	Annually	Repair, replace, or restore as needed to ensure proper operation.
j	Check motor contractor for pitting or other signs of damage.	Clean and tighten electrical connections as needed.	Annually	Repair, replace, or restore as needed to ensure proper operation.
k	Check fan blades and fan housing.	Clean as needed.	Annually	Repair or replace as needed to ensure proper operation.
I	Check refrigerant system temperatures.	When outside of recommended levels, find and record the cause.	Annually	Repair and adjust refrigerant to achieve optimal operating levels.
m	Check integrity of all panels on equipment.	Replace fasteners as needed to ensure proper integrity and fit/finish of equipment.	Annually	Repair or replace damaged panels.
n	Assess field-serviceable bearings.	Lubricate as necessary.	Annually	Replaced as needed.
o	Check for fin damage and evidence of fouling on the refrigeration cycle indoor heat exchanger, chilled water coil heat exchanger or steam or hot water coil heat exchanger surfaces.	Clean and restore as needed to ensure acceptable condition.	Annually	Repair or replaced as needed to ensure proper operation.
р	Inspect for evidence of moisture carryover beyond the drain pan from cooling coils.	Clean as needed.	Annually	Repair or replace as needed to ensure proper operation.
q	Check damper for condition, setting, and operation.	Adjust and lubricate as needed.	Annually	Repair or replace as needed to ensure proper operation.
r	Inspect exposed ductwork for insulation and vapor barrier integrity.	Record location of damage.	Annually	Repair or replace as needed to ensure proper operation.

Boiler Maintenance				
Item No.	Inspection Task	Maintenance Task	Frequency	Recommended Action
	Mechanical			
а	Visually inspect fuel filter.	Clean and verify proper operation.	Monthly	Repair or replace.
b	Perform chemical testing of system water.	Verify water treatment target levels are being maintained.	Monthly	Repair equipment and treat water to proper water chemistry.
с	Check fuel pump for proper operation.	Clean and verify proper operation.	Quarterly	Repair or replace.
d	Inspect blowdown or drain valve.	Clean and verify proper operation.	Quarterly	Repair or replace.
e	Check for evidence of leakage of fuel supply, heat transfer fluid, and flue gas.	Record location of identified leaks.	Quarterly	Repair or replace.
f	Check control system and devices for evidence of improper operation.	Clean and verify proper operation.	Semiannually	Repair or replace.
g	Check control box for dirt, debris, and/or loose terminations.	Clean, lubricate, and verify proper operation.	Annually	Repair or replace.
h	Check motor contactor for pitting or other signs of damage.	Clean and tighten electrical connections as needed.	Annually	Repair or replace.
i	Check for evidence of buildup or fouling, corrosion, or degradation on heat exchange surfaces.	Clean and tighten electrical connections as needed.	Annually	Repair or replace.
j	Check for proper damper operation.	Clean and restore as needed to ensure acceptable condition.	Annually	Repair or replace.
k	Check combustion chamber, burner, and flue for deterioration, moisture problems, condensation, and combustion products.	Clean and adjust combustion process for operation.	Annually	Repair or replace.
I	Inspect refractory for damage or wear.	Clean combustion side. Record location of damage and wear.	Annually	Repair or replace.
m	Observe burner flame at high load for correct clearance from refractory	Clean and adjust.	Annually	Repair or replace.
n	Verify proper operation of safety devices per manufacturer's recommendations.	Clean, lubricate, and adjust.	Annually	Repair or replace.

	Water Heater Maintenance				
Item No.	m No. Inspection Task Maintenance Task Frequency Recommended Action				
	Mechanical				
а	Check water pressure.	Verify and adjust for proper	Monthly	Repair or replace.	
ů		pressure.	Wortenry		
h	Check control water pressure.	Verify and adjust for proper	Monthly	Repair or replace.	
b b		pressure.	Monthly		
	Check thermal expansion tank.	Verify tank is working		Repair or replace.	
с		correctly, pressurized, and	Monthly		
		no damage.			
	Inspect T&P relief valve.	Inspect and verify that valve	Quarterly	Repair or replace.	
a		is functioning properly.			
	Drain and flush tank.	Drain tank and verify water is		Repair or replace.	
е		clean. If milky, drain entire	Annually		
		tank and refill.			
	Check anode rod.	Inspect and verify that anode		Repair or replace.	
4		rod is function and doesn't	Annually		
'		have significant	Annually		
		damage/wear.			

Site Maintenance				
Item No.	Inspection Task	Maintenance Task	Frequency	Recommended Action
Civil	Civil			
а	Check sediment in storm drain manholes	Clean out sediment in manhole basins	Biannual	Pump out sediment with vac truck.

	Electrical Equipment Maintenance					
Item No.	Inspection Task	Maintenance Task	Frequency	Recommended Action	Reference	
El	ectrical					
а	Switchgear enclosure inspection	Infared scanning	Annually	Clean and verify proper operation. Repair or replace.	NFPA 70B: 11.17	
b	Switchgear enclosure inspection	Visual inspection	Semiannually	Clean and verify proper operation. Repair or replace.	NFPA 70B:15.2.6 thru 15.2.7.2	
с	Molded case circuit breaker inspection	Visual inspection	every 3 years	Repair or replace.	NFPA 70B:17.7 thru 17.11	
d	Molded case circuit breaker inspection	electrical test	3-5 years	Repair or replace.	NFPA 70B: 11.10.5	
е	Power and distribution dry type transformers	cleaning, inspection, testing	every 2 years	Repair or replace.	NFPA 70B: 11.9, 11.11.2	
f	Rotating equipment	Visual mechanical and electrical inspection,	Annually	Repair or replace.	NFPA 70B: 26.7, 8.7, 25.3, 25.4, 25.6	
g	Motor control center inspection	Infared scanning	Annually	Clean and verify proper operation. Repair or replace.	NFPA 70B: 11.17	
h	Motor control center enclosure, contactors, relays, wiring inspection	Visual inspection	Annually	Clean and verify proper operation. Repair or replace.	NFPA 70B: 16.2.1 thru 16.3.5, 16.5.3,	
i	Motor control center bus bar, wiring and ternminal connections inspection	Visual inspection, check connections for tightness	every 2 years	Clean and verify proper operation. Repair or replace.	NFPA 70B: 16.4.2	
j	wiring devices, receptacles, snap switche, attachment plugs, connector bodies	inspection, operational check	monthly and when used	Repair or replace.	NFPA 70B: 24.2.1 thru 24.6, 24.3.1,	
k	Power cables, inspection	Visual inspection	Annually	Repair or replace.	NFPA 70B: 19.2	
I	Power cables, testing	electrical testing	every 3 years	Repair or replace.	NFPA 70B: 19.5, 11.9.2.4	
m	Light fixtures, inspection and cleaning	cleaning, inspection, testing	Annually	clean fixture lenses, test lamps and ballasts, relamp	NFPA 70B: 23	
n	Emergency lighting monthly test and inspection	test lighting, inspection, repair	monthly	30 second test emergency lighting every 30 days for required	NFPA 101	
0	Emergency lighting yearly test and inspection	test lighting, inspection, repair	Annually	90 mimute test emergency lighting annually for required illumination to	NFPA 101	

APPENDIX C – COST ESTIMATE

MULTI-BUILDING CONDITION ASSESSMENTS CONSTRUCTION COST ESTIMATE (REVISION 4)

CITY OF CORDOVA CORDOVA JR./SR. HIGH SCHOOL CORDOVA, ALASKA

PREPARED FOR:

Coffman Engineering 800 F Street Anchorage, Alaska 99501

March 3, 2023



NOTES REGARDING THE PREPARATION OF THIS ESTIMATE

DRAWINGS AND DOCUMENTS

Level of Documents:	(109) construction documents from 2001 and condition survey documents
Date:	February 7, 2001
Provided By:	Coffman Engineers of Anchorage, Alaska

RATES

Pricing is based on current material, equipment and freight costs.

Labor Rates:	A.S. Title 36 working 60 hours per week
Premium Time:	16.70% (included with unit rates)
Subcontractor Mark-Up:	35.00%
General Requirements,	
Overhead, and Profit:	45.00%
Estimator's Contingency:	30.00%
Unique Market Risk:	5.00%
Escalation to Summer 2024	
at 7.91% per Annum (16 Months):	10.55%
A/E Design Fee:	12.00%

BIDDING ASSUMPTIONS

Contract:	Standard construction contract without restrictive bidding clauses
Bidding Situation:	Competitive bid assumed
Bid Date:	Spring 2024
Start of Construction:	Summer 2024
Note:	Quantities, qualities, and conditions are assumed when not directly provided in narrative, or obvious from available drawings.

EXCLUDED COSTS

- 1. Administrative and management costs
- 2. Furniture, furnishings and equipment (except those specifically included)
- 3. Remediation of contaminated soils or abatement of any hazardous materials

NOTES REGARDING THE PREPARATION OF THIS ESTIMATE (Continued)

GENERAL

When included in HMS Inc.'s scope of services, opinions or estimates of probable construction costs are prepared on the basis of HMS Inc.'s experience and qualifications and represent HMS Inc.'s judgment as a professional generally familiar with the industry. However, since HMS Inc. has no control over the cost of labor, materials, equipment or services furnished by others, over contractor's methods of determining prices, or over competitive bidding or market conditions, HMS Inc. cannot and does not guarantee that proposals, bids, or actual construction cost will not vary from HMS Inc.'s opinions or estimates of probable construction cost.

This estimate assumes escalation based on a 12-month rolling average of the U.S. Consumer Price Index. HMS Inc. will continue to monitor this, as well as other international, domestic and local events, and the resulting construction climate, and will adjust costs and contingencies as deemed appropriate.

Due to the lingering effects of the COVID-19 pandemic on the global supply chain and labor market, as well as ongoing geopolitical impacts to energy prices, HMS Inc. has included an additional contingency titled 'Unique Market Risk'. This amount provided for in the estimate will be adjusted as the situation continues to change and the effect on construction pricing becomes better understood.

CONDITION ASSESSMENT GENERAL COST SUMMARY

TOTAL BUILDING REPLACEMENT	\$ 82,436,328
DEFICIENCIES	3,575,260

CONDITION ASSESSMENT COST SUMMARY

	Total	
PHASE 1		
Deficiency 1 - Purlin Repair	\$ 3,173	
Deficiency 2 - Chimney Repair	959	
Deficiency 3 - New Boilers	987,379	
Deficiency 4 - Replace Fuel Tank	224,636	
Deficiency 5 - Science Lab Propane Pipe	6,400	
Deficiency 6 - Localized Leak Repair	9,927	
Deficiency 7 - Emergency Egress Lighting	35,522	
Deficiency 8 - PWSC Science Building GFCI Receptacles	1,826	
Deficiency 9 - Grab Bars	14,666	
Deficiency 10 - ADA Pipe Insulation	6,665	
Deficiency 11 - Relocate Refrigerator	2,270	
Deficiency 12 - Remodel Locker Rooms	364,892	
PHASE 2		
Deficiency 13 - Replace Gang Showers	9,628	
Deficiency 14 - Replace Lights	694,234	
Deficiency 15 - Replace Telecom	606,112	
PHASE 3		
Deficiency 16 - ADA Parking and Access	56,724	
Deficiency 17 - Intercom Public Address and Clock System	368,334	
Deficiency 18 - Shop Lighting	27,261	
Deficiency 19 - Science Building Light	16,047	
Deficiency 20 - Repaint Building at Grade	4,534	
Deficiency 21 - Replace Windows	49,836	
Deficiency 22 - Pipe Leak in Voc Ed	4,236	
Deficiency 23 - Add Foundation Drain	21,746	
Deficiency 24 - Replace Doors	21,591	
Deficiency 25 - Remove Spalled Paint and Repaint	1,263	
Deficiency 26 - Repair Sprinkler	35,399	-
TOTAL ESTIMATED CONSTRUCTION COST:	\$ 3,575,260	_

TOTAL BUILDING REPLACEMENT	QUANTITY	UNIT	UNIT RATE \$	TOTAL \$
Demolish existing structure	623,580	CF	0.45	280,611
Demolish building substructure	48,100	SF	1.10	52,910
New Jr./Sr. school	56,690	SF	410.00	23,242,900
Load, haul, and dispose of debris	1,925	LDS	650.00	1,251,250
Site work as needed to support new Jr./Sr. school	1	LOT	90000.00	90,000
SUBTOTAL:				\$ 24,917,671
Subcontractor's Overhead and Profit on Material and Labor	35.00%			8,721,185
SUBTOTAL:				\$ 33,638,856
General Requirements, Overhead, and Profit	45.00%			15,137,485
Estimator's Contingency	30.00%			14,632,902
Unique Market Risk	5.00%			3,170,462
Escalation to Summer 2024 at 7.91% per Annum (16 months)	10.55%			7,024,159
A/E Design Fee	12.00%			8,832,464

CITY OF CORDOVA - CORDOVA JR./SR. HIGH SCHOOLPAGE 7CORDOVA, ALASKAMULTI-BUILDING CONDITION ASSESSMENTS COST ESTIMATE (REVISION 4)DATE: 3/3/2023

PHASE 1 Deficiency 1 - Purlin Repair	QUANTITY	UNIT	UNIT RATE \$	TOTAL \$
Steel side plates at purlin	326	LBS	3.65	1,190
Paint to purlin and plates (allowance)	50	SF	2.10	105
SUBTOTAL:				\$ 1,295
General Requirements, Overhead, and Profit	45.00%			583
Estimator's Contingency	30.00%			563
Unique Market Risk	5.00%			122
Escalation to Summer 2024 at 7.91% per Annum (16 Months)	10.55%			270
A/E Design Fee	12.00%			340

CITY OF CORDOVA - CORDOVA JR./SR. HIGH SCHOOLPAGE 8CORDOVA, ALASKAMULTI-BUILDING CONDITION ASSESSMENTS COST ESTIMATE (REVISION 4)DATE: 3/3/2023

PHASE 1 Deficiency 2 - Chimney Repair	QUANTITY	UNIT	UNIT RATE \$	TOTAL \$
Prep areas around cracks for repair	16	SF	3.50	56
Seal outlets at cracks in the concrete chimney	14	LF	13.70	192
Epoxy injection of cracks in the concrete chimney	14	LF	10.20	143
SUBTOTAL:				\$ 391
General Requirements, Overhead, and Profit	45.00%			176
Estimator's Contingency	30.00%			170
Unique Market Risk	5.00%			37
Escalation to Summer 2024 at 7.91% per Annum (16 Months)	10.55%			82
A/E Design Fee	12.00%			103

CITY OF CORDOVA - CORDOVA JR./SR. HIGH SCHOOLPAGE 9CORDOVA, ALASKAMULTI-BUILDING CONDITION ASSESSMENTS COST ESTIMATE (REVISION 4)DATE: 3/3/2023

PHASE 1 Deficiency 3 - New Boilers	QUANTITY	UNIT	UNIT RATE \$	TOTAL \$
Demolish boiler and associated appurtenances	2	EA	3900.00	7,800
Note: Recent communication with industry indicates boiler rebuild may be significantly more expensive than replacement, dependent on scope.				
Rebuild boiler B-1	1	EA	200000.00	200,000
B-2: Cast iron fuel oil boiler with complete package	1	EA	90000.00	90,000
Load and haul debris	1	LD	650.00	650
SUBTOTAL:				\$ 298,450
Subcontractor's Overhead and Profit on Material and Labor	35.00%			104,458
SUBTOTAL:				\$ 402,908
General Requirements, Overhead, and Profit	45.00%			181,309
Estimator's Contingency	30.00%			175,265
Unique Market Risk	5.00%			37,974
Escalation to Summer 2024 at 7.91% per Annum (16 Months)	10.55%			84,132
A/E Design Fee	12.00%			105,791

CITY OF CORDOVA - CORDOVA JR./SR. HIGH SCHOOLPAGE 10CORDOVA, ALASKANULTI-BUILDING CONDITION ASSESSMENTS COST ESTIMATE (REVISION 4)DATE: 3/3/2023

PHASE 1	QUANTITY	UNIT	UNIT RATE	TOTAL
Denciency 4 - Replace Fuel Tank			\$	\$
Inert, decommission, and demolish fuel tank	1	LOT	7000.00	7,000
Remove temporary fuel tank and piping	1	LOT	850.00	850
New 3,000 gallon fuel tank and accessories	1	EA	55000.00	55,000
Bollard	4	EA	1100.00	4,400
Load and haul debris	1	LD	650.00	650
SUBTOTAL:				\$ 67,900
Subcontractor's Overhead and Profit on Material and Labor	35.00%			23,765
SUBTOTAL:				\$ 91,665
General Requirements, Overhead, and Profit	45.00%			41,249
Estimator's Contingency	30.00%			39,874
Unique Market Risk	5.00%			8,639
Escalation to Summer 2024 at 7.91% per Annum (16 Months)	10.55%			19,141
A/E Design Fee	12.00%			24,068

CITY OF CORDOVA - CORDOVA JR./SR. HIGH SCHOOLPAGE 11CORDOVA, ALASKAMULTI-BUILDING CONDITION ASSESSMENTS COST ESTIMATE (REVISION 4)DATE: 3/3/2023

PHASE 1			UNIT RATE	τοται
Deficiency 5 - Science Lab Propane Pipe		Givin	\$	\$
3/4" diameter motorized gas shutoff valve	1	EA	675.00	675
Shutoff switch at classroom exit	1	EA	170.00	170
Conduit and conductor (allowance)	100	LF	10.90	1,090
SUBTOTAL:				\$ 1,935
Subcontractor's Overhead and Profit on Material and Labor	35.00%			677
SUBTOTAL:				\$ 2,612
General Requirements, Overhead, and Profit	45.00%			1,175
Estimator's Contingency	30.00%			1,136
Unique Market Risk	5.00%			246
Escalation to Summer 2024 at 7.91% per Annum (16 Months)	10.55%			545
A/E Design Fee	12.00%			686

CITY OF CORDOVA - CORDOVA JR./SR. HIGH SCHOOL	PAGE 12
CORDOVA, ALASKA	
MULTI-BUILDING CONDITION ASSESSMENTS COST ESTIMATE (REVISION 4)	DATE: 3/3/2023

PHASE 1	OUANTITY			TOTAL
Deficiency 6 - Localized Leak Repair	QUANTITY	UNIT	\$	\$
Repair connection to equipment	10	EA	300.00	3,000
SUBTOTAL:				\$ 3,000
Subcontractor's Overhead and Profit on Material and Labor	35.00%			1,050
SUBTOTAL:				\$ 4,050
General Requirements, Overhead, and Profit	45.00%			1,823
Estimator's Contingency	30.00%			1,762
Unique Market Risk	5.00%			382
Escalation to Summer 2024 at 7.91% per Annum (16 Months)	10.55%			846
A/E Design Fee	12.00%			1,064

CITY OF CORDOVA - CORDOVA JR./SR. HIGH SCHOOL	PAGE 13
CORDOVA, ALASKA	
MULTI-BUILDING CONDITION ASSESSMENTS COST ESTIMATE (REVISION 4)	DATE: 3/3/2023

PHASE 1 Deficiency 7 - Emergency Egress Lighting	QUANTITY	UNIT	UNIT RATE	TOTAL \$
			*	¥
Mini emergency inverter	3	EA	1650.00	4,950
Conduit and conductor (allowance)	450	LF	12.86	5,787
SUBTOTAL:				\$ 10,737
Subcontractor's Overhead and Profit on Material and Labor	35.00%			3,758
SUBTOTAL:				\$ 14,495
General Requirements, Overhead, and Profit	45.00%			6,523
Estimator's Contingency	30.00%			6,305
Unique Market Risk	5.00%			1,366
Escalation to Summer 2024 at 7.91% per Annum (16 Months)	10.55%			3,027
A/E Design Fee	12.00%			3,806

CITY OF CORDOVA - CORDOVA JR./SR. HIGH SCHOOL	PAGE 14
CORDOVA, ALASKA	
MULTI-BUILDING CONDITION ASSESSMENTS COST ESTIMATE (REVISION 4)	DATE: 3/3/2023

PHASE 1 Deficiency 8 - PWSC Science Building GFCI Receptacles	QUANTITY	UNIT	UNIT RATE \$	TOTAL \$
Demolish duplex receptacle	6	EA	20.00	120
New GFCI receptacle	6	EA	72.00	432
SUBTOTAL:				\$ 552
Subcontractor's Overhead and Profit on Material and Labor	35.00%			193
SUBTOTAL:				\$ 745
General Requirements, Overhead, and Profit	45.00%			335
Estimator's Contingency	30.00%			324
Unique Market Risk	5.00%			70
Escalation to Summer 2024 at 7.91% per Annum (16 Months)	10.55%			156
A/E Design Fee	12.00%			196

CITY OF CORDOVA - CORDOVA JR./SR. HIGH SCHOOLPAGE 15CORDOVA, ALASKAMULTI-BUILDING CONDITION ASSESSMENTS COST ESTIMATE (REVISION 4)DATE: 3/3/2023

PHASE 1	QUANTITY	UNIT	UNIT RATE	TOTAL
Deficiency 9 - Grab Bars			\$	\$
Allowance to install backing as needed	19	LOTS	250.00	4,750
New 18" grab bar	19	EA	65.00	1,235
SUBTOTAL:				\$ 5,985
General Requirements, Overhead, and Profit	45.00%			2,693
Estimator's Contingency	30.00%			2,603
Unique Market Risk	5.00%			564
Escalation to Summer 2024 at 7.91% per Annum				4 050
(16 Months)	10.55%			1,250
A/E Design Fee	12.00%			1,571

CITY OF CORDOVA - CORDOVA JR./SR. HIGH SCHOOL	PAGE 16
CORDOVA, ALASKA	
MULTI-BUILDING CONDITION ASSESSMENTS COST ESTIMATE (REVISION 4)	DATE: 3/3/2023

PHASE 1				TOTAL
Deficiency 10 - ADA Pipe Insulation	QUANTITY	UNIT	UNIT RATE \$	\$
ADA pipe protection enclosure	34	EA	80.00	2,720
SUBTOTAL:				\$ 2,720
General Requirements, Overhead, and Profit	45.00%			1,224
Estimator's Contingency	30.00%			1,183
Unique Market Risk	5.00%			256
Escalation to Summer 2024 at 7.91% per Annum (16 Months)	10.55%			568
A/E Design Fee	12.00%			714

CITY OF CORDOVA - CORDOVA JR./SR. HIGH SCHOOLPAGE 17CORDOVA, ALASKAMULTI-BUILDING CONDITION ASSESSMENTS COST ESTIMATE (REVISION 4)DATE: 3/3/2023

PHASE 1				7074
Deficiency 11 - Relocate Refrigerator	QUANTITY	UNIT	UNIT RATE \$	\$
Move refrigerator	1	LOT	150.00	150
New receptacle (allowance)	1	EA	65.00	65
Conduit and conductor (allowance)	25	LF	12.86	322
Allowance to repair finishes	1	LOT	150.00	150
SUBTOTAL:				\$ 687
Subcontractor's Overhead and Profit on Material and Labor	35.00%			240
SUBTOTAL:				\$ 927
General Requirements, Overhead, and Profit	45.00%			417
Estimator's Contingency	30.00%			403
Unique Market Risk	5.00%			87
Escalation to Summer 2024 at 7.91% per Annum (16 Months)	10.55%			193
A/E Design Fee	12.00%			243

CITY OF CORDOVA - CORDOVA JR./SR. HIGH SCHOOLPAGE 18CORDOVA, ALASKAMULTI-BUILDING CONDITION ASSESSMENTS COST ESTIMATE (REVISION 4)DATE: 3/3/2023

PHASE 1	QUANTITY	UNIT	UNIT RATE	TOTAL
Deficiency 12 - Remodel Locker Rooms			\$	\$
Demolish gang shower fixture	9	EA	130.00	1,170
Demolish tile (allowance)	600	SF	1.45	870
Demolish gypboard (allowance)	430	SF	0.60	258
Saw cut concrete (allowance)	350	LF	12.50	4,375
Break up and remove concrete (allowance)	230	SF	5.50	1,265
New drainage pipe (allowance)	155	LF	47.00	7,285
New service pipe (allowance)	250	LF	19.00	4,750
Infill concrete	230	SF	41.00	9,430
Concrete doweling	88	EA	41.00	3,608
Moisture resistant gypboard, painted	430	SF	5.10	2,193
New floor tile	300	SF	21.00	6,300
36"x36" shower stall	25	EA	2500.00	62,500
Shower curtain and rod	25	EA	110.00	2,750
Folding shower seat	6	EA	390.00	2,340
Load, haul, and dispose of debris	2	LDS	600.00	1,200
SUBTOTAL:				\$ 110,294
Subcontractor's Overhead and Profit on Material and Labor	35.00%			38,603
SUBTOTAL:				\$ 148,897
General Requirements, Overhead, and Profit	45.00%			67,004
Estimator's Contingency	30.00%			64,770
Unique Market Risk	5.00%			14,034

CITY OF CORDOVA - CORDOVA JR./SR. HIGH SCHOOL	PAGE 19
CORDOVA, ALASKA	
MULTI-BUILDING CONDITION ASSESSMENTS COST ESTIMATE (REVISION 4)	DATE: 3/3/2023

PHASE 1	QUANTITY	UNIT	TOTAL
Deficiency 12 - Remodel Locker Rooms			\$ \$
Escalation to Summer 2024 at 7.91% per Annum (16 Months)	10.55%		31,091
A/E Design Fee	12.00%		39,096

CITY OF CORDOVA - CORDOVA JR./SR. HIGH SCHOOL	PAGE 20
CORDOVA, ALASKA	
MULTI-BUILDING CONDITION ASSESSMENTS COST ESTIMATE (REVISION 4)	DATE: 3/3/2023

PHASE 2	QUANTITY	UNIT	UNIT RATE	TOTAL
Deficiency 13 - Replace Gang Showers			\$	\$
Demolish gang shower fixture	1	EA	160.00	160
New gang shower fixture	1	EA	2750.00	2,750
SUBTOTAL:				\$ 2,910
Subcontractor's Overhead and Profit on Material and Labor	35.00%			1,019
SUBTOTAL:				\$ 3,929
General Requirements, Overhead, and Profit	45.00%			1,768
Estimator's Contingency	30.00%			1,709
Unique Market Risk	5.00%			370
Escalation to Summer 2024 at 7.91% per Annum (16 Months)	10.55%			820
A/E Design Fee	12.00%			1,032

CITY OF CORDOVA - CORDOVA JR./SR. HIGH SCHOOLPAGE 21CORDOVA, ALASKAMULTI-BUILDING CONDITION ASSESSMENTS COST ESTIMATE (REVISION 4)DATE: 3/3/2023

PHASE 2	0	,		
Deficiency 14 - Replace Lights	QUANTITY	UNIT	UNII RATE \$	IOTAL \$
Demolish high bay fixture	53	EA	250.00	13,250
New high bay fixture	53	EA	900.00	47,700
Allowance for scaffolding rental	1	LOT	1500.00	1,500
Demolish classroom light fixture	149	EA	65.00	9,685
New suspended LED fixture in classroom	149	EA	350.00	52,150
Retrofit with TLED or LED fixture	122	EA	200.00	24,400
Occupancy sensor control	40	EA	350.00	14,000
Dimmer switch	40	EA	74.00	2,960
Emergency battery pack	75	EA	130.00	9,750
Conduit and conductor (allowance)	1,800	LF	12.86	23,148
Allowance to repair finishes	1	LOT	10000.00	10,000
Load and haul debris	2	LDS	650.00	1,300
SUBTOTAL:				\$ 209,843
Subcontractor's Overhead and Profit on Material and Labor	35.00%			73,445
SUBTOTAL:				\$ 283,288
General Requirements, Overhead, and Profit	45.00%			127,480
Estimator's Contingency	30.00%			123,230
Unique Market Risk	5.00%			26,700
Escalation to Summer 2024 at 7.91% per Annum (16 Months)	10.55%			59,154
A/E Design Fee	12.00%			74,382
TOTAL ESTIMATED COST:				\$ 694,234

CITY OF CORDOVA - CORDOVA JR./SR. HIGH SCHOOL	PAGE 22
CORDOVA, ALASKA	
MULTI-BUILDING CONDITION ASSESSMENTS COST ESTIMATE (REVISION 4)	DATE: 3/3/2023

PHASE 2	QUANTITY	UNIT	UNIT RATE	TOTAL
Denciency 13 - Replace Telecom			φ	Þ
Demolish existing Cat5 receptacles, wiring, panels, and associated equipment	47,870	SF	0.40	19,148
New telecom jacks, Cat6 cable, patch panels, routers, switches, and associated equipment	47,870	SF	1.65	78,986
Allowance to demolish and repair finishes	47,870	SF	1.75	83,773
Load and haul debris	2	LDS	650.00	1,300
SUBTOTAL:				\$ 183,207
Subcontractor's Overhead and Profit on Material and Labor	35.00%			64,122
SUBTOTAL:				\$ 247,329
General Requirements, Overhead, and Profit	45.00%			111,298
Estimator's Contingency	30.00%			107,588
Unique Market Risk	5.00%			23,311
Escalation to Summer 2024 at 7.91% per Annum (16 Months)	10.55%			51,645
A/E Design Fee	12.00%			64,941

CITY OF CORDOVA - CORDOVA JR./SR. HIGH SCHOOL	PAGE 23
CORDOVA, ALASKA	
MULTI-BUILDING CONDITION ASSESSMENTS COST ESTIMATE (REVISION 4)	DATE: 3/3/2023

PHASE 3 Deficiency 16 - ADA Parking and Access	QUANTITY	UNIT	UNIT RATE \$	TOTAL \$
Note: Fill and surface course prices per quote from Wilson	Construction.			
Excavate and dispose at ADA parking	45	CY	15.00	675
Classified fill	54	CY	60.00	3,240
Surface course	9	CY	110.00	990
Concrete parking slab	600	SF	14.90	8,940
Extra for ADA ramp slope	150	SF	4.00	600
Finish grading	1,000	SF	0.20	200
Allowance for equipment rental	1	LOT	2500.00	2,500
SUBTOTAL:				\$ 17,145
Subcontractor's Overhead and Profit on Material and Labor	35.00%			6,001
SUBTOTAL:				\$ 23,146
General Requirements, Overhead, and Profit	45.00%			10,416
Estimator's Contingency	30.00%			10,069
Unique Market Risk	5.00%			2,182
Escalation to Summer 2024 at 7.91% per Annum (16 Months)	10.55%			4,833
A/E Design Fee	12.00%			6,078

CITY OF CORDOVA - CORDOVA JR./SR. HIGH SCHOOLPAGE 24CORDOVA, ALASKAMULTI-BUILDING CONDITION ASSESSMENTS COST ESTIMATE (REVISION 4)DATE: 3/3/2023

PHASE 3 Deficiency 17 - Intercom Public Address and Clock System	QUANTITY	UNIT	UNIT RATE \$	TOTAL \$
New PA, intercom, and paging headend	1	EA	3500.00	3,500
New speaker	35	EA	270.00	9,450
Master call station for intercom paging	1	EA	1900.00	1,900
New hand set	12	EA	655.00	7,860
Clock system headend equipment	1	EA	2550.00	2,550
New analog clock with integral battery in classrooms	20	EA	375.00	7,500
Wireless point connected to master clock in data rack	1	EA	185.00	185
3/4" diameter EMT conduit	8,000	LF	7.86	62,880
Wiring	9,600	LF	1.35	12,960
Test system	1	LOT	1250.00	1,250
Load and haul debris	2	LDS	650.00	1,300
SUBTOTAL:				\$ 111,335
Subcontractor's Overhead and Profit on Material and Labor	35.00%			38,967
SUBTOTAL:				\$ 150,302
General Requirements, Overhead, and Profit	45.00%			67,636
Estimator's Contingency	30.00%			65,381
Unique Market Risk	5.00%			14,166
Escalation to Summer 2024 at 7.91% per Annum (16 Months)	10.55%			31,385
A/E Design Fee	12.00%			39,464

CITY OF CORDOVA - CORDOVA JR./SR. HIGH SCHOOLPAGE 25CORDOVA, ALASKAMULTI-BUILDING CONDITION ASSESSMENTS COST ESTIMATE (REVISION 4)DATE: 3/3/2023

PHASE 3	QUANTITY	UNIT	UNIT RATE	TOTAL
Deficiency 18 - Shop Lighting			\$	\$
Demolish existing light fixture	11	EA	65.00	715
New 1'0"x4'0" LED light fixture	11	EA	625.00	6,875
Load and haul debris	1	LD	650.00	650
SUBTOTAL:				\$ 8,240
Subcontractor's Overhead and Profit on Material and Labor	35.00%			2,884
SUBTOTAL:				\$ 11,124
General Requirements, Overhead, and Profit	45.00%			5,006
Estimator's Contingency	30.00%			4,839
Unique Market Risk	5.00%			1,048
Escalation to Summer 2024 at 7.91% per Annum (16 Months)	10.55%			2,323
A/E Design Fee	12.00%			2,921

CITY OF CORDOVA - CORDOVA JR./SR. HIGH SCHOOL	PAGE 26
CORDOVA, ALASKA	
MULTI-BUILDING CONDITION ASSESSMENTS COST ESTIMATE (REVISION 4)	DATE: 3/3/2023

PHASE 3	QUANTITY	UNIT	UNIT RATE	TOTAL
Deficiency 19 - Science Building Light			\$	\$
Retrofit with TLED or LED fixture	21	EA	200.00	4,200
Load and haul debris	1	LD	650.00	650
SUBTOTAL:				\$ 4,850
Subcontractor's Overhead and Profit on Material and Labor	35.00%			1,698
SUBTOTAL:				\$ 6,548
General Requirements, Overhead, and Profit	45.00%			2,947
Estimator's Contingency	30.00%			2,849
Unique Market Risk	5.00%			617
Escalation to Summer 2024 at 7.91% per Annum (16 Months)	10.55%			1,367
A/E Design Fee	12.00%			1,719

CITY OF CORDOVA - CORDOVA JR./SR. HIGH SCHOOLPAGE 27CORDOVA, ALASKAMULTI-BUILDING CONDITION ASSESSMENTS COST ESTIMATE (REVISION 4)DATE: 3/3/2023

PHASE 3	QUANTITY	UNIT	UNIT RATE	τοται
Deficiency 20 - Repaint Building at Grade	90,000	UNIT	\$	\$
Scrape away damaged paint (allowance)	500	SF	1.50	750
Repaint to match	500	SF	2.20	1,100
SUBTOTAL:				\$ 1,850
General Requirements, Overhead, and Profit	45.00%			833
Estimator's Contingency	30.00%			805
Unique Market Risk	5.00%			174
Escalation to Summer 2024 at 7.91% per Annum				200
(16 Months)	10.55%			380
A/E Design Fee	12.00%			486

CITY OF CORDOVA - CORDOVA JR./SR. HIGH SCHOOLPAGE 28CORDOVA, ALASKAMULTI-BUILDING CONDITION ASSESSMENTS COST ESTIMATE (REVISION 4)DATE: 3/3/2023

PHASE 3 Deficiency 21 - Replace Windows	QUANTITY	UNIT	UNIT RATE \$	TOTAL \$
L Demolish windows and trim	94	SF	40.00	3,760
Install new aluminum storefront windows	78	SF	100.00	7,800
Install new operable double pane vinyl windows	16	SF	76.50	1,224
New window flashing	78	LF	5.60	437
New trim at windows	156	LF	5.25	819
New caulk at windows	156	LF	2.40	374
Load and haul debris	1	LD	650.00	650
SUBTOTAL:				\$ 15,064
Subcontractor's Overhead and Profit on Material and Labor	35.00%			5,272
SUBTOTAL:				\$ 20,336
General Requirements, Overhead, and Profit	45.00%			9,151
Estimator's Contingency	30.00%			8,846
Unique Market Risk	5.00%			1,917
Escalation to Summer 2024 at 7.91% per Annum (16 Months)	10.55%			4,246
A/E Design Fee	12.00%			5,340

CITY OF CORDOVA - CORDOVA JR./SR. HIGH SCHOOLPAGE 29CORDOVA, ALASKAMULTI-BUILDING CONDITION ASSESSMENTS COST ESTIMATE (REVISION 4)DATE: 3/3/2023

PHASE 3				TOTAL
Deficiency 22 - Pipe Leak in Voc Ed	QUANTITY	UNIT	UNIT RATE \$	\$
Locate leaky pipe	1	LOT	240.00	240
Repair leaky pipe (allowance)	1	LOT	300.00	300
Demolish ceiling tiles	20	SF	1.10	22
New acoustic ceiling tiles	20	SF	3.39	68
Load and haul debris	1	LD	650.00	650
SUBTOTAL:				\$ 1,280
Subcontractor's Overhead and Profit on Material and Labor	35.00%			448
SUBTOTAL:				\$ 1,728
General Requirements, Overhead, and Profit	45.00%			778
Estimator's Contingency	30.00%			752
Unique Market Risk	5.00%			163
Escalation to Summer 2024 at 7.91% per Annum (16 Months)	10.55%			361
A/E Design Fee	12.00%			454

CITY OF CORDOVA - CORDOVA JR./SR. HIGH SCHOOL	PAGE 30
CORDOVA, ALASKA	
MULTI-BUILDING CONDITION ASSESSMENTS COST ESTIMATE (REVISION 4)	DATE: 3/3/2023

PHASE 3 Deficiency 23 - Add Foundation Drain	QUANTITY	UNIT	UNIT RATE \$	TOTAL \$
Note: Sewer rock price per quote from Wilson Construction.				
Hand excavate at foundation	3	CY	150.00	450
4" diameter perforated PVC drain pipe, wrapped	20	LF	21.70	434
Trenching and backfill	30	LF	13.00	390
Warning tape	30	LF	0.60	18
Machine excavate and dispose for dry well	7	CY	15.00	105
Geotextile fabric	17	SY	241.00	4,097
Sewer rock at dry well	8	CY	110.00	880
Allowance for equipment rental	1	LOT	2,500.00	2,500
SUBTOTAL:				\$ 8,874
General Requirements, Overhead, and Profit	45.00%			3,993
Estimator's Contingency	30.00%			3,860
Unique Market Risk	5.00%			836
Escalation to Summer 2024 at 7.91% per Annum (16 Months)	10.55%			1,853
A/E Design Fee	12.00%			2,330
CITY OF CORDOVA - CORDOVA JR./SR. HIGH SCHOOLPAGE 31CORDOVA, ALASKAMULTI-BUILDING CONDITION ASSESSMENTS COST ESTIMATE (REVISION 4)DATE: 3/3/2023

HMS Project No.: 22130-D

PHASE 3	OLIANTITY			τοται
Deficiency 24 - Replace Doors	QUANTITY	UNIT	\$	\$
Demolish double door assembly	1	EA	120.00	120
Demolish single door assembly	2	EA	65.00	130
New double door assembly	1	EA	4000.00	4,000
New single door assembly	2	EA	1850.00	3,700
Inspect other doors	1	LOT	210.00	210
Load and haul debris	1	LD	650.00	650
SUBTOTAL:				\$ 8,810
General Requirements, Overhead, and Profit	45.00%			3,965
Estimator's Contingency	30.00%			3,833
Unique Market Risk	5.00%			830
Escalation to Summer 2024 at 7.91% per Annum (16 Months)	10.55%			1,840
A/E Design Fee	12.00%			2,313

CITY OF CORDOVA - CORDOVA JR./SR. HIGH SCHOOLPAGE 32CORDOVA, ALASKAMULTI-BUILDING CONDITION ASSESSMENTS COST ESTIMATE (REVISION 4)DATE: 3/3/2023

HMS Project No.: 22130-D

PHASE 3 Deficiency 25 - Remove Spalled Paint and Repaint	QUANTITY	UNIT	UNIT RATE \$	TOTAL \$
Remove paint spalling	100	SF	2.00	200
Repaint at previously spalled areas	150	SF	2.10	315
SUBTOTAL:				\$ 515
General Requirements, Overhead, and Profit	45.00%			232
Estimator's Contingency	30.00%			224
Unique Market Risk	5.00%			49
Escalation to Summer 2024 at 7 91% per Annum				
(16 Months)	10.55%			108
A/E Design Fee	12.00%			135

CITY OF CORDOVA - CORDOVA JR./SR. HIGH SCHOOLPAGE 33CORDOVA, ALASKAMULTI-BUILDING CONDITION ASSESSMENTS COST ESTIMATE (REVISION 4)DATE: 3/3/2023

HMS Project No.: 22130-D

PHASE 3		UNIT	UNIT RATE	τοται
Deficiency 26 - Repair Sprinkler	QUANTIT	UNIT	\$	\$
New sprinklers in auto shop (allowance)	1	LOT	3500.00	3,500
Replace damaged sprinkler head (allowance)	20	EA	340.00	6,800
Replace damaged escutcheon (allowance)	20	EA	20.00	400
SUBTOTAL:				\$ 10,700
Subcontractor's Overhead and Profit on Material and Labor	35.00%			3,745
SUBTOTAL:				\$ 14,445
General Requirements, Overhead, and Profit	45.00%			6,500
Estimator's Contingency	30.00%			6,284
Unique Market Risk	5.00%			1,361
Escalation to Summer 2024 at 7.91% per Annum (16 Months)	10.55%			3,016
A/E Design Fee	12.00%			3,793