Department of Education & Early Development
Finance/Facilities Trip Report

Prepared by: **Wayne Marquis**	*TA #:* **05-17-22594**
Date of Trip: **11/17-18/2016**	*Date Report Finalized:* **12/23/2016**
School District/Site: **Southeast Island School District**	*Persons Involved in Trip:* **Wayne Marquis**
Name of Facility Visited (*): **Barry Craig Stewart Kasaan School*** **Edna Bay School----------** **Hollis School*** **Howard Valentine Coffman Cove School*-------** **Hyder School** **Naukati School*----------** **Port Alexander School** **Port Protection School----------** **Thorne Bay School*** **Whale Pass School ----------**	*Type of Facility / Student Enrollment FY16* **KG-12 / 11** **PK-12 / (closed FY15)** **PK-12 / 22** **PK-12 / 14** **KG-12 / 7** **PK-12 / 19** **KG-12 / 11** **KG-12 / 13 (closed FY17)** **PK-12 / 77** **KG-12 / 10**

Persons Contacted: **Lauren Burch, Superintendent, lburch@sisd.org, (907) 828-8254; Chris Page Haufe, Executive Assistant / Board Secretary / Human Resources, cpage@sisd.org, (907) 828-8254; Lucienne Smith, Business Manager for Southeast Island School District and Hydaburg City Schools, lucienne.smith@akebs.com, (907) 677-9263; Teri Willard, Maintenance Manager / Travel / Purchasing for Southeast Island School District and Hydaburg City Schools, teriwillard@sisd.org, (907) 828-8254; Jonathan Fitzpatrick, (Coffman Cove area) Maintenance, jfitzpatrick@sisd.org; (907) 329-2244, (907) 254-3142 (mobile); Bud Willard, Maintenance (Thorne Bay area); Mike Ashe, Mechanic / Pupil Transportation Supervisor (907) 828-3411; (907) 254-3411 (mobile).**

PO Box 19569
Thorne Bay, AK 99919
Fax: (907)-828-8257

Purpose of Visit: Preventive Maintenance re-certification site visit of the School District's maintenance program as required by 4 AAC 31.013. (*Preventive Maintenance And Facility Management),* and technical assistance.

Active Projects/Status:

Project # / CIP Priority	Project	Amount	Year	Status
	No Active Project at this time.			

Certification Summary:	***District Certified?***	NO

The Southeast Island School District does not meet the department's requirements as required in regulations 4 AAC 31.013 Preventive Maintenance and Facility Management.

In order to continue receiving state aid under AS 14.11.011, the Southeast Island School District will need to address the following:

1. Record energy consumption and produce energy reports for all facilities as set forth in 4 AAC 31.013(a)(2)

2. Develop a maintenance training program that specifies training for custodial and maintenance staff and records training received by each person as set forth in 4 AAC 31.013(a)(4)

The district has been given credit for the information produced during the site visit.

The department remains available to answer any questions and provide technical assistance while the district implements a qualifying preventive maintenance program.

Maintenance Management:	
• Provide copies of work orders in varying state of completion.	YES
• Report: Total maintenance labor hours collected on work orders by type of work [e.g., scheduled, corrective, operations support, etc.] vs. labor hours available by month for the previous 12 months.	YES
• Report: Scheduled and completed work orders by month for previous 12 months.	YES
• Report: Number of incomplete work orders sorted by age [30 days, 60 days, 90 days, etc.] and status [deferred, awaiting materials, scheduled, etc.]	YES
• Report: Comparison of scheduled maintenance work order hours to unscheduled maintenance work order hours by month for the previous 12 months.	YES
• Report: Monthly trend data for unscheduled work orders showing both hours and numbers of work orders by month for the previous 12 months.	YES
• Report: Planned maintenance activity report by facility for next 3 months.	YES

• Report: Completed maintenance activity (work orders) including labor and material costs by facility for previous 3 months.	YES

Since our last site visit, on 8 May, 2012, the Southeast Island School District has finalized transitioning its Computerized Maintenance Management System (CMMS) maintenance software from Maximo to MPulse.

District administrative personnel are now making effective use of the new reporting systems, with more than 96% of maintenance personnel hours being accounted for. It is noted that nearly half of these reported hours consists of capital projects scattered throughout the district (e.g. green houses construction, biomass boilers installation, etc.). This is an effective system by which the district can account for maintenance efforts that benefit stakeholders in various ways, whether it be students learning about aquaponics, growing food that school kitchens can use, or saving money on diesel fuel by burning wood as a more affordable biomass resource for heat. The concretization of above projects are truly amazing accomplishments which the district can be proud of.

The district employs three maintenance personnel. These employees and their respective schools are:

Jonathan Fitzpatrick	Coffman Cove
" "	Coffman Cove Wood Boiler
" "	Naukati
" "	Naukati Wood Boiler*
" "	Whale Pass School
Earl (Bud) Durdle	Port Alexander
Bud Willard	Thorne Bay Float
" "	Thorne Bay School
" "	Thorne Bay Gymnasium
" "	Thorne Bay Wood Boiler*
" "	Hollis School
" "	Hollis Kindergarten
" "	Kasaan School
" "	Kasaan Wood Boiler*

*These projects were funded through and Alaska Energy Authority (AEA) grant and completed in-house, on forced account.

The district also employs students to assist in the operation of its biomass boilers. Students get a stipend to stoke the boilers 2-3 times a day throughout the school year.

Reports show the completion of Preventive Maintenance (PM) work orders as being somewhat erratic throughout the twelve month reported period, with certain months achieving a respectable output while other months have had no PM work reported. A word of caution is warranted where neglect in PM can be costly on the long run. One of the main advantages of using PM programs is to optimize facilities' operability and maintenance on the long haul. Ignoring or neglecting PM can have a negative impact that worsens over time. Reactionary maintenance is harmful to the learning environment, and it eventually becomes more expensive as systems perform poorly and eventually fail prematurely.

The 12% of scheduled work order hours versus unscheduled work order hours is supportive of the above statement where the district appears to be spending marginal time in the execution of PM.

A great deal of time and effort goes into the maintenance / upkeep of teacher housing. The maintenance team also spends respectable efforts performing Corrective Maintenance (CM). With the added load of large-scale capital projects, these realities explain why there is little time left for maintenance employees to conduct PM. Indeed, the maintenance team is obviously very busy responding to many different needs of schools scattered over a large geographical area. Both maintenance personnel who accompanied me during the site visit are passionate about their jobs and truly dedicated to supporting the district's educational environment.

The site visit revealed significant maintenance work taking place on a daily basis. The conditions of the schools we visited reflected good maintenance care, including the oldest school located in Hollis. This school is now more than thirty years old and was originally moved from Long Island in 1997. District employees, including teaching staff, are hopeful to rejuvenate or replace this older facility in the foreseeable future. All were excited about the installation of a biomass boiler next summer.

Energy Management:	
• Provide a written energy management plan.	YES
• Report: Consumption data for each building, each utility [e.g., fuel oil, electricity, natural gas, LPG, water][1] by month for the previous 12 months.	NO

The district presented the Fiscal Year 2017 Southeast Island School District Energy Management Plan, which holds the principal and or lead teacher accountable for energy management of his / her school. These individuals are to promote use of educational programs that correlate to energy use and conservation.

The Southeast Island School District energy management plan lists worthy measures aimed at conserving natural resources while saving money to support other needs:

- Hot water in food service areas set at 180 degree Fahrenheit
- Activation of Heating, Ventilation, and Air Conditioning (HVAC) in gymnasium areas after regular school hours restricted to athletic areas where achievable
- Restrict lighting to areas where stakeholders are active and working
- Hold custodians responsible for complete shutdown of facilities at closure
- Expect stakeholders to contribute to energy efficiency: each person will be an "energy saver" as well as an "energy user"

Review of the district's energy logs show:

[1] For facilities constructed before 12/15/2004, a district may record energy consumption for utilities on a monthly basis when multiple buildings are served by one utility plant; [4 AAC 31.013]

- From FY14 to FY16, years have progressively gotten warmer, which suggests a decreased demand for heating energy during this timeframe
- Irregular monthly fuel oil recording for many sites:

Naukati, FY16

July	900
August	220
September	634
October	961
November	836
December	746
January	
February	725
March	236
April	
May	
June	

Coffman Cove, FY15

July	84
August	83
September	117
October	118
November	115
December	92
January	93
February	93
March	93
April	93
May	93
June	93

Thorne Bay, FY16

July	
August	
September	260
October	244
November	236
December	529
January	286
February	256
March	387
April	810
May	761
June	233

- Naukati: data missing; more fuel consumed in July than in December
- Coffman Cove: 6 consecutive months with identical fuel consumption
- Thorne Bay: January -second coldest month of the year- is showing almost as much fuel consumed as June -second warmest month of the year; FY16 was the highest oil consumption year between FY14 and FY16, in spite of being the warmest year during this timespan

Analysis of energy data revealed that the district is still reporting monthly fuel deliveries rather than monthly fuel consumption. This observation was reported during the department's last site visit, in 2012. Although the site visit report back then indicated the need for the district to take preemptive measures aimed at determining monthly fuel consumption, no further actions have been taken to meet the regulation. Changes need to be made so that monthly fuel consumption is being measured in order to abide to the regulation. The seasonal operation of the biomass boilers evidently influence oil consumption. Perhaps, indicating when boilers seasonally get turned on / off may simplify report analysis and provide a logical explanation to explain fuel consumption fluctuations.

Since some of the school sites report consuming more energy during warmer years, it would be worthwhile to query as to the reasons behind the anomaly. On the other hand, schools sites who demonstrate favorable response mitigating energy consumption should be recognized and praised for their stakeholders' efforts.

The following are resources available to help facilitate monthly fuel readings:

Topic	**Link**
Tank Dip Charts (Cylindrical Tanks)	http://www.petroleumtechinc.com/dipchart/tanks.html
Ace Tank Dip Charts & More	https://www.acetank.com/tank-chart-generator/

Of course, an alternative to dipping tanks is the simple installation of in-line flow meters, though this alternative can prove quite expensive.

The district provided monthly energy consumption reports for electricity, cords of wood, and propane. The district is also tracking monthly heating degree days.

In an effort to reduce heating costs, the district is to be commended for the installation of biomass boilers at four different sites since 2010:

- Coffman Cove, 2010
- Thorne Bay, 2014
- Kasaan 2015
- Naukati 2016

The district is planning on installing a biomass boiler for its school in Hollis during summer 2017.

An interesting anecdote was shared during our site visit. It was reported that school construction in Naukati (2010) preceded that of Coffman Cove (2013).

The Naukati school utilizes a mechanical ventilation system as a component for heat distribution. The gymnasium for the school has limited wall insulation due to the need for many vertical wooden studs in close proximity to each other to support the heavy weight of the large roof. With wood being a relatively a poor insulator, the end result is that it is quite difficult to achieve comfortable temperatures in this gymnasium during cold weather. This setting is contributing to a facility that consumes much more heating energy than better insulated ones.

Three years later, during the construction of the Coffman Cove school, which was a basic replica of the school in Naukati, the district managed to add an insulated layer to the exterior envelope of the gymnasium, so that occupant comfort could be achieved. Radiant floor heat was also implemented. These changes contributed to a more comfortable facility that can be operated at a lesser cost. These are fine examples of the district's focus on minimizing energy consumption while optimizing quality of the learning environment in a smart way.

As we conducted our site visits of five of the school sites, it was apparent that stakeholders are accustomed to minimizing energy consumption, with lighting usually being left on only where necessary and where the overall temperatures in the schools were comfortable, but not overly warm. Furthermore, these observations held true even in facilities that prove challenging to operate due to limited Heating Ventilation and Air Conditioning (HVAC) systems accessibility (e.g. school in Coffman Cove is set to default with no communication with end user due to no desk top computer or program accessibility since commissioning) or faulty automated operation (e.g. gymnasium in Thorne Bay whose ventilation must be manually turned on / off when needed). District officials are aware of the condition and they are hopeful to remedy the situation as soon as funding becomes available.

The resourcefulness and adaptability of maintenance personnel is noteworthy. Again, a solid sense of ownership in both maintenance personnel who accompanied me prevailed during these school site visits.

Custodial Program:	
• Custodial plan that is building specific and describes both the frequency and level of custodial care for each facility.	YES

The district is still utilizing the Custodial Care Program that was produced following our 2012 site visit. The document is basic and meets with above regulation. In 2012, the sample provided was for the school in Naukati, and this year, the custodial plan presented was for the school in Hollis.

As depicted in the photos below, sustained custodial care is evident. We visited five schools, and while the district's schools were built under various standards over the last three decades, the quality of custodial care ranked from satisfactory to above standard. This is no small feat in a district with many schools scattered over a large geographical area.

The responsibility of custodial care falls directly under the jurisdiction of the principal / lead educator at each of the district's school sites. The results seen are favorable. In some instances, some of the educators as well as a few students (e.g. Hollis), partake in custodial care of their own schools. Other larger sites have specialty individuals perform custodial duties.

Maintenance Training:	
• Provide a schedule of planned training for both custodial and maintenance personnel for the current or upcoming school year.	NO
• Provide a record of training describing type and duration of training by individual for current school year.	YES

The district reports minimal training for both custodial and maintenance workforce.

The training for the maintenance workforce is recorded via the MPulse Maintenance Software. Again, the district's administrative personnel is making effective use of this program.

A review shows minimal amount of training given the number of personnel and the amount of schools with related systems complexity. Much of the maintenance training during this past year has focused on water treatment / operation. Maintenance training has declined since our last site visit, with less multiplicity as what was witnessed back then: OSHA safety, asbestos safety, fire suppression systems maintenance, biomass and oil fired boiler maintenance and operation, etc.

It was pointed out that the district hires older students to oversee the stoking of boilers with firewood. Given the fact that these individuals become district employees partaking in the operational maintenance of school facilities, they should be trained on boiler operation, safety, means to protect themselves, emergency procedures, etc. It is admirable to witness such young capable individuals join in the operation of campus facilities, but the district must also ensure that these employees are properly trained to do so in a safe manner. Adequate training documentation can prove invaluable in case of mishap, but more importantly, employees must learn to recognize hazards, know how to mitigate risks, be knowledgeable about the job itself, etc.

The training for the custodial workforce is recorded via the district's portal under the "Professional Development – Classified Staff Training." The two classes that were reported are: Confidentiality, and Precautions Against Blood Borne Pathogens.

The district does not have a planned training schedule for either maintenance or custodial personnel. There appears to be some ongoing training throughout the year, but the planning portion is missing or it is occurring ad hoc.

In order to meet the training regulation, a viable approach used by some of the districts is to set training objectives at the beginning of each school year. Since the custodial workforce answers directly to the principal / lead teacher for each of the schools, these school officials should partake in the scheduling and follow up on accomplishments.

There are numerous means to select adequate and purposeful training for both custodial and maintenance personnel. Webinars, seminars, and online training are but of few. Some districts rely partly on their insurance carrier and the free training it provides. This is an effective means to select and assign training to employees who can then complete the training as their schedule allows. Throughout the school year, while accessing the insurance carrier's training program, district officials have access to each employee's training records and can track course completion. As examples, subject matters many districts utilize to train custodians include:

- Working with Blood Borne Pathogen (e.g. use of Personal Protective Equipment (PPE))
- Use of Chemicals
- Material Safety Data Sheet (MSDS)
- Asbestos Exposure
- Machinery Use
- School User Interaction
- Child Abuse Prevention
- Safety and Security
- Energy Management
- OSHA Training
- Etc.

The detailing of training reports is another important factor. For instance, "Skilled Temp Maintenance" does not inform the reviewer on who this person was. Record keepers should bear in mind that the training report should inform anyone not well versed with district operations (e.g. OSHA investigator, insurance representative, new district employee coming on board for the first time, etc.) on what training is taking place, who was in attendance, who delivered the training in question, etc.

Training reports should answer basic questions such as:

- Attendee's name (job title is not sufficient)
- Who is providing the training (e.g. American Red Cross -Joe Redford-, school nurse -Julie Wallace-, etc.)
- Description of subject matter (e.g. water treatment level 1, blood borne pathogens, etc.)
- Date of completion (dd/mm/yyyy)
- Time duration (e.g. 20 minutes, 8 hours, etc.)
- Form (e.g. webinar, power point presentation, instructor, shadowing professional, etc.)
- Location (name of school and room, location of conference, etc.)

The following suggestions are made:

- Establish a yearly training plan for both maintenance and custodial employees at the beginning of each school year
- Continue recording "shadow-training" such as when accompanying / escorting other facility professionals (e.g. refrigeration technicians, fire alarm / fire suppression inspectors, etc.)
- Continue using the "Training" purpose code in the MPulse CMMS and log the hours of training as they occur throughout the year
- Take advantage of the Alaska Municipal League Joint Insurance Association Inc., which offers free online training via their Online University, free webinar, on-site training, etc. http://www.amljia.org/risk-management/training.html
- Have district trade professionals (e.g. plumbers) record their trade-mandated Continuing Education Units (CEUs) course requirement to maintain their license
- Monitor training accomplishments throughout the year
- Follow-up on employees who do not complete assigned training

On a final note, some of our school districts rely on Safeschools to help manage and administer their training program. However, there is a cost associated with the use of these services. The site may be accessed for suggestions during the planning portion of training development. http://www.safeschools.com/

Capital Planning (Renewal and Replacement):	
• Provide a Renewal / Replacement (R&R) Schedule (detailed to at least DEED's 26 systems) for each permanent building over 1000sf.	YES
• Provide information that supports that the data in the R&R schedules was developed based on system condition assessments.	YES

Renewal and Replacement (R&R) schedules are in place for all of the district's school facilities:

- A summary cover sheet gives rendition for each of the district's facilities with figures matching the fiscal year in which work is estimated to be required;
- Many R&R schedules have attached sheets where comments explain "Year Installed" changes that correlate to the R&R in question (e.g. 1978 Kasaan Library had windows replaced in 2012).

The history of the district's grant projects that have been documented in the department's archives began in 1982 (e.g. GR82-005 Rowan Bay Elementary School $326,000; GR82-006 El Capitan $450,000).

The district is actively participating in the department's annual Capital Improvement Project (CIP) request for funding. The prioritization of project submittals is an ongoing process where district officials reportedly take into account inputs from maintenance personnel, specialty contractors, building occupants, and the Advisory School Councils at each site. The district takes personal pride in "getting the most possible life from each of our structural properties," while citing "no projects needed because of lack of maintenance."

During the FY18 Capital Improvement Project (CIP) cycle, the district presented its Six-Year Capital Improvement Plan:

District Priority	Project Location and Description	Estimated Cost
1	Thorne Bay K-12 Fire Suppression System*	$455,180 + esc.
2	Thorne Bay Maintenance Building Roof Replacement*	$220,117 + esc.
3	Thorne Bay K-12 School Underground Storage Tank Replacement*	$308,881 + esc.
4	Thorne Bay K-12 Mechanical Control Upgrade*	$1,377,232 + esc.
5	Thorne Bay K-12 School Carpet Replacement	$99,166
6	Gym Lighting Upgrade, 2 Schools (Thorne Bay and Port Protection)	$962,503 + esc.
7	Thorne Bay K-12 School Playground Upgrades	$227,111
8	Kasaan School Covered Play Area Construction*	$442,545 + esc.
9	Roof Replacement, 2 Schools (Thorne Bay and Port Alexander)*	$3,863,946 + esc.
10	Port Alexander K-12 Domestic Water Pipe Replacement*	$92,806 + esc.
11	Port Protection K-12 Gymnasium Relocation and Foundation*	$199,353 + esc.

* reuse of score from FY17 CIP cycle

Fixed Asset Inventory System:	
• Report recording asset, date acquired, location and estimated period of service	YES

The district turned in a fixed asset schedule, dated 30 June 2016, for items holding a minimum threshold value beginning at $5,000. Assets are depreciated on an annual basis and they are catalogued in various functions, including acquisition date, life expectancy, depreciation per year, etc. Depreciation for Fiscal Year 2016 was $776,164.96.

The insurance carrier for the district is the Alaska Municipal League Joint Insurance Agency (AMLJIA).

General Observations and Comments:

The Southeast Island School District has done amazing work while switching maintenance management software from Maximo to MPulse. The transitory period was ongoing during our 2012 site visit, and the review of both field work and PM documentation during this site visit revealed remarkable results. This is by far the most important and most demanding component of any PM program and, because of sustained efforts, it is also one of the stronger components of the district's PM program.

The district is investing major efforts in reducing energy consumption in all of its schools. The results are remarkable and this is one of the more successful energy programs witnessed for a school

district of this size involving numerous satellite schools. It is evident that this endeavor has many stakeholders involved, including custodians, maintenance personnel, students, teachers, and principals. In order to meet the energy regulation component in its entirety, the district will need to determine its monthly oil consumption, and not solely account for fuel deliveries. At this point in time, this element is one of two elements preventing renewal of the district's PM re-certification.

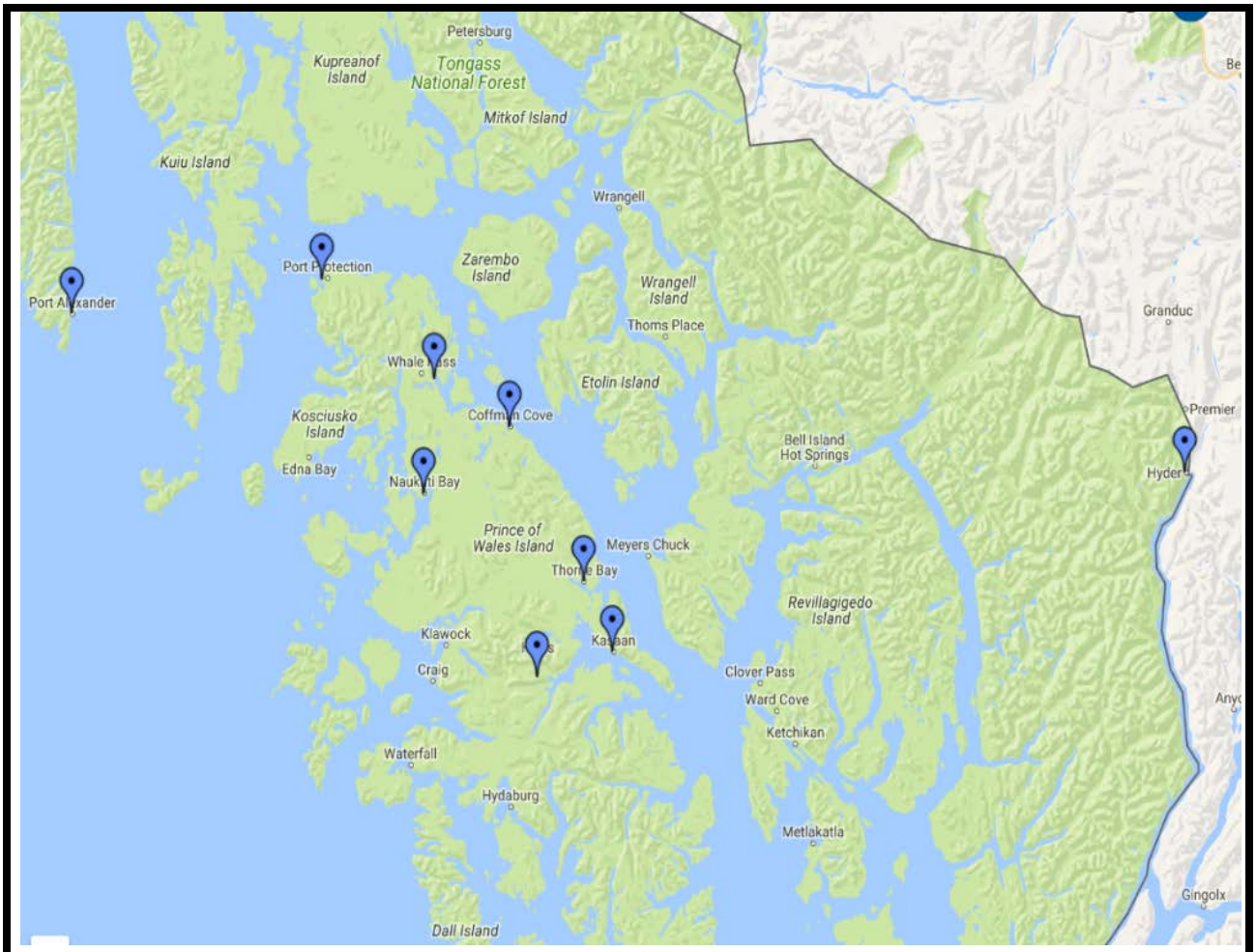
The oversight and delivery of custodial care was satisfactory in all of schools we visited, and above standard in both cleanliness and organization was witnessed in a few of them.

The training component of the PM program is not receiving as much attention as what was reported during our last site visit. A more acute recording and better defining of what training is taking place would enhance this portion of the program. More importantly, a training plan for both custodians and maintenance personnel needs to be present and abide to the training regulation. This is the second element that prevents renewal of the district's PM re-certification.

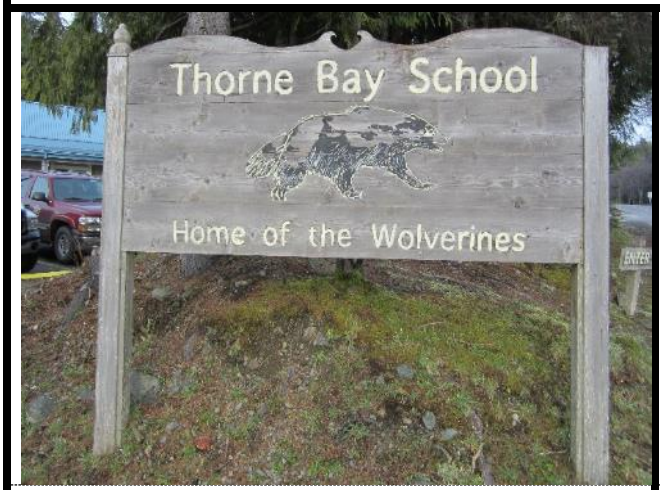
The district is involved in significant in-house capital projects, and more particularly at this time, in the form of ongoing biomass boiler installations throughout the district. Additionally, the district is keeping tabs on other needs and does good work partaking in the department's annual Capital Improvement Project (CIP) program. Renewal and Replacement schedules have been provided.

Fixed assets are accounted for and depreciated on an annual basis.

The bottom line is that the district is doing a great job at maintaining its schools. Regaining PM certification will require a little work, but it does not deter the fact that great efforts are made on a daily basis to achieve successes that were observed during our site visit. The department looks forward to working together to achieve program compliance.



Southeast Island School District (SEISD) map (Port Protection was closed earlier this year.)



SEISDTBS Southeast Island School District Thorne Bay School (SEISDTBS)


SEISDTBS Main school is facility on right of photo. Gymnasium entryway to the left.

SEISDTBS Complex roof lines.

SEISDTBS Roof replacement is priority 2 on CIP list.

SEISDTBS

SEISDTBS Sea kayaking / exploring is an important component of the district's educational program.

SEISDTBS

SEISDTBS

	
SEISDTBS	SEISDTBS
	
SEISDTBS	SEISDTBS Wall penetration for biomass boiler insulated piping into main facility.

SEISDTBS Clean edges.

SEISDTBS

SEISDTBS Failing fire sprinkler piping –dry system. Replacement is priority 1 on CIP list.

SEISDTBS

SEISDTBS

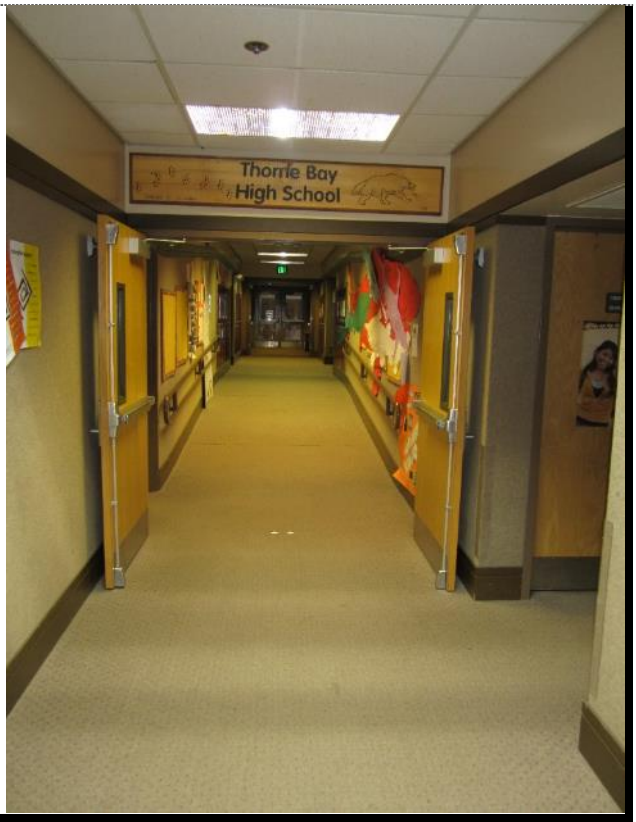
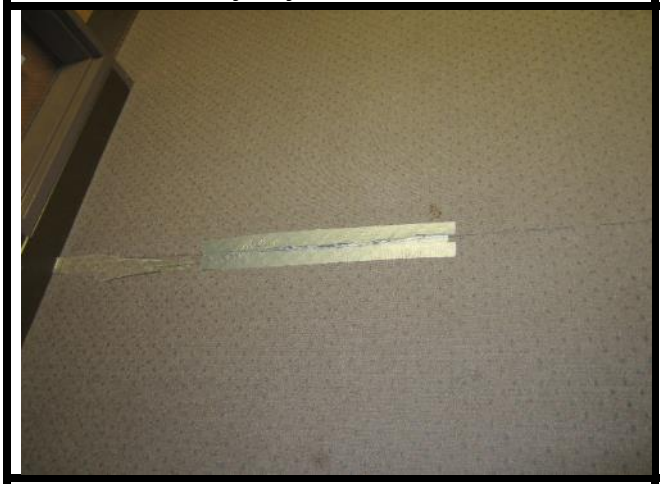
SEISDTBS

SEISDTBS

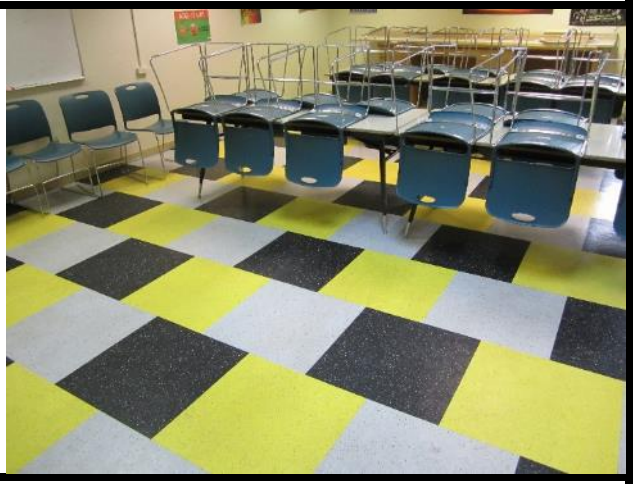
SEISDTBS

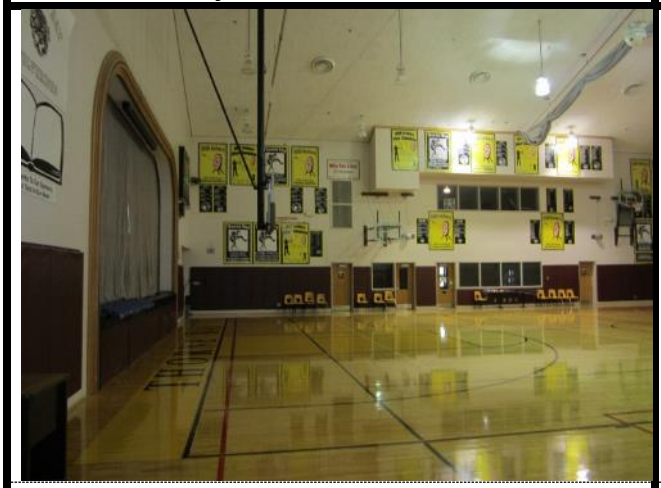
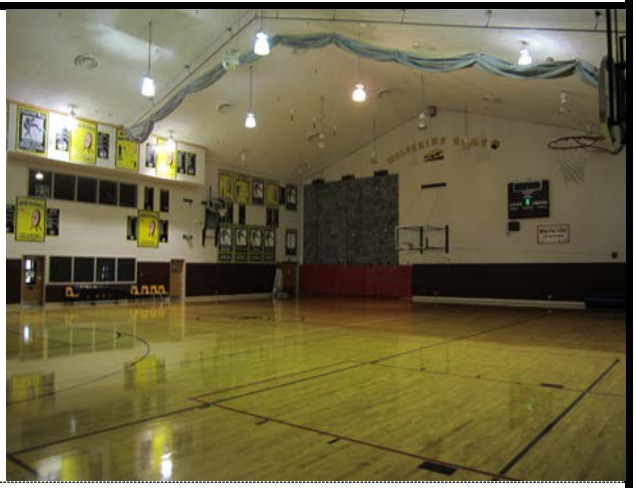
SEISDTBS

SEISDTBS Main entrance.

	
SEISDTBS Entryway.	SEISDTBS
	
SEISDTBS Worn out carpet. New carpet is already on site. Replacement is due over Christmas break. Project was listed as priority 5 on CIP list.	SEISDTBS Teacher lounge / break room. Carpet is fraying at transition.

	
SEISDTBS Classroom. Great condition.	SEISDTBS
	
SEISDTBS	SEISDTBS Library.
	
SEISDTBS Impressive organization.	SEISDTBS

	
SEISDTBS Kitchen. Clean and neatly organized.	SEISDTBS New rubberized floor tile.
	
SEISDTBS	SEISDTBS Commercial grade equipment.
	
SEISDTBS Cafeteria. Serving line in forefront of photo.	SEISDTBS New tiles. It was mentioned that yellow is one of the toughest colors to keep clean. Currently in great condition.

	
SEISDTBS Girls rest room.	SEISDTBS Receiving adequate custodial care.
	
SEISDTBS Boys rest room.	SEISDTBS
	
SEISDTBS Gymnasium.	SEISDTBS Lighting upgrade listed priority 6 on CIP list.

SEISDTBS Retracted wooden bleachers.

SEISDTBS Climbing wall.

SEISDTBS Students achievements.

SEISDTBS

SEISDTBS

SEISDTBS

	
SEISDTBS Weight room.	SEISDTBS
	
SEISDTBS Equipment storage room. Decent organization.	SEISDTBS Custodial area / washer / dryer for sport equipment.
	
SEISDTBS Girls changing room. Gymnasium.	SEISDTBS Lockers are in excellent condition.

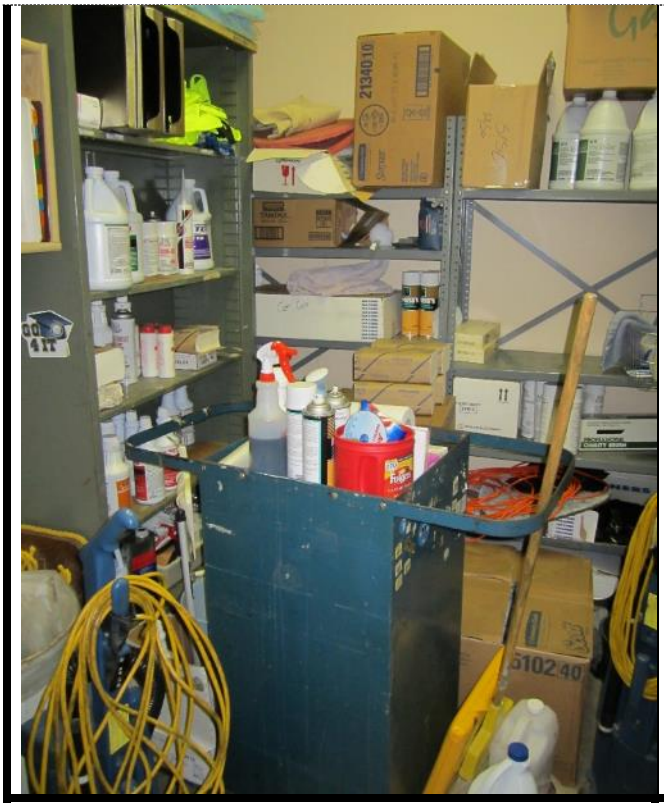
SEISDTBS Shower stalls. Acceptable custodial care.

SEISDTBS Boys changing room. Gymnasium. Clean.

SEISDTBS Lockers.

SEISDTBS Shower stalls.

	
SEISDTBS HVAC automation in gymnasium is marginally achieved via defective pneumatic controls. Maintenance personnel need to manually interact with systems as on-demand / as-required basis.	SEISDTBS Custodial closet. This part of the building is of original construction.



SEISDTBS Custodial supplies storage. Good organization.

SEISDTBS Gym area boilers. Two-year inspection is current and was last completed in August of 2016.

SEISDTBS School domestic hot water maker via oil burner.

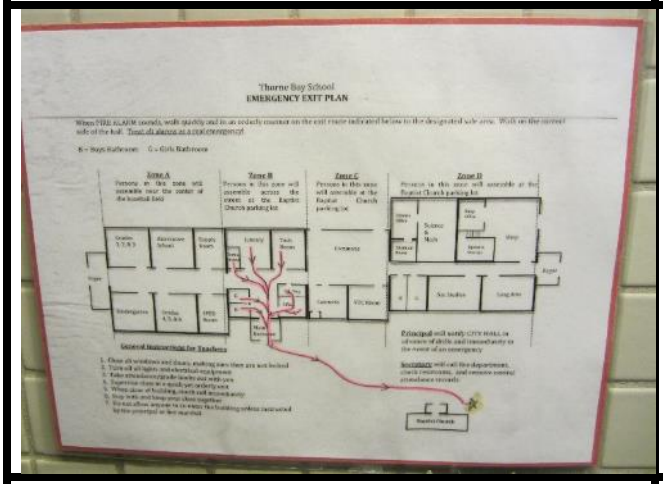
SEISDTBS Electric panels access - need 36" clearance in front of them.

	
SEISDTBS Air compressor with strainer / dryer. Used for HVAC pneumatic controls.	SEISDTBS Some of these pneumatic parts have not been manufactured in years. Upon failure, it has become nearly impossible to find original replacements.
	
SEISDTBS HVAC control panel, main schools. Some of it appears to be functional.	SEISDTBS Hybrid system, part pneumatic, part electronic. District plans to upgrade this antiquated system. Project is listed as priority 4 on the district's CIP list.

	
SEISDTBS Air compressor used to keep dry fire sprinkler charged.	SEISDTBS Diesel operated fire suppression pressure booster pump. In good condition.
	
SEISDTBS Check valve. Inspection last completed in October 2015.	SEISDTBS Biomass heat exchanger. Simple yet very effective.

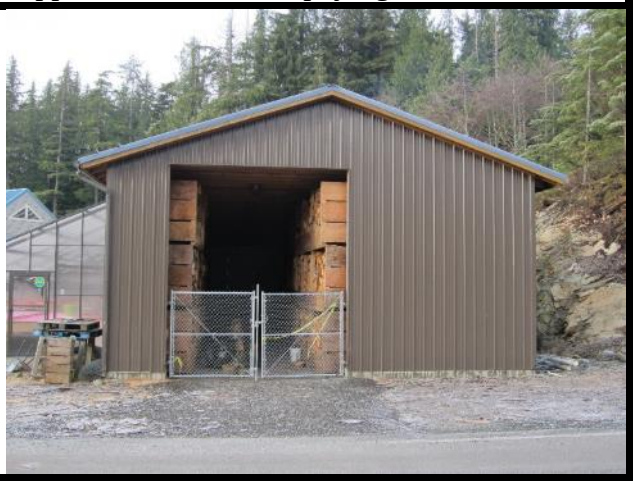
SEISDTBS Example of energy savings reminder.

SEISDTBS Temperature reading of 66 degrees Fahrenheit. Site visit was conducted during in-service day (no students).



SEISDTBS Emergency Exit Plan / Procedures.

SEISDTBS Playground Equipment. Very basic. Project calling for upgrades is listed as priority 7 on the district's CIP list.

	
SEISDTBS	SEISDTBSBBF Biomass Boiler Facility.
	
SEISDTBSBBF Greenhouse –right of photo- is partially attached to the boiler facility.	SEISDTBSGH Greenhouse. Students are afforded the opportunity to split wood to help supplement the cost of paying for activities.
	
SEISDTBSBBF Front portion of facility is being used to dry wood.	SEISDTBSBBF

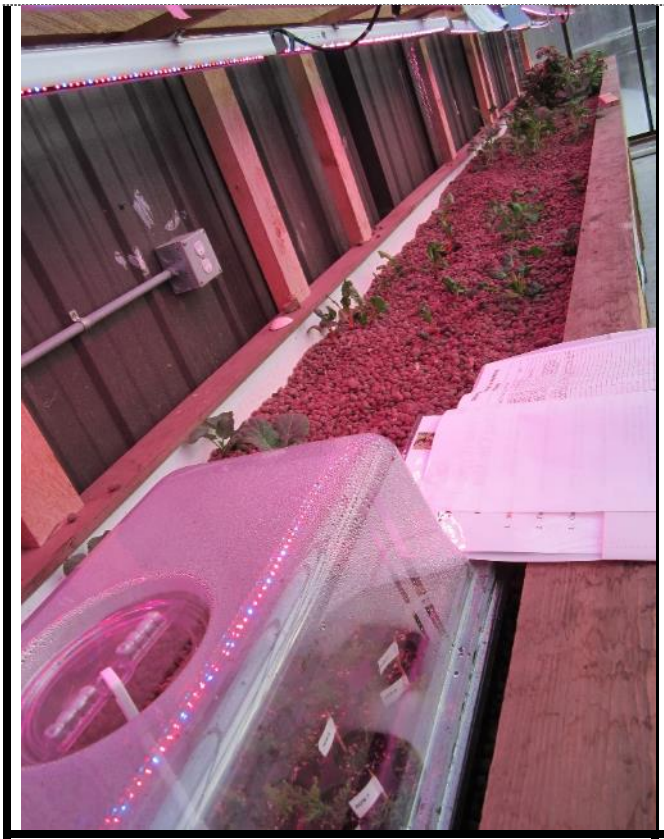
SEISDTBSBBF

SEISDTBSBBF Storage. Neat and well organized.

SEISDTBSBBF Wood ready to be burned. Boiler -1 of 2- in background.

SEISDTBSBBF Alternate fuel source produced in Klawock sawmill. About twice the cost of using traditional firewood.

	
SEISDTBSBBF	SEISDTBSBBF Inside combustion chamber. Boilers are opened to atmosphere (non-pressurized vessel) and therefore do not require state inspection. Operational caution must be exercised, however, not to produce internal heat exceeding boiling point.
	
SEISDTBSBBF Distribution system - polyethylene glycol- behind the boilers. Very basic and effective.	SEISDTBSGH Fish tank inside of greenhouse. Used as aquaponic feeding component.

	
SEISDTBSGH Greenhouse heating of both water and ambient temperature is achieved via energy received from Biomass Boiler Facility.	SEISDTBSGH
	
SEISDTBSGH	SEISDTBSGH

SEISDCCWS Coffman Cove Wood Storage Building.

SEISDCCBBF Biomass Boiler Facility.

SEISDCCBBF Boilers.

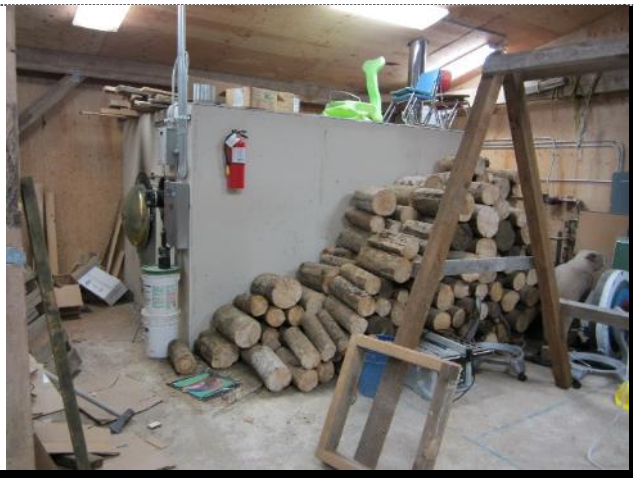
SEISDCCBBF Controls.

SEISDCCGH Greenhouse.

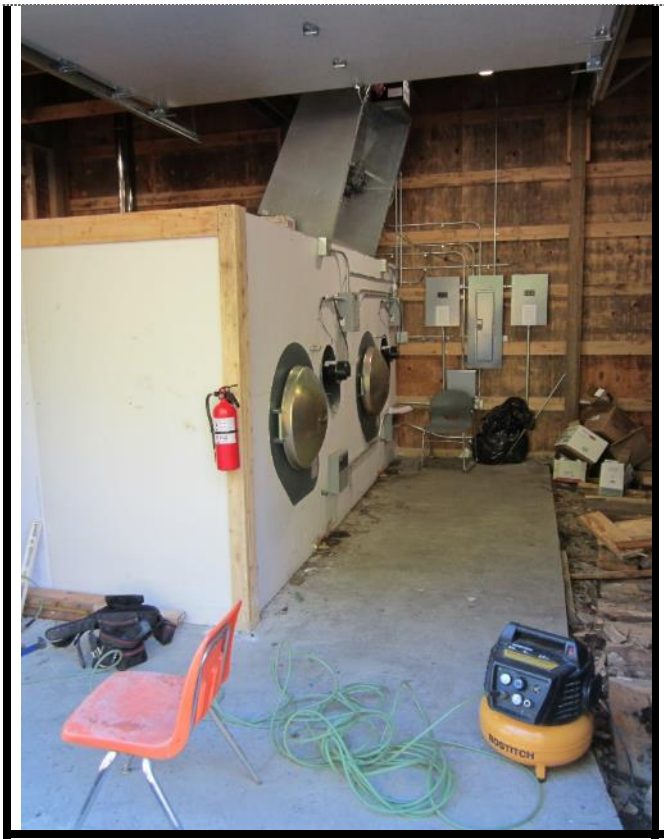
SEISDCCGH

	
SEISDCCGH	SEISDCCGH
	
SEISDCCGH Boiler unit located inside of greenhouse.	SEISDCCGH
	
SEISDCCGH	SEISDCCGH

	
SEISDCC Covered play area.	SEISDCC Chicken coop, storage sheds.
	
SEISDHS Hollis School. Cafeteria / Kitchen. Student craftwork.	SEISDHS Classroom. Late afternoon visit prevented taking exterior photos.
	
SEISDHS Classroom. New windows. Well-kept considering age of facility.	SEISDKBBF Kasaan Biomass Boiler Facility (left). School is to the right.

	
SEISDKBBF	SEISDKBBF Single boiler for small campus.
	
SEISDKBBF	SEISDKBBF Area needs housekeeping.
	
SEISDN Naukati. New fence and covered play area.	SEISDN

	
SEISDN Goats are part of the school curriculum.	SEISDNGH Greenhouse.
	
SEISDNBBF Biomass Boiler Facility. Just commissioned a few weeks ago.	SEISDNBBF

	This area intentionally left blank.
SEISDNBBF	SEISD