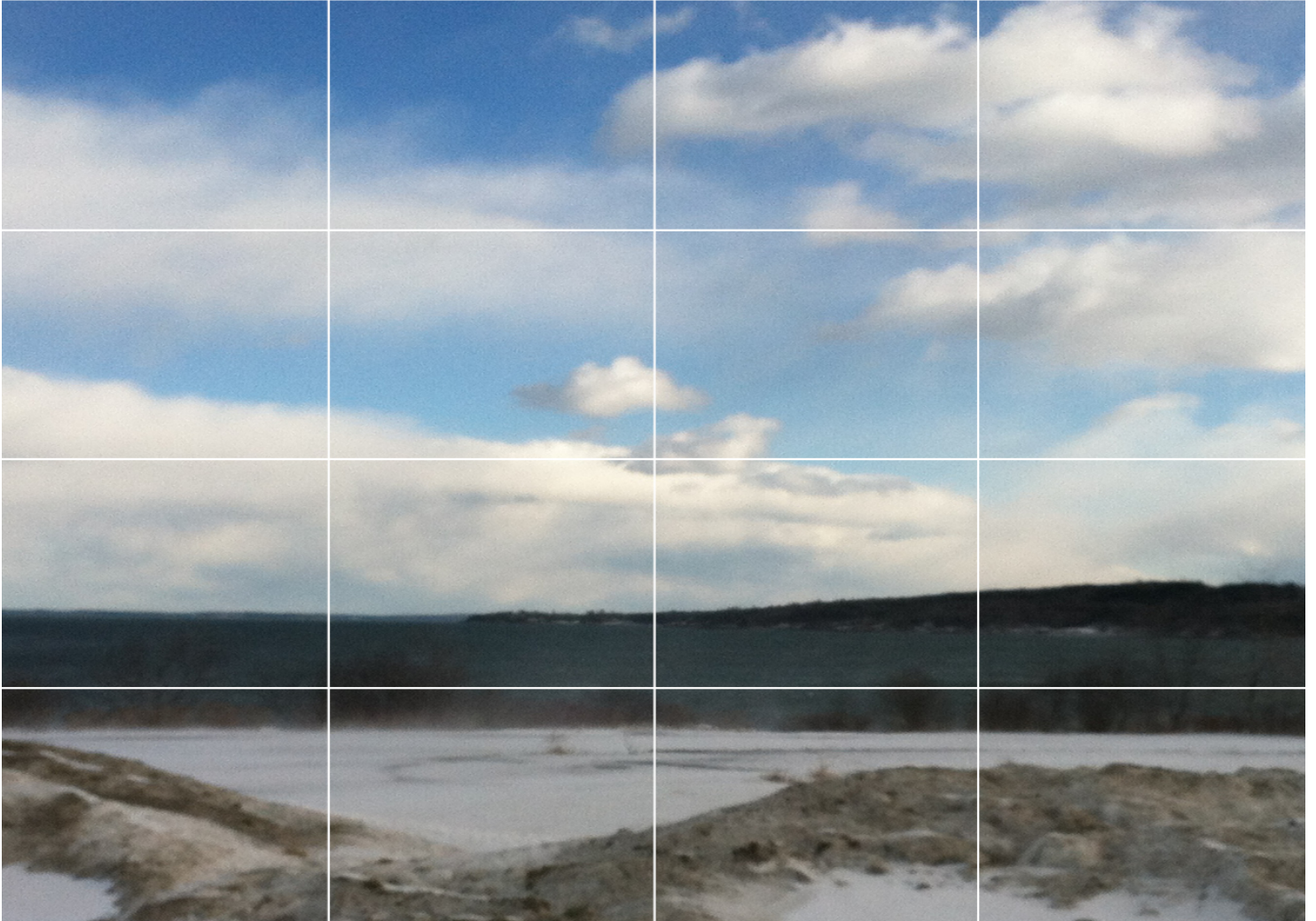


LAVALLEE | BRENSINGER ARCHITECTS



*"Education with a limitless view..."*

Mid-Coast School of Technology  
Rockland, ME  
Visioning and Existing Facilities Assessment  
January 28, 2015

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"Nationwide, Career Technical Education (CTE) programs are changing, evolving and innovating to better serve the country's needs. CTE is preparing students of all ages to help drive America's success and vitality. Further, it is creating an educational environment that integrates core academics with real-world relevance. CTE is leading this change, transforming expectations and making a difference for students, for secondary and postsecondary schools, for businesses and industry—for America."

**- National Association of State Directors of Career Technical Education Consortium 2014.**



## 1. Executive Summary of Recommendations and Conclusions

The Board of Mid-Coast School of Technology established a Visioning Committee to explore and envision the future of the Career and Technical Education within Region 8. As part of their process, the Visioning Committee embarked on a study of the existing building facility to determine the existing condition of the physical space and the current educational programs; specifically:

- A. Study of the existing facility in its entirety, as it relates to all systems, ADA accessibility, Life Safety, and all other applicable codes. This comprehensive study will be necessary to determine any building improvements or replacements to meet all current codes.
- B. Providing assistance with determining present and future program needs of the Region.
- C. Proposing renovation or replacement options to ensure a 21st century facility that inspires and supports Region 8's needs within the existing facility and possible expansions; all to ensure a more efficient utilization of space.
- D. Recommending improvements to the character and appearance of the existing facility.
- E. Reviewing traffic patterns for improving the safety and efficiency of the site; for all traffic, parking, busing, drop-off and pick-up needs; as well as vehicular traffic of the CTE programs, pedestrians, and vehicular storage.
- F. Proposing a plan for energy-efficiencies through-out the facility.
- G. Evaluating renovation of the existing school versus building a new school.
- H. Preparing a project timeline and cost estimates.
- I. Prepare an Educational Specification that meets the State's defined requirements.

Lavallee Brensinger Architects was selected from several firms interviewed to conduct the study. The process of exploration and study was recommended. The process was comprised of four (4) tasks performed simultaneously. Each of these four (4) tasks would be used in determining the conclusions and recommendations based on the vision of Region 8 and the existing facility.

### 1. A series of workshops were scheduled to listen to the concerns of Region 8 and create a Vision for the future of Mid-Coast School of Technology.

Starting with the Mid-Coast administration and Region 8 Cooperative Board's Visioning Committee, two meetings were scheduled; one on April 17, 2014 and one on May 16, 2014. Both meetings resulted in a discussion of the history of the school; previous repair work undertaken to keep the facility operating; a previous feasibility study to renovate the school; a previous process undertaken to construct a new school through an initiative referenced as Many Flags; and the goals and expectations for this study. The overarching expected outcomes were defined as follows:

- A facility that supports use by community colleges, local business, and industry partners.
- Knox, Waldo, and Lincoln County industry and business leaders should be contacted to explore the needed skills and professional qualifications the region seeks in employees. School programs should be based on these needs.
- Alternative delivery models were discussed alongside the Maine Department of Education's (MDOE) requirements for delivering career and technical education within a Region. Strict requirements are mandated and meeting those requirements are mandatory for the curriculum, assessments, instruction time, and faculty qualifications.

- Programs also need to be approved by the MDOE and made available to all students within the Region. As part of the discussion, traveling time, logistics, and costs were discussed. Exploring changes within the model are limited to those features that can be changed while meeting the educational delivery requirements of the MDOE.
- Students should be interviewed to find out why they attend Mid-Coast School of Technology. All schools should be contacted to determine the obstacles facing students who may not “know” the programs or benefits of the school.
  - Obtain the thoughts of the greater Region 8 community relating to the future of Mid-Coast School of Technology.
  - Define the opportunities, obstacles, and challenges to Mid-Coast School of Technology.

Current faculty members were gathered on May 16th and current students were gathered on May 23rd, 2014 to solicit and record their thoughts and concerns about their existing “day in the life” of Mid-Coast School of Technology. Students and faculty were asked to explain “Why” they decided to attend the school; including, why they were inspired to attend as students and why teachers chose to teach their CTE programs, why they believe the school is successful; and why they believe change is needed. These workshops were used to define the user-group vision for the future of Mid-Coast School of Technology.

Stakeholder workshops were conducted to cover three (3) Visioning subjects of “Why” does the school exist in its current form and why is change needed. The Stakeholders were presented with the thoughts and “why statements” gathered from the students, faculty, and administration. These visionary statements from the users were used to demonstrate that most all members of the Region 8 community believe that change is needed; and needed as soon as possible. The purpose of this study was to define “what” will the changes include, and “how” it may be implemented. The following Stakeholder groups were invited to the Stakeholder Visioning Workshop on June 17, 2014 to define the agents for change and envision the future of Mid-Coast School of Technology:

Program Advisory Committee Members  
Region superintendents  
Region 8 and sending school Board members  
Educators  
Visioning committee members  
Administration team  
Specialists; technology, adult-ed, facility director, etc...  
Industry leaders and members of community groups  
Students

Region 8 sending School Board members, educational leaders, industry leaders, and members of the community were invited to attend workshops to discuss the Vision that resulted from the user groups and Stakeholder workshops. The key agents of change were presented and the question of “what if” was used to discuss each change agent and explore thoughts, concerns, and opportunities to accomplish meaningful transformation within Mid-Coast School of Technology. Workshops were conducted on October 9, 14, 15, and 16, 2014. In addition, a presentation and listening session was conducted at the Five Town CSD Board on December 3, 2014. These workshops produced numerous ideas relating to the current success, weaknesses, obstacles, and desired outcomes for the future of Mid-Coast School of Technology.

Together, these workshops and meetings provided the information needed to form the Vision and determine the needs. The common threads between all focus groups were used as a means to define consensus for the direction of the school. Understandably, given the size and wide range of

interests within the Region, more work is required to determine a final educational program and feasible project to implement the vision. However, the findings and beliefs that were gathered from these workshops form the basis for the recommendations and conclusions pertaining to the operations and educational delivery model.

**2. An infrastructure assessment of the existing school facility was performed.**

Becker Engineering reviewed the existing structural systems, Allied Engineering reviewed the electrical, mechanical, and plumbing systems, Gartley & Dorsky reviewed the site utilities and site constraints, and Sebago Technics reviewed existing site possibilities and permitting. On-site visits were conducted and observations, findings, and conclusions were reported. Research was conducted to determine the age and efficiency of the systems as well as code compliance. Engineering assessments were made as to the return-on-investment value of the existing facility as it relates to renovations. These reports form the basis for the conclusions and recommendations pertaining to the physical facility and site.

**3. An educational program and environment assessment was performed.**

Lavallee Brensinger conducted on-site measurements and recorded observations relating to spaces that support the Career and Technical Education programs and evaluated the educational environment as a whole. An existing spatial program was established as a starting point in the educational facility assessment. Factors relating to differentiated teaching, student learning styles, and the facility's ability to support the vision defined in Task 1 were assessed. In addition, code compliance, safety and security and building use was evaluated along with the logistics of possible additions and renovations versus a new facility option. The evaluation included the main structure and the "out buildings" located on the campus. This assessment was used for the conclusions and recommendations pertaining to the ability to renovate the existing school or to build new in a cost effective manner.

**4. An operational and maintenance assessment was performed.**

The school provided cost information and records for the past five (5) years; which was provided to the assessment team. The cost to operate and maintain the facility was reviewed and compared with current costs incurred by facilities that meet or exceed current energy codes and best practices for similar career and technical educational facilities. These costs included the utilities, building repairs, component and system replacement, and maintenance activities. This information was used for the conclusions and recommendations pertaining to the feasibility of the probable costs and return on investment in either renovating, building new, or doing nothing.

Storage and security of the "out buildings" require additional costs beyond the main building to keep material securely stored. In addition, functional aspects of the main building simply do not work and create liability conditions that could cost the community to correct; such as the culinary program operating a cafe where guests have to use the student restrooms located within the educational environment.

The comprehensive facility assessment study includes all the facts and findings gathered from the tasks above and a broader detailed explanation behind the recommendations and conclusions. The entire assessment study is meant to be considered in its entirety; however, an outline of the conclusions and recommendations are listed below.

## Recommendations and Conclusions

- A. Study of the existing facility in its entirety, as it relates to all systems, ADA accessibility, Life Safety, and all other applicable codes. This comprehensive study will be necessary to determine any building improvements or replacements to meet all current codes.

The infrastructure assessment demonstrates that the existing facility has outlived its expected life-cycle as both a marine repair facility and school. This facility has served the Region for over 35 years; but, was never designed as a school. The dedication and ingenuity of the maintenance staff has kept the facility operational despite the failing infrastructure. The “band-aids” and “patch work” is not sustainable for the foreseeable future and, as detailed in the attached engineering reports, major building components are ready for replacement. In addition, the energy efficiency and performance of the facility systems is almost twice the annual per square-foot cost of a modern school.

The “Cost of Doing Nothing” is significant. Operational and maintenance costs will continue to rise, as the “band-aids and patchwork” need to be replaced with larger “fixes”. The cost of fuel continues to fluctuate as it ultimately rises and current efficiency-losses will increase; requiring more fuel at higher future prices. Local authorities have demonstrated patience and understanding with regard to the facility, as they regularly review the on-going degradation and code-compliance issues. Life-safety, communication, and accessibility (ADA) system up-grades are on-going and add to the annual cost of operating and maintaining the existing facility.

Aside from just a few new mechanical units, all components of the existing infrastructure do not meet current building codes; from the foundation to the roof. Improvements are required for all systems and the in-situ replacement of most items will impact the cost, time, and difficulty of logistically facilitating the work around school schedules, if a renovation is decided.

- B. Providing assistance with determining present and future program needs of the Region.

Local Industry needs to assist in defining which programs are offered in the Region. During the workshops it was made clear that specific skills are needed in the area, such as healthcare professionals and specialized skills in manufacturing and innovations. Local businesses are looking for programs to align with their needs and are ready to offer partnerships in training and program assessment. Opportunities include enhanced cooperative programs where on-the-job experience may be used to attain academic proficiency. This type of programming already exists in the clinical sessions required by the Certified Nursing Assistant program. The concept of expanding cooperative opportunities to other programs, such as culinary, baking, welding, etc... is part of the vision.

New possible programs were discussed as Business and Entrepreneurship; Electrical; Plumbing / HVAC; Early Childhood Education; Cosmetology; and other possibilities depending on the involvement of local businesses and higher education. This is in addition to transforming current programs to meet shifts in industry; such as automotive programs steering more towards alternative fuel vehicles and pre-engineering geared towards robotics for example.

Community access needs to be broadened and include more adult education programs, adult career training, and stronger connections to higher-education. Year-round access was suggested by some stakeholders to take advantage of the investment as a community.

Further discussions included opening the school during off-hours and off-sessions for access by middle school students who wish to engage in STEAM (Science, Technology, Engineering, Art, and Math) programs. Local industry voiced a need for stronger connections and access to spaces for use as business incubators, meeting with labor candidates from the CTE programs, and support of professional development and skill training.

The schedules for the Regional high schools need to align. This will provide opportunities to expand programs and participation. This alignment will also provide time flexibility so students and programs may take place as currently offered in morning and afternoon sessions, or every other day; which will reduce busing costs, eliminate student disruptions due to short-cycling program time, and allow students to participate in more or expanded programs.

- C. Proposing renovation options to ensure a 21st century facility that inspires and supports all of Region 8's needs within the existing facility and possible expansions; all to ensure a more efficient utilization of space.

Educationally, the facility does not support 21st century learning and teaching. The physical spaces provide poorly defined areas for program delivery. The existing environment fails to support student learning styles based on environmental issues, such as:

- Indoor air quality, from temperature to oxygen
- Acoustics, from noise between spaces to noise control within spaces
- Lighting, from natural day-lighting and outdoor views to artificial light levels and densities
- Comfort, from furnishing types to colors and finish materials
- Anxiety, from feeling relaxed in different group sizes to obtaining personalized attention
- Safety, from feeling secure to feeling respected in a healthy and safe environment

The existing facility is limiting in too many ways to suggest renovation options without starting a concept design process. Suggestions, such as building a second floor within the existing clear-span open space, would require supplementing the existing steel frame with new foundations and structure installed within the existing; creating a building within a building. This solution will be compromised by having to work around the existing steel frame and the on-going educational activities. A renovation will also require compliance with seismic, fire, plumbing and egress codes that will greatly impact the existing building.

For these reasons, we believe building a new building on the same site will be the most cost-effective solution and allow for the most advantageous response to creating a flexible and adaptable 21st century educational environment designed to sustain itself for future decades.

- D. Recommending improvements to the character and appearance of the existing facility.

The existing exterior wall systems have outlived their expected performance life. Replacing the exterior wall systems will provide an opportunity to completely change the character and create a welcoming and inspiring appearance to reflect the educational activities of the facility. Building new will also provide this opportunity, with even more return on investment; since the new character and appearance will not be secondary to the existing steel framing and massing.

Whether new or renovated, successful schools take on the character and values of the



community they serve. Recommended improvements are to create a character that creates a new level of pride and educational achievement for the school and its community.

- E. Reviewing traffic patterns for improving the safety and efficiency of the site; for all traffic, parking, busing, drop-off and pick-up needs; as well as vehicular traffic of the CTE programs, pedestrians, and vehicular storage.

The existing site was evaluated for acreage, location, and constraints. The existing parking areas restrict an easy flow of traffic. Bus traffic also conflicts with parking areas along Main Street. The Commercial Driving License program could use better access from Main Street onto the site and alleviate the tight corners at the North-west and South-west property line corners. Student, faculty, and visitor parking can be better defined and located to focus all users towards the main entrance; which will provide better controlled access into the building.

More spaces are needed to accommodate programs. Better use of the site through better organized traffic and parking patterns will increase the space counts and take advantage of unused areas of the site. Out buildings currently used for programs and storage are located in such a way that require traffic to cross student walkways between program buildings; which is not the most advantageous solution. Storage buildings are used for materials and create a condition where students have to cross traffic or walk between vehicles to gather supplies. School vehicles are stored outdoors or in program spaces when areas are available. Storing the vehicles within a new vehicle storage building will extend the life of the vehicles, reduce maintenance requirements, and keep program areas free from utility vehicles.

Creating a new school design on the existing site will enable all of the out buildings to be consolidated into one facility and take advantage of the entire site area to maximize spatial efficiency and resolve current safety and security concerns.

- F. Proposing a plan for energy-efficiencies through-out the facility.

Following the Efficiency Maine Advanced Building Program as a guide to replacing the existing systems within the existing building will ensure energy conservation and efficiency. Best practices include a high level of sustainable and energy-efficient design embedded in all aspects of the design process. A proposed plan would be to build new and take advantage of the opportunity to innovate solutions that work for your specific program and your site to maximize your energy efficiency and minimize your operations and maintenance costs.

- G. Evaluating renovation of the existing school versus building a new school.

Given the age and condition of the facility, as well as the obstacles that the existing facility poses on the educational delivery, there is very little justification for renovating the facility; as described and depicted in the attached engineering assessment reports.

There are numerous options that can be explored to define a solution that meets with the approval of the Stakeholders and Sending Communities. A replacement school can be provided while educational activities continue on the campus and in the school; as well as a new school built on a new site. Renovations and additions will require multiple phasing and a large amount of effort creating temporary conditions. A new school avoids the added costs, time, and educational distraction of a renovation project. A new school on the existing site avoids the costs involved with finding available land, acquiring the land, and

constructing the off-site infrastructure to connect electric, sewer, and other utilities.

H. Preparing a project timeline and cost estimates.

Assuming a maximum size of 90,000 square-feet of new construction at the current State average for Total Project Cost of \$285 per square-foot, the probable cost for a new facility is in the range of \$25,500,000 as many factors will be involved in determining a final projected cost. A cost analysis should start with a defined program and concept design that studies solutions based on organizational diagrams that support the Guiding Principles and Desired Design Patterns included in this study.

Construction costs continue to climb as the economy continues to improve, and financing rates are slowly starting to increase. The condition of the facility suggests an immediate timeline of defining and starting the process to place a project in front of the voters. Starting a programming and concept design process in early 2015 will provide enough time to establish a project for placement on the November 2015 ballot; however, with the community engagement process required for a consensus-built solution we recommend a June 2016 ballot. Assuming a successful vote and allowing for 8 months to complete the design and engineering, construction could start in Spring 2017 for a September 2018 opening and subsequent demolition and site work completing in the Fall of 2018.

I. Prepare an Educational Specification that meets the State's defined requirements.

This study defines the vision for Mid-Coast School of Technology as it goes forward into the future. Community groups throughout the Region participated in visioning workshops to discuss the existing facility, programs, and the desired direction for the school. Multiple groups of community members expressed similar concepts and concerns for agents of change.

This process established a Vision, Guiding principles, Desired Design Patterns, and desired pathways that lead to higher-education opportunities, certifications, licenses, and career-readiness. The information within this study should be used as a guide to respond to the seven questions asked by the State on their State funded projects. Even if the project is a locally funded project, considering these seven questions will assist in building project-defining consensus within the Region.

Students throughout the Region need to understand the programs, possibilities, and outcomes from attending Mid-Coast School of Technology. Specifically, the content of the programs, how they are offered, how they are delivered, and the resulting accomplishments. Students expressed desires to learn more about the programs at MCST, and demonstrated a general misunderstanding of what the school offers and how the Career Technical Pathway delivered at Mid-Coast School of Technology differs from elective programs offered at the District high schools.

**Commentary:**

Numerous studies have concluded, through evidence-based evaluations, that indoor environmental quality greatly impacts the ability to learn for long-term retention. The largest obstacle that negatively impacts the learning currently taking place is the physical facility. Faculty and staff are making great connections with current students, who are achieving a high level of success; however, the existing facility is limiting what can be achieved within the school.

The cost has been a topic of discussion in each meeting and workshop. The cost is linked to the understanding of the Mid-Coast School of Technology offerings. Questions have been raised as to how a Regional Career and Technical Educational (CTE) facility differs from comprehensive high schools and Career and Technical Centers. The Department of Education has rules and regulations that dictate the organization and administration of these school types; which also differ from the organization and administration of charter schools, magnet schools, private schools and CTE programming in other states. Mid-Coast School of Technology is governed by an independent Board comprised of members from each regional school District. These members all have a stake and decision-making role in the operation and success of the school. A certified CTE director is charged with overseeing the school and the faculty is certified by the State and various national organizations to deliver these programs to meet specific State and National requirements for certifications and licensure.

Experience and evidence shows that out-dated and tired facilities that become rejuvenated to address 21st century skills attract student participation and enrollments climb. Defining the desired career or educational paths that students are interested in pursuing and defining what skills and professional proficiency is required by local business or future industries evolving in the Region is critical. The process has been started and reviewing the information within this study to engage students, parents, business and industry leaders to define a final program of rejuvenated and new programs will define the spatial needs and capacity of the school; upon which a concept design can be created and estimated.

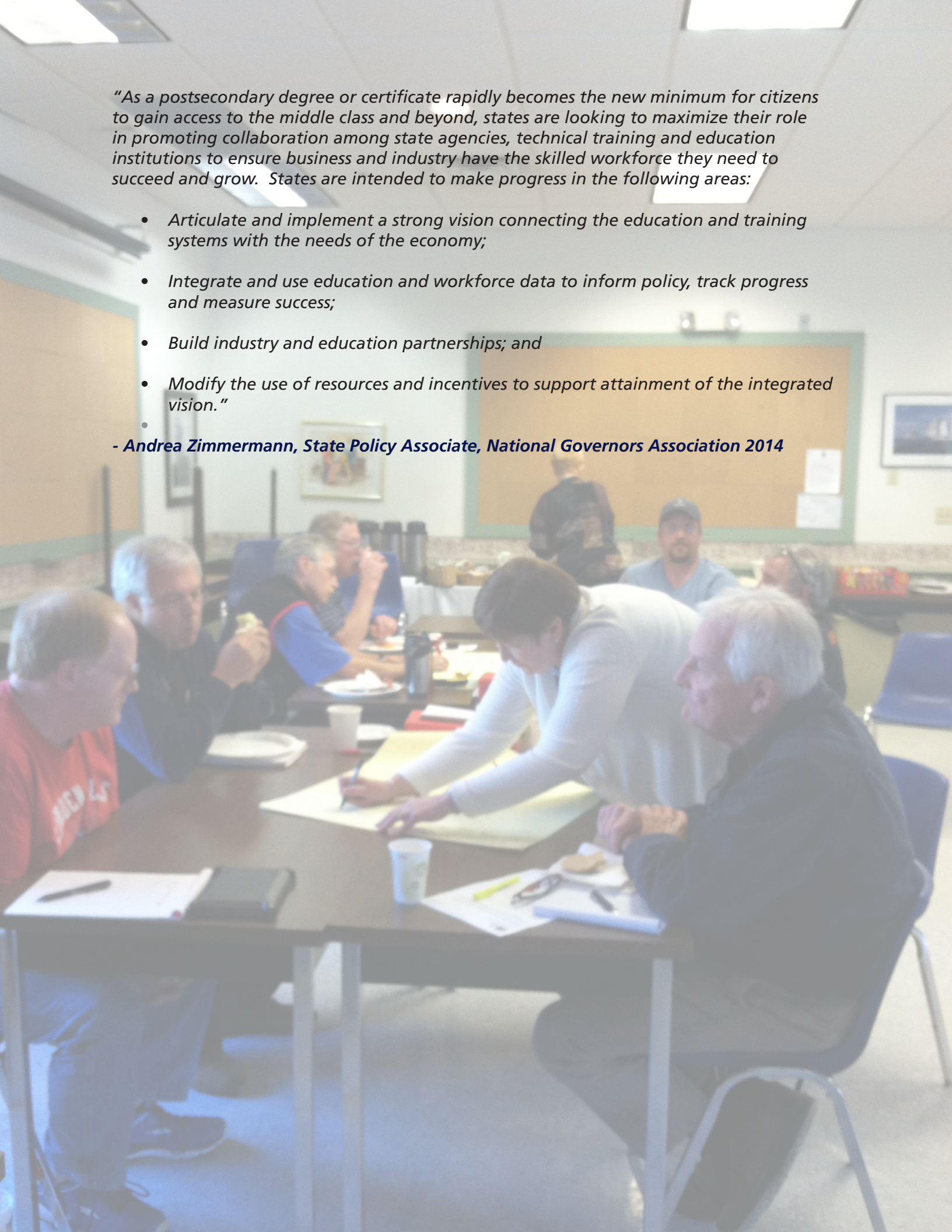
State funding possibilities were discussed and information was shared amongst participants. Since the Many Flags initiative, the State has published lists of potential projects for consideration into the Department of Education construction program. The most recent list was published and MCST was not within the top 30 schools ranked for consideration. The State funds approximately 5 projects during each funding cycle.

The Department of Education was contacted and, as with any other Maine school, advised that MCST may submit another application when the program re-opens the process of collecting applications.

*"As a postsecondary degree or certificate rapidly becomes the new minimum for citizens to gain access to the middle class and beyond, states are looking to maximize their role in promoting collaboration among state agencies, technical training and education institutions to ensure business and industry have the skilled workforce they need to succeed and grow. States are intended to make progress in the following areas:*

- Articulate and implement a strong vision connecting the education and training systems with the needs of the economy;*
- Integrate and use education and workforce data to inform policy, track progress and measure success;*
- Build industry and education partnerships; and*
- Modify the use of resources and incentives to support attainment of the integrated vision."*

**- Andrea Zimmermann, State Policy Associate, National Governors Association 2014**



## 2. Introduction to Region 8

Region 8 has endured and endeavored to provide recognized educational programs in the Career and Technical Educational (CTE) field within a building constructed as a manufacturing facility. Educational accolades and student achievement have been realized despite the building's shortcoming as an educational facility. As students, parents, and Region 8 community members enter the facility there is recognition of skilled coaching, mentoring, and learning taking place; however, there is also a concern about the obsolete structure, poor indoor environmental quality, and deteriorating infrastructure.

Mid-coast School of Technology has a great opportunity. Over the past several years, interest in high school and higher education Career and Technical Education (CTE) has grown as the US labor market has yearned for technical-skilled workers and leaders. CTE programs are evolving and focus is shifting towards skills that support innovation and invention. Over this time, faculty, staff, and parents have witnessed a higher level of student engagement and participation. Most recently, students have embraced the concept of change in their education, and their future, by engaging in discussions to improve their learning environment and learning process.

Stakeholders see this as the time to embrace opportunity and evolve programs alongside shifts in education and technology by transforming an antiquated building into a sustainable educational facility. Mid-coast School of Technology is poised to take advantage of the forward-thinking process that started in 2008. Considering the Many Flags initiative, and the evolution of those strategic ideas and planning over the past several years, this existing facility assessment and educational specification delivers a collaboratively-defined Vision and Mission that sets the stage to transform Mid-coast School of Technology into a meaningful facility that inspires and supports Region 8 Career Technical Education for future decades.

"The State Board of Education believes vocational education is an integral component of the comprehensive secondary school and should be accessible to sit students. It also believes that the acquisition of academic skills is fundamental in the development of sound vocational skills. Interaction with community, business, and Industrial advisory groups is essential to assure the development of quality, comprehensive vocational programs to meet the needs of students with diverse interests, skills, and abilities. The opportunity for enrollment in vocational education should be extended to all individuals including those who have completed or discontinued their format education." The initial language of the State Board of Education upon the creation of vocational schools." – **ME DOE**



### 3. History of Mid-coast School of Technology

On November 15, 1973, the first meeting was held to form Vocational Region 8. The board was made up of 22 members at that time and they were charged with creating a Cooperative Agreement that included factors such as cost sharing, number of board members and how board members are selected to serve on the regional board.

In June of 1974, Peter Schwalbenberg was hired as the first Director of Region 8. He went on to serve until June 1989 – 15 years. Following Peter's tenure, the board went on to hire two short term Directors who served a total of 5 years. Tim Hathorne took the position in July 1996 and served as Director for the next 12 years. Beth Fisher was hired as Region 8's 5th Director upon Tim's retirement in 2008.

Classes began in September 1975 and were held in a temporary location while renovations began at the Knox Industrial Building, our current location. The building was purchased for \$495,590. Ganneston Builders were hired to renovate the building with approximately \$600,000 after a bond in the amount of \$1.4 million was passed by voters. The Knox building was originally built as a boat renovations facility in 1968 by Ganneston Builders who are still in business today.

Classes were first held in our current location in September, 1977 after an extensive period of renovations to this building.

The first series of adult education classes began in May, 1976 and over 200 people participated in Region 8's first offerings. Classes offered included Welding, Carpentry, Basic Butchering, Masonry, Shorthand and Ferry Service.

Initial programs for students at MCST included carpentry, welding, auto/engine shop, marine trades, chef training, truck driving, and masonry. The first course offered was a building trades program on the island of Vinalhaven in February, 1975. Other courses eventually offered included outdoor power equipment, commercial fishing and seamanship.

The board voted in December, 1981 to expand a Special Ed/General Occupations course to include girls.

The board recognized the Region 8 Teachers Association as the formal bargaining in October, 1987. In February, 1990 the board voted to accept the first negotiated agreement with the teachers association.

In January, 1997 the board issued an RFP for a facilities study as part of a long range planning initiative. The board entered into a contract with WBRC in April, 1997 for a 3 phase study that included a site review, a structural review, program evaluations and future programming needs. A final report was issued in June, 1998 that recommended a school construction project in the amount of \$6.9 million.

The Department of Education approved a revolving renovation bond in the amount of \$1,000,000 in October, 1999. Repairs to the building included a new roof, air quality contract, asbestos abatement, and construction projects including building the student room and replacing boiler and boiler room. The projects concluded in 2001. There have been no major building renovations since 2001.

“Career Technical Education (CTE) provides students of all ages with the academic and technical skills, knowledge and training necessary to succeed in future careers and to become lifelong learners. In total, about 12.5 million high school and college students are enrolled in CTE across the nation. CTE prepares these learners for the world of work by introducing them to workplace competencies, and makes academic content accessible to students by providing it in a hands-on context. In fact, the high school graduation rate for CTE concentrators is about 90% – 15 percentage points higher than the national average.”

**- National Association of State Directors of Career Technical Education Consortium 2014**



**STUDENT PROJECT DISPLAY: WELDING FABRICATIONS - 2014**



## 4. Educational Environment Evaluation

### Current Program Offerings

- › Auto Collision Repair
- › Auto Technology
- › Certified Nursing Assistant
- › Cooperative Education
- › Culinary Arts-Two options-Baking and Culinary
- › Design Tech
- › English/Technical Communications
- › Emergency Medical Training
- › Fire Fighting
- › Health Occupations
- › Horticulture [Islesboro]
- › Introduction to Applied Technology
- › Machine Shop
- › Marine Technology
- › Marine Technology/Carpentry [Vinalhaven]
- › Mathematics
- › Pre-Engineering
- › Residential Construction
- › Small Engine Technology / Diesel
- › Social Studies
- › Tech Lab [North Haven]
- › Welding/Fabrication

### Our Student's Success

**50%** continue on to higher education\*

**20%** concurrently enrolled in college courses

**200** college credits awarded 2013–2014

**800** adult education students served

**231** industry certifications issued 2013–2014

### Future Program Considerations\*\*

- › Business Program that would offer training in Microsoft Office applications, entrepreneurship, accounting and other business skills
- › Early Childhood Education Program
- › Electrical and/or a Plumbing Program

### Our Mission

Maine Career and Technical Education (CTE) aims to ensure that students acquire the high-quality, industry-recognized technical skills and related academic standards that will prepare them for postsecondary education and entry into an ever-changing workplace and society.

Training an educated workforce is key to developing a successful and productive community and economy. CTE, through its career clusters, pathways and programs, empowers students to develop the attributes and skills necessary to become successful citizens, workers and leaders.

\*approximately the same state wide average for all high school students  
\*\*program implementation would be based on determined labor needs, student interest and funding availability



## Our students are well prepared for local industries\*

The region's major employers are primarily focused on health care, hospitality, marine trades, banking, retail stores, education, metal working and building supply industries. MCST's current offerings prepare students for employment in the vast majority of these industries.

### **CNA/ Medical Studies**

- › PenBay Medical
- › Miles Memorial Hospital
- › Lincoln County Healthcare

### **Culinary Arts**

- › Samoset Resort
- › Moody's Restaurant
- › Area restaurants

### **Design Technology**

- › Adventure Advertising

### **Emergency Medical**

#### **Training / Fire Fighting**

- › Northeast Ambulance
- › Local fire departments

### **Horticulture**

- › Hoboken Gardens
- › Plants Unlimited

### **Machine Tool**

- › Lie Nielsen
- › Knox Machine
- › Masters Machine

### **Marine Technology**

- › North End Composites
- › Lyman Morse
- › O'Haras

### **Pre-Engineering**

- › Dragon Cement
- › Bath Iron Works

### **Carpentry / Construction**

- › Hodgdon Yachts
- › Matthew Bros

### **Welding**

- › Bath Iron Works
- › Fisher Engineering
- › Steel Pro

### **Auto Collision/Auto Repair**

- › Steve Clough Auto Repair
- › Sallinen's Body and Repair Shop
- › Shepard Motors

### **Small Engines/Diesel Repair**

- › Port Harbor Marine
- › Journey's End / O'Haras

## Why Mid-Coast School of Technology for CTE?

As required by the Maine Department of Education (ME DOE) all CTE programs must:

1. Have a curriculum and assessment aligned with ME DOE approved industry standards. For example: standards for Culinary are written by the American Culinary Federation, standards for Welding are by the American Welding Society, Automotive curriculum is written by the National Automotive Technicians Education Foundation.
2. Provide a minimum of 350 hours of instruction.
3. Be available to all students in the Region.
4. Be pre-approved by the ME DOE/CTE division.
5. Be taught by a certified ME DOE instructor with verified extensive work experience in the program area to be taught.

*\*as listed by the department of labor*

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# MID-COAST

## a. A Day in the life

### Current Educational Experience

In preparation of the workshops, invitations were delivered to all members of the community; specifically outlining the facts. The workshops expanded on the current state of the school. Participants were asked to consider the facts as a part of the exploration of ideas to maximize the school's potential.

Currently Mid-Coast School of Technology is operating at a high level of success. Workshops were introduced with some facts about the school's mission, current and possible future programs, student enrollment, educational success, and current connection to the community beyond high school students. All of these facts are the starting point for transforming the school as it moves into the future.

### Current Educational Model and Connection to Local Business

Currently Mid-Coast School of Technology is operating within the Maine Department of Education's guidelines and regulations. The operational model was presented; as it relates to meeting the requirements of the MDOE, industry standards for certifications and licensing, instruction time, assessments, and creating a regional home for all regional students to participate.

Participants were asked to consider how local businesses could become more engaged, how the school may become more of a partner with these businesses to steer programs towards sought-after skills and innovation.

### Workshop Focus Groups

Several focus groups were assembled to explore the future of Mid-Coast School of Technology. For each individual group, the exploration started with a brief over-view of the current school. Workshops were started by answering some frequently asked questions:

#### "Why a Region?"

- Career and technical education regions were established by the Legislature in the early 1970's – there are 8 regions in Maine
- CTE regions function as an extension of the secondary schools located within the region's boundaries
- A region differs from a "center" in that an individual school unit operates the center and assumes full financial responsibility

#### Why do Regions Work?

- State Law dictates how Regions are organized and governed
- All CTE program offerings must be approved by the Department of Education
- These programs must prepare students for employment in current or emerging occupations
- The Cooperative Board oversees the Region's budget and annual assessment to the local municipalities
- As required by the Maine Department of Education (ME DOE) all CTE programs must:
  - Have a curriculum and assessment aligned with ME DOE approved industry standards.
  - Provide a minimum of 350 hours of instruction.
  - Be available to all students in the Region.
  - Be pre-approved by the ME DOE/CTE division.

- Be taught by a certified ME DOE instructor with verified extensive work experience in the program area to be taught.
- Be administered by a CTE Director
- Conduct third-party assessment using tools designed by a testing agency or professional organization. These tests must be proctored by someone vetted by the testing authority as being impartial and protecting test content

#### Why is Career and Technical Education (CTE) Essential?

- CTE reduces dropout rates
- CTE is applied learning which is the style proven to have the best retention rate
- CTE prepares students for jobs, including the military, and post secondary education at 2 or 4 year colleges
- CTE programs offer national or industry certification such as Fire Fighting, Welding, and Certified Nursing Assistant
- CTE is a required component of educational opportunities for Maine students

#### Why perform a Visioning Process to Advance our CTE Programs?

- Evaluate and implement 21st century CTE paradigm shift for students in the region
- Evaluate programs and equipment for their relevance to current and future employment opportunities
- Evaluate the condition of our tired old building including safety, efficiency, and ability to offer up-to-date technology labs

#### Why is CTE considered “different” than Vocational Education?

- CTE is based on an Industry Standards System; not solely training of a trade craft
- CTE is designed to achieve a level of expertise to satisfy nationally recognized certifications and licenses
- CTE programs require advanced technical skills to reflect technology embedded in all 21st century occupations
- Programs are designed to reach beyond the trade craft and develop critical thinking, creativity, communication, and collaboration skills
- Programs are required to be aligned with industry standards; some examples include:
  - American Culinary Foundation
  - American Welding Society
  - National Automotive Technicians Education Foundation
  - Certified Nursing Assistant

## Conclusions from the Teacher Workshop

*(bold text reflects common ideas)*

### What about the school needs change?

- Create a teacher living room with “in and out” access. Teacher training, eating, living to take place in this “teacher common” space. Can also be used to engage with the students in all daily aspects.
- Need more classroom space multi-function area that connect to shops with line of sight.
  - Annex lab – collapsible classroom
  - Need glass walls for visual connectivity (safety and oversight)
  - Organized space that separates the programs
- More restrooms. 2 ½ hour sessions require nearby restrooms.
- School-wide gathering space. At least for monthly and evening events.
  - 1 ½ times as large as culinary conference room – (maybe 2 times)
  - Space that allows student presentations, awards, and whole school assemblies
  - Dining space for cafe users is OK; but need separate restrooms for customers (folding walls for dividing up the space into multi-use areas?)
- **Need a real school-wide environment that builds community and pride - look at this place.**
- Dedicated common test areas, 20 +/- spaces – Test Proctor is not instructor (3rd party).
- **Dining for all-day programs. Need all-day programs to eliminate the start-stop process.**
- Need Library Resource space for proper storage of resource materials - possible separate space for staff only and students only.
- **All-day sessions, every-other day. Reduce set-up and break-down time.**
- **Adult-ed use vs. day or HS use – shared supervisor all are multi-use with multi-staff – How do you separate and share?**
- **Need business space to meet and greet students – industry connection.**

### Why do teachers choose MCST?

- **Passionate and dedicated to the profession of Project-based, Hands-on learning**
- **Faculty are still learning as new innovations arise.**
- Have fun creating and working with students.
- Students keep you young (student passion and energy towards their education).
- Selling education is rewarding, especially watching students succeed as they learn.
- **Mentoring and giving back to community.**
- Participating in student enthusiasm.
- Witnessing “Light bulb” moments students have when the “get it”.
- Building relationships as mentors and education advocates.
- Enjoying the “Pass-It-On” process (trade and skills) – “Paying it forward”.
- **The challenge of helping students decide what they will do with their lives or adults change careers.**
- Not because of the facility - there is a long, non-negotiable list of needs for this facility.

### What inspires you at MCST?

- We believe in CTE
  - We are creating a skilled and educated workforce.**
  - We are paving the “Path” for students (college, career, life).**
  - We teach relevance and real-world applications to serious students who know what they want to do with their lives.**

- Hands-on learning is essential.
  - The Region needs skilled workers and we're working towards that mission
  - We teach practical problem solving skills, which employers require
  - We believe we offer more motivation – and mutual respect - to students
- Tangible career opportunities.
  - At MCST skills are trained by experienced professionals**
  - We collaborate with students from other towns
  - We cater to different interests (outside the traditional classroom)
  - Students at MCST select their own interests and educational pathway**
  - We offer real-world certifications and licenses for good paying jobs**
  - We offer, and need to strengthen apprenticeship programs – as a spring board**
    - Many paths and directions are available to graduates
    - Work ethic is embedded in our students (learn by doing)
  - We help students find and follow their passion (HS and adult students)**
  - We offer workforce credentials and students have a portfolio to offer colleges and business**

Why do some students choose not to participate in CTE?

- See it as “old fashioned”. We hear all the time “who wants to go to school in this place?”
- Lack of CTE understanding and what the programs provide; despite the facility.
- Students and parents are not sure of options and possibilities.
- Concerns about satisfying academic requirements at their sending high schools.
- Family influences requiring traditional school (high school to grad school)
- Concern they will be unable to meet standards for graduation and meet CTE requirements.
- Difficulty in stepping outside the box and realizing we offer the same path, just down a different road (high school to grad school).
- Peer pressure from academic school.
  - Faculty insisting we are the home for academic failure
  - Society image of success as only through higher education and a masters degree
- **Don't know what's in the building – don't see the community support.**
- Lack of interest or direction - afraid to make a choice about their future.
- Not having a positive experience at sending school.
- No idea of what they want to do for a living and looking for experience elsewhere.
- Afraid to try something out and find a way to balance their education and passion.

Why do students choose to attend MCST?

- **A comfort level – they feel a sense of belonging with students who share a passion.**
- Personal interests and passions.
- **MCST offers multiple pathways and career options.**
- Different type of learner – heads-on, hands-on learners.
- Continuity and bond with the teachers – and education is result based.
- Ready to find new experiences through project-based, relevant, projects.
- Family influence – previous experiences with relatives who are experts in a craft.
- Comfort with “working” in classroom – rather than sitting in a classroom.
- MCST is a place to be creative and achieve real results through “doing”.
- **No pressure to choose a program – we respect genuine interest in a subject area.**
- New faculty and new students adds to their other high school experience.
- **We offer content that is more relevant, rigorous, and interesting to tactile learners.**

- Students get to apply what they've already learned at their other high schools.
- **We empower students to learn through design and fabrication at their own pace.**

Why you come to work everyday?

- The Students – we engage in two-way learning, seeing progress, motivating progress, and being a consistent connection between them and their education.
- The Challenges – we help students work through problem solving on a project level and decisions about their future life plans.
- **The Improvement – our never-ending opportunity to improve what we know and how we teach.**
- **The Change – we can change curriculum as needed – we encourage creativity. We don't get bored with what we're teaching because there's a lot of opportunity for creativity and change.**
- Because it's a great place to work.
- Its challenging – Its fun – It keeps me young. I love selling, and education is the best thing to sell.
- We are passionate and dedicated to the mission.
- We liike kids and watching them learn new skills and master a craft.
- **We are able to pass on knowledge to next generation.**
- Still learning.
- **Its a steady and secure job as business and industry are always looking for the next best set of skills.**
- **To give my skills to another generation, as it was given to me.**
- It needs to be about the kids!!
- **Semi-career change. I'm now teaching instead of "working". Its my time to share my experience and knowledge.**
- **Sharing knowledge and skills.**
- Education is passion and never wasted.
- **My 2nd career. After 20-plus years of "working" I'm now teaching the next generation.**
- I like the student / teacher ratio of 16:1. Lots of personal attention and guidance.
- I love teaching the skills I had a chance to master.
- **Opportunity to mentor students and watch them succeed.**

Summary of what needs to change:

- **We need a new facility that supports each individual program and the school as a whole.**
- **We need to keep encouraging industry experts to teach.**
- **We need to extend the day beyond 2 1/2 hours.**
- **We need to engage more students of all ages.**
- **We need to keep our programs relevant.**

## Conclusions from the AM and PM Student Workshops

*(bold text reflects common ideas)*

### Why does MCST inspire you as Students?

- The teachers; they care about what we're doing, because they do it too.
- Students choose to be here, choose what they want to learn, and love to be here.
- The opportunity to learn in a different way.
- **The location of the building "It's our own school".**
- I come to this school because it's what I want to do with my life. I want to be an auto mechanic and this is the best training there is at my age.
- I'm in the automotive program because it will help me get into a college that teaches diesel engine repair.
- If it wasn't for the culinary program, I'd be out working in a restaurant. I chose to work here, graduate, and then run a restaurant. It's fun to cook and then eat what I'm cooking.
- Enjoyment in using creativity.
- I cannot get this type of hands-on, practical experience anywhere else.
- **Community involvement...I have something to talk to my parents and older friends about.**
- Career focus - my education is now focused on my career.
- I wanted to try something different.
- **Its a better education (for me). What I'm learning is actually....**
  - Useful and meaningful**
  - Used for a profession (not exactly the single subject)**
  - Enabling me to take college level classes and get college credits**
  - Enabling me to start my career early**
  - Enabling me to work and study**
  - Fun and Work**
- **Business – I get to see how to work and what others are doing. Employers get to....**
  - Work with us so we can prove our ability and get a job**
  - Give us a job so we can go to school (college)**
- Teachers treat us like adults.
  - We are responsible here...more than other schools, where we're treated like "kids"
  - We are comfortable here...more than other schools...with more opportunity to be express ourselves.

### Why should the school change or improve?

- **Additional programming – based on area needs so we can work during school and summer**
- **Better scheduling, just as we're getting something done, its time to go back to school.**
- We need an auditorium like our other school so we can all meet.
- We need noise suppression and control - its loud in here when we're all working.
- We need storage for our projects.
- A school should NOT be a maze (very poor way-finding).
- **Sustainable practice area - we know clean energy is the future, we should learn it.**
- Sustainable school – green education.
- **A new look to the building. My friends don't like the look and feel of the building.**
- The driveway blocks the back door and we need larger bay doors.
- We need more student parking.
- Scanlin Tech systems.
- SPACE - there is no space. Everything is on top of everything else.
- We need outside activity space.
- Access / express change - why can't we stay here and work on our projects after school.



- Carpentry needs to be moved away from the machine tool because the dust is ruining our machines, and the noise is very distracting.
- We need welding units that work (in the automotive area).
- We need lights in the booths, preferably LED's so they won't burn out.
- Better tables in the booths, the ones we have are a mess and no longer work.
- Drinks (vending machines) in the downstairs, we have to walk a long way to get a drink.
- Space for tool boxes in, or at least near, the booths (areas where we work).
- Locks on the bathroom doors, or provide a stall.
- More classroom space - there is no place to take tests and taking a test in all that noise doesn't work.
- More tool storage space. There is no place to store things, we have to constantly go outside.
- More loft space - the photo equipment is all mixed up with all sorts of building storage.
- **All day school: time is a problem.**  
**Time is a problem at our home school and here. It's always hurry up and get on the bus**  
**More flexibility about time – freedom from the “bell”.**  
**We know personal responsibility; let us use the school when we don't have time to finish our projects.**
- **Global interaction – we should see how other students are doing what we're doing.**
- **A school environment that reflects a real work environment; a business would work in here.**
- **Space that fosters creativity and learning.**
  - Room to think, space to create, and room to fail. (invention is the by-product of failure).
  - More sound-proof walls and roof (very loud when its raining).
  - More light in the shops downstairs (some space are very bright, others have no light).
  - Bigger Certified Nursing Assistant room. Space is too small and cramped.
  - Changing room or locker room. We have to leave and hide our shop clothes.
  - An outside booth, storage space (for Marine Tech).
  - Garage doors with easier access for boats, outlets in the booth, heated booth.
  - Intercom in classrooms, not in the shop area, lowered lights, better ventilation, better organized tools.
  - More outboard shop (small engine repair) space.
  - More space for presentations. Teachers move from person to person or group to group and are interested in all of our individual projects, but there is no place to present what we're doing to everyone else.
- **More programs that offer more college credits - maybe visit colleges or have them visit us.**
- **More field trips to businesses so we can see what they're doing as compared to what we're doing.**
- More program opportunities. I know friends who take other courses at other CTE schools.

#### Summary of why you would change MCST

- **We need a facility with more space that fosters creativity and learning - and more of it**
- **We need to keep current with industry and the global economy**
- **We need to extend the day schedule and gain access during off school hours**
- **We need to create a better looking building that encourages more participation**
- **We need to keep our programs relevant with new industries and businesses**
- **We need to expand courses that offer college credits**
- **We need to keep our “own school” identity**

Conclusions from the Stakeholder Workshop  
Samoset Resort June 17, 2014

*(bold text reflects common ideas)*

Why is CTE critical to the Region?:

- Heads-on - Hands-on learning opportunities.
- Students see application of learning and apply it to refine and master skills.
- Ensure that labor force needs for areas within Knox, Waldo, and Lincoln counties are met.
- Students are able to select the educational path that interests them most.

Why are we here to create a Vision for the future of MCST?:

- To find the best solution that meets all of our students' needs and the community's needs (taxpayers).
- **Explore necessary updates to current programs and define new programs for higher level skills and new technology needs - staying current with the needs of Industry and Business**
- Rethink how CTE is designed and delivered.
  - **Rethink the image of the school; from its name to how it is presented to students, the regional community, higher education institutions, and area businesses.**
  - **Rethink the way we market the school to our Region and greater Maine.**
  - **Rethink the way programs are delivered and expand opportunities to more members of the regional community.**
- Explore unmet needs of the Region and find solutions.
  - **Find out where the employment opportunities are in the Region; and the skills needed**
  - **Find out what obstacles are in the way for creating a community college setting here.**
  - **Find out if other CTE models work better and how we can apply them at MCST.**
- Get industry and higher-education more involved in the programs and activities of the school.
- Create a more inspiring place to learn; a place that reflects our educational values.
- **Balance the services with the cost; engage more students and expand opportunities.**

Why are changes needed at MCST?:

- Reduce costs (find ways to maximize our return on our investment).
- **The facility is uninspiring, outdated, too small (out buildings), and is standing in the way of higher education coming to MCST.**
- The school is falling apart and costing the taxpayer's money to keep it running.
- **Not enough students attend MCST for the price we're paying (need to get more students and community members engaged).**

Summary of why change is needed at MCST

- **We need an inspiring and welcoming facility that attracts more local businesses and colleges to get involved; and balances the cost with the services and opportunities to all members of the Region.**
- **We need to deliver programs in a way that maximizes the return on our investment.**
- **We need to align our programs with the needs of local businesses and higher education.**
- **We need to keep our programs relevant with new local industries and businesses.**
- **We need to be recognized throughout Maine as a Career and Technical Education leader.**

Visioning Session 10-09-14  
Oceanside High School, Rockland

*(bold text reflects common ideas)*

What if we deliver a Full Day CTE program?

**Examples of other models:**

Ellsworth = full day every other day.  
Lincoln = full day every other day.  
Lewiston = full day every other day.  
3 block of learning 4th block of prep.

• **Pros:**

Full day = less discipline issues.  
Programs like Culinary Arts benefit students prep in AM and cook in PM.  
Programs like CNA / Health Science benefit schedules align better with outside clinicals (program hours align with workday).  
Reduces busing costs by 50%.  
Programs align with local business workdays encouraging more coop opportunities and preparing students for real world workdays.  
Either (5) 8-hour days or (4) 10-hour days to align with some businesses.  
Faculty eat at same time as students.

• **Cons:**

Dining space and support staff will need to be added to the operational cost.  
Public transportation / need late bus.

• **Challenges:**

Aligning schedules with sending schools a requirement for success.  
Snow days will need to be considered.  
Teacher prep time needs to be scheduled.  
Teacher breaks have to be scheduled.  
Need to find a study of educational results.

What if programs expand and allow access to more community members during the day?

Safety and security will need to be addressed.  
A policy for access control will be needed.  
Proper "vetting" of folks will be required.  
Adults will learn with the students and build confidence, creativity, and maturity (just as in the workforce).  
Advanced students can help teach adult ed programs and everyday technology skills.  
Vetting process of education interest.  
Policy for businesses to adopt "Learning First" work product is second.  
After school-hour programs may increase.

Retirees can volunteer as Ed-techs.  
Students of all ages can get more involved.

What if we offer more educational opportunities?

**Region 8 is the most important opportunity in the area to help students and adults.**

Facility needs space for expanding the learning opportunities for everyone (new types of educational space).  
Technical college use will require spaces that support their needs.  
Industry use will require spaces that support their skills and training.  
Center for opportunity - new CTE including accelerated industry training and programs.  
Collaborative unions will invest in training centers for labor force and new careers.  
Specifically, lab / flexible space that accommodates multiple uses that meet the needs of industry, CTE, and higher education

**Obstacles / Needs**

Building gives off wrong image; needs to market "innovation and our future".  
Needs flexible lab space.  
Needs space for large group instruction.  
Needs to serve more members of the Region:  
Secondary level (HS) and even middle school  
Post-secondary level  
Adult level  
Needs to be equipped for CTE, industry, and higher education learning.  
Full STEM school – bring science, technology, engineering, and math to the school.  
Get out of "subject silos" & integrate content.

**Site opportunities / thoughts**

• **Pros:**

Commercial boat building and repair.  
Coast guard program – marine biology.  
Proximity to the water and centrally located.  
Good asset - selling would require re-zoning.

• **Cons**

Seems to be "tucked away" - needs marketing effort to inform community members.

Visioning Session 10-14-14  
Camden Hills Regional High School

*(bold text reflects common ideas)*

What if we deliver a Full Day CTE program?

- **Challenges:**

Aligning schedules with sending schools.  
Will need a class-size policy (currently 16:1).  
Determine arrival and departure times that work with extra-curricular activities.  
Aligning with academic programs (AP, etc).

- **Pros:**

Full time students; no more mid-day travel.  
Possibly expanding program opportunities.

What if programs expand and allow access to more community members during the day?

- **Challenges:**

Education needs to "come first"; job-related tasks "second".  
Finding staff for weekends and evenings.  
Industry should use the school – "...on their schedule..." and not interfere with CTE.  
Exploratory lab scheduling should take place "at times that do not interfere with CTE".  
Innovation labs for all ages would be great.  
Need to define costs (adult-ed currently pays).  
Educate guidance counselors and teachers.  
Enables teachers to remain current with industry (professional development).

- **Industry Partners**

Determine the number of students involved in programs and recruiting for specific needs (example: CNA / Health Sciences + other).  
Cooperative learning is expected.  
Business incubators are expected

- **Exploration Studios**

K-8 STEM programs would be great  
Freshman can engage in applied learning  
Flexibility of space to support industry use;  
CTE program use; Academic HS use (projects)  
Small business connections; place to grow  
Support CTE exploration & CTE certificate and license & work place readiness training

- **Marketing (PR) the Opportunities**

Need a full-time staff / grant writer  
Need to provide tours for all identified groups

Need to review how other schools are doing it  
Need to change the image of CTE School.  
Celebrate all schools, including MCST.  
Celebrate what MCST does well, and what MCST can become with change.  
Celebrate what each school does best.  
Region wide publication to show schools' success; such as quarterly announcements.

What if we offer more educational opportunities?

- **Challenges:**

Changing the culture of students (CTE stigma)  
Creating cohesion between sending school and MCST schedules and "imagery".

- **How best to implement:**

Combining the academic / CTE with buy-in from the school leaders and teachers.  
Create cooperation and not competition.  
Create a "Win -Win" for all students.  
Continue the separate school cultures to support school spirit and identity.  
Accommodate anytime / anywhere learning with video-conferencing.  
Strengthen soft skills by treating students like adults and allowing them to make informed decisions about the programs they choose.  
Demonstrate the difference between current CTE and tomorrow's CTE (STEM / STEAM and Common Core alignment).  
List all programs throughout the region and decide on New Programs for MCST.

- **Other Comments to Consider:**

Hard to get employers in during the day.  
Partner schools vs. sending schools.  
Go to industry partners for money – after school, summer camp / fees?  
Define reasons why CTE programs cannot be separated into sending schools.  
How will video conferencing work in the academic HS if equipment is not available?  
CTE curriculum allows video-conferencing in select programs only; however, observation is a good marketing / informational tool (ex: TV cooking show via Culinary Programs).

## Visioning Session 10-15-14 Medomak Valley High School

*(bold text reflects common ideas)*

### What if we deliver a Full Day CTE program?

- **Pros:**

Will provide a better educational experience.  
Less disruption and time spent on buses.

- **Challenges:**

Need a dining facility and kitchen.  
Imposing changes on school schedules.  
Find the funding to support new spaces.  
Need to obtain buy-in from students to accept staying in their sending school "all day" every other day. Students look forward to leaving every day.

- **New What If:**

What if a new technical high school is created where CTE students obtain all their credits for graduation?

- Ensures cooperation between Region HS
- Creates a comprehensive High School for approx 450 (MA and NH model)
- Creates a choice for academic or tech HS
- Could be a dual campus of HS and tech HS
- Could operate more efficiently; but cost more due to duplicating services, or not if teacher sharing among the schools took place

### What if programs expand and allow access to more community members during the day?

- **Challenges:**

Student safety and security needs to be a priority.  
Financial component – staffing and operation.  
Need to establish and find funding needs.  
24 / 7 education needs more teachers and staff.  
Logistics of attendance.

- **Pros:**

Culture of the area would appreciate having access to the facility.  
Recreational culture and community organizations would use the facility.  
Focus on younger students in vacation and summer sessions.  
Exploratory labs – possibly generate fees.

Learning soft skills will be enhanced.  
Marketing the school will be critical so what we provide is actually used.

### What if we offer more educational opportunities?

- **Thoughts:**

Marketing of the programs and opportunities will be critical. Many do not know what MCST currently offers.

If new programs were offered "they would come"; such as:

- HVAC / plumbing
- Electricity

Industry leaders could teach the skills they need for their businesses.

Facilitate the opportunities by industry needs  
Some employers currently hire through temps to avoid full-time employment costs. How would this prevent a "part-time" workforce.  
Collaborative unions will need to invest in the idea of using MCST for training their members.

- **Obstacles / Needs:**

Need to obtain employer buy-in to engage in the MCST programs.

State programs are "defined", need to explore what can be "tweaked" to meet current business needs (equipment?)

Community participation will require buy-in.  
Scheduling and busing decisions will be a priority.

Opportunities are needed; need to find the best way to share resources and control costs.

Need to compare models and define what is needed and what will work best for the entire Region.

- **Other Notes:**

See if State funding for employers can help supplement wages / training.

Kids need the opportunity to compete.

Need the right type of environment to learn.

Need a safe OSHA friendly facility.

Need partnerships / grants / marketing / money to make this happen (we're not MA).

Visioning Session 10-16-14  
Mid-Coast School of Technology

*(bold text reflects common ideas)*

What if we deliver a Full Day CTE program?

• **Pros:**

Time in sending school vs. CTE will be better spent.  
Curriculum should be designed to meet common core standards - then students can come every day (Technical High School).  
Enhanced project engagement and time to complete tasks - gain better experience.  
Save fuel cost and education time.  
Enhances co-op programs with area local businesses.  
Social aspects of HS will be served as students stay engaged in both schools for more quality time.  
Student teacher relationship may become better at sending schools (more quality time)  
Enhances aspirations – confidence.

• **Challenges:**

What happens to students who want to participate in CTE as well as AP classes?  
How do students stay involved in extra-curricula activities at the sending high schools?  
CTE concern about “losing” students for a day  
Allowing Community into school/MCST shops may impede the concept.  
Need to define how costs associated with this option will work.

What if programs expand and allow access to more community members during the day?

• **Thoughts:**

Individual partnerships with business will need to be arranged - might all be different.  
Sustainable economy is needed to sustain the concept; however, this allows for re-training during economic down turns.  
Could be opened to all family members.  
Could those on welfare offer their skills.  
This would change the “MCST” stereotype.  
MCST can become the anchor of job training.  
Challenge adults and students to learn from each other.  
Enhance Cooperative Learning at the school.

Would reduce higher-ed travel.  
Industry could pay for continuing education.  
Combining student skills directly with industry leaders and experienced workers.  
Need to define capacity and schedules.  
Need to open the resource to everyone  
Middle School, Seniors, Cottage Industries.  
Add summer programs with transportation.  
Students learn from those who are experts in owning and operating a business.

What if we offer more educational opportunities?

• **Pros:**

Create New Programs.  
Change the name? “Center for Mid-Maine Entrepreneurial Studies”??  
Engage our Small Cottage Industry  
- Textiles  
- Organic farms  
- Entrepreneurial ventures  
Create technological “think tanks”.

• **Obstacles / Needs:**

Need to find federal money for technology and business programs.  
Need to “Market” the school.  
Need to “get out the word” of what we’re visioning.  
Need to showcase student projects.  
Need to celebrate student success throughout the Region.  
Need to avoid Bureaucracy obstacles.  
Need to break down walls of nay-sayers.  
Need to build a grass roots effort.

### Workshop Conclusions – Aligning the Vision

After meeting with the Stakeholders, Administration, Faculty, Students, and conducting four (4) community meetings, common suggestions and ideas were compiled into a discussion about what these individual groups were all interested in pursuing. The consensus results should be considered a priority in the future of MCST.

What if CTE course become full-day sessions taking place every other day?

- Requires scheduling adjustments and cooperation amongst the Region schools.
- Reduces travel time disruption and provides a better educational experience.
- Reduces travel costs by 50%.
- Enhances the possibility for coop programs with local businesses; full workday experience.
- Keeps students more engaged.
- Creates the need for a dining area and staff for students at MCST.
- Creates the work ethic of full-day employment and work flow on projects.
- Allows for the CTE programs to align with common core standards in core curriculum.
- Enhances the social aspect of learning at MCST and sending schools.
- Concerns and obstacles were defined
- Students and faculty have to consider losing “daily interaction”
- Schools have to consider how students can stay engaged in sports and other extra-curricular activities at the sending schools
- Schools have to consider how academic course, such as AP classes, will work with schedule change.
- DOE class size policies and program participation rates will need to be reviewed to ensure programs are available to everyone in the Region; but should not change from current opportunities.

What if the school opened its doors to community members at all times; including after hours?

- Overarching concern is safety and security; both the students interacting with adults and the facility tools and equipment being used inappropriately and damaged.
- Allows for Region 8 retirees and community groups, to use the facility as a Maker Space and stay engaged with the community.
- Allows Region 8 retirees and business leaders to participate in student education.
- Allows more students and different age groups within region 8 to learn skills through workshops and sessions after school, on weekends, and school vacations.
- Allows local businesses and higher-education to use the facility for work-specific training and formal course work.
- Creates a positive effect and better markets the school’s value within the Region.
- Enhances the daily activities of adults needing to gain skills and may keep more families in the Region.
- Creates the same atmosphere as “the work place”; refining student soft skills, allowing adults to learn from the students (technology), and encourages innovation and invention.
- Concerns include:
- The costs for having MCST staff available when the school is open.
- The aspects of safety and security; creating the need for use policies.
- Scheduling simultaneous uses.
- Local businesses should focus on CTE program requirements and not use the school for employment production needs.

What if the student and projects work were showcased to local employers?

- The MCST success and results will become more well known throughout the Region.
- The MCST image and culture will be further enhanced; removing any “stigmas”
- Collaborative partnerships and business leaders may invest in the programs.

- Business leaders may become more engaged with the school.
- Students within the Region will see the results and opportunities at MCST.
- There are no concerns; this feature is a win-win.

#### What if the school maximized Cooperative Learning Opportunities?

- Requires scheduling adjustments and cooperation amongst the Region schools.
- Businesses may invest and start recruiting.
- Students see an avenue that further inspires their education.
- Students gain work experience and funds for higher education opportunities; demonstrate competence and work ethic from employer references.
- Area businesses obtain energized employees looking to be trained.
- Students learn more social soft skills in a professional environment; building confidence.
- Adult education students will gain employment opportunities and build a resume.
- Some programs, such as CNA, currently participate in this process, so its not a new idea.
- Reduces travel to community colleges, if MCST spaces are made available to colleges for offering on-site opportunities
- There are no concerns; this feature is a win-win.

#### What if local Industry Partners Take Active Roles in the School - and partnered to define Programs?

- Requires scheduling adjustments and cooperation amongst the Region schools.
- Programs may evolve to offer specific skills in demand throughout the Region.
- Employment opportunities exist. During the workshop business leaders from the boat building, composites, and medical fields expressed an immediate need to skilled workers; and their willingness to engage with MCST.
- Student skills are combined with industry skill development and techniques.
- During the course of the study, the following businesses were contacted to determine the following information:
  1. Are they interested in engaging with MCST to determine new programs and resources that can be shared and supported?
  2. What can MCST do for their businesses?
  3. What skills and services are they looking for in new employees?

Fresh Catch, Dick McGee  
 Pen Bay Healthcare, Erik Frederick  
 SummerMaine, Fletcher Hall  
 Down East Magazine, Bob Fernald  
 Global Packing and Shipping, Sarah McLean  
 Homes and Harbors, Stacey Palmer, Maine, Boats  
 Hill's Seafood, Sam Hill  
 Elliot & MacLean, Sarah Gilbert  
 Bangor Savings, Skip Bates  
 Adventure Advertising, Joe Ryan  
 Joe Corrado Photography, Joe Corrado  
 Dragon Cement, Mark Curtis  
 Breakwater Design, Ginny Savage  
 Machias Savings Bank, Brad Galley  
 Morgan Stanley Investments, Rita West

#### What if the school created Exploratory Labs?

- Students of all ages and community members have opportunity to explore CTE programs.
- Students of all ages, and community members can "explore" multiple fields, educational pathways, and participate in programs that enhance life-long learning.
- New programs may evolve from exploring and inventing opportunities and new skills.



- Requires scheduling adjustments and cooperation amongst the Region schools.
- Higher education and business leaders may be encouraged to take advantage of these spaces for research and development opportunities with students of all ages.

What if the school offered programming through Webinars and Video Conferencing?

- Concern is that sending schools may not have the technology to accommodate this option; but would be interested in pursuing this course.
- **Requires planning, cooperation and region-wide superintendent agreement.**
- **More students and educators may become engaged in MCST; at all educational levels. Courses can accommodate more students and create more opportunities for Ed-techs, higher-education, and business leaders to get involved.**

What if the Bridge Year Plan was implemented in all Schools?

- **This plan allows students to earn up to 30 college credits during high school.**
- **This plan is currently being piloted this year (2014-2015) throughout the state.**
- **These requires planning, cooperation and region-wide superintendent approval and support by school boards, superintendents, and administrators.**

"Career Technical Education helps to bridge these gaps in key industries. Students with a CTE-related associate's degree or credential can earn up to \$19,000 more per year than those with a comparable humanities degree."

*- National Skills Coalition 2014*



## b. Creating the Vision

### Meeting and Workshops

Mid-Coast School of Technology kicked off the study with 2 meetings of the Stakeholders. The goals of the Visioning Committee were defined and objectives were outlined. The process was to include the following:

#### Attendees Included:

Beth Fisher – CTE Director  
 David Mathews – Chair, Board of Directors  
 Sherry Moody – Business Manager  
 Kim Appleby – Visioning Committee  
 Tori Manzi – Visioning Committee  
 Norm Theberge – Visioning Committee  
 Bill Hibbard – Visioning Committee  
 Ron Lamarre – Lavallee Brensinger Architects

Stakeholders invited to participate in the June, July, and August 2014 Visioning Sessions would include:

- Program Advisory Committee Members
- Region 8 Superintendents
- Board Members
- Educators
- Visioning Committee Members
- Administrative Team
- Specialists; such as Technology, Adult-ed, Facility Director, etc...

The goal was to capture the opinions, thoughts, and ideas from a cross section of Stakeholders from within the Region. This leads to the defined Vision detailed into a set of Priorities for the school as it moves forward into the future.

One over-arching goal was defined as identifying the “Business Needs” from local industries throughout Knox, Waldo, and Lincoln counties. Business leaders were contacted and invited to participate. The Penobscot Bay Regional Chamber of Commerce was also invited to engage in the process. Local business leaders associated with the PBRCC were also contacted to explore what specific skills and professional attributes that were looking for in their business, and what they feel their future workforce will be required to have in terms of specific skills and training. This information will be used to help decide which future programs are offered at MCST and how existing programs may be modified to meet the needs of local industry.

A second over-arching goal was to interview students from both the sending schools and MCST. Establishing opinions shared by students and parents about the school and what they consider inspiring, supportive, and culturally-connected about the school. Through this process define what students found to be obstacles to the programs, as well as their understanding about what goes on at MCST.

A third over-arching goal was defined as exploring the MCST of the Future. Defining “Why” MCST exists in its current form; “What” can MCST become; and “How” MCST can evolve to deliver Career and Technical Education to all students in the Region; including adults, younger students, and higher-ed students.

**Mid-Coast School of Technology  
MCST Regional Board of Directors****Kick-off Meeting**

4-17-14

10:00 AM to 12:00 PM at MCST Conference Room

**Attendees**

Beth Fisher – CTE Director

David Mathews – Chair, Board of Directors

Sherry Moody – Business Manager

Rick Migliore – Facilities Director

Robert Deetjen – Student Services Coordinator

Ron Lamarre – Lavallee Brensinger Architects

**Communications:**

- Ron will send all meeting minute-type correspondence to Sherry for distribution to everyone at MCST.
- Everyone was invited to send Ron e-mails or call for any information or discussions at any time.
- Ron was asked to contact Scott Brown at the DOE to discuss the MCST facility assessment study that is now underway.
- Ron will take minutes at all meetings and send to Sherry for review and comment; and then finalized by Ron. The final minutes will be distributed by Sherry.

**Study Schedule:**

- On-site facility visits and assessments to start the week of June 23<sup>rd</sup>, after school is out for the summer.
- Faculty / Student Visioning Sessions:
  - Ron to attend the Faculty lunch on May 16<sup>th</sup> to speak with faculty. The purpose is to hear what the faculty thinks about the current facility and what they think the facility could become.
  - Ron to attend the Skills BBQ on May 23<sup>rd</sup> to speak with students at 9:00am and 11:30am. The purpose is to hear what the students think about the current facility and what they think the facility could become.
- Stakeholder Visioning Sessions:
  - The week of June 16<sup>th</sup> was identified as a week where the following participants may be able to attend the first visioning session to take place at a venue that can support the group:
    - PAC Members
    - Region superintendents
    - Board members
    - Educators
    - Visioning committee members
    - Administration team
    - Specialists; technology, adult-ed, facility director, etc...
    - Students

- The week of June 16<sup>th</sup> was identified as a week where the following participants may be able to attend the first visioning session to take place at a venue that can support the group:
- The agenda for the meeting will be a three (3) part workshop:
  - Discussion of the “Why...”
  - Discussion of the “What If...”
  - Discussion of the “How...”

The Visioning Sessions will be documented and recorded with the intent of including in the ME DOE Ed Spec document.

**Discussion:**

- Community college involvement is key. Schools, such as Kennebec Valley, Eastern Maine, and Southern Maine, have expressed interest and should be included in the eventual programming discussions. Previous MOUs are included in the Many Flags submission; where the 9-16 concept was pursued with the State.
- Any in-place agreements with industry(s) or community college(s) will be sent to Ron.
- Industry partners will be contacted for involvement in the eventual programming discussions.
- Project funding options were discussed. Possible alternative delivery methods, such as Public-Private-Partnership and Grant / Donor Opportunities. MCST will consider finding a grant writer to approach local industry partners.

**To Do List:**

- Ron to send the signed contract to MCST
- Ron to create and send a postcard invitation for the Stakeholder Visioning Session; to include an RSVP request. A draft will be sent after a date, time, and venue is finalized. Postcard is intended to be an e-mail blast.
- Dave to confirm Samoset as a venue for the Stakeholder session.
- Rick to gather existing condition drawings of the building; which will be reviewed by the assessment team in late June; when the facility is visited to start the on-site facility review and assessment.
- Beth will provide student projections; if known.
- Sherry will send Ron any and all documents that she believes may be helpful; including at least the following:
  - Utility costs for the past 5 years (fuel and electricity broken out separately)
  - Maintenance costs over the past 5 years broken down annually; if possible, a list of the “big ticket” items that were completed
  - Replacement of systems and equipment over the past 5 years; costs and descriptions
  - Furniture and Equipment upgrades purchased over the past 5 years; cost and descriptions
  - Reports from previous studies or facility assessments; such as AHERA reports, etc....

This represents the kick off schedule to get the work completed through the end of June.

End of Minutes.

**Mid-Coast School of Technology  
MCST Visioning Committee****Kick-off Meeting**

5-16-14

9:45 AM to 11:00 AM at MCST Conference Room

**Attendees**

Beth Fisher – CTE Director

David Mathews – Chair, Board of Directors

Sherry Moody – Business Manager

Kim Appleby – Visioning Committee

Tori Manzi – Visioning Committee

Norm Theberge – Visioning Committee

Bill Hibbard – Visioning Committee

Ron Lamarre – Lavallee Brensinger Architects

**Communications:**

- Ron will send all meeting minute-type correspondence to Sherry for distribution to everyone at MCST.
- Sherry will send all correspondence to the Visioning Committee, and all the sending school boards

**Study Schedule:**

- Stakeholder Visioning Sessions:
  - The June 17<sup>th</sup> session was discussed and the invited participants were identified by Sherry:
    - PAC Members
    - Region superintendents
    - Board members
    - Educators
    - Visioning committee members
    - Administration team
    - Specialists; technology, adult-ed, facility director, etc...
    - Students

It was noted that each Board may send who they choose to attend the session; but the goal is to have a cross section of all Stakeholder groups represented and seated in a mixed group, so that topics can benefit from multiple perspectives within each group.

Sherry will send a list of invitees to the Visioning Committee.

**Discussion Points:**

- It was reiterated that the process need to identify the “Business Needs” from local industry(s)
  - CTE Program decisions should be based on industry needs
  - Meeting the business needs of Knox County is a priority in deciding on the final program
  - Defining the programs should also consider prior and current research / polling of the business community need

- What do the sending school students need to see or hear to get them interested in MCST?
  - o Inspiring school (exterior and interior aesthetics)
  - o “Knowledge” of what takes place within the school (student work and achievements)
  - o “Knowledge” of the benefits of a CTE program
- Reaching out to each sending school:
  - o Meeting the culture of each school was defined as a Study task
  - o Visiting satellite programs was defined as a Study task
  - o It was noted that “All options” need to be “on the table” for consideration:
    - Charter school model
    - MA model of comprehensive education within the facility, or other national models
    - Integrated Community College - Adult ed – CTE HS
    - Etc....
  - o A wider community “say” in what MCST becomes is critical
  - o Outreach program is needed to define MCST now and in the future
    - High % of Knox County has not been in the school – Maybe a YouTube video is needed
    - Turnover at the superintendent position creates a perpetual discussion of MCST’s role in the Region
    - “Build a consensus” / obtain buy-in between the superintendents
- Maine DOE challenge
  - o Cannot change the “educational model of CTE Center; but maybe the process
  - o Process: Defining MCST of the Future
    - Daily Schedules
    - Defining the school as the ME DOE CTE center (not charter, not magnet, etc...)
    - Integration of ideas on the school; in-line with State statutes
    - “What is CTE” and “Why does it exist”
      - Create a memo to those attending / invited to the visioning session
    - OR
      - Create a Survey Monkey FAQ to define the Process and allow questions to be submitted prior to the visioning session
    - Define the steps necessary to ensure each sending school understands MCST’s role
      - Offering the required / defined leadership and oversight to meet DOE regulations
      - Offering national standards within national requirements
      - Offering 3<sup>rd</sup> party assessments
      - Offering properly equipped facilities to meet educational requirements
- Current concerns that affect the process:
  - Sending school leadership change constantly disrupts the understanding of MCST
  - Continuity of the school’s connection to each sending school needs to be strengthened

#### To Do List:

- Beth and Sherry will send Ron the information to define:
  - “What is CTE” and “Why does it exist” in Region 8
  - All the FAQ items that constantly arise or need to be addressed
- Ron will put together a brief outlining the current status of MCST and its role in Region 8; from a “consultant’s perspective”, as opposed to MCST’s perspective
- Ron, Sherry, and Beth will work on a document for an online survey monkey to be sent to all invited members of the Visioning Session; so that even those who cannot attend can provide input. The survey monkey document will be distributed before the meeting on June 17<sup>th</sup>.

End of Minutes.





### c. Agents for Change

#### Spatial Change

Currently Mid-Coast School of Technology is operating from a re-purposed boat repair facility. The educational spaces are located within this facility and “fit” together to create areas for educational programming delivery to take place. These areas are not well organized as an educational environment that supports 21st century learning and teaching opportunities. Specific goals from the visioning process cannot be attained from within the current facility; such as:

- Team teaching and shared work areas where faculty can collaborate and prepare.
- Student project areas that share storage and classroom space for third party assessments
- Enlarged spaces to accommodate equipment in code and regulatory compliance
- Spaces for displaying student work
- Student program spaces that provides indoor environmental quality that supports learning; specifically:
  - Acoustic separation and control to meet ASHRAE sound standards
  - Lighting to meet ASHRAE light level and illumination standards
  - Ventilation and exhaust to meet ASHRAE fresh air standards
  - Heating and cooling to meet temperature control standards to meet ASHREA standards and energy-code compliance
  - Visual-connectivity and way-finding systems that define path and place for informal and student interaction; as well as program connectivity for inter-disciplinary student engagement.

Creating an interior environmental quality that supports teaching and learning is a fundamental change that will improve the existing facility from a renovated industrial environment into an inspiring and meaningful educational environment. This change is a priority for the future of the school.

#### Facility Infrastructure and Imagery Change

The existing infrastructure (HVAC, plumbing, electrical, and structural) systems are antiquated and past their expected life-cycle value. The condition of these existing systems are further detailed and outlined in the attached engineering assessments. The use and operation of the appliances and fixtures that are supported by this infrastructure are also either past their life-cycle expectancy or are not adequate for the population of the school.

The exterior envelope, consisting of the exterior walls, windows, doors, and roof systems are antiquated and past their expected life-cycle value. As expected, given the age and original building type of the facility, these systems do not meet energy-conservation codes or standards. Daylighting requirements and door access control lack the required standards and requirements for an Educational-use and Assembly-use facility. 21st century schools are classified by building codes as a mix of Educational-use and Assembly-use; meaning the educational spaces are “used” for educational purposes and require specific spatial requirements, and spaces within the school “used” for assembly of the occupants (eg: dining facility) require specific spatial requirements.

Restroom spaces are physically too small in size to accommodate standards required by the American with Disabilities Act (ADA) and fixture counts fall short of required numbers based on occupancy. These facilities are also randomly located throughout the facility creating un-desired distances and routes for access by participants during instructional and learning sessions. The goal of providing regulation and code compliant restroom facilities, located to accommodate all users without disrupting the education is a priority for the future of the school.

In addition, the physical appearance represents an industrial facility and masks the educational activities and programs taking place within its walls. Many observations and commentary during community and stakeholder meetings indicated the school’s physical appearance was a deterrent to students and parents who may otherwise choose to attend the school. During student visioning

workshops it was made clear that current students had no idea what took place in the facility, and only after visiting and witnessing the school's programs and opportunities did they choose to attend; however, it was further noted that other students who were also inspired by the programming simply were not comfortable attending the school due to its current condition and negative reputation based on the "look" of the facility.

Complying with these spatial use requirements and transforming the physical appearance / condition is a priority for the future of the school.

#### Enhanced Community Support and Understanding

Workshops were conducted with many members of the Region 8 community. During these workshops it was noted that one major change to be made was the way the school was marketed to the parents and students; including adult students. Many participants voiced their concern that the messages relating to the school success was over-shadowed by the misconception that Mid-Coast School of Technology was a vocational school simply offering an alternative to college-preparatory academics. The following success was shared during these workshops, including:

- 50% of the MCST students continue on to higher-education.
- 20% of MCST students were enrolled in college courses while attending MCST programs
- 200 college credits were awarded through MCST programs in 2013-2014
- 800 adults within the Region 8 community currently take courses at MCST
- 231 industry certifications were awarded through MCST in 2013-2014

As part of the discussion, organizational and administrative facts about the Regional Technical School were discussed. An outline of the statistics was provided:

- In the early 1970s the State of Maine organized Career and Technical Education Regions to ensure all students have access to programs and services. Currently, there are 8 regions in Maine.
- Career and Technical Education Regions function as an extension of the secondary schools located within the region's boundaries.
- Career and Technical Education Regions differ from "technical centers" in the way in which they operate. Career and Technical Education Regions are operated by an individual Region Unit, which assumes full financial and educational responsibility for delivering the programs in a location available to all secondary schools located within the region's boundaries.
- State law dictates how Career and Technical Education Regions are organized and governed.
- Region 8's Cooperative Board oversees the Region's budget and annual assessment to local communities.
- All Career and Technical Education programs need to be approved by the Maine Department of Education; and must prepare students for current and emerging occupations. Each program offered must:
  - Include a curriculum and assessment process aligned with the Maine Department of Education approved industry standards
  - Include a minimum of 350 hours of instruction
  - Be available to all students within the region's boundaries
  - Be pre-approved by the Maine Department of Education
  - Be taught by a certified Maine Department of Education instructor with verified extensive work experience in the specific program area
  - Be implemented by a Career and Technical Education Director
  - Be aligned with Industry Standards; such as:

- American Culinary Foundation
- American Welding Association
- National Automotive Technicians Education Foundation
- Certified Nursing Association
- Include assessment tools designed by a third-party testing agency or professional organization to validate advancement. These tests are proctored by a party vetted by the testing authority as being impartial and protective of the test content.

For these reasons, community members shared that it is a priority to market the message and success of Mid-Coast School of Technology to all students and families. Further, the workshop shared proven reasons why Career and Technical Education is essential within the Region.

- Offering applied Career and Technical Education provides learning opportunities in a more relevant manner. Students believe the education is directly related to tangible skills and knowledge that they see applied in everyday experiences. For this reason, high school drop-out rates are reduced as differential teaching and learning engages more students.
- Applied learning allows for the most amount of retention. For this reason, college preparatory courses have evolved to project-based learning; where students are engaged in real-life applied exercises to explore, research, and report conclusions or construct solutions.
- Career and Technical Education prepares students for either a career or post secondary education in either a 2-year or 4-year college or university. As noted by many students, the applied learning allows them get a jump on either their career or college experience. As with all secondary schools, this educational pathway also prepares students for a military career.
- Career and Technical Education offers national and industry-recognized certification and license in many service-oriented careers; such as certified nursing assistants, welding, and fire-fighting. These certifications and licenses allow students to pursue immediate careers or a baseline for future learning opportunities in their respective fields.
- Career and Technical Education is a required component of secondary school education in the State of Maine.

This change includes exploring, evaluating, and implementing 21st century Career and Technical Education paradigm shifts for student interests throughout the Region. Evaluate and evolve programs offered for enhancing the way in which the Region understands, supports, and takes advantage of Mid-Coast School of Technology was noted as a priority for the future of the school.

#### Scheduling and Use

Aligning Mid-Coast School of Technology scheduling with the sending high schools will address the current condition of time and learning. Students feel they spend too much time traveling to and from their sending schools and too little time advancing their projects and learning their craft. Students are inspired by the relevant course work and the educational leadership. Having to start and stop working based on half-day block sessions was discussed as one of the largest obstacles to the learning process. Similarly, students at the sending schools who do not participate in Mid-Coast School of Technology are interested in the programs, but feel the disruptive nature of daily travel and inflexibility in scheduling along-side their course work in their high school limits their ability to participate.

Exploring ways to engage more students, this will increase the return on investment from the communities. Students will benefit from every-other-day alignment; which would allow students to arrive at the same time and leave at the same time, allowing student participation in their sending school extra-curricular activities. Faculty will benefit from more one-on-one time and less distraction preparing for two cohorts per day; and preparation time could be addressed before, after, or even during the day as students work on individual assignments. This option will require a dining and kitchen space; which can be combined with a student commons used as both dining, assembly, and student project display space.

Aligning schedules does not require every-other-day, as the alignment may also accomplish more flexibility for more students to engage in the programs; maybe at different learning levels where the course may be used to achieve proficiency in art or other common core standard. Using the space, equipment, and teaching resources to fill the time slots with creative opportunities was discussed at length with many community members and students; understanding that certification and licensing needs the required number of instruction hours and third-party assessment.

#### The Cost of Avoiding Change

Current operational costs are divided between “chasing the band aids” and utilities and general maintenance. For the purpose of this analysis, we assume that general maintenance will be the same in a new facility; therefore, we have not included the cost for snow plowing, mowing, HVAC control contracts, etc.... in the costs below. Utilities are a function of efficient spatial design and energy-efficient systems. Utility costs over the past five years have averaged the following amounts:

\$88,289 between the oil and propane

\$34,793 for electrical service

This totals \$123,082 / 57,815 square feet = \$2.13 per square foot. Modern energy-efficient facilities can reduce that cost per square-foot by approximately \$0.63 per square-foot.

For a new facility of the same size 57,815 square-feet

Expenditures can be reduced by \$ 36,360 annually.

For a new facility of approximately 90,000 square-feet

Expenditures may be \$ 135,000 annually or \$1.50 per square-foot.

This includes absorbing the increased energy use to temper and distribute ventilation air; which is currently lacking within the existing facility.

In addition, the past five years have required \$ 464,055 keeping the aged and inefficient facility operational. This amounts to an annual average of \$92,811 per year. These costs will also be reduced to zero in a new facility.

The result, assuming a new school of the same size will reduce annual expenditures by an annual average of \$129,171. If a new facility is aggressively designed to meet energy-efficiency and sustainable design goals, these savings will be increased.



STUDENT PROJECT DISPLAY: WELDING FABRICATIONS - 2014

#### d. Guiding Principles

Mid-Coast School of Technology offers Career Technical Education to all students, including adults, within Region 8. Moving forward, specific guiding principals were discussed and identified at several workshops that took place between June 2014 and December 2014. These principals offer a framework to be considered as the school transforms from its current conditions to a 21st century learning environment. Since these principals were established by community members and stakeholders of Region 8, they offer a valuable summary of expectations and desired outcomes to be implemented.

##### Organization

- A collaborative organization that allows for flexibility and future evolution of program space.
- Spatial adjacencies and inter-connectivity that supports student and adult learning to take place either simultaneously or at different times within shared space that is safe and secured.
- Welcoming connection to higher-education institutions, local businesses, and local middle schools enabling programs to expand and involve more of the learning community.
- Continue to offer, and expand, higher-education courses and partnerships; including the creation of spaces available to college and university use.
- Consider offering and scheduling portions of the school to local business leaders and community organizations to use the program space for continued training, business incubators, and maker space.

##### Personalization

- Consider scheduling programs to meet the needs of student interested in both 2-year and 4-year colleges and university.
- Align program schedules with Region 8 sending school schedules to offer opportunities to all students who have individual learning plans.
- Maintain the identity of MCST and celebrate the history of the school, its alumni, and the work produced by current students.
- Create an environment of team teaching and collaborative learning; enabling students to engage in more programs and teachers to share resources.
- Align career and educational paths with higher-education pathways and local business needs.
- Create space for students to interact and secure personal materials. Create space for teachers to interact and secure personal materials.

##### Adaptability

- Create spaces and organizations that allow future adaptability; defined as multi-sized and multi-use program space with interchangeable infrastructure.
- Create a robust wireless environment that supports all technology tools and encourages global connectivity with outside educators and learning opportunities.
- Create spaces that encourage constant innovation and change within the school to ensure the environment remains relevant to future student and faculty needs.
- Create spaces that are capable of daily transformation enabling different cohorts of students to utilize the school outside of school hours and sessions.

##### Community Connection

- Create connections to local businesses for sharing space and resources.
- Showcase student projects and success for community viewing and appreciation.
- Display student projects for sale; on-site and on the internet, and encourage entrepreneurship.

### e. Desired Design Patterns

Mid-Coast School of Technology is a community asset and offers a wealth of opportunity to everyone in the Region. Inviting community involvement and engagement requires specific design patterns to ensure sustainable and future growth. These design patterns create a language of consistency to be maintained through the future evolution of the school.

- Spaces should remain flexible and adaptable. Flexible for daily use, meaning able to be re-organized within minutes to support a different use. Adaptable for future use as programs evolve, expand, or change.
- Projects and equipment should be easily secured as different cohorts of students and users access the spaces. Tools, materials, and consumable supplies should be shared and respected through policies that support both active and passive monitoring.
- Spaces should reflect the environments of real world experiences. Specific programs should reflect the working environments of business and industry.
- Program areas available to community-use and out-side-hour sessions should be designed with dedicated environmental systems and secured from other areas. Infrastructure should be designed to allow mechanical and electrical systems to operate independently to allow secured areas to remain in the "off" position.
- Sustainable and "Green" systems and materials should be designed and expressed within the educational environment for use as teaching tools. Strategies and measures should follow established best-practices and guidelines for creating a sustainable site, natural resource conservation, minimal energy-use, healthy indoor air quality, sustainable materials, and innovation.
- Meaningful and inspiring imagery should be used to connect the school to the Region 8 architectural and cultural fabric. Exterior design should reflect the values and ideals of the community while expressing the school's purpose and success. Interior design should reflect the aspirations of the students, the diversity of the programs, the relevancy of the coursework, and a 21st century learning environment.
- Safety and security is vital and an important aspect of all schools. The selected security systems and measures should allow for a healthy and safe environment while also supporting the collaboration, creativity, critical thinking, and communication of 21st century education.
- Minimizing the cost of maintenance and operation is a priority within the Region. Measures and strategies should reflect low and easily-maintenance materials and systems. Non-chemical cleaners and simple equipment to ensure easy routine maintenance and long-terms value.





## 5. Programs: Now and Future

### Current Scheduling of Programs

#### Considerations:

Programs are delivered and scheduled to support teacher contracts; sending school sports; staffing needs; and the program study requirements

#### Bridge Program:

Courses are delivered in cooperation with the University of Maine Orono and University of Maine Augusta. Courses are taught by High School teachers, and include the following criteria:

- Agreement between High School, CTE Program, and the University
- Courses include Math, English, Social Studies, and Science
- Each High School provides a cohort of students = taught by High School teachers in their High School
- There are 15-20 students per cohort. All subjects delivered with the cohort together
- Juniors and Seniors receive both High School and College credits for their work
- This program is being Piloted this year at Medomak Valley High School
- Currently offering 25-30 college credits in High School
- This concept originated in CTE programs. Students need to be enrolled in CTE courses

The idea is that this type of program will continue on the "off" CTE days; if an "every-other-day" full time CTE schedule was defined and delivered.

#### Vehicles Storage

MCST has a full size bus, mini bus, van, and 2 pick-up trucks. Storing these vehicles outdoors creates maintenance and operational issues. Providing a garage will reduce the corrosion and engine fatigue; which will extend the life and reduce the maintenance and repair costs.

Current Programs and Delivery  
 Adult education Program 2013-2014  
 642 Students

USCG Licensing: 187-226 adult Students

Program Components

United States Coast Guard Licensing

Location: 1 portable space = "out building" and uses fire fighting space

1:14 instructor-student ratio

Time: Monday-Saturday 8AM - 4:30PM

Duration: 1 and 3 week courses

Spatial Specifications for the space has to be approved by US Coast Guard  
 Year-round Education

CDL Licenses: 20-31 Students

Program Components

Commercial Drivers Licenses

Exterior drive area needs to be approved by the Bureau of Motor Vehicles

Educational Space needs to be designed to meet Maine State standards

1:8 max instructor-student ratio

Duration: 12 week program

Location: 1 portable space = "out building"

Health Care: 90-120 students

Program Components

Health care - Certified Nursing Assistant

Time: Mon-Wed 8AM - 4PM

Duration: 9 week program offered 4 times per year

10 adult students per instructor

Health care - Certified Residential Medication Assistant

Time: Thursdays - 1 day per week

Duration: 6 weeks offered 4 times per year

10 adult students per instructor

Health care - Certified Nursing Assistant Medication program

Time: Fridays 8AM to 4PM

Duration: 16 weeks offered once per year

Computer Science: 60-189 students

Program Components

Location: Computer Lab Space

applications

computer repair/networking

graphic programs

Time: Mon-Thurs 5PM- 8PM

Duration: 6 weeks offered four (4) times per year

1:10 instructor-student ratio

Six (6) courses run concurrently

Machining: approx 60 students

Program Components

Two (2) course run concurrently

Duration: 8 week programs offered once each semester

1:8 instructor-student ration

Location MCST Lab Space

Welding: 40-57 students

Program Components

Two (2) course run concurrently

Time: 2 nights per week

Duration: 8 week programs each semester

3 programs offered: Stick, Mig, and Tig welding

1:8 instructor-student ratio

Location: MCST Lab Space

Needs: Access to 8 welding stations and classroom space

"Hobby" Programs (catch all): approx 60 students

Program Components

Location: MCST Spaces, as needed based on offerings

Carpentry

Introduction to Applied Technology

Auto space

Marine area

Time: Night programs

Student Storage: Space provided in each program space

## Current College Involvement

### University of Maine Augusta - Nursing Program

Eight (8) students are hosted at MCST annually in the Medical Science space for lab instruction.

### Kennebeck Valley Community College

Designated to serve students in the mid-coast region

### Community Colleges (SMCC, EMCC, CMCC, KVCC)

MCST students are currently dual enrolled in various programs including:

- Carpentry
- Auto Tech
- Machine Tool
- Graphic Arts
- Technical Writing
- and other programs

## Current Site Program

Parking: Currently 50-60 dedicated spots

### Student Parking:

20 Current spaces

40 Future spaces needed

### Staff & Visitor Parking

30 Current spaces

80 Future spaces needed

**State of Maine**  
**Department of Education**  
**School Facilities Services**



**Major Capital Improvement Program**  
**Space Program Template**

**Mid Coast School of Technology**  
**Region 8**  
 Grades 9-12 - 400 Students

**Lavallee Brensinger Architects**  
**Educational Planning Phase**  
 September 24, 2014

Mid Coast School of Technology																			
	EXISTING SCHOOL NAME:						PROPOSED FACILITY:						96 student increase - new programs Island Satellite = 50+ Mainland Coop = 60-80						
	NUMBER OF STUDENTS: 300 + 642						NUMBER OF STUDENTS: 300 + 642												
	GRADE CONFIGURATION:						GRADE CONFIGURATION:												
PROGRAM OF SPACE NEEDS	EXISTING FACILITY						PROPOSED FACILITY - DRAFT						PROPOSED FACILITIES - FINAL				COMMENTS		
Subject	# of Rooms	@	Room Size	sf=	Area (sf)	Student Capacity	# of Rooms	@	Room Size	sf=	Area (sf)	Student Capacity	# of Rooms	@	Room Size	sf=		Area (sf)	Student Capacity
Administration																			
214 Student Services Coord	1	@	100	sf=	100	1+2	1	@	150	sf=	150			@		sf=			11-10 x 8-5 x 7-9 clg
213 Office (Bobby)	1	@	100	sf=	100	1 + 1	1	@	150	sf=	200			@		sf=			11-9 x 8-6 x 7-9 clg
212 Data / Server Room	1	@	130	sf=	130		0	@		sf=	0			@		sf=			11-9 x 10-11 x 7-11 clg (new space in net-gross)
211 Faculty Conf-Dining	1	@	180	sf=	180	6	1	@	500	sf=	500			@		sf=			11-1 x 16-4 x 9-5 clg (seating for 15 faculty + kitchenette)
207 Faculty Restroom	1	@	30	sf=	30		0	@	64	sf=	0			@		sf=			6-4 x 4-7 x 9-6 clg - 1 fixture 1 sink (new space in net-gross)
208 Main Office	1	@	249	sf=	249	2	1	@	550	sf=	550			@		sf=			21-6 x 11-7 x 9-5 clg
208D Record Storage	1	@	42	sf=	42		1	@	100	sf=	100			@		sf=			6-5 x 6-7 x 9-5 clg
208A Conference	1	@	178	sf=	178	6	1	@	200	sf=	200			@		sf=			11-5 x 15-7 x 9-5 clg
208B Business Mgr	1	@	139	sf=	139	1	1	@	150	sf=	150			@		sf=			12-2 x 11-5 x 9-5 clg
208C Director	1	@	161	sf=	161	1+3	1	@	200	sf=	200			@		sf=			15-11 x 10-1 x 7-7 clg
209 Adult Ed	1	@	105	sf=	105	1+1	1	@	150	sf=	150			@		sf=			11-3 x 9-3 x 9-10 clg

Mid Coast School of Technology

217 Cafeteria	1 @	901	sf=	901		1 @	1500	sf=	1500		@	sf=		23-5 x 38-6 x dble ht - Combined with MPR (new = <400 HS)
Kitchen / storage / walk-ins	@		sf=	0		1 @	1200	sf=	1200		@	sf=		<400 = 1200 More = enrollment x 80% x 3.5 sqft per student)
Recycling	@		sf=	0		1 @	250	sf=	250		@	sf=		
Office	@		sf=	0		1 @	150	sf=	150		@	sf=		
<b>Total</b>	@		sf=	2315		@		sf=	5300		@	sf=		
<b>Educational Space</b>														
210 History - Social Studies	1 @	333	sf=	333		1 @	800	sf=	800		@	sf=		16-8 x 20 x 9-10" clg (needs to seat 18 students)
216 English Classroom	1 @	571	sf=	571		1 @	800	sf=	800		@	sf=		16-8 x 34-3 x dble ht - no clg (needs to seat 18 students)
216A Storage off 216	1 @	156	sf=	156		1 @	150	sf=	150		@	sf=		9-3 x 16-10 x dble ht - no clg
215 Classroom	1 @	546	sf=	546		1 @	800	sf=	800		@	sf=		21-6 x 25-4 x 10-2 clg (needs to seat 18 students)
219 Culinary Arts Kitchen	1 @	1051	sf=	1051	22	1 @	3064	sf=	3064	32	@	sf=		31-8 x 33-2 (Culinary and Baking Lab)
Kitchen Laundry-Sink	1 @	52	sf=	52		1 @	0	sf=	0		@	sf=		9-4 x 5-7
219C Kitchen Stor / support	1 @	103	sf=	103		1 @	756	sf=	756		@	sf=		5-3 x 19-7
Kitchen Laundry-Restrm	1 @	52	sf=	52		1 @	100	sf=	100		@	sf=		5-6 x 9-3
Cooler / freezer	1 @	128	sf=	128		0 @	0	sf=	0		@	sf=		
218 Café (MPR = 54 occ)	1 @	1126	sf=	1126		1 @	1200	sf=	1200		@	sf=		38-10 x 29-1 x 9-11 clg (combined w/ dining for large assembly)
206 Women	@		sf=	0		@		sf=	0		@	sf=		2 fixtures and 2 snks
205 Men	@		sf=	0		@		sf=	0		@	sf=		1 urinal 1 sink
204 Health Sciences (CNA)	1 @	1517	sf=	1517	14	1 @	1445	sf=	1445	16	@	sf=		38-6 x 39-5 x dble ht - no clg (less the Director's Office)
Laundry	@		sf=	0		@		sf=	0		@	sf=		8-6 x 7-11 x dble ht - no clg (incl in 204)
Rest + Shower +linen clos	@		sf=	0		@		sf=	0		@	sf=		8-0 x 4-11 x dble ht - no clg (incl in 204)
Storage Clos	@		sf=	0		@		sf=	0		@	sf=		3-3 x 7-7 x dble ht - no clg (incl in 204)
Kitchenette	@		sf=	0		@		sf=	0		@	sf=		8-6 x 8-8 x dble ht - no clg (incl in 204)
Teacher Office	1 @	0	sf=	0		1 @	75	sf=	75		@	sf=		
203 Medical Services	1 @	361	sf=	361	12	1 @	1445	sf=	1445	16	@	sf=		20-1 x 17-11 x dble ht - no clg
CR Space within Med Serv	1 @	321	sf=	321		@		sf=	0		@	sf=		17-10 x 17-11 x dble ht - no clg (incl in Med Services Space)
Teacher Office	1 @	0	sf=	0		1 @	75	sf=	75		@	sf=		

### Mid Coast School of Technology

Mid Coast School of Technology															
201 Design Tech Lab	1 @	663	sf=	663	15	1 @	1200	sf=	1200	16	@	sf=			28-5 x 23-4 x dble ht - no clg
TV-AV Studio Loft	1 @	400	sf=	400		1 @	400	sf=	400		@	sf=			loft area over stairs
201A Office	1 @	109	sf=	109		1 @	100	sf=	100		@	sf=			9-9 x 11-2 x dble ht - no clg
201B Storage	1 @	115	sf=	115		1 @	100	sf=	100		@	sf=			9-9 x 11-10 x dble ht - no clg
Teacher Office	1 @	0	sf=	0		1 @	75	sf=	75		@	sf=			
113 Machine Shop CR	1 @	404	sf=	404	8	1 @	400	sf=	400	12	@	sf=			26-11 x 15-0 x 7-6 clg (shed)
113A Machine shop tools	1 @		sf=	0		1 @	1	sf=	280		@	sf=			
113B Storage / Inspection	1 @	52	sf=	52		1 @	1	sf=	50		@	sf=			3-6 x 15-0 x dble ht - no clg
Machine Tool Technology	1 @	2227	sf=	2227		1 @	3500	sf=	3500		@	sf=			44-3 x 50-4 x dble ht - no clg (need diagram)
114D Computer Lab	@		sf=	0		@		sf=	0		@	sf=			14-10 x 10-5 x 7-6 clg (shed) (in Machine Tool Tech space)
Student Locker Area	@		sf=	0		@		sf=	0		@	sf=			20-0 x 6-8 dble ht - no clg
Teacher Office	1 @	0	sf=	0		1 @	75	sf=	75		@	sf=			
114 Welding Fabrication CR	1 @	285	sf=	285	9	1 @	330	sf=	330	12	@	sf=			19-0 x 15-0 x 7-6 clg (shed)
114A Storage under ramp	1 @	103	sf=	103		1 @	300	sf=	300		@	sf=			33-0 x 3-2 x 6-2 clg (under ramp)
Welding Fabrication	1 @	1912	sf=	1912		1 @	3775	sf=	3775		@	sf=			37-6 x 51-0 x dble ht - no clg
Welding Fab "Nook"	1 @	356	sf=	356		0 @		sf=	0		@	sf=			29-8 x 12-0 x dble ht - no clg
Teacher Office	1 @	0	sf=	0		1 @	75	sf=	75		@	sf=			
Carpentry	1 @	1888	sf=	1888	12	1 @	3900	sf=	3900	16	@	sf=			24-0 x 60-0 + 16-0 x 28-0 x dble ht - no clg
116 Carpentry CR	1 @	328	sf=	328		1 @	330	sf=	330		@	sf=			17-3 x 19-0 x 7-6 clg (shed)
116A Storage	1 @	173	sf=	173		1 @	400	sf=	400		@	sf=			15-4 x 11-3 x 7-6 clg (shed)
Finishing Space	1 @	0	sf=	0		1 @	200	sf=	200		@	sf=			
Teacher Office	1 @	0	sf=	0		1 @	75	sf=	75		@	sf=			
117 Pre-Engineering	1 @	1411	sf=	1411	22	1 @	1200	sf=	1200	16	@	sf=			61-4 x 23-0 x 7-6 clg (shed)
IT Network-Server	1 @	0	sf=	0		1 @	200	sf=	200		@	sf=			
Print lab	1 @	0	sf=	0		1 @	300	sf=	300		@	sf=			
Teacher Office	1 @	0	sf=	0		1 @	75	sf=	75		@	sf=			

### Mid Coast School of Technology

Mid Coast School of Technology													
Marine Technology	1 @	2928	sf=	2928	7	1 @	2900	sf=	2900	16	@	sf=	48-0 x 61-0 x dble ht - no clg (need instructure-director input)
Paint Booth	@		sf=	0		@		sf=	0		@	sf=	25-0 x 13-8 (in Marine tech)
Storage Shed	@		sf=	0		@		sf=	0		@	sf=	12-0 x 9-6 (in Marine tech)
Utility / Compressor Room	@		sf=	0		@		sf=	0		@	sf=	6-2 x 26-0 (in Marine tech)
Restroom	@		sf=	0		@		sf=	0		@	sf=	6-2 x 6-0 (in Marine tech) - 1 fixture 1 sink
115 Marine Technology CR	1 @	328	sf=	328		1 @	400	sf=	400		@	sf=	19-0 x 17-3 x 7-6 clg (shed)
Left-over Storage	1 @	343	sf=	343		1 @	300	sf=	300		@	sf=	24-6 x 14-0 x dble ht - no clg
Teacher Office	1 @	0	sf=	0		1 @	75	sf=	75		@	sf=	
107 Applied Technology CR	1 @	591	sf=	591	20	1 @	330	sf=	330	16	@	sf=	25-4 x 23-4 x 7-6 clg (shed)
Copy Nook	1 @	49	sf=	49		1 @	50	sf=	50		@	sf=	5-4 x 8-11 x dble ht - no clg
Applied Technology- Exploration	1 @	1430	sf=	1430		1 @	2400	sf=	2400		@	sf=	67-6 x 21-2 x dble ht - no clg
Applied Tech CNC Room	1 @		sf=	0		1 @	300	sf=	300		@	sf=	12-9 x 11-4 x (opn clg shed) 4ft x 8ft sheet CNC
Teacher Office	1 @	0	sf=	0		1 @	75	sf=	75		@	sf=	
106 Mathematics CR	1 @	511	sf=	511		1 @	800	sf=	800		@	sf=	21-9 x 23-5 x 7-6 clg (shed) Needs to seat 18 students
106A Math CR Storage	1 @	215	sf=	215		1 @	100	sf=	100		@	sf=	14-0 x 15-4 x under mezzanine
108 Office - Faculty	1 @	135	sf=	135		1 @	75	sf=	75		@	sf=	14-0 x 9-8 x 7-6 clg (shed)
109 IT Room / Office	1 @	304	sf=	304		1 @	300	sf=	300		@	sf=	19-0 x 16-0 x 7-6 clg (shed)
110 Automotive Tech CR	1 @	342	sf=	342	14	1 @	350	sf=	350	16	@	sf=	19-0 x 18-0 x 7-6 clg (shed)
Auto Tech Space	1 @	4384	sf=	4384		1 @	4000	sf=	4000		@	sf=	91-4 x 48-0 x dble ht - no clg
Storage Wall Auto Tech	1 @	131	sf=	131		1 @	350	sf=	350		@	sf=	43-8 x 3-0 x dble ht - no clg
Restroom Auto Tech	@		sf=	0		@		sf=	0		@	sf=	6-0 x 6-0 x 7-6 clg (shed) 2fixtures no sink (in Auto Tech)
Auto Collision Space	1 @	4645	sf=	4645	14	1 @	3900	sf=	3900	16	@	sf=	91-4 x 50-10 x dble ht - no clg
111 Automotive Tech CR	1 @	342	sf=	342		0 @		sf=	0		@	sf=	19-0 x 18-0 x 7-6 clg (shed) (shared with Auto Tech?)
111A Tool Storage	1 @	141	sf=	141		1 @	350	sf=	350		@	sf=	12-7 x 11-2 x 7-6 clg (shed)
Restroom Auto Tech	@		sf=	0		@		sf=	0		@	sf=	16-1x 8-0 x 7-6 clg (shed) (in Auto Collision)
Overflow - between both	1 @	2985	sf=	2985		1 @		sf=	0		@	sf=	49-4 x 60-6 x dble ht - no clg
Teacher Office	0 @	0	sf=	0		2 @	75	sf=	150		@	sf=	



Mid Coast School of Technology

Small Engine Repair	1 @	873	sf=	873	15	1 @	1200	sf=	1200	16	@	sf=		42-3 x 20-8 x dble ht - no clg
Spray Paint Booth & Stor	@		sf=	0		@		sf=	0		@	sf=		29-4x 25-0 x 7-6 clg (in Auto Collision)
101D small engine storage	@		sf=	0		@		sf=	0		@	sf=		4-9 x 8-0 x 7-6 clg (shed)
Restroom small engine	@		sf=	0		@		sf=	0		@	sf=		6-0 x 6-0 x 7-6 clg (shed) 1furinal no sink (in sm engine)
101A / 101B 102 Stor-Tools	1 @	331	sf=	331		1 @	300	sf=	300		@	sf=		9-2 x 36-0 x under mezzanine
Teacher Office	0 @	0	sf=	0		1 @	75	sf=	75		@	sf=		
103 Restroom	1 @	36	sf=	36		@		sf=	0		@	sf=		6-0 x 6-0 x under mezzanine 1 sink + 1 fixture
105 Adult Ed - Custodial	1 @	387	sf=	387		@		sf=	0		@	sf=		25-10 x 15-0 x under mezzanine
Storage Pen	1 @	229	sf=	229		@		sf=	0		@	sf=		9-0 x 25-5 x dble ht - no clg
118 Coast Guard Portable	1 @	572	sf=	572	14	1 @	800	sf=	800	16	@	sf=		28-3 x 20-3 outdoor portable
Coast Guard Storage	0 @	0	sf=	0		1 @	400	sf=	400		@	sf=		
119 CDL Portable	1 @	572	sf=	572	8	1 @	800	sf=	800	8	@	sf=		28-3 x 20-3 outdoor portable
Fire-EMT Out Bldg	1 @	2482	sf=	2482	9	1 @	0	sf=	0	16	@	sf=		(12-2 x 26-2) + (20-3 x 30-3) + (50-10 x 30-6) out building
EMS Instruction						1 @	520	sf=	520		@	sf=		
EMS Practice						1 @	80	sf=	80		@	sf=		
EMS Training Restroom						1 @	70	sf=	70		@	sf=		
EMS Storage						1 @	150	sf=	150		@	sf=		
Educator Offices	0 @	0	sf=	0		1 @	75	sf=	75		@	sf=		
Fire Fighting Science Lab	1 @		sf=	0	11	1 @	1280	sf=	1280	16	@	sf=		
FFS Instructional Area						1 @	380	sf=	380		@	sf=		
FFS Storage						1 @	150	sf=	150		@	sf=		
FFS Training / Drill Area						1 @	925	sf=	925		@	sf=		
FFS Training Stair						1 @	170	sf=	170		@	sf=		
FFS Prop/Gear Storage						1 @	300	sf=	300		@	sf=		
Educator Offices	0 @	0	sf=	0		1 @	75	sf=	75		@	sf=		

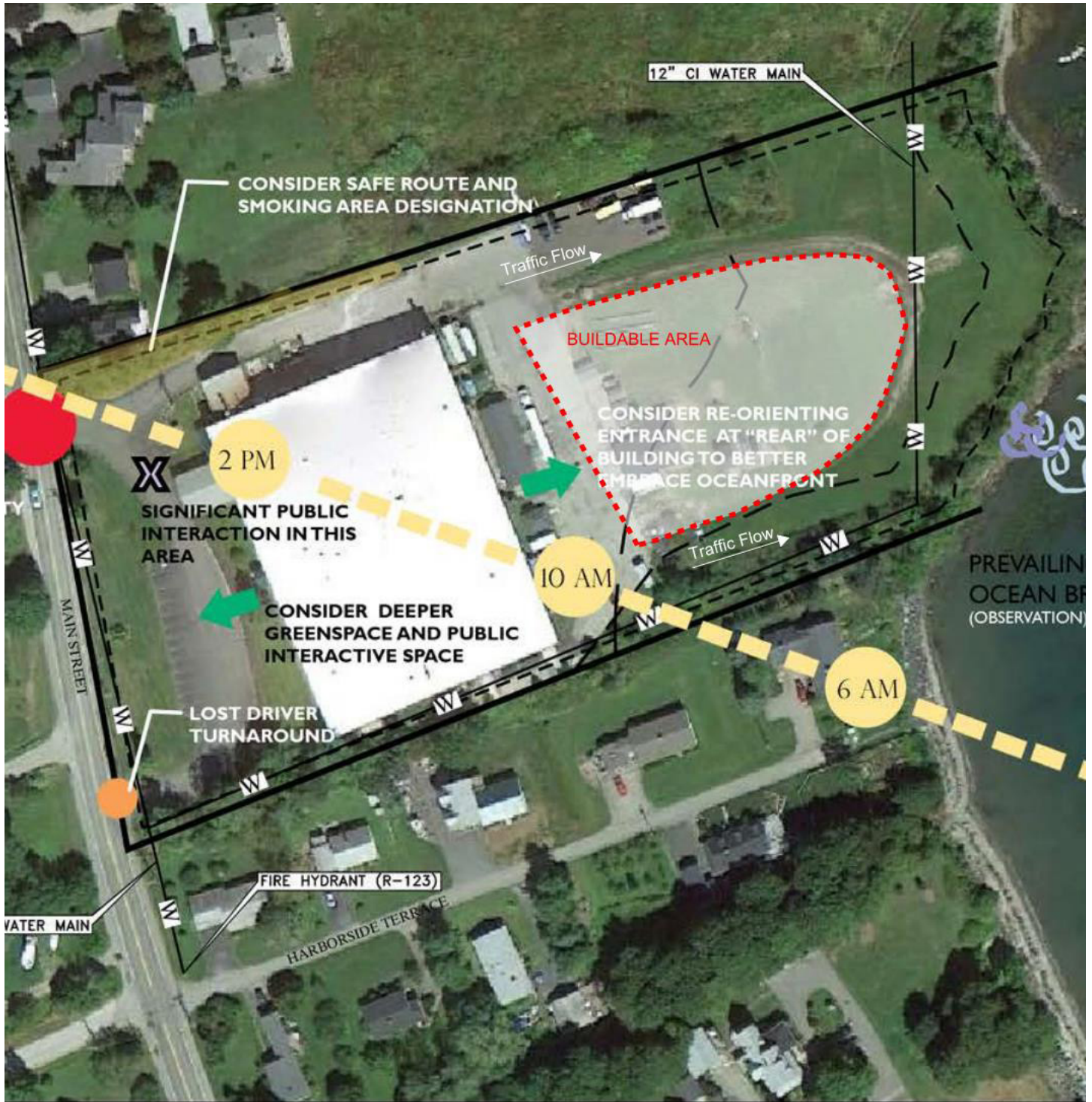
**Mid Coast School of Technology**

Mechanical Room	1 @	1015	sf=	1015	@	sf=	0	@	sf=		In Net to Gross Calculation	
Storage Shed	1 @	127	sf=	127	@	sf=	0	@	sf=		12-4 x 10-4 outdoor shed	
Storage Shed	1 @	201	sf=	201	@	sf=	0	@	sf=		12-4 x 16-4 outdoor shed	
Storage Shed	1 @	104	sf=	104	@	sf=	0	@	sf=		12-0 x 8-8 outdoor shed	
Storage Container	1 @	340	sf=	340	@	sf=	0	@	sf=		40-0 x 8-6 outdoor shed	
	@		sf=	0	@	sf=	0	@	sf=			
Storage Pen (fenced area)	1 @	911	sf=	911	@	sf=	0	@	sf=		20-3 x 19-8+25-4 outdoor shed	
<b>Total</b>	@		sf=	44727	@	sf=	53005	@	sf=			
<b>NEW PROGRAMS</b>												
Business Education	@		sf=		1 @	800	sf=	800	16	@	sf=	
Conference - Instruction	@		sf=		1 @	400	sf=	400	@	sf=		
Business Incubator Space	@		sf=		1 @	0	sf=	0	@	sf=		See Dining Area for Inculabort Space (learning commons)
Teacher Office	0 @	0	sf=	0	1 @	75	sf=	75	@	sf=		
Cosmetology Lab	@		sf=		1 @	1800	sf=	1800	16	@	sf=	Includes student storage area
Practicle Lab - classroom	@		sf=		1 @	650	sf=	650	@	sf=		
Dispensatory Area	@		sf=		1 @	150	sf=	150	@	sf=		
Teacher Office	0 @	0	sf=	0	1 @	75	sf=	75	@	sf=		
HVAC-Plumbing-Electricity	@		sf=		1 @	1400	sf=	1400	12	@	sf=	One lab designed for all 3 uses
Storage	@		sf=		1 @	250	sf=	250	@	sf=		
Instructional Area	@		sf=		1 @	330	sf=	330	@	sf=		
Teacher Office	0 @	0	sf=	0	1 @	75	sf=	75	@	sf=		

Mid Coast School of Technology															
Science Lab-classroom	@		sf=			1 @	1200	sf=	1200		@		sf=		Adult Ed during the day when HS is not using (to seat 18)
Prep Area	@		sf=			1 @	300	sf=	300		@		sf=		
Teacher Office	0 @	0	sf=	0		1 @	75	sf=	75		@		sf=		
	@		sf=			@		sf=	0		@		sf=		
<b>Total</b>	@		sf=	0	226	@		sf=	7580	316	@		sf=		
	Actual Measured Facility				Proposed Based on State Standards										
<b>SUPPORT SPACE SQUARE FOOTAGE</b>	47,042				65,885										
Gross Mark-up @ 1.4	10,773				23,060										
TOTAL Gross Square Footage	57,815				88,945										
<b>Based on students 1/2 day</b>	256				281				Target = 250 +/- sqft per student						
<b>GROSS sf= PER STUDENT</b>															



## 6. Site Possibilities



## Site Assessment Criteria

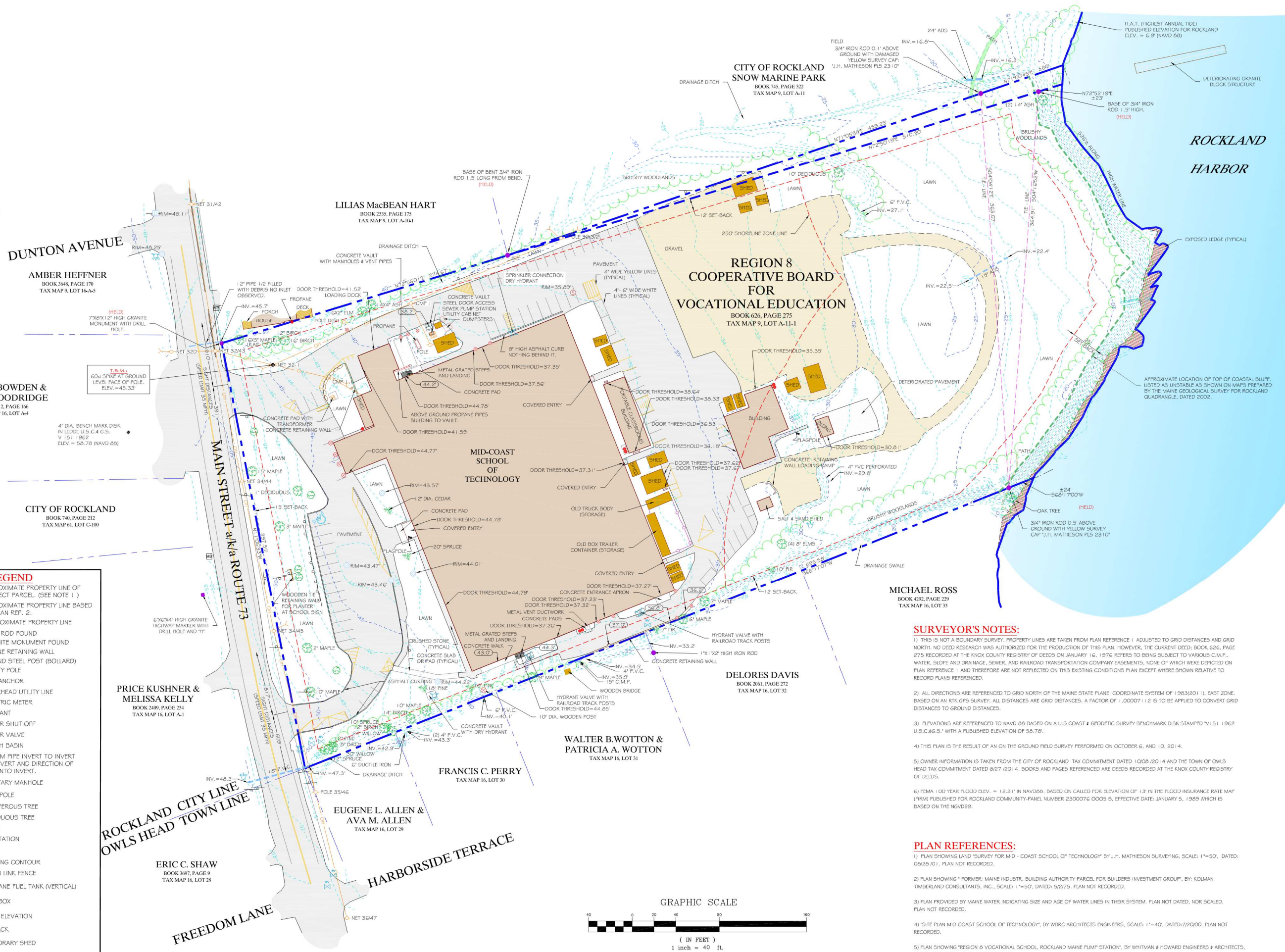
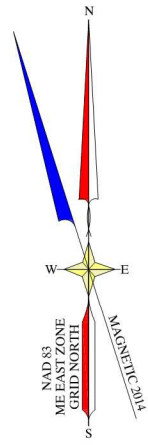
The existing site has the following features and amenities that add value to Region 8.

1. The waterfront location allows for programs to take advantage of integrating curriculum that involves the sea bed, tidal conditions, ocean water, and other water-front environmental conditions.
2. The open, unobstructed site also provides optimum conditions for loop-type geothermal possibilities using the ocean, the topography, and any basement areas that need to be filled.
3. Solar hot air walls, photovoltaics, solar hot water, passive solar heating, and daylight harvesting will take advantage of the open solar exposure surrounding of the site. The prevailing winds generated from the ocean and air temperatures provides a constant stream available for harvesting in turbines throughout the site; these come in small vertical turbines as well as the familiar windmill.
4. Utility infrastructure exists on the existing site. Services, such as power, sewer, and water are already on site. Future gas lines will also most-likely be provided down Main Street, to this site as it serves adjacent properties.
5. The existing site is currently used as a school; so future use as a school is not a change of use and will continue to operate as allowed by the planning and zoning boards. Sale of the property will be contingent on planning and zoning board approval for a change of use. Complicating the matter is if a proposed use is currently not allowed by current planning and zoning board regulations.

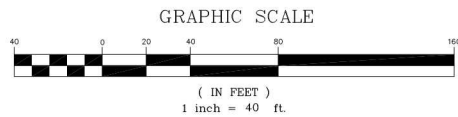
For these reasons, we recommended the existing site be considered as the first option for a new school. Finding another site may require costs to develop many of the features above; such as land clearing for solar gains, utility infrastructure, planning and zoning approvals, as well as acquisition costs. In addition, a new site will require habitat studies which can only be performed in March and April for vernal pool investigations; which affects the timing for finding and approving a new site.

Selling the existing property to an entity that can propose an acceptable use, and finding a site that has less development costs than the sale price, may be a challenge. It is also understood that the educational and financial value of the existing site will be lost if a new site is decided. The search will need to find a buyer for the existing site and seller for an alternate site that creates a win-win financially for Region 8.

This decision of re-using the existing site or finding a new site will need to be the first decision made during the next steps in the process.



- LEGEND**
- APPROXIMATE PROPERTY LINE OF SUBJECT PARCEL. (SEE NOTE 1.)
  - APPROXIMATE PROPERTY LINE BASED ON PLAN REF. 2.
  - APPROXIMATE PROPERTY LINE
  - IRON ROD FOUND
  - GRANITE MONUMENT FOUND
  - STONE RETAINING WALL
  - ROUND STEEL POST (BOLLARD)
  - UTILITY POLE
  - GUY ANCHOR
  - OVERHEAD UTILITY LINE
  - ELECTRIC METER
  - HYDRANT
  - WATER SHUT OFF
  - WATER VALVE
  - CATCH BASIN
  - STORM PIPE INVERT TO INVERT OR INVERT AND DIRECTION OF PIPE INTO INVERT.
  - SANITARY MANHOLE
  - FLAG POLE
  - CONIFEROUS TREE
  - DECIDUOUS TREE
  - BUSH
  - VEGETATION
  - SIGN
  - EXISTING CONTOUR
  - CHAIN LINK FENCE
  - PROPAINE FUEL TANK (VERTICAL)
  - MAIL BOX
  - SPOT ELEVATION
  - SETBACK
  - TEMPORARY SHED



**SURVEYOR'S NOTES:**

- 1) THIS IS NOT A BOUNDARY SURVEY. PROPERTY LINES ARE TAKEN FROM PLAN REFERENCE 1 ADJUSTED TO GRID DISTANCES AND GRID NORTH. NO DEED RESEARCH WAS AUTHORIZED FOR THE PRODUCTION OF THIS PLAN. HOWEVER, THE CURRENT DEED, BOOK 626, PAGE 275 RECORDED AT THE KNOX COUNTY REGISTRY OF DEEDS ON JANUARY 16, 1976 REFERS TO BEING SUBJECT TO VARIOUS C.M.P., WATER, SLOPE AND DRAINAGE, SEWER, AND RAILROAD TRANSPORTATION COMPANY EASEMENTS, NONE OF WHICH WERE DEPICTED ON PLAN REFERENCE 1 AND THEREFORE ARE NOT REFLECTED ON THIS EXISTING CONDITIONS PLAN EXCEPT WHERE SHOWN RELATIVE TO RECORD PLANS REFERENCED.
- 2) ALL DIRECTIONS ARE REFERENCED TO GRID NORTH OF THE MAINE STATE PLANE. COORDINATE SYSTEM OF 1983(2011), EAST ZONE, BASED ON AN RTK GPS SURVEY. ALL DISTANCES ARE GRID DISTANCES, A FACTOR OF 1.000071 (2) IS TO BE APPLIED TO CONVERT GRID DISTANCES TO GROUND DISTANCES.
- 3) ELEVATIONS ARE REFERENCED TO NAVD 88 BASED ON A U.S. COAST & GEODETIC SURVEY BENCHMARK DISK STAMPED CV 151 1962 U.S.C.46.9 WITH A PUBLISHED ELEVATION OF 58.78.
- 4) THIS PLAN IS THE RESULT OF AN ON THE GROUND FIELD SURVEY PERFORMED ON OCTOBER 6, AND 10, 2014.
- 5) OWNER INFORMATION IS TAKEN FROM THE CITY OF ROCKLAND TAX COMMITMENT DATED 1/06/2014 AND THE TOWN OF OWLS HEAD TAX COMMITMENT DATED 8/27/2014. BOOKS AND PAGES REFERENCED ARE DEEDS RECORDED AT THE KNOX COUNTY REGISTRY OF DEEDS.
- 6) FEMA 100 YEAR FLOOD ELEV. = 123.1' IN NAVD88. BASED ON CALLED FOR ELEVATION OF 1'3" IN THE FLOOD INSURANCE RATE MAP (FIRM) PUBLISHED FOR ROCKLAND COMMUNITY-PANEL NUMBER 2300076 0005 D, EFFECTIVE DATE: JANUARY 5, 1989 WHICH IS BASED ON THE NAVD88.

**PLAN REFERENCES:**

- 1) PLAN SHOWING LAND "SURVEY FOR MID-COAST SCHOOL OF TECHNOLOGY" BY J.H. MATHIESON SURVEYING, SCALE: 1"=50', DATED: 08/25/01. PLAN NOT RECORDED.
- 2) PLAN SHOWING "FORMER: MAINE INDUSTR. BUILDING AUTHORITY PARCEL FOR BUILDERS INVESTMENT GROUP", BY: KOLMAN TIMBERLAND CONSULTANTS, INC., SCALE: 1"=50', DATED: 5/2/75. PLAN NOT RECORDED.
- 3) PLAN PROVIDED BY MAINE WATER INDICATING SIZE AND AGE OF WATER LINES IN THEIR SYSTEM. PLAN NOT DATED, NOR SCALED. PLAN NOT RECORDED.
- 4) "SITE PLAN MID-COAST SCHOOL OF TECHNOLOGY", BY: WBCR ARCHITECTS ENGINEERS, SCALE: 1"=40', DATED: 7/2/00. PLAN NOT RECORDED.
- 5) PLAN SHOWING "REGION 8 VOCATIONAL SCHOOL, ROCKLAND MAINE PUMP STATION", BY: WHITMAN & HOWARD ENGINEERS & ARCHITECTS, DATED: FEB. 1976. PLAN NOT RECORDED.

CLIENT PROJECT: L'AVALLEE BRENSINGER ARCHITECTS  
MID-COAST SCHOOL OF TECHNOLOGY

SHEET TITLE: EXISTING CONDITIONS & TOPOGRAPHIC SURVEY

LOCATION: 1 MAIN STREET  
TOWN: ROCKLAND COUNTY: KNOX STATE: MAINE

SCALE: 1" = 40'  
DATE: OCTOBER 23, 2014  
DRAWN BY: SAT  
CHECKED BY: JAD

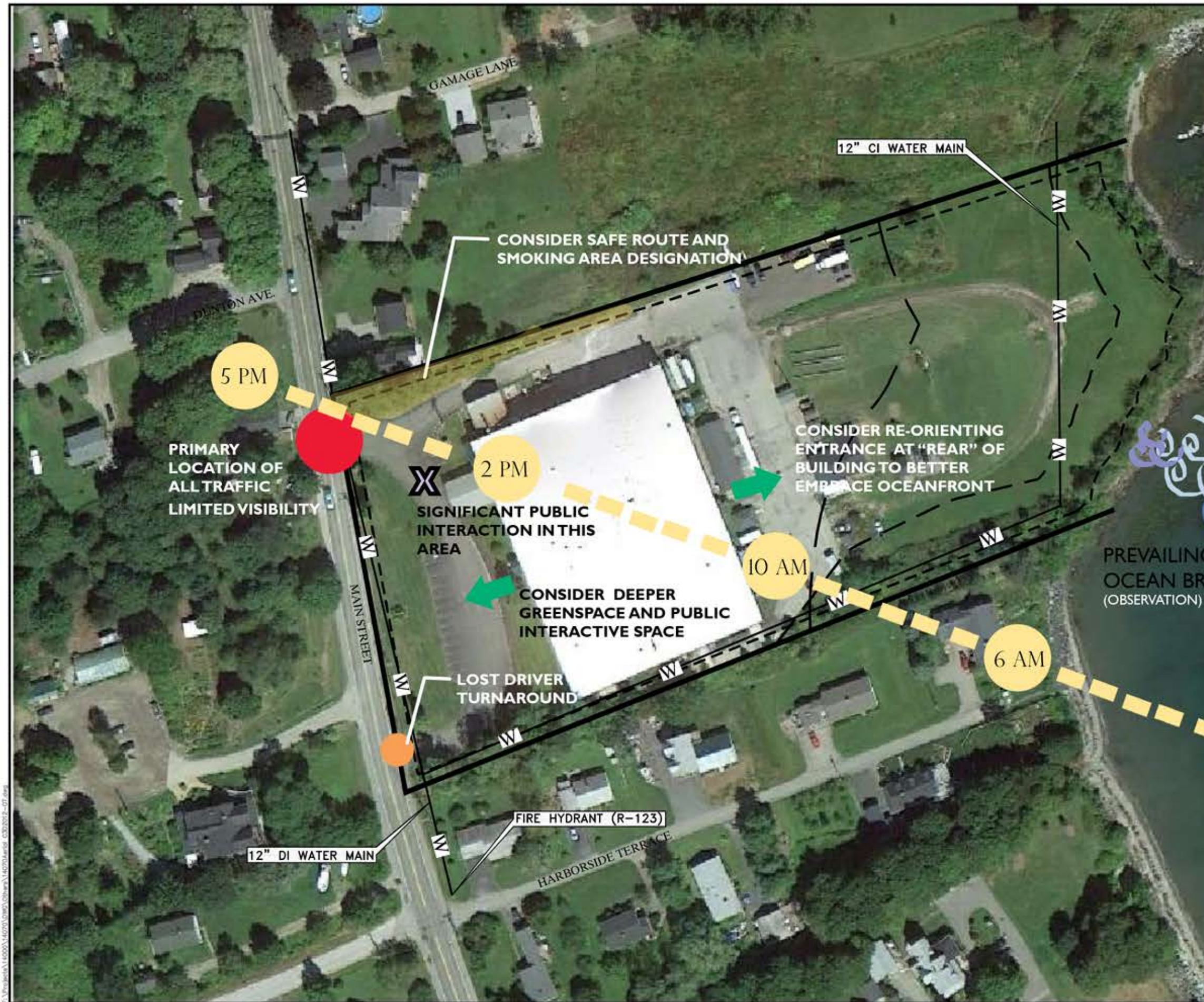
**Gartley & Dorsky**  
ENGINEERING & SURVEYING

59B Union Street P.O. Box 1031 Camden, ME 04843-1031  
Ph: (207) 236-4365 Fax: (207) 236-3065 Toll Free: 1-888-282-4365  
165 Main Street Suite 211 P.O. Box 1072 Damariscotta, Maine 04844  
Ph: (207) 790-5065

ADVANCE COPY

PROJ. NO. 2013-372

**SV-1**



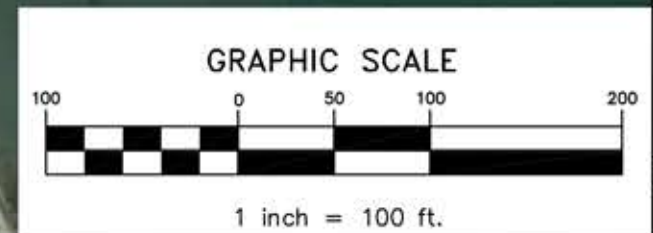
**LEGEND**

- APPROXIMATE PROPERTY LINE
- APPROXIMATE MUNICIPAL SETBACK LINE
- APPROXIMATE NRPA JURISDICTIONAL LINE
- APPROXIMATE 250' SHORELAND ZONE BOUNDARY
- APPROXIMATE WATER MAIN LOCATION

**ZONING REQUIREMENTS (WF-1 & GENERAL DEV. SLZ)**

MINIMUM LOT SIZE	40,000 SF
MINIMUM STREET FRONTAGE	100 FT
FRONT SETBACK	15 FT (LANDSCAPE BUFFER)
SIDE SETBACK	12 FT
WATER FRONTAGE SETBACK	25 FT (80% OF FRONTAGE)
FLOOR-AREA-RATIO	40% (BASE)
MAXIMUM BUILDING HEIGHT	40'



**Gartley & Dorsky**  
ENGINEERING & SURVEYING

100 Water Street, P.O. Box 1011, Camden, ME 04843  
 Tel: (207) 236-4351 Fax: (207) 236-5855 Toll Free: 1-800-262-6855  
 103 Main Street, Suite 20 P.O. Box 1072, Brunswick, Maine 04011  
 Tel: (207) 730-6466

**MID-COAST SCHOOL OF TECHNOLOGY**

PROJECT: 2013-372  
 SHEET TITLE: AERIAL  
 SCALE: 1"=100'  
 LOCATION: 1 MAIN STREET  
 TOWN: ROCKLAND COUNTY: KNOX STATE: MAINE  
 DRAWN BY: JAM  
 CHECKED BY: JAM  
 DATE: FEBRUARY 4, 2014

**AE-1**



~~DUST~~



### MID-COAST SCHOOL OF TECHNOLOGY – CIVIL ENGINEERING ASSESSMENT

#### FACILITY DATA:

Mid-Coast School of Technology is located at 1 Main Street in the City of Rockland, Knox County, Maine. This property is identified on the city tax map as Map 9 Block A Lot 11-1. The record owner is Region 8 Cooperative Board for Vocation Education, a quasi-municipal corporation. It is one of the career and technical education institutions established for the regions of the state pursuant to 20A MRSA § 8451. The property deed is recorded at the Knox County Registry of Deeds in Book 626, Page 275, January 16, 1976.

The Rockland tax map annotates the land area as 7.3 acres. By survey and deed data, the parcel contains 285,166 square feet (6.5 acres). This latter value will be used for this assessment.

The property lies on the east side of Main Street. It is bounded on the west by Rockland Harbor, to the north by two parcels, a home and Snow Marine Park, owned by the city. It is bounded to the south by the city line and a number of homes in Owls Head.

The property slopes moderately from west to east to the water, and is at the base of a watershed that extends westerly ~1000 feet from the site. Drainage piping in the road right of way releases surface water to the property at both the north and south extremes of the property, nearly incident with the property corners. A naturalized drainage way exists along the northerly side of the property, as well a recently excavated drainage way along the southerly side of the property to convey surface runoff from these sources. These drainage ways are depicted on city GIS mapping data on a watercourse base layer. City records indicate that a field determination was performed by Val Desrosiers of the Maine Department of Environmental Protection (DEP) in 2007. Ms. Desrosiers indicated that the drainage way in question was not a jurisdictional stream, but that the drainage course runs to a jurisdictional wetland. The national wetland inventory indicates that the shoreline is mapped as containing a Marine Wetland. This is a broad screen device, and is not always accurate. The subsequent permitting discussion addresses this designation as it affects activity along the shore.

The parcel is presently partially developed with the MCST facility, with a prevalence of active operations in the main building and within the yard area to the east of the building. The building is oriented north-south on its long axis and sited ~150 feet the road relative to the front door. Its first floor (threshold ~44.8) is approximately 6 feet below the adjacent road elevation, and steps down for the bulk of the building to the lower level elevation (threshold ~37.3).

#### MUNICIPAL ZONING:

##### Ordinance and Zones.

The zoning ordinance forms the basis for determining allowable uses, density, bulk standards, and performance standards for land uses. The city maintains an Official Zoning Map and an Official Shoreland Zoning Map indicating the applicable zones for municipal regulation of property. The parcel is located in the Waterfront Subzone WF-1 zoning district identified on the Official Zoning Map. The portion of the property within 250 feet from the upland edge of the coastal wetland is designated General Development Shoreland Zone on the Official Shoreland Zoning Map. For information purposes, the drainage ways observed along the north and south limits of the property are shown on the official Zoning Map as a linetype not identified in the legend. By personal communication, the city Code

Enforcement Officer indicates this line represents a GIS derived layer, indicating known watercourses. These courses are not subject to municipal review, but are indicative of locations where further regulation may be applicable, such as under the state Natural Resources Protection Act. As a refinement to applying zoning requirements, the zoning ordinance stipulates that 'Those areas designated as General Development on the Official Shoreland Zoning Map of the City of Rockland, shall be subject to the provisions of the underlying zoning districts as depicted on the Official Zoning Map of the City of Rockland, and shall not be subject to the provisions of General Development District.' Presently, then, the WF-1 standards only apply.

Use.

There is a threshold question of the use of the property to be addressed.

City records indicate that in 1976, the school sought what is characterized in the file as an appeal to operate a school in the then Industrial (F) zone from the Zoning Board of Appeals, which was granted.

The city revised and recodified its ordinances into its current code, The Rockland Code, in 1983, including its Zoning Ordinance (Article III of Chapter 19). Subsequently, the city rezoned the property to include it in the WF-1 subzone in ordinance amendments effective July 11, 1990.

The WF-1 subzone standards are prefaced by a commentary which indicates: 'this zone will be known primarily as a marine dependent zone. Any use of the zone must have a direct or indirect need for proximity or access to the water.' Further, identified allowable uses within the subzone include Educational Institutions and facilities [19-304 22 D. (1) b. (vi)], a defined term. An educational institution for the purposes of the WF-1 subzone is: 'Any institution, the primary goal of which is marine related or marine dependent education' [19-304 22 C. (5)]. It is not established that MCST meets this primacy test, nor would it necessarily need to meet it.

As noted in the exposition of the timeline, the 1990 ordinance revisions establishing the purported marine dependency requirement standard for the WF-1 subzone and prohibitive use definitions was implemented after the legal commencement of the use of MCST as a career technical education region in 1976. The ordinance clarifies that the lawful use of a building existing at the time of the effective date of the article may be continued, and may be reconstructed or structurally altered. As MCST has been permitted to operate since 1976, its status as a preexisting use is clear.

In inquiring with the Code Enforcement Officer (CEO) regarding the city's view of this apparent conflict, he suggested it is unlikely that the objective of the crafters of the amended ordinance was to make MCST a nonconforming use. The city may have overlooked MCST, and may have focused on the Hurricane Island Outward Bound School facility in crafting its definitions.

It is also noteworthy that the city has approved prior applications by the school for new buildings and building expansions subsequent to the date of the rezoning. The city records indicate permits have been issued subsequently for to the conversion of the use of the marine fisheries building to education, expansion of that building, addition of the temporary modular buildings and expansion of the main building. The threshold issue of extension of a nonconforming use was apparently not identified on any occasion, notwithstanding the plain language of the ordinance.

Like all land use documents, the ordinance is subject to ongoing assessment and change. The CEO indicated the city would cooperate with modifications to the ordinance if sought by MCST.

Revision to the subzone use standards or alternately rezoning to another zone with different standards should be investigated to identify the better action to meet the current needs and expansion objectives. The city may have planning objectives it wishes to discuss during this process. Ordinances are changed by the voters at either a regular or special election.

#### Zoning Standards.

Assessing the present WF-1 subzone, specific lot and bulk standards apply. These dimensionally derived standards contain minimum lot standards and then developmental maximums.

The property well exceeds the minimum lot standards for the zone: to wit, minimum lot size (40,000 square feet) and minimum lot frontage (100 feet).

As development options are considered, the following setbacks and standards apply:

- Front yard setback: 15 feet (identified as a required landscape buffer in which parking is prohibited)
- Side yard setback: 12 feet
- Waterfront setback: 25 feet for 80% of the lot. Application of this standard allows for zero setback for the remainder of the frontage, presumptively for marine facilities. Development in this zone is also subject to limitations under the Natural Resources Protection Act administered by Maine DEP. This setback is generally measured from the Highest Annual Tide (HAT) line. However, a portion of the property has been mapped as an unstable bluff by the state's broad screen mapping of the coast. This screening work, seeking to identify problem coastal bluffs, is implemented as further prohibitions in the shoreland zoning requirements. The designation of unstable bluff requires measurement of the setback from the top of bluff instead of the HAT. As with many such broad screen measures, this finding can be remedied or challenged if it has deleterious ramifications to the finally established plan of utilization of the lot and shore frontage.
- Maximum building height: 40 feet (mean elevation of original grade or existing street level, whichever is higher, to the highest point of a flat roof)
- Maximum Floor Area Ratio (FAR): 40% is the base standard for this zone. Computed allowable floor area, then is 114,066 square feet. This standard may be increased by increasing public access by way of a deeded right of way along the water, building siting and separation to effect public benefits enumerated in the ordinance.

#### REGULATION OF EXPANSION:

The city of Rockland maintains a site plan review ordinance, requiring review and adherence to performance standards for expansions and additions to the facility. Review criteria focuses on the performance standards enumerated in Section 16-204: traffic; compatibility with other uses; burden on public facilities; landscaping, drainage, lighting, fire hazard, sewer, water solid waste; compatibility with area; signs (if part of the application); and compliance with other ordinances.

The adjacent road, Main Street (Route 73) is a Maine Department of Transportation right of way. It lies within the Urban Compact area, and is subject to city administration of road openings, such as for utilities, and of access management standards for new or modified curb cuts.

An increase in trip generation by new uses or expanded uses in excess of 100 new trips in the peak hour requires a Maine DOT Traffic Movement permit. Absent a substantial increase due to new enrollment or a change of use, this increased trip generation is not expected to occur.

Adjacency to identified natural resources subjects the property to the standards of the Natural Resources Protection Act, administered by the Maine Department of Environmental Protection (DEP). Most activities within 75 feet of streams and of the coastal resource require a permit and adherence to performance standards. Where preexisting development, such as impervious area or structures exist, that area may be maintained, and typically reused, with simple permitting. Activities within areas depicted as NWI wetlands would require permitting. As part of the permitting process, the actual wetland type, rather than the broad screen designation would be determined, and its physical limits delineated. Permitting has specific performance standards that would require assessment of alternatives and also require documentation that identifies what measures were taken to avoid impacts to wetlands and to minimize those impacts. As a typical part of this planning, the design would need to use to the minimum impact to wetland areas necessary to meet the project objectives.

Facilities in Maine are subject to state rules and permit requirements for modifications and expansions based on increased development footprint. Expansion of facilities beyond the limits of the development footprint require assessment for applicability of review under the Natural Resources protection Act, as previously mentioned. In addition, the Site Location of Development Act regulates activity that creates impervious area in excess of 3 acres subsequent to 1970. Finally, the Stormwater Law regulates projects that disturb greater than one acre of soil, or create new impervious areas that exceed one acre in the aggregate subsequent to 2005. These acts are administered by Maine DEP. The development footprint presently encompasses ~4 acres. Of this, ~2 acres (including the 1.25 acre building) demonstrably predates the Site Law threshold, meaning ~1 acre could be developed before triggering Site Law review. Similarly, expansion activity that has occurred subsequent to the stormwater law is roughly ~0.5 acres, meaning an additional 0.5 acres could be developed before triggering Stormwater Law review.

In evaluating marine facilities for program objectives, developing piers, floats, or similar facilities involving activity below the Highest Annual Tide would require review by DEP and the US Army Corps of Engineers. Structures with projections below mean low water, are subject to the Department of Conservation submerged lands leasing program. The waterfront of the property is mapped as containing tidal waterfowl and wading bird priority habitat, so the Maine Department of Inland Fish and Wildlife will comment as part of some DEP permitting processes. The shore frontage of the property is within a Federal Emergency Management Agency mapped special flood hazard area, commonly referred to as a floodzone. The applicable FEMA community panel is 230076 005 B, depicting a VE (13) zone, referenced to the National Geodetic Vertical Datum of 1929. FEMA's January 2014 draft map again proposes a VE (13) zone, now referenced to the North American Vertical Datum of 1988. Restrictions apply to activities in this area, administered by the city through the Floodplain Management Ordinance. No part of the presently developed portion of the property is within the special flood hazard area.

#### FACILITIES AND SITE DATA:

The original main structure, reported as constructed in 1968, was planned for boatbuilding and memorialized the siting and grade constraints for the facility as it has been developed. Had an educational use been originally envisioned, siting considerations would likely have differed.

Two curb cuts from Main Street serve the property. The northerly curb cut provides direct access to the rear of the building, outbuildings, parking and extended yard area, as well as a connection to the front parking area. The southerly curb cut affords access to the limited front parking area and front door drop off. The entrance sight distances are measured as 910 feet to the north and 391 feet to the south at the north curb cut and 817 feet north and 609 feet south at the south curb cut. The posted speed limit of Main Street is 35 mph. The city zoning ordinance (19-307.5.B(3)) requires a minimum sight distance of 250 feet for a posted speed limit of 35 mph. Further, in its site plan review standards, a performance standard states that: "...provisions for vehicular loading, unloading, and parking, and for vehicular and pedestrian circulation on the site and onto adjacent public and private streets and ways will (not) create hazards to safety..." As a point of information, the MDOT basic safety standard for areas outside urban compacts is 305 feet at a posted speed limit of 35 MPH for passenger vehicles. MDOT further cites a basic safety standard for large vehicles of 455 feet. As has been noted, the north curb cut has less sight distance, 391 feet when facing north. As has also been noted, this location is in an urban compact area and not subject to MDOT review. The standard is useful as a point of information. As a further point of information, MDOT estimated daily traffic volume is 7,330 for that segment of Main Street. MDOT records indicate 4 crashes in the vicinity of the entrance in the most recent reporting period (2011-2013). The closest crash was in the vicinity of Dunton Avenue, and there were no reported crashes at the facility entrance. No high crash locations affect analysis of this site; the nearest high crash location is at Talbot Avenue and Union Street.

Large vehicle turning operations are observed to utilize the north curb cut, and appear to have adequate room. Programming for the truck driving instruction utilizes the rear of the property in adequately level areas. Areas for this training are not permanently defined, and share area with other utilizations of the space including parking, programming, storage structures and stored equipment.

Physical access to component portions of the building are restricted by overhead door placement and adjacent clear travel way zones. For example, access for automotive is reported to utilize the south facing door in the southeast corner of the building. A short apron exists at this location, hampering the vehicular movement while utilizing the door. In addition, no separation airlock or air curtain exists for operating these openings in cold temperatures.

Adequate water supply exists on the property. In addition to a 12" main located in the right of way of Main Street, a 12" cast iron main traverses the property from north to south and extends across the south face of the building. Domestic and fire protection services are tapped off this cross country main as it traverses the building's south side and enter the building along the south wall.

The property is connected to the municipal sewer by means of a pump station and force main to the Main Street sewer main. These components are owned and operated by the city of Rockland. Services for buildings with plumbing route to the north side of the building to the location of the pump station. The city has substantially renovated the pump station within the last two years, including grinder pumps, controls, and frequency drives for the pumps. This lift station is connected to the municipal

sewer by a relatively new 2" diameter force main. The lift station serves only the school and was constructed when a cross country connection was discontinued.

The main building's hydronic heating is fueled by No. 2 fuel oil, stored in a 10,000 gallon underground double wall tank on the north side of the building. This facility is registered with Maine DEP as registration number 5355. The tank is identified as tank 2, and is the only identified active tank at the site. It is reported to have been installed in 1994, replacing an abandoned tank identified as tank 1.

Main building kitchen equipment and heating for the conference room space is fueled by propane, stored in an above ground tank (single 1000 gallon tank). Outbuildings are heated by propane and No. 2 fuel oil. No natural gas service exists or has been proposed for the vicinity.

A single ground mounted transformer serves the main building, and has been recently updated. The electrical equipment entrance is on the north side of the building, in proximity to the tanks and lift station.

The site is subject to surface water runoff generated onsite and also to offsite surface runoff from a portion of Main Street, which is elevated above the campus. The property is at the lowest point in the watershed at the base of Ingraham Hill, rising to the west. As such, a consequential amount of subsurface runoff is directed towards the west wall of the building. Surface drainage appears to collect surface runoff and some off-site derived stormwater, but does not clearly convey this water nor groundwater adequately away from the building. Observations indicate that groundwater is not consistently drained from the subslab condition at the lower floor level (approximate elevation 37.4). In assessing options, soil conditions were observed to be dense native parent material, expected to be denser and poorly draining than the surface grading, minor utility trenching and foundation excavation. As a result, groundwater flows at the restrictive layer and follows the downgradient path to the foundation.

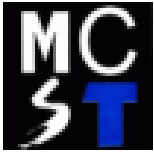
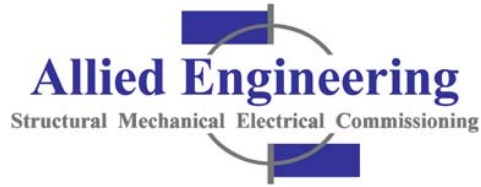
Revised surface runoff collection as well as subsurface drainage to intercept upgradient groundwater should be implemented with the anticipated renovation work.

Appended reference materials:

CITY COMPOSITE ONLINE ZONING MAP  
COASTAL BLUFF MAP  
FEMA FLOOD RATE MAP (FIRM)  
DRAFT FIRM REVISION  
MIFW ENVIRONMENTAL REVIEW MAP  
USFWS NATIONAL WETLANDS INVENTORY MAP  
NRCS SOILS MAP  
UST TANK REGISTRATION







## Region 8, Mid-Coast School of Technology

### HVAC EXISTING CONDITIONS

#### Heating Plant

The building is heated by a single #2 oil-fired boiler. The boiler is a Smith 350-4500-A 15-section cast iron sectional type with a Powerflame C40A burner.

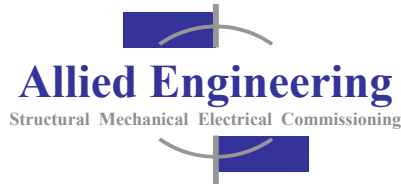


A Pryco day tank holds #2-oil that is pumped from a 10,000 gallon underground storage tank. The tank was installed in approximately 1993 and the School has records indicating it is a DEP compliant double wall tank with leak monitoring. A duplex oil pumping system draws from the tank and circulates oil through the boiler room.



The boiler stack is a 24" diameter Metalfab Model IPIC double wall steel type. The stack is understood to be in poor condition with various leaks.

The combustion air dampers need to be reviewed, the sizing appears to be smaller than code required.

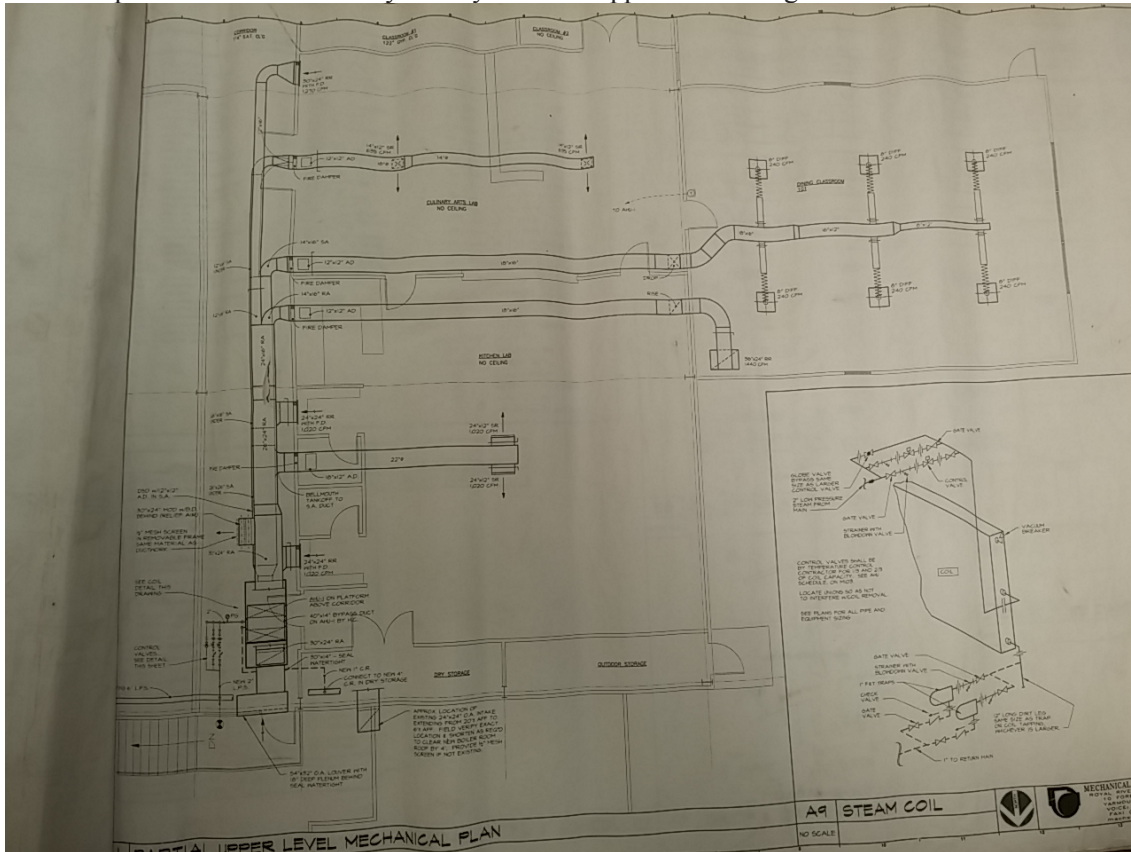


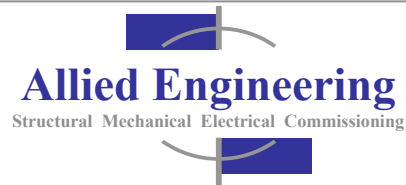
The boiler creates low pressure steam that is piped throughout the building to various terminal units (unit heaters, heating coils, fintube, etc). The condensate from the terminal units drains to several (at least three) condensate return units located throughout. The condensate is pumped back to a Skidmore boiler feed unit located next to the boiler.

Heating, Ventilating, and Air Conditioning (HVAC) Distribution - Upper Level – Front of Building

The commercial kitchen has two island hoods located over various cooking appliances. The hoods have fire suppression systems. Makeup air is provided from a McQuay Model CAH808 air handler mounted on the mezzanine. This air handler has an outside air louver, filters, a face & bypass steam coil, and modern DDC controls.

The drawing below shows the air handling unit that is located at the mezzanine level. The supply and return ducts run along the mezzanine, providing heating and ventilation air to the kitchen, cafeteria, and function space. This is a relatively new system that appears to be in good condition.





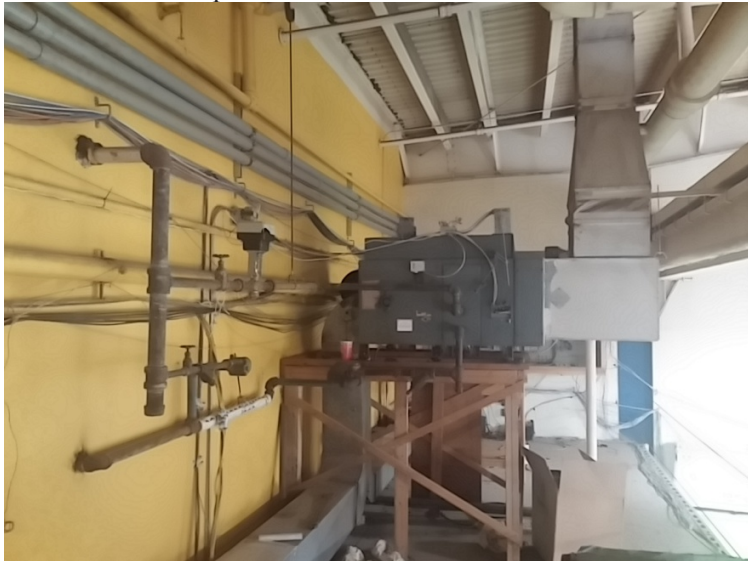
Additional kitchen makeup air comes from a “duct sock” which appears to be in poor condition.

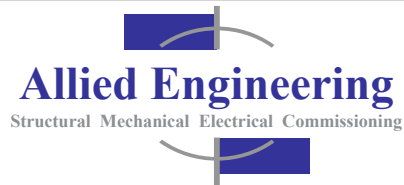


The Offices and Classrooms at the front of the building are heated by perimeter steam baseboard heaters and convectors. Zoning is good, with thermostats in each major space. Supplementary electric heating elements are reported to be provided (within the baseboard heater enclosures) in office areas to maintain adequate heat when the steam boiler plant is off line.

A steam unit heater is located in the lobby.

The mezzanine air handler shown in the photo below provides ventilation air to the office and classroom spaces. Note the vertical duct routed to a roof outside air intake. Local roof exhaust fans exhaust the stale air from the spaces.





Heating, Ventilating, and Air Conditioning (HVAC) Distribution - Shop Areas

The shop area has a wide variety of exhaust fans and makeup air units. The wide open shop area includes many shops functions and several classroom spaces. The photo below indicates a typical condition.

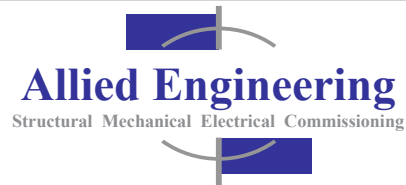


Welding/Fabrication: This shop has a recently installed (2006) modern exhaust systems. The equipment costed approximately \$45,000 when purchased. This equipment is in good condition and could be relocated into a modern building.

- Airflow Model DC-8 dust collector provides exhaust for six (6) welding stations. The welding stations have retractable arm snorkels.



- Plasma cutting downdraft table with exhaust to the exterior.



- Airflow recirculating downdraft table.

Auto Collision Repair:

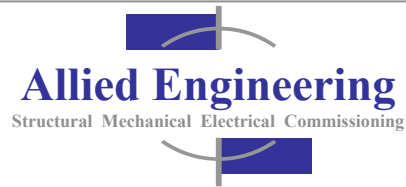
- Large PPC paint booth exhausted to the exterior.



Auto Technology:

- Carmon vehicle exhaust pipe system with four tail pipe hookups. The photo below shows the Carmon fan on the steel column; along with one of the (4) flex drops for connection to a tail pipe.





Outdoor Power Equipment:

- This area has an exhaust system with hose drops, similar to the Auto Technology Carmon system.

Marine Technology:

- Large spray booth in the Northeast corner, ducted to the exterior.
- Grizzly C0441 dust collector with recirculating filter, not ducted to the exterior.

Introduction to Applied Technology:

- Several small dust collectors with recirculating filters (not ducted to the exterior).
- The 3D printer area has a small exhaust fan.

General Building Ventilation – Shop Area

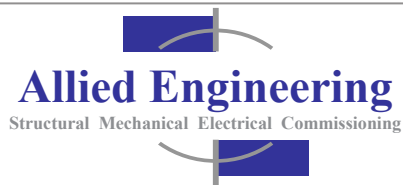
There are numerous exhaust fans in the space. These fans are used to draw contaminated air away from cleaner areas. The many exhaust fans are NOT offset by a corresponding amount of makeup air, thus the building is under negative pressure.

During a 2009 Facilities Management Group, Inc. project, two energy recovery ventilators (ERV) were retrofitted. Each of these units provides 3,000 CFM of fresh air and exhaust to the building. Due to the lack of roof strength, the units are mounted on steel stands.

These units provide necessary fresh air to the shops areas. However, they do NOT provide makeup air for the exhaust fans, since they exhaust the same amount of fresh air that they bring in.

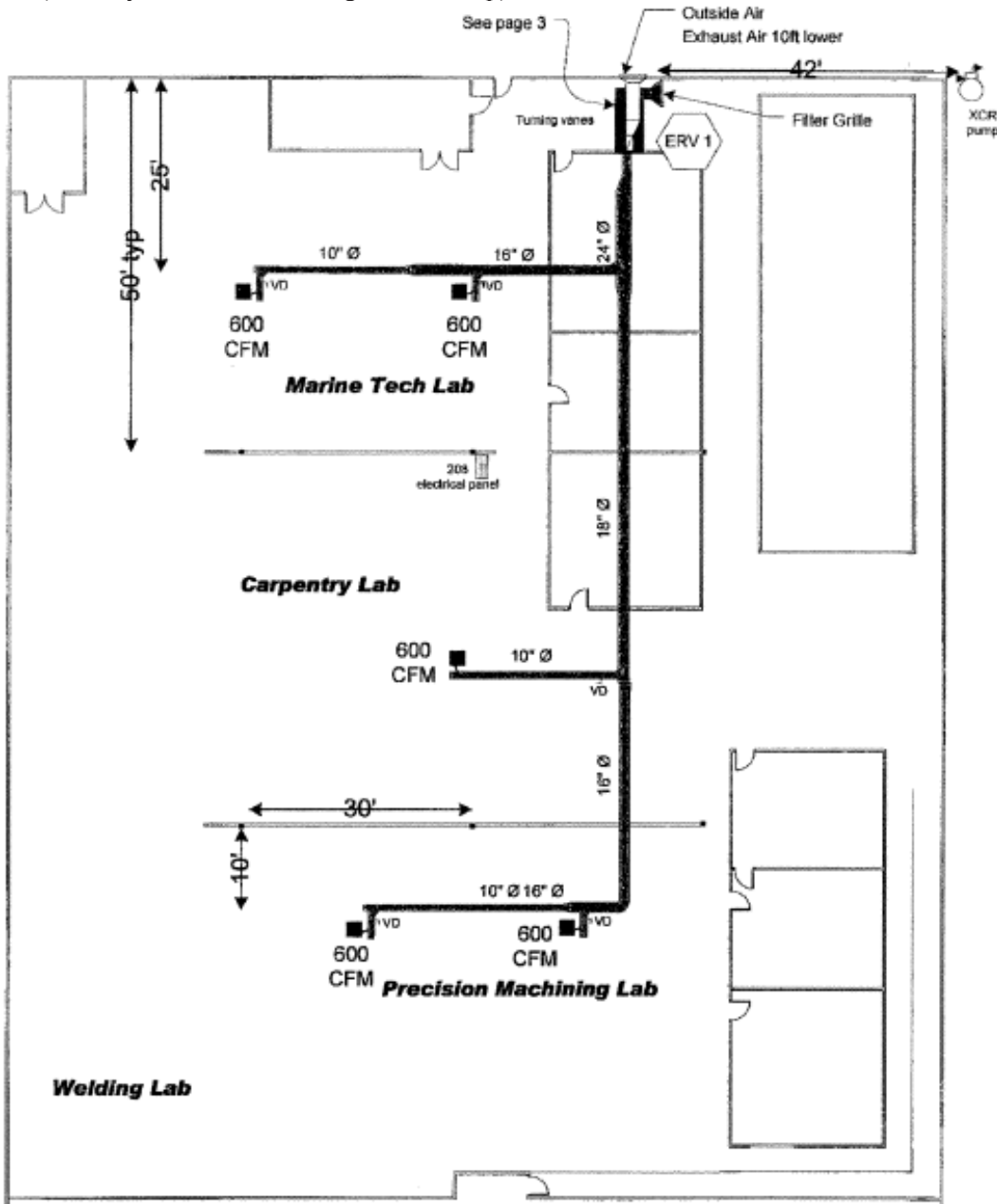
The ERV located at the Auto Collision shop is shown in the photo below:



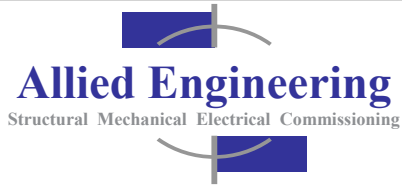


Both of these systems are in good condition and could be relocated or used in a modern building. A modernized facility would have a hot water heating system, therefore the ERV steam coil would need to be removed and replaced with a hot water coil.

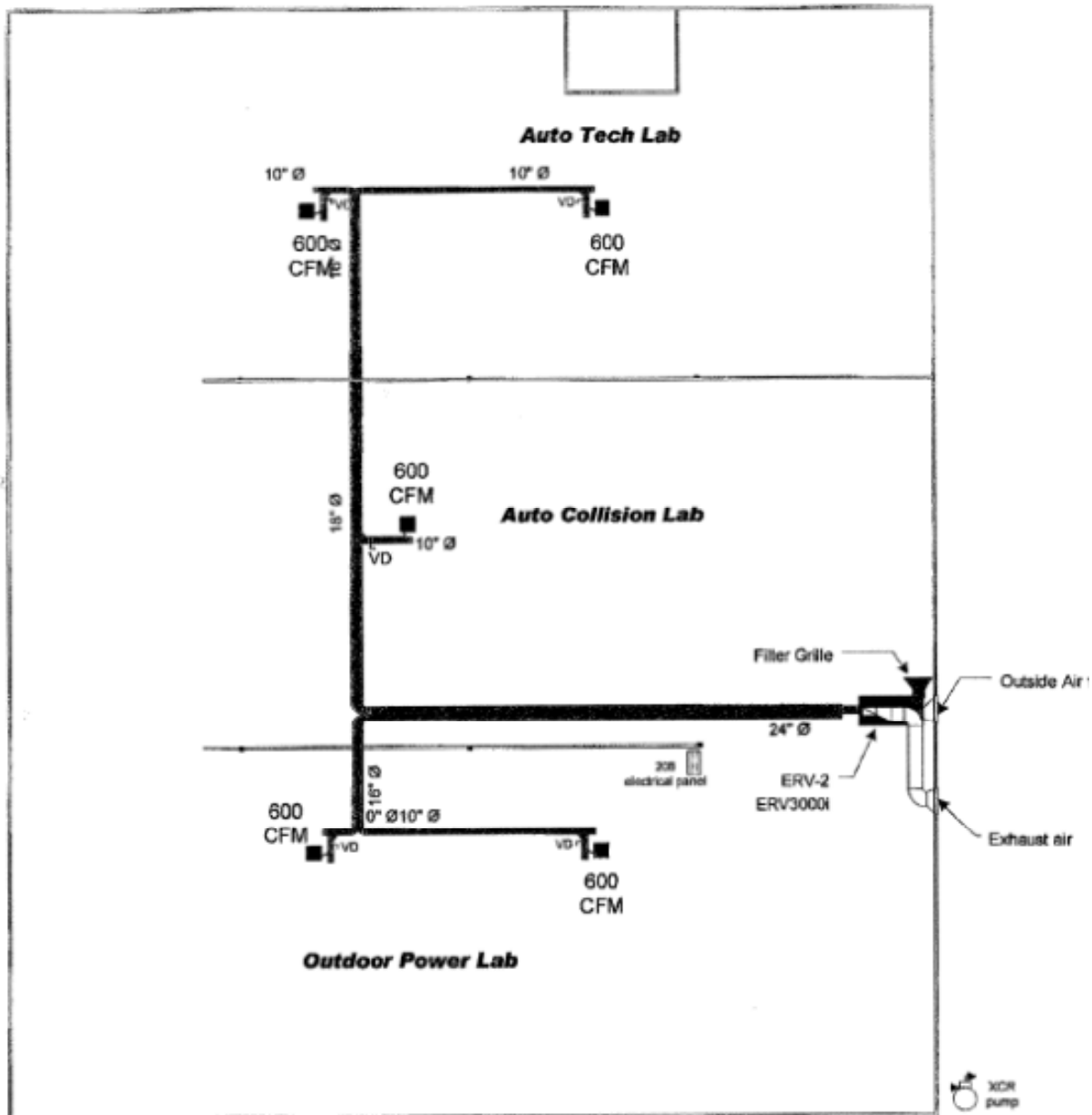
This floor plan (courtesy of Facilities Management Group) shows the ERV at the North end of the



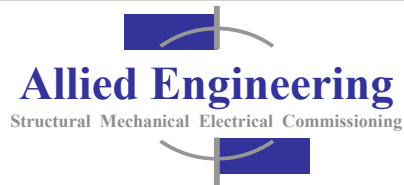
building.



This floor plan (courtesy of Facilities Management Group) shows the ERV at the South end of the building.







### Heating – Shop Area

- There are several large steam unit heaters that are hung from the ceiling.
- The energy recovery units have steam coils.
- There are several ceiling paddle fans that can be used to de-stratify the air in the space.
- There are electric baseboard heaters in the perimeter bathrooms.

### Air Conditioning – Shop Area

- No overall air conditioning, local AC units only.
- Wall air conditioners in some of the class rooms.
- IT Repair has a portable 1-ton AC unit.

### Classroom Ventilation – Shop Area

There are several classrooms that were constructed within the Shop Area. The photo below shows a few of the units.

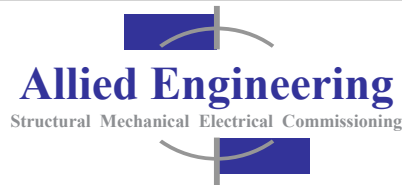


The box on top of the classroom in the foreground is a “Jet Air Filtration System”. This was likely added to improve classroom indoor air quality since the classroom is lacking fresh air. Or perhaps it was added to remove odors. The bottom line is that these classrooms do not have code compliant fresh air ventilation. A typical 800 SF classroom with 20 occupants requires 370 CFM of fresh air.

## **HVAC – RECOMMENDATIONS**

### Heating Plant

1. Provide a new boiler plant with redundant boilers and pumps. This system could utilize LP gas, natural gas (if available), #2-oil, or biomass. Other options such as geothermal could be explored. If gas is used, the boilers should be high efficiency condensing boilers.



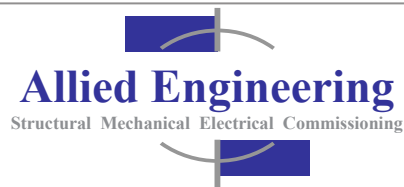
2. Steam and condensate piping is in poor condition and at the end of its useful life. Due to their age and condition, the majority of the systems need to be replaced. The new boiler plant should have forced hot water, with all steam piping eliminated.
3. The size of the heating plant directly relates to how well the building is insulated. A new building would have a smaller heating plant due to higher R-values.

### HVAC Distribution

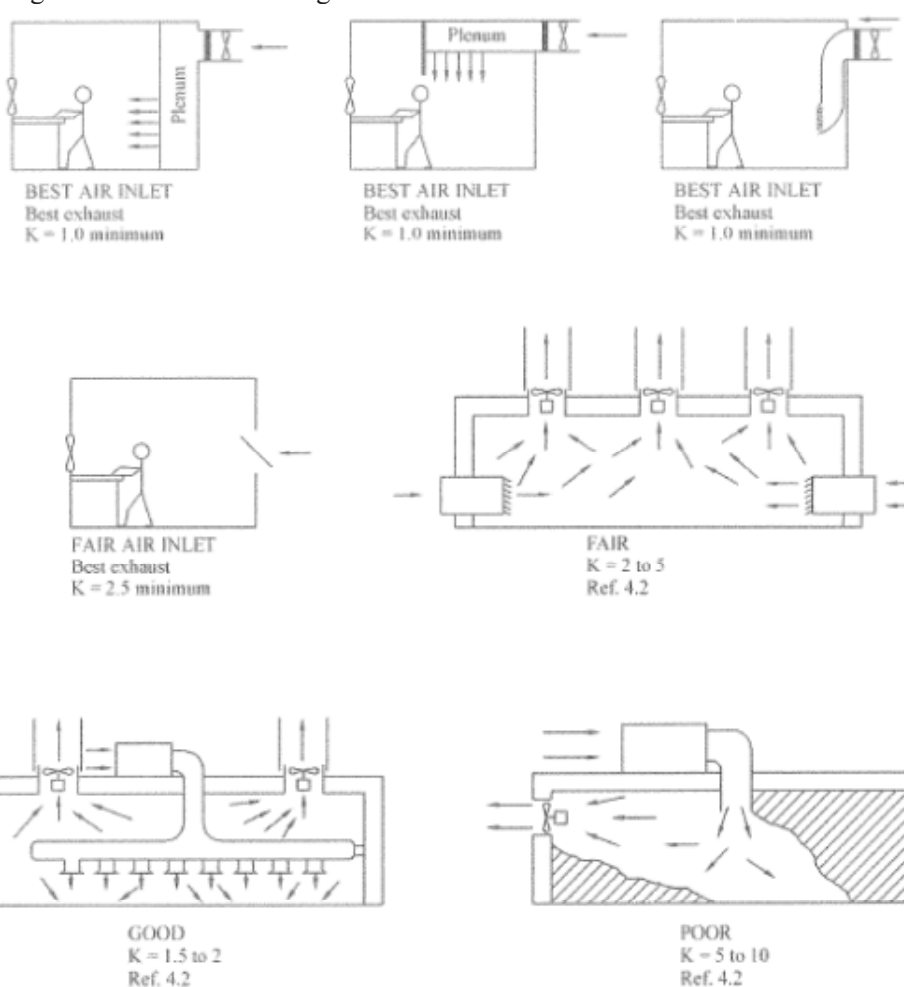
1. Heating piping and heaters are in poor condition and are at the end of their useful life. An all new forced hot water heating system should be added.
2. Provide a modern building automation system (BAS) to allow for accurate control of HVAC systems.
3. Provide air conditioning for offices and classrooms. Consider the use of heat pump systems, these systems dovetail well with site-generated energy using PV panels.
4. The range-hoods in the culinary education space lack a proper hood and fire suppression system.
5. The hoods do not have code required clearance over the appliances. The poor overhang likely results in poor capture of effluents.



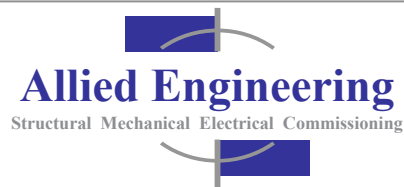
6. The dishwasher is lacking a code required exhaust hood.
7. Provide proper insulation for mechanical systems.
8. Establishing a minimum level of indoor air quality positively impacts student and teacher performance, can reduce absenteeism, and avoid the potential for long and short-term health problems. Typical code-required (ASHRAE 62.1) ventilation rates:
  - a. Classrooms: Fresh air at 10 CFM/person and 0.12 CFM/SF.
  - b. Conference and Offices: Fresh air at 5 CFM/person and 0.06 CFM/SF.



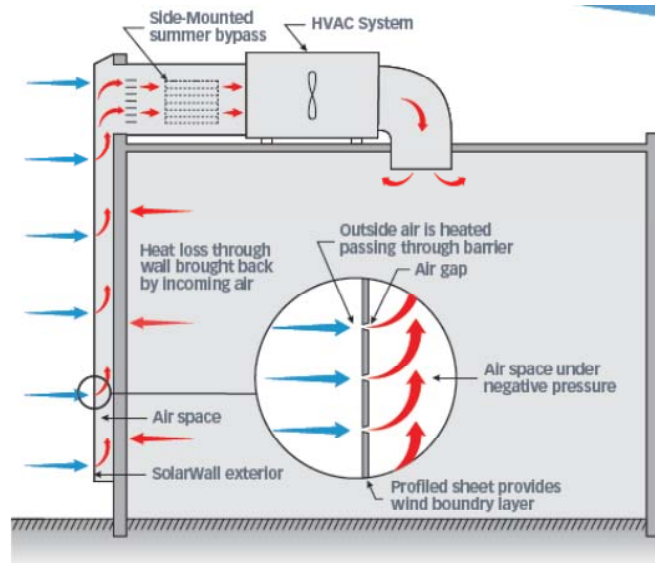
9. Provide proper exhaust and makeup air. Typical code-required (ASHRAE 62.1) exhaust rates:
- c. Auto Repair Rooms: 1.5 CFM/SF of exhaust
  - d. Woodwork shop: 0.5 CFM/SF exhaust
10. HVAC systems need to be designed to assure airflow from “clean to dirty”. Source capture shall be provided (similar to the welding hoods) to contain odors at the source wherever feasible. Proper design will capture and contain contaminants and prevent them from migrating to offices and class rooms. In addition, the HVAC systems need to provide proper exhaust capture and fresh air in the shop areas. The following ACGIH diagrams illustrate the good practices of having fresh air at the breathing zone.



11. Provide ventilation demand controls using timers and sensors. To save energy, fresh air and exhaust should be provided only when needed.

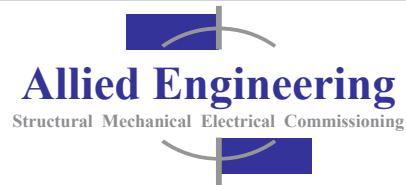


12. Solar Wall: The un-shaded portions of the South wall of the building provide an excellent opportunity to save energy. Solar walls are a cost effective and simple way to utilize renewable energy in a school. When the sun warms the surface of a solar wall collector, the heated air is drawn through thousands of tiny perforations on the surface and ducted to the existing air intake. On a sunny day this air will be heated anywhere from 30-70°F above ambient. The solar heated air is then distributed throughout the building via the conventional makeup air system.



The solar wall retrofit could also please the neighbors since the existing wall is in need of refurbishing.

13. If the existing building is modernized, the high bay shop areas will need an effective way to de-stratify the air. The existing paddle fans could be re-used or upgraded to assure even temperature distribution.
14. As mentioned, several newer systems such as duct collectors and energy recovery units should be re-used in any modernized facility.



## PLUMBING EXISTING CONDITIONS

Domestic water enters the South end of the building in the Auto Technology Shop, in the mechanical room near AHU-1. The photo below shows the water entrance next to one of the sprinkler entrances.



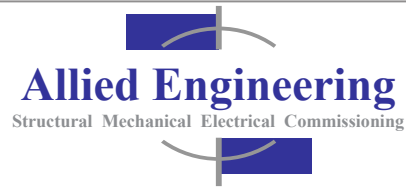
- There is 100 psi static pressure at the water entrance. The plumbing code calls for a pressure reducing valve whenever city water pressure is above 80 psi – the PRV is missing.
- The water entrance is approximately 4", as shown in the photo above it reduces to 2". The 2" main reduces further to a 1" meter and RPZ backflow preventer.

A Bosch Model 51C 50-gallon oil-fired domestic water heater is located in the boiler room. This heater provides hot water to the kitchen and adjacent spaces.

Local electric tank type heaters are provided at each bathroom group, providing local hot water for the sinks. The photo below shows a typical bathroom in the shop area. Note the electric water heater mounted high on the wall above.



There are several floor drains throughout the shop area. These drains are clogged and in poor condition.



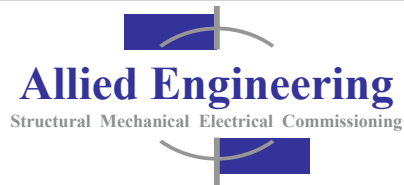
The maintenance staff has had issues with the cast iron piping below the floor, with poor drainage and piping pitch going the wrong way. One of the bathroom groups (SW corner of shop area) has been shut down because of this. A sanitary line branches out to the remote Fire Fighting building (toilet in building). This sanitary line has frozen in past winters. In general the sanitary piping in the building is in poor condition at the end of its useful life.

Plumbing fixtures are in generally in fair to good condition for their age. All of the toilets are tank type.



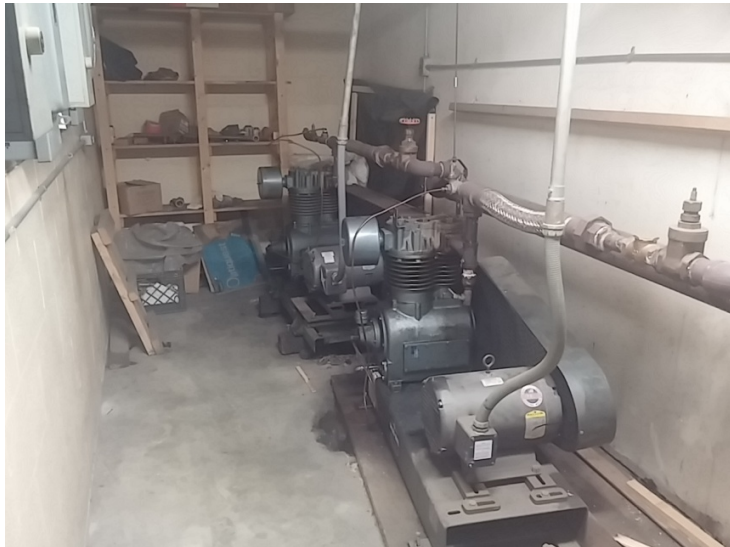
Kitchen fixtures are also in aging, but serviceable condition. The 3-bay pot sink in the photo below has a grease interceptor.





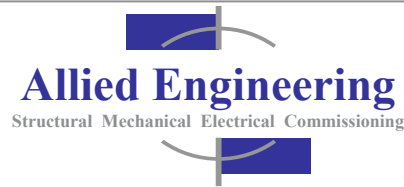
There is in LP tank outside next to the oil tank, this provides gas for kitchen appliances.

A central compressed air plant is located along the East wall of the Marine Tech Shop. The two 15-HP Saylor Beall compressors are in fair condition. The system has a 110 gallon 1968-vintage ASME air tank.



Compressed air is piped throughout the shop areas to various tools.

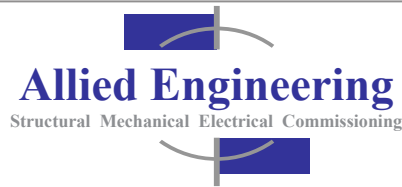
Emergency showers are located near bathroom groups. The location and spacing of the showers may be inadequate in relation to the potential hazards, this requires further study. The building needs to be surveyed to ensure that the appropriate flushing system is installed within ten seconds or 55 feet from any hazard. The path to the fixture must not be hindered with obstructions. Therefore, not only is the location of the fixture critical, but also being sure the area nearby is free of debris or other hazards that may impede its use. The emergency showers are fed with cold water only, lacking tempered water (60°F to 90°F) as required by current ANSI standards.



## **PLUMBING – RECOMMENDATIONS**

1. Due to the age of the plumbing systems, all plumbing should be replaced in any major building upgrade. This would include trenching and installing all new underslab plumbing.
2. New plumbing fixtures will be upgraded to water conserving type meeting ADA requirements.
3. The current concept has “distributed” (local heaters throughout) domestic water heaters. This is a sound concept and could be continued. The many remote bathroom groups could be consolidated to save first cost and operating costs. Energy efficient water heating including solar thermal and heat pump water heaters should be considered for high demand areas such as the kitchen.
4. A thorough review of hazards will need to be implemented to confirm that safety showers and eyewashes are properly located.
5. There are no interceptors, allowing oil to enter the sewer system. The shop programs will need to be reviewed to confirm where and if oil or solids interceptors are needed in the new sanitary system.
6. The large roof area lends itself to rain water recovery. In order to reduce water demand for sewage conveyance and irrigation, some schools opt to use rainwater catchment systems with cisterns or underground storage tanks. These supplementary systems can significantly decrease water demand by drawing on stored water instead of municipal water supplies or drinking water wells.
7. A new duplex air compressor and compressed air piping network will be required.





### **SPRINKLER EXISTING CONDITIONS**

The building is provided with an NFPA-13 sprinkler system. There are two sprinkler entrances along the South wall. Each riser serves approximately ½ of the building (east & west). There are no backflow preventers at the sprinkler risers. It appears that the building has 100% sprinkler coverage.

There is a dry pipe valve in the NW corner of the shop area, at the mezzanine level. This dry pipe valve is connected to the West sprinkler system; it is not known what this serves.

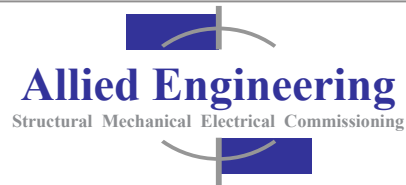
The service tags indicate that the systems are being serviced by Eastern Fire Protection. The tags indicate very good water pressure:

- 100 PSI static
- 80 PSI residual

A fire department connection is located at the north wall of the building, outside the Marine Tech Shop.

### **SPRINKLER – RECOMMENDATIONS**

1. The sprinkler system should continue to be inspected at regular intervals by a licensed sprinkler contractor.
2. The sprinkler system could be re-used if the building is renovated and modernized. The sprinkler heads and piping would be adjusted to suit the new room layouts.
3. The sprinkler system has the capacity to be extended if the building footprint is enlarged. An additional sprinkler riser could easily be added to serve the additional building area.
4. The hazard area of the shop use below will need to be reviewed to confirm that the sprinkler discharge flow density is adequate for the fire hazard.



## **ELECTRICAL EXISTING CONDITIONS**

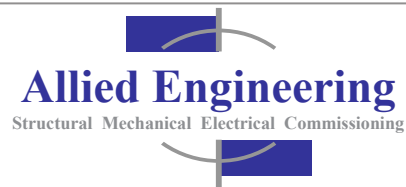
### **Service Entrance and Power Distribution**

The building has an underground electrical service from overhead utility lines. The underground utility primary is 12,470 volts, originating at a riser on the site and terminating at a utility-owned 300 kVA pad mounted transformer. The underground secondary service from the padmount transformer is 208/120-volts, 3-phase, 4-wire and terminates at two main distribution panels, identified as “MDP” and “Westinghouse”, that are located in the Electric Room on the Second Floor at the northeast corner of the building.



The incoming service entrance conductors to each are reportedly three 500-kcmil copper conductors per phase to each main distribution panel, resulting in a total service capacity of 2,000 amps. The highest demand in the past two years, as measured by Central Maine Power Company (CMP) was 140 kW in November of 2012, which equates to approximately 432 amps at 0.9 power factor or 41 percent of the capacity of the existing utility transformer.

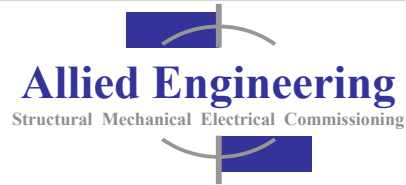
Main distribution panel MDP is a 1200-amp, main-circuit-breaker General Electric (GE) Spectra Series Panelboard that appears to be less than 10 years old and is in excellent condition. MDP currently has three spare 200-amp branch circuit breakers plus space for adding five 3-pole 200-amp frame size circuit breakers. The short-circuit interrupting (AIC) rating of the panelboard is 65,000 amps. The main circuit breaker is rated higher than the current-carrying capacity of the incoming feeder conductors; it would be possible to replace the existing rating plug in the circuit breaker with a 1,000-amp unit.



Main Distribution Panel “Westinghouse” is a Westinghouse fusible-switch type switchboard. The switchboard was manufactured in 1976. It appears to be in good condition based on a visual inspection and without opening the enclosure, but it has reached the end of its anticipated useful life. The switchboard is fully utilized. Its AIC rating is not marked on the switchboard nameplate. Similar to MDP the switchboard main fuses are rated higher than the current-carrying capacity of the incoming feeder conductors; it would be possible to replace the existing fuses with 1,000-amp units.



From the main distribution panels, power is distributed throughout the building to branch-circuit panels located throughout the building. Many panels are located in the second floor corridor and mounted to columns in the shop areas. There are also branch-circuit panels in the Kitchen and Boiler room. The panels are a mix of old panels that appear to be original to the building and have reached the end of their anticipated useful life, and relatively new panels. Some of the newer panels appear to have been added as replacements for old panels located near them, but the older panels are currently still in use. The older panels are a mixture of Westinghouse panelboards and Bryant and Square D load centers. The newer panels are mostly Square D panelboards, although some are Square D load centers. Example photos of typical branch-circuit panels are below:



Left: Original Westinghouse Panelboard



Right: Old Bryant Load center

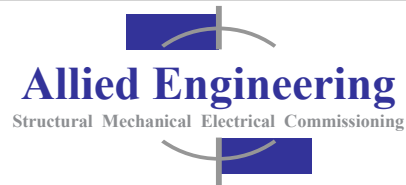


Left: Newer Square D Panelboard



Right: Newer Square D Load Center





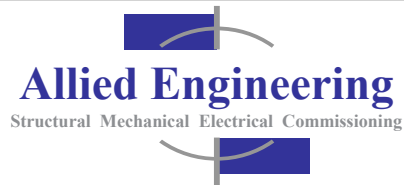
A busway is located in the shop near the welding area to supply equipment that is not near walls. This busway is very old and has reached the end of its anticipated useful life.



An enclosed circuit breaker and small load center located in the welding area do not have adequate working clearance as required by the National Electrical Code (NEC) due to the proximity of a partial height CMU wall.



In addition to the electrical service to the building, there is a separate single-phase underground service that appears to supply a sewage pump station located outdoors to the north of the building. This service



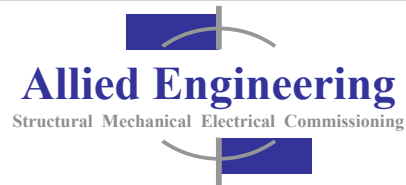
originates at a pole mounted utility transformer and terminates in the pump station control panel. The pump station control panel is also equipped with a pin-and-sleeve connector, presumably to allow connection of a portable generator.



### General Wiring and Receptacles

It was reported that many of the panel feeders utilize their metal conduits as the equipment grounding conductors. This methodology is code compliant; it is widely considered poor wiring practice by modern standards due to the risk of conduit fittings becoming loose and thus compromising the integrity of the electrical path to ground.

As stated in the Service Entrance and Power Distribution Section, the service entrance conductors to the building are not sized to carry the rated current of the overcurrent protective devices protecting them. The demand on the service is such that this condition can be remedied by reducing the current rating of the overcurrent protective devices. It is also reported that some of the panel feeders within the building are not adequately sized for their upstream overcurrent protective devices. It may be possible to reduce the current ratings of the overcurrent protective devices for these feeders as well, but the loads on the panels need to be studied to determine whether or not this would be a viable option.

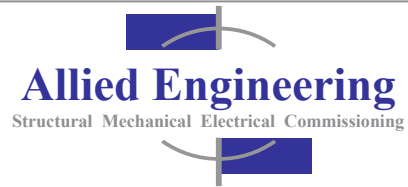


Exposed power wiring generally consists of single conductors in conduit. Most of the conduit is metal, but the feeders to the newer branch-circuit panels are installed in PVC conduit.

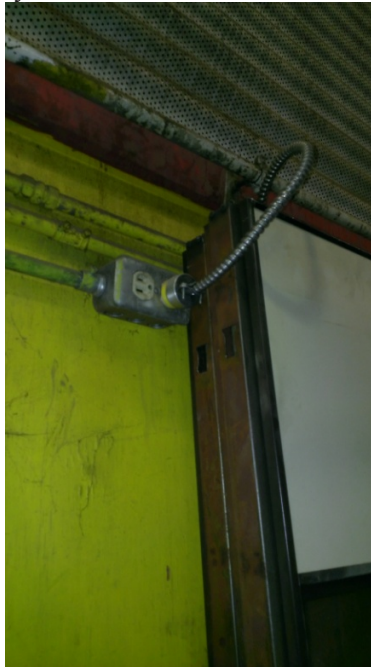


Type NM cable (romex) was noted above an acoustical ceiling; as such, we expect it is used where concealed in most spaces constructed within the high-bay shop area. The romex cable visible in the photo below is not in resting on the ceiling grid and is properly supported.

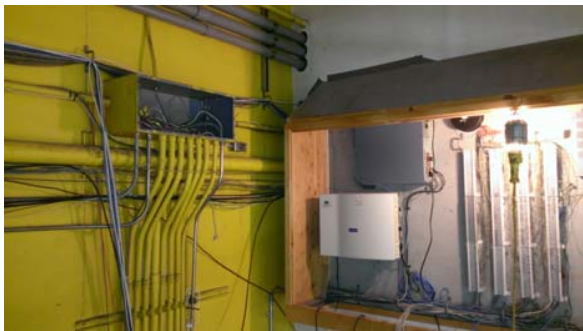




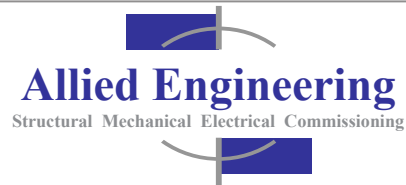
A couple of locations were noted along the north wall of the shop area where cord caps are installed on metal-clad cable, which is not permitted by code.



A couple of locations were also noted where junction boxes are not appropriately covered as required by NEC.







Receptacles are generally located appropriately for the current use of the facility. In the shop area, cord drops are in place for connecting tools and equipment in open areas.

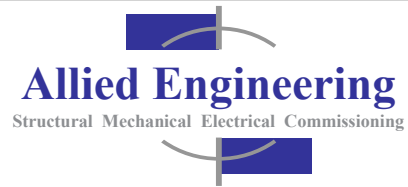


### Interior Lighting and Lighting Controls

The high-bay shop areas are illuminated by modern 6-lamp T5 or high-output T5 fluorescent luminaires that appear to have been installed within the past 10 years. These fixtures appear to be in good condition and provide adequate general illumination, with an average of approximately 40 footcandles measure at 30 inches above the floor.



Lighting throughout the remainder of the building varies in age, condition, and lamp/ballast technology utilized in the fixtures. Luminaires with T8 lamps and, presumably, electronic ballasts are installed in the boiler room and paint spray room. A mixture of fluorescent fixtures with wraparound acrylic lenses and recessed troffers utilizing T8 lamp illuminate the classroom structures constructed within the high-bay shop area. Fluorescent fixtures utilizing T12 lamps and, presumably, magnetic ballasts are in use in the electric room and along the north wall of the shop area. Bathrooms are illuminated by combination fan/light units that utilize self ballasted compact fluorescent lamps. Track lighting with heads utilizing LED lamps is in use for accent lighting in the second floor corridor. Example photos of the lighting in various areas are below:



Electric Room



Shop area bathroom



Strip fixture in Storage Room

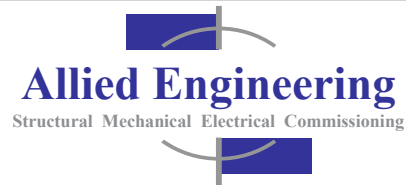


Classroom with lens troffers



Classroom with wraparounds





Second floor corridor



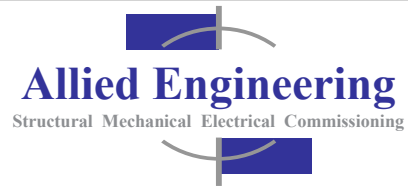
Recessed parabolic troffers in meeting room



Interior lighting is controlled by manual switches. Spaces generally do not have controls that provide automatic shutoff, which would be required for a new facility of this size and should be provided if significant renovations are planned.

### Exterior Lighting

Similar to the interior lighting, the exterior lighting varies in age, condition, and technology used. Most fixtures are High-Intensity Discharge (HID), metal halide or high-pressure sodium wall packs or flood fixtures that do not have cutoff optics and offer low-quality light with much glare. Modern LED fixtures have been installed in some areas, likely as replacements for older units that failed. In general, the exterior lighting should be updated as part of any planned renovations. Example photos of the lighting in various areas are below:



Newer HID fixture



Mix of LED, and different HID fixtures



LED replacement fixtures

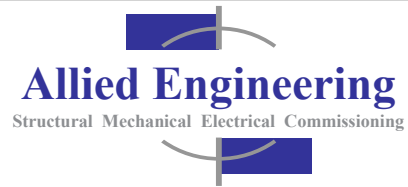


Old HID flood



Wall pack with lens covered to reduce glare



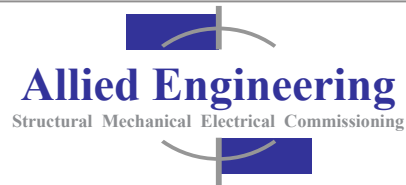


Varying fixtures on east wall



An HID flood fixture that appears to be leased from the utility company is supplied by the same pole mounted transformer that service the sewage pump station.





An electro-mechanical time clock located on the north wall of the shop area controls some outdoor fixtures; others have integral photocells for control.

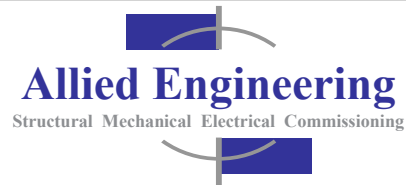
Emergency and Means-of-Egress Lighting and Marking

Emergency lighting for means of egress is provided by emergency battery units with DC lamp heads. In interior areas, emergency lights appear to be located to provide adequate illumination of means of egress. No emergency lighting is provided at the exterior of building exits as required by NFPA 101.

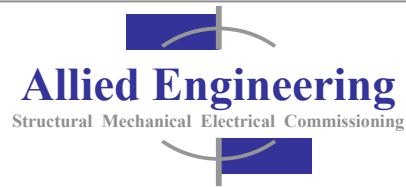


Fire Alarm System

The building is equipped with an automatic addressable Fire alarm system. The fire alarm control panel is a Notifier AFP-200 series unit that is located in the second floor electric room at the northeast corner of the building, and remote annunciators are located in the main office and shop areas. The control panel appears to be adequate for current needs, but the AFP-200 series is no longer offered by Notifier and the panel offers little to no expansion capability as it has only one addressable signaling line circuit.



The fire alarm system is connected to the local fire department municipal alarm circuit via a local energy master box located on the exterior of the building. The master box is in poor condition and should be replaced.

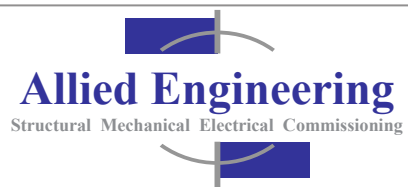


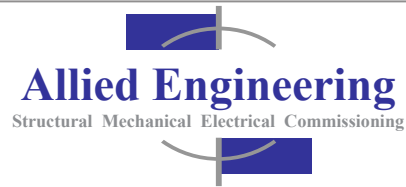
For alarm initiation, manual pull stations are located at most exits, although there is no manual pull station at the exits from the boiler room or the electric room. Smoke detectors are located in the classroom structures constructed within the high-bay shop area, but there is no smoke detector in the electric room that houses the fire alarm control panel as required by NFPA 72. The manual pull station locations do not comply with the Americans with Disabilities Act (ADA). The units are mounted too high.

Fire alarm occupant notification is provided by horn/strobe type audible/visual appliances. Occupant notification generally does not comply with current standards. The only second floor space with strobes is the corridor, and the units in that area have red lenses while current standards would require clear lenses. There is no notification appliance in the main electric room or bathrooms. The classroom structures constructed within the high-bay shop area have no notification appliances. There are not enough strobes to cover the high-bay shop areas as required by current code. In areas the strobes are mounted higher than permitted by ADA.









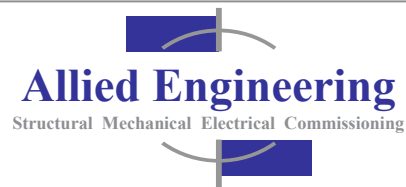
Systems and Telecommunications Infrastructure

An overhead copper Telephone utility line enters the building at the second floor electric room at the northeast corner of the building. A backboard housing the telephone demarcation is located in the electric room. Some old PBX phone system equipment that appears to be no longer in use remains mounted to the backboard.



A newer voice-over-IP telephone system is installed and located on a mezzanine in the shop area. This system appears to be used for paging and intercom functions in addition to telephone communication outside the school. The system appears to be in good condition, but the school would benefit from an intercommunication system that serves all areas and classroom spaces.



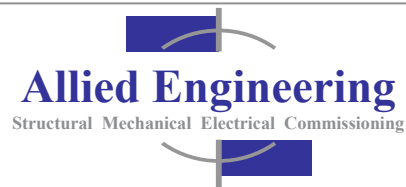


A data network server rack is located in a telecommunications room near the main office on the second floor. In addition, a wall mounted rack housing patch panels is located in a computer lab at the south end of the second floor.



The telecommunications cable plant consists of open cabling that has been installed over time as the network has evolved. There is no pathway support infrastructure such as cable trays or 'J' hook pathways for supporting the cables.





The school is equipped with an old Simplex master clock system. The system appears adequate for current needs, but should be updated as part of any planned renovations.



### **ELECTRICAL – RECOMMENDATIONS**

1. Provide overcurrent protection sized appropriately for the rating of the service entrance conductors.
2. Review panel feeders to determine that they are adequately protected against overcurrent. Facilities maintenance is reportedly in the process of conducting this review.
3. The lighting in the high-bay areas is fairly new and appropriate for long-term use. The lighting in other areas should be updated as part of any planned facility renovation to provide energy-efficient, low-glare fixtures and reduce the number of different lamp types that need to be stocked for maintenance.
4. Provide lighting controls with automatic shutoff for all areas in accordance with energy code requirements under any planned renovation.
5. Update exterior lighting in all areas to LED fixtures with full-cutoff optics.
6. Update the fire alarm system to comply with current standards and the ADA as part of any planned renovations.
7. Provide an integrated intercommunications, paging, clock and program system to serve all areas under any planned renovation.
8. Provide telecommunications pathways consisting of cable trays, conduits, and 'J' hooks under any planned renovation.

MC  
5

Introdu  
to App  
Techno





August 15, 2014

Lavallee Brensinger Architects  
155 Dow Street, Suite 400  
Manchester, NH 03101  
Attn: Ron Lamarre, Design Principal

Existing Building Structural Review  
Mid Coast School of Technology  
Rockland, Maine

Dear Ron:

Per our agreement, we visited the above referenced building on Thursday, July 24, 2014. The intent of our visit was to review the general condition of the existing roof structure and also to collect information sufficient to facilitate a structural analysis of the existing building structure. We understand that the building may be reused or added on to in the future. The existing building was constructed as a pre-fabricated, pre-engineered metal building and was built circa 1968 to be utilized as a boat maintenance and storage facility. We understand that building was converted to educational use in the mid 1970's and that the roof was reinforced at that time. The existing building is approximately 200 feet by 272 ft in dimension with rigid steel frames at 30 feet on center and a column spacing of 50 feet. Cold formed metal purlins supporting metal decking span between the rigid frame lines. Crane rail girders were connected to the existing interior columns, but at the time of our visit it was apparent that a majority of the cranes had been removed or were inactive.

### **Observed Conditions**

In reviewing the field conditions, we found the reinforcements to be inconsistent with the drawings that were provided by the school. Specifically, reinforcing plate sizes and detailing varied from the 1975 drawings. Where the existing frames were reinforced, we found that the plates added in the tension zones were not continuous, nor were they welded at the stiffeners that were added as part of the reinforcement (photo 2). Without continuity, these plates are ineffective at transferring tension as intended. We also noted that large holes were torch cut into these plates where the original purlins were connected to the frame girders (photos 2, 3 & 4). The section losses at these holes were substantial and when considered in tension over the supports, these holes reduce the effectiveness of the reinforcement considerably.

At the purlin connections to the existing building, a single bolt and a 3 3/4" c-channel were utilized to connect the purlins. We noted many locations where there was almost no edge distance from the bolt to the end of the purlin (photo 4).

At the exterior wall where the welding department was located, there were several columns that were severely corroded with almost complete section lost. The school has made attempts at reinforcing these columns (photo 5), but the load path and connection to the foundation may be considered questionable. Note also that there were apparent drainage issues around the building that may have resulted in this condition, and correction of these issues would be prudent to reduce the likelihood of future damage.

There was a steel liner panel present at the interior of the building, and thus the existing wall girts and cross bracing could not be viewed. We noted siding damage around the exterior of the building (photo 6). No drawings were available for the sidewalls (perpendicular to the building frames). We presume that rod cross bracing was present in these walls to act as a lateral system in this direction. If it is determined that a new addition will be added to the existing building it will be important to locate the existing cross braces and consider them in the design. The concrete slab-on-grade appeared to be in good condition.

### Structural Analysis

For our analysis, we reviewed loadings based on the 2009 International Building Code (IBC), currently enforced in the State of Maine. We also reviewed loadings based on the 1975 Building Officials and Administrators Building Code (BOCA), presumably the code in which the frame reinforcing was based. Gravity loadings (dead load and snow load) and lateral loads (wind and seismic) were reviewed. For acceptance criteria, we utilized the methodologies outlined in the International Existing Building Code (IEBC). In general, the IEBC allows for an overstress of 5 percent for existing members carrying gravity load and an overstress of 10 percent for existing members resisting seismic loadings.

For gravity loadings, our calculations indicated that the flat roof snow loading was nominally the same for the IBC and BOCA Codes at 39 psf. For the IBC analysis, this value is based on an Importance Factor of 1.1 assuming a secondary education facility with a capacity of greater than 250 persons, and a thermal factor of 1.0 assuming roof insulation less than R=25. Note that current IBC requires skip loading of continuous span members like the building frames used in this building, whereas skip loading was not required as part of the BOCA code in 1975.

As a result of the discrepancies with the reinforcing work observed in the field, we prepared our snow load analysis under two conditions- One condition where the existing reinforcements were considered ineffective due to their as-installed condition, and the other condition assuming that the existing reinforcement were installed as detailed and therefore considered effective. In order for this condition to apply the holes and plate continuity conditions would need to be repaired.

For the frame analysis with ineffective existing reinforcing as observed in the field, overstresses were calculated in the building frame. When not considering skip loading, the overstress in the frame members were as high as 40%. The columns were considered acceptable. When considering skip loading the maximum overstress increased to 52% in the frames and the columns were overstressed by 5%. Reference interaction diagram ID01 and ID02 for more specific information. Our analysis indicated that the roof has sufficient capacity to safely support 20 psf of snow without overstress of members. Using snow density guidelines provided by the IBC Code, this corresponds to 1.0 foot of snow. For the safety of the building occupants it is recommended that all snow in excess of 1.0 foot of depth be removed if repairs are not made to the existing frames.

For the frame analysis with fully effective (repaired) reinforcing and based on the 1975 design and a 39 psf snow loading not considering skip loading as would have been done in the 1975 BOCA Code, we found the spans adjacent to the center column to be overstressed by 20 percent. These areas of overstress should be repaired at the same time as the 1975 defective work. The interior columns were within allowable stress limits in this analysis. It is important to note that the existing crane rail girders were assumed to brace the columns in the weak direction. This may be an unrealistic assumption as there was no apparent lateral rigidity at the crane rails to prevent them



from swaying. We believe that reinforcing of the crane system will be required to achieve the necessary bracing action. See attached interaction diagram ID03 for further details on this portion of the analysis.

The overstresses in the spans adjacent to the center columns occur where the straight beam connects to the tapered beams over the adjacent columns using the original building design snow loads. We are of the opinion that modern engineering software better predicts the forces in the members compared to the calculation methods when the building was constructed and reinforced. Based on this, the bending moment at the transition to the tapered beam is higher than what the original designers predicted, resulting in an overstress.

With skip loading per the IBC introduced to the snow load analysis with fully effective 1975 reinforcing, we found that the overstresses in the spans adjacent to the center column to increase to 32 percent. The interior columns were overstressed in this analysis by 5% if the crane girders brace the columns as discussed above. This overstress is considered acceptable based on the IEBC. Reference interaction diagram ID04 for additional information on this portion of the analysis.

We also analyzed the roof purlins as part of our gravity load analysis. The original construction featured "Z" purlins at 4 feet on center. In the 1975 reinforcement "C" purlins were added between the existing purlins. Our analysis indicates that the purlins were sufficient to support the calculated dead and snow loadings.

For lateral loads, we analyzed the existing frames considering BOCA wind loadings, and IBC wind and seismic loadings and assumed that the 1975 building reinforcement was effective (repaired). Note that when wind and seismic loads are considered in combination with snow, the snow loadings are reduced to account for the fact that there is a low probability of a wind or seismic event will occur at the same time as a full snow loading event. Also note that that the BOCA Code did not consider seismic loadings for this building. The frame was within allowable stress limits for all loading combinations including wind (see interaction diagrams ID05 and ID06). When considering IBC seismic loadings, several members are overstressed including both frame beams and the end columns, overstresses range between 7 and 38 percent. Reference interaction diagram ID07 for additional information. Comprehensive interaction diagrams for both the BOCA analysis and the IBC analysis are included as interaction diagrams ID08 and ID09.

We also evaluated the existing building connections. We found the tapered beam to straight beam connections to be 2 percent overstressed when considering dead and snow only; however, when considering IBC seismic loadings the overstress in approximately 35 percent overstressed. At the exterior column-to-beam connection, the connection was within allowable loadings when considering BOCA snow loadings; when considering IBC loadings including seismic the connection calculates as overstressed by 53 percent.

It is important to note that the existing building frame appeared to be in good condition at the time of our visit. We are of the opinion that the calculated overstresses, detailing concerns and damage that have been identified can be corrected with steel reinforcements. The overstresses and detailing concerns have not lead to significant building damage to date; wind sweeping of snow, melting and a diminished factor of safety have kept the building from failing in heavy snow events. Continuing to rely on these factors to prevent a structural failure is not advised. Without reinforcement, snow removal is recommended from this point forward to ensure occupant safety.





### Structural Code Analysis for Future Use

In considering the future use of this building by the Midcoast School of Technology, we reviewed the requirements of the 2009 Edition of the International Existing Building Code. Based on our understanding of the project we anticipate that the IEBC requirements for Repairs (Chapter 5), Alterations (Chapter 6-8) and Additions (Chapter 10) may apply. Our analysis is provided as a broad overview of the IEBC requirements relative to this project. Once the project scope is better defined, a more comprehensive analysis of the IEBC requirements should be undertaken.

For Repairs, IEBC requires dangerous conditions be remedied, and repairs shall be made such that structural damage or improperly installed construction is restored. In the case of damage, if damage is substantial (defined as a 20 percent reduction in a critical element), the repair must meet the requirements of the International Building Code for new construction. With this basis, we would anticipate that the frame reinforcing would need to be repaired to provide continuity, to address the reinforcing holes and to deal with local overstresses. Most of the repairs can be made to BOCA 1975 levels, with the exception of where the beams adjacent to the center column were overstressed and at the damaged columns. The damaged columns would require reinforcement to ensure a proper load path to the foundation. We would also anticipate repairing the purlin connections with welds to remedy the inadequate edge distance.

For Alterations, the IEBC level of Alteration is defined by the area of building involved, and the requirements are cumulative which is to say there requirements of a Level 1 or 2 Alteration must also be enacted when undertaking a Level 3 Alterations. We anticipate the following components of Alterations could be considered when altering this building:

- **New Elements:** New structural elements are required to meet the requirements of the International Building Code governing new construction (reference IEBC Section 707.2).
- **Gravity Modifications:** With some code exceptions, alteration shall not reduce the capacity of the existing load capacity of gravity load carrying elements more than 5 percent of their current capacity and loads shall not be increased by more than 5 percent on existing structure members (reference IEBC 707.4). Based on our analysis for current snow loads we anticipate structural strengthening will likely be necessary. If the addition of insulation is required as part of the State Energy Code and/or for enhanced building performance, the addition of insulation will increase snow loading on roofs. Applying an increased thermal factor (Ct) of 1.1 for a roof with an R in excess of 25, the increased roof snow load would be 43psf. The purlins are sufficient to support this loading, but frame reinforcement will be required to safely support this loading. In addition, if a new structure creates a high-low roof conditions which introduce snow drifting from aerodynamic shade, then gravity loaded elements would require reinforcement.
- **Lateral Load Force Resisting System:** The evaluation of the structure for the resistance of wind and seismic loads per the IEBC requires an evaluation of the lateral load resisting system. The level to which the building will require upgrading is determined by the level to which the structure is involved with the alteration. Where more than 30 percent of the total floor and roof area of the building is involved in structural alterations, the altered building must comply with IBC 2009 for wind loads and 75 percent of IBC 2009 for seismic forces. Below the 30 percent structural alteration threshold, the overall system only needs to meet the requirements from the time of original construction, but if alterations increase



Existing Building Structural Review  
Mid Coast School of Technology  
Rockland, Maine

Page 5 of 11

the stresses by more than 10 percent in a component or element, then the component or element must be upgraded to IBC 2009 wind forces or reduced seismic forces. In general, if lateral elements are to be removed or if dead weight is added to the building as part of the building alterations, the stresses in the existing lateral load resisting system will need to be evaluated. If the resulting stresses as a result of the alteration increase by greater than 10 percent then upgrades will be required. Based on our analysis, we have detected overstresses based on IBC seismic forces. Thus we anticipate that if the building is altered in a renovation that structural upgrades to meet current code will be required.

If additions are part of the proposed work at the Midcoast School of Technology, they will be governed by Chapter 10 of the IEBC. Additions must comply with the International Building Code for new construction. If an addition is tied to the existing building, then all or a portion of the existing building must meet the requirements of the International Building Code for new construction. In our experience it is generally more cost effective to keep additions structurally independent of existing building structures. This would include floor mezzanines within an existing building. The introduction of a mezzanine may, however, provide an opportunity to brace the existing crane columns from the mezzanine by means of a secondary lateral system. Further study of this concept will be necessary in a future design phase.

#### Summary Points

1. The existing roof framing has defective work and is overstressed with snow loading. Remove snow in excess of 1.0 feet of snow.
2. The roof frames with defective work repaired will still require reinforcement of spans either side of the center column. Purlin connections shall be repaired with this work.
3. With new roof insulation existing roof frames will require significant reinforcement.
4. Future additions shall be kept independent of the existing building.

Please feel free to contact us with any questions you might have.

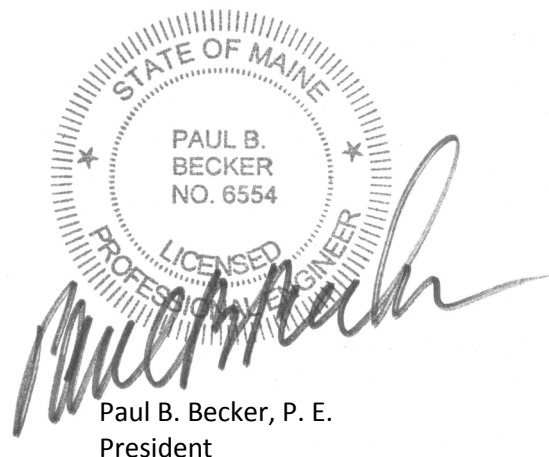
Sincerely,  
**BECKER STRUCTURAL ENGINEERS, INC.**



Ethan A. Rhile, P. E.  
Associate

Attachments:

Photos  
Interaction Diagrams  
Drawing of Existing Frame Elevation



STATE OF MAINE  
PAUL B.  
BECKER  
NO. 6554  
LICENSED PROFESSIONAL ENGINEER

Paul B. Becker, P. E.  
President





Photo 1: General view of Midcoast School of Technology from Route 73.





Photo 2: Beam over column connection. Note reinforcing discontinuity at column, holes in top flange reinforcing.





Photo 3: Torched hole in reinforcing plate at beam top flange.





Photo 4: Limited edge distance condition at purlin connection, torched hole in top reinforcing plate.



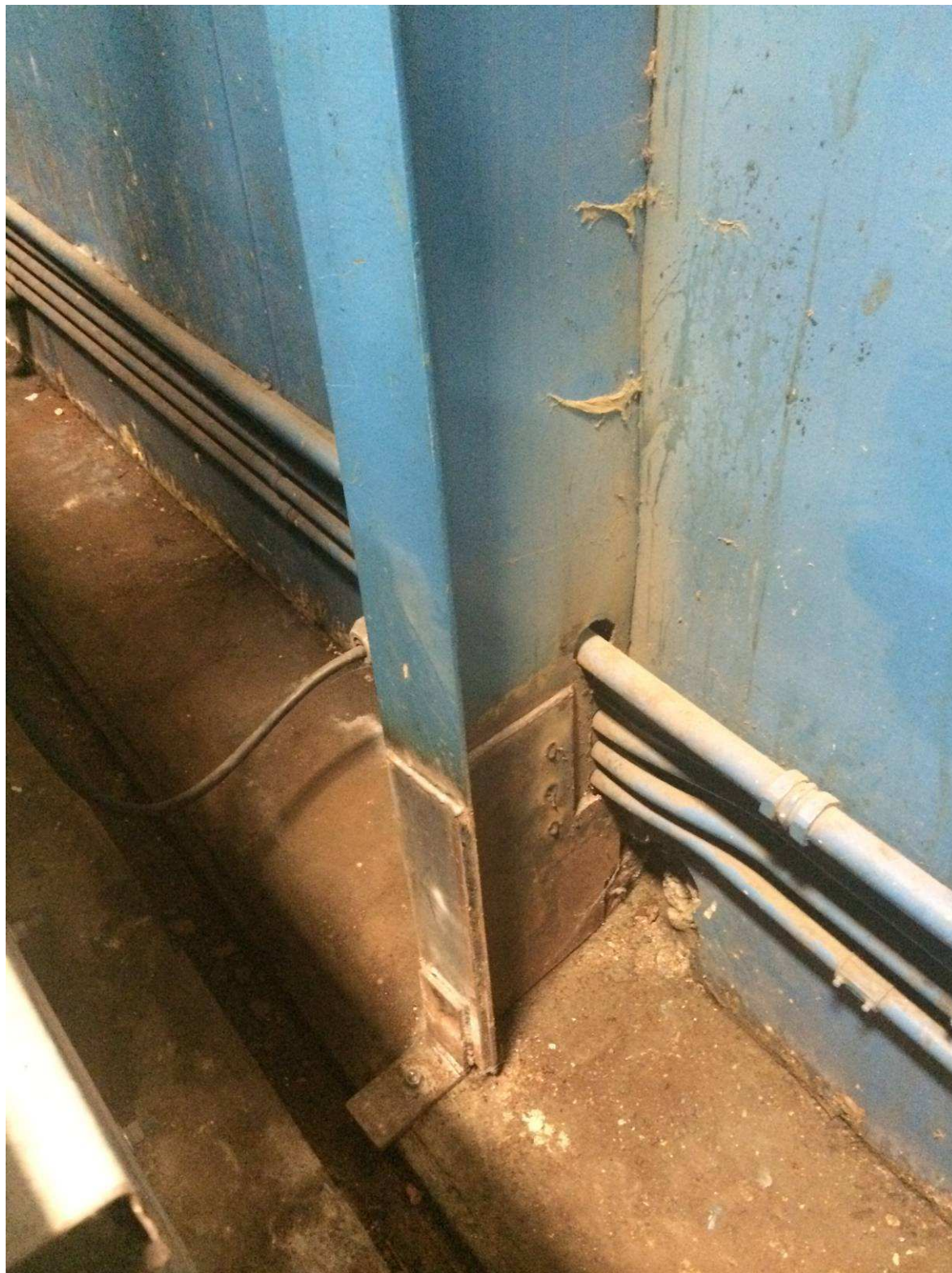


Photo 5: Reinforcing at existing column corrosion.





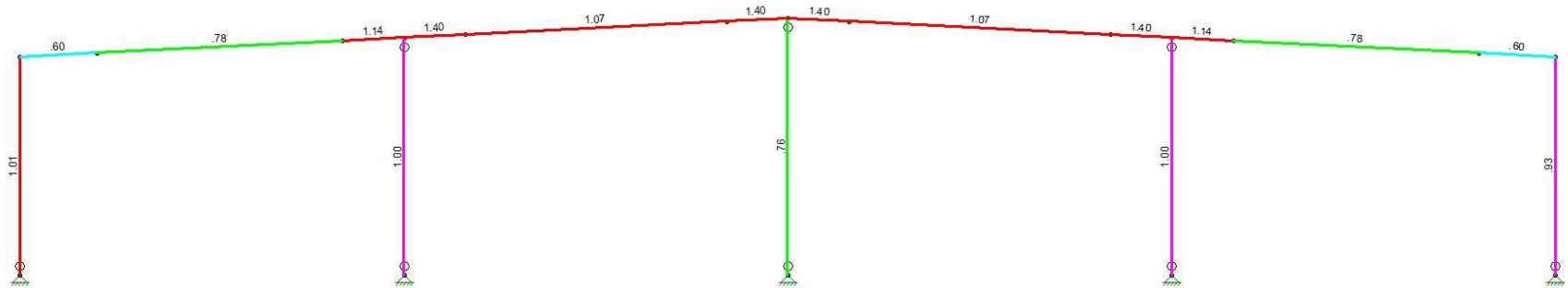
Photo 6: Siding damage and inadequate drainage condition.



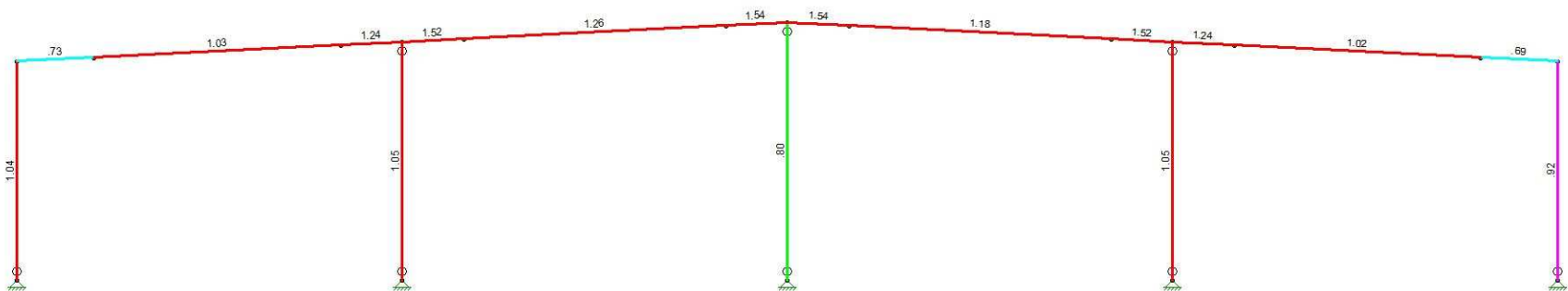


**Envelope of Load Combinations including Dead and Snow Loads  
Existing Reinforcing Considered Ineffective (As Observed in Field):**

ID01 – BOCA 1975/IBC 2009 (Balanced Snow Only)

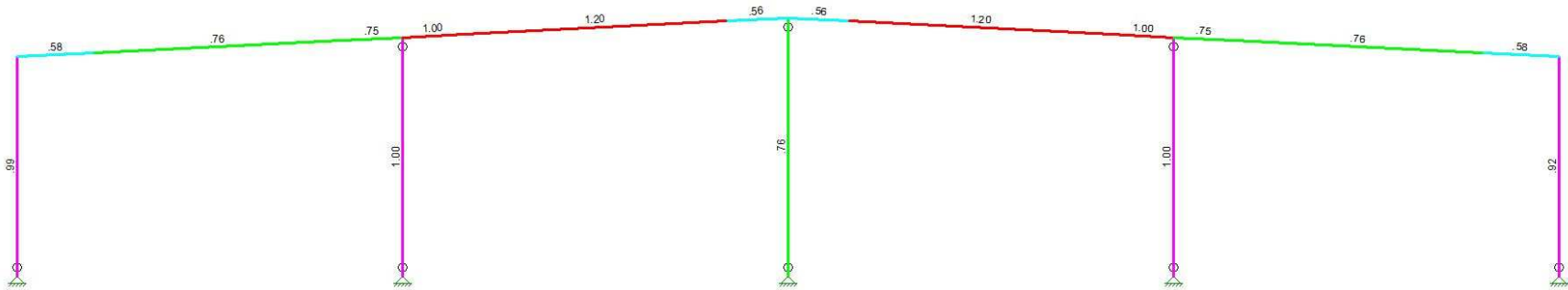


ID02 – IBC 2009 (Envelope of snow skip loading)

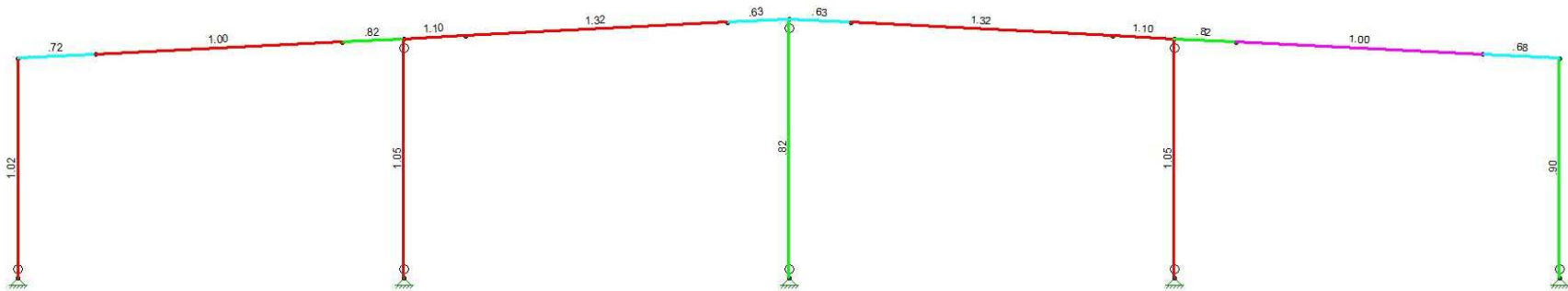


**Envelope of Load Combinations including Dead and Snow Loads  
Existing Reinforcing Considered Effective (Repairs Required)**

ID03 – BOCA 1975/IBC 2009 (Balanced Snow Only):

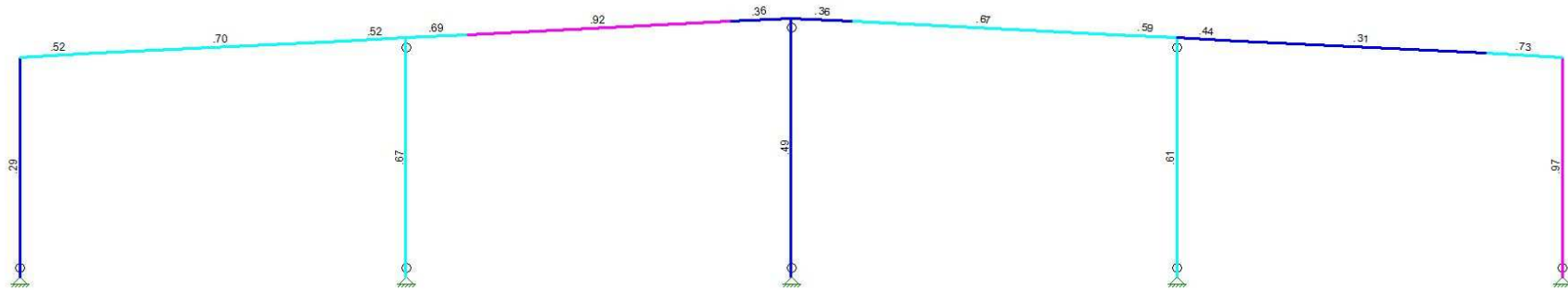


ID04 – IBC 2009 (Envelope of snow skip loading):

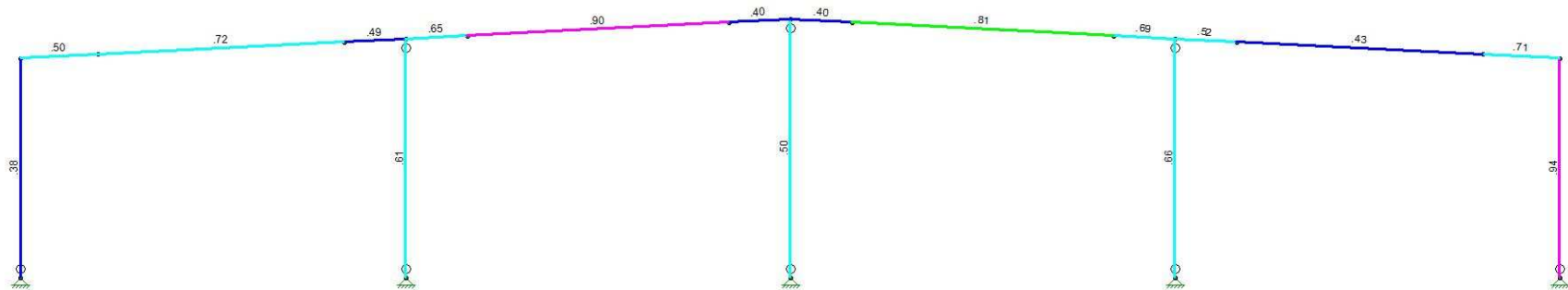


**Envelope of Load Combinations including Dead, Wind, and Snow Loads  
Existing Reinforcing Considered Effective (Repairs Required)**

ID05 – BOCA 1975:

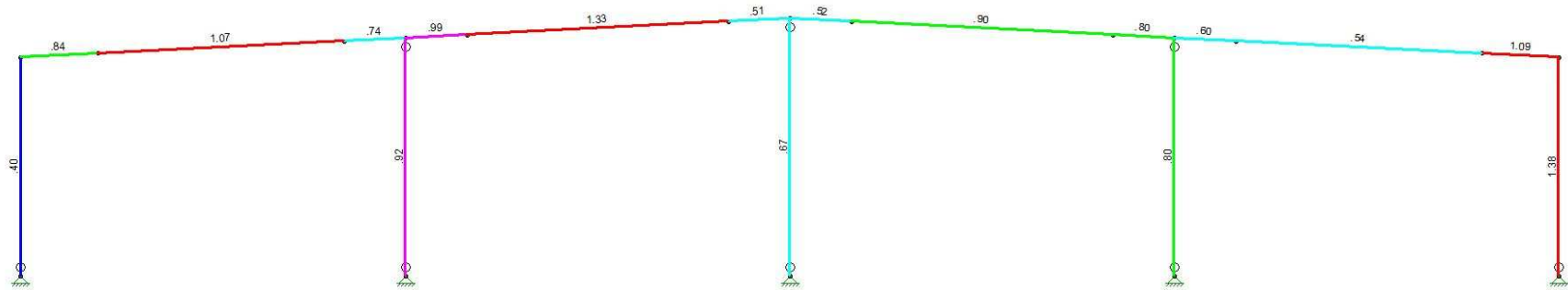


ID06 – IBC 2009:



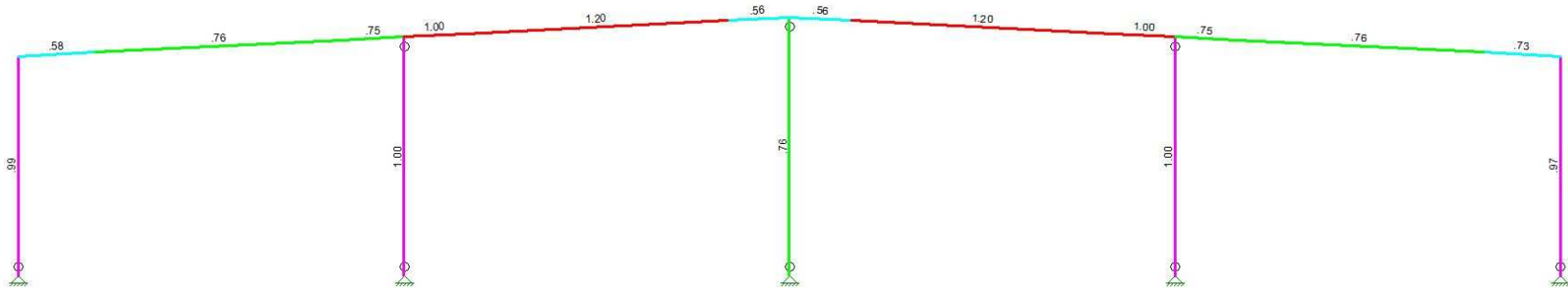
**Envelope of Load Combinations including Dead, Snow and Seismic Loads  
Existing Reinforcing Considered Effective (Repairs Required)**

ID07 – IBC 2009:

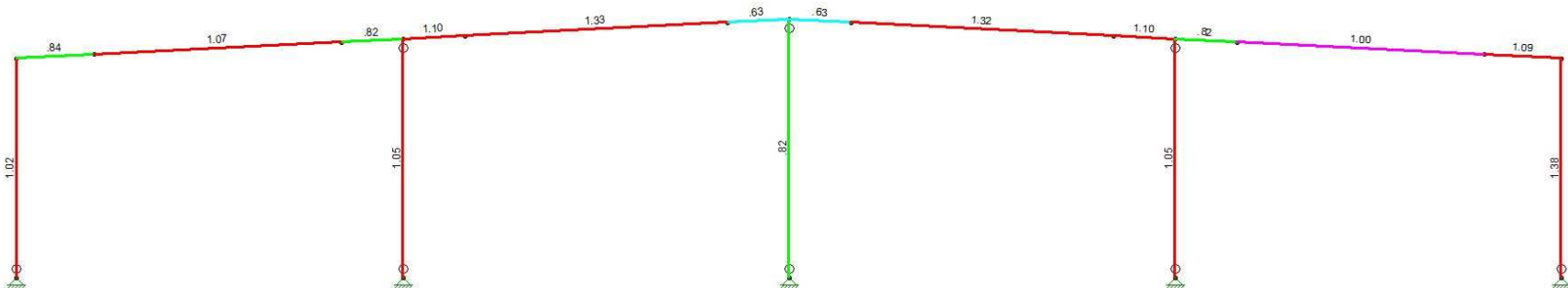


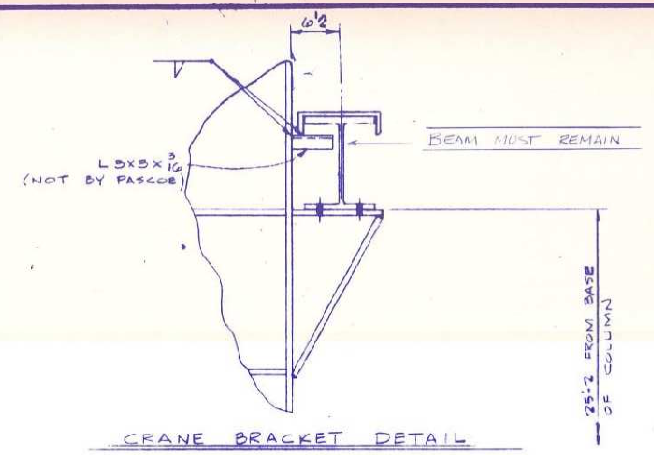
**Total Envelope of all load combinations:  
Existing Reinforcing Considered Effective (Repairs Required)**

ID08 – BOCA 1975:

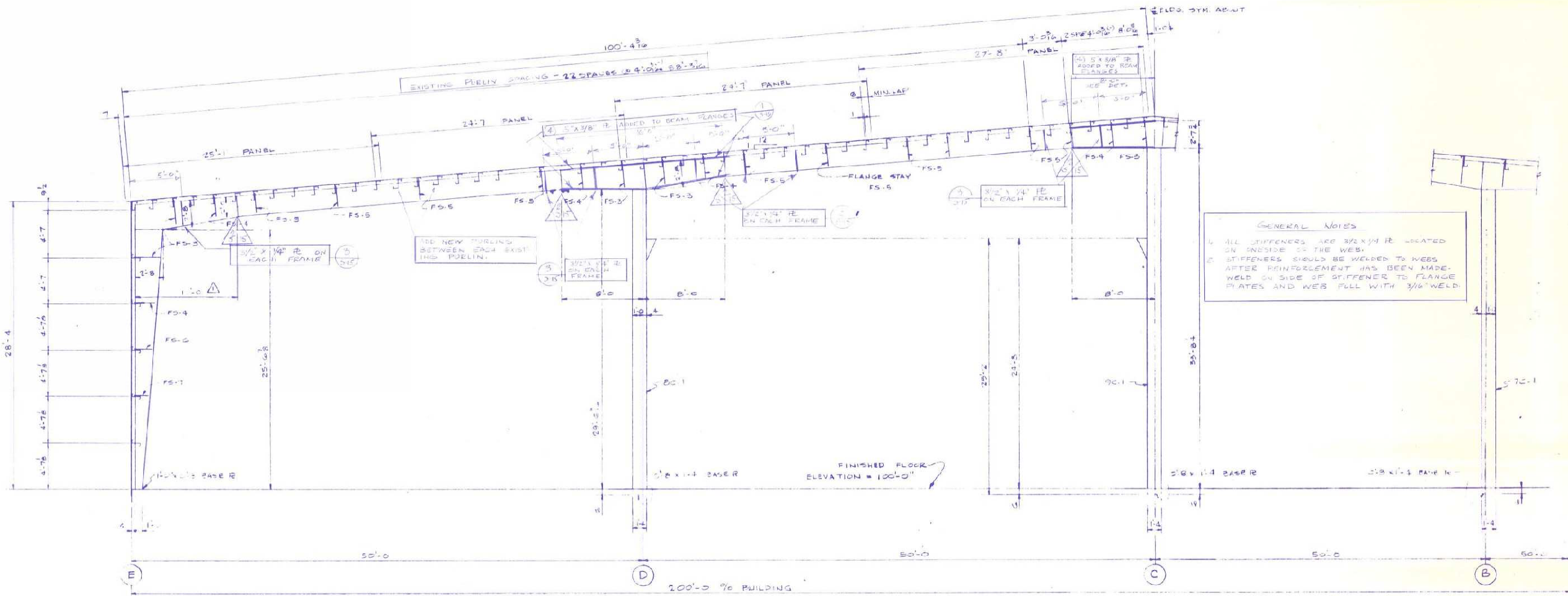


ID09 – IBC 2009:





CRANE BRACKET DETAIL



**GENERAL NOTES**

- ALL STIFFENERS ARE 3/8\"/>
- STIFFENERS SHOULD BE WELDED TO WEBS AFTER REINFORCEMENT HAS BEEN MADE. WELD ON SIDE OF STIFFENER TO FLANGE PLATES AND WEB FULL WITH 3/16\"/>

**MODULAR FRAME SECTION**

3/16\"/>

ALL CHANGES ARE SYMM ABOUT #

NOTE PASCOE RESPONSIBLE FOR DESIGN

NOTE: SEE DRAWING S-15 FOR MODULAR FRAME CONNECTION DETAILS.  
 NOTE: SEE DRAWING S-16 FOR MODULAR FRAME COLUMN & RFTER MAKE NOS.

ALL NEW CONSTRUCTION IS NOTED IN BOX - OTHER NOTATIONS REFER TO EXISTING.

DATE	NO.	REVISIONS	BY	CHK'D
2-27-68	1	DIM. OF HAUNCH	JMT	
3-21-68	2	ADDED CRANE BRACKETS / ERECTION MARKS	JMT	
	3			
	4			
	5			
	6			

THIS DRAWING IS NOT TO SCALE UNLESS OTHERWISE NOTED. DIMENSIONS GOVERN, DO NOT SCALE.

BOLTS 1/2\"/>

HOLES 9/16\"/>

PART ONE SHOP COAT OF STANDARD PRIMER

DATE: FEB. 16, 1968  
 DRAWN: J.M. JOHNSON  
 CHECKED: WCB  
 APPROVED:



APPROVED FOR DEPT. OF HEALTH & WELFARE	APPROVED FOR DEPT. OF PUBLIC SAFETY
BY: _____ TITLE: _____ DATE: _____	BY: _____ TITLE: _____ DATE: _____
APPROVED FOR BUREAU OF PUBLIC IMPROVEMENTS	APPROVED FOR
BY: _____ DIRECTOR: _____ DATE: _____	BY: _____ TITLE: _____ DATE: _____
<b>STATE OF MAINE</b>	
TITLE: REGION 3 VOCATIONAL SCHOOL	
LOCATION: BOWLAND, MAINE	
TITLE THIS DWG: MODULAR FRAME SECTION	
ARCHT'S DRAWN BY: _____ SEAL: _____	PROJECT NO: _____
CHECKED BY: _____	
DESCRIPTION	SCALE: 1/4\"/>
REVISIONS	DATE: 11-25-75





Visioning Meeting RSU 13      October 9<sup>th</sup>  
Meeting Minutes

Although the attendance was small the group was diverse and engaged. The meeting started with an overview of how CTE schools were created by the State of Maine, how Regions differ from Centers and then MCST in particular. Some very interesting and insightful responses from the students and teachers at MCST garnered from their visioning sessions were then given which began a lively discussion from the assembled group.

Some very important statements were made by participants:

**MCST is one of the primary assets in the region.**

**Most people do not know what we do at MCST.**

**We need a 2 year college in the region.**

**The majority of jobs do not require a 4 year college degree**

**We must create an Over Arching Vision/Idea for the future of MCST**

**What are the training needs?**

- MCST offers many programs which result in licensing or certification in an industry related field
- New programs are needed to enhance the ones we already have
- Can we integrate adult students into the day programs?
  - Concerns for safety and security of day students
  - Can we do back ground checks on adult students? Is this an invasion of privacy?
  - Can only be considered if building is enlarged
  - Can only happen in programs which are not already at full enrollment
  - Students can teach adults current ways of doing things (win-win for all)
- Can we attract a Community College to offer classes that will augment or expand opportunities for our students and adults in the area?
  - We do not have the labs to offer medical programs
  - We do not have adequate computers or space
  - Need to talk to state to see if community college other than KVCC could offer classes at MCST
- Bring in business and industry volunteers to aid in the instruction of the students
  - Must be totally invested teaching what they know and how they work on daily basis
  - Must be vetted and background checks done
  - Not just a way for businesses to get free work from our students and teachers
  - Would keep the students current on how things are done in the real world of work
  - Utilize the vast number of retired men and women in the area who have great knowledge of industry and business
- Can we make the school available to students who want to continue working on their projects after hours?
  - How do the students without personal means of transportation get home?



- Do we need new staff to man the building after regular school hours end?
- How would this impact use of workshop space for the adult education programs?
- Make MCST a STEM school with all the sciences, technology and math the programs need
  - Get math and sciences out of the silos and into hands on learning so students understand why they need to learn it

### **Full day vs half day schedule**

- Full day strongly requested by both students and teachers in their visioning sessions
- Philosophy in sending schools needs to change to enable this
  - Current scheduling is biggest obstacle
- Half day:
  - Students coming and going from sending schools is disruptive to both MCST and sending schools
  - Bussing is waste of valuable teaching time
  - Transporting students for half day every day is costly
    - Four trips a day on average from sending schools
  - Programs cannot be as instructive as there are not enough hours
  - There is no correlation to a work day in business or industry/ no rhythm
  - Students are unable to really get into their project before they have to leave
- Full day:
  - Would enable teachers and students time to really get the most out of their time together
  - Teachers would need time to do their class prep as now it is done between sessions
    - Offer a period each day just for prep
    - Offer break time
  - Need kitchen facility and space to feed the students and staff to oversee lunch
    - Additional staff needed?
    - Could/should culinary program do this?
    - Could we make culinary program large enough to have a dining room open to students, staff and community like other schools have done?
  - Changing from half day to full day has been done in other Regions and has met with great success
    - We can ask other schools how they did it

### **What are the possibilities with the existing building vs a new building?**

- The building is one of the major issues
- Space is very limited for programs now and adding new programs is not going to happen unless more space is added
- Building is loud, congested and difficult to work in sometimes due to fact it was never meant to be a school
- People do not know what goes on in the building as it is not inviting nor even remotely looks like a school
- Larger shops with better lighting and storage spaces for tools and equipment is needed

- Programs need to keep changing as industry changes and our building is not equipped to facilitate these changes
  - Example given for automotive program: cars of today run on so many different fuels and we need space and ventilation to offer a program which takes this all into account
- Flexibility of space would enable various uses

#### **Current location vs new one**

- Current location is not central for all sending schools
  - Should determine a better more central location
- Waterfront location is nice but not vital for the school or its programs
- Marine programs do not access the water so can be taught at other location
- May be advantageous to sell the existing waterfront land and use funds to build new
  - May require zoning change from Rockland to get maximum dollars on oceanfront lot
  - Sherry is looking into getting a current real estate appraisal done
- Does the current acreage allow us enough room to build what is needed?

Visioning Meeting CHRHS      October 14<sup>th</sup>  
Meeting Minutes

Ron started the meeting with an overview of how CTE schools were created by the State of Maine, how Regions differ from Centers. He explained MDOE requirements for CTE schools and why each school in state cannot do CTE as so cost prohibitive. Regions created to enable all students in Maine an opportunity to attend CTE.

#### Full Day at MCST

- Scheduling for students could be hard for guidance counselors
  - CHRHS as alternating day schedules (Red day/White day)
  - Suggested Red day at MCST then White day at CHRHS
- Each sending school would have to agree
- Class size policies
  - On days when students not at MCST they would cause overcrowding in the sending schools
  - Resulting in need for more staffing and/or more class offerings
  - Can we better utilize the teachers we currently have
- Some students would rather never be at their sending school
  - they want CTE every day all day and on weekends
- How would the bussing work
  - Students still picked up and delivered to sending schools as now
  - CTE students then picked up at sending school and bussed to MCST
  - Would mean only two trips a day not four as is now

#### Half-day Issues

- Not all students arrive or leave at same time
  - Instructors must delay start of class or interrupt when other students arrive
  - Some students have to leave early so do not get full instruction
  - Students are unable to get into their projects before its time to leave
- This fall there are more students in PM sessions
  - They want to be able to go from CTE home not back to classes at sending school
  - This has caused crowding of some programs at MCST

#### What if there was ability for full time attendance at MCST?

- Student could be full time MCST student
- Organize as STEM school
- Expand existing programs to more students
- Create educational Pathways so students can attain their goals
- Take advantage of their training to test out of regular classes
- Offering required classes and also AP classes via technology
  - Align AP courses at sending schools
    - Each school does one best

- One teacher in a sending school teaches it and students at MCST or other sending school take the class
- This of course would not work for hands on CTE classes
- Does all the learning have to take place in the school
  - Current CNA students do clinical at Knox Center or Quarry Hill but they want more
  - Currently MCST has to turn away students in CNA program due to lack of space and equipment as they are shared with Medical Science program
  - Could an industry “adopt” a program and offer training at their place of business?
    - Laws around what students can do
    - Monitoring required so the learning is happening
    - Need to be sure the business wants and is able to teach what they do not just get free help
    - Can industry and small business afford to send staff to MCST or use their staff time to train our students

#### Allowing adult or industry people into the building

- Flexibility to be able to teach in a space during day and make the space available to others in evening or on weekends
- Availability for classes on evenings and weekends so HS students and adults can learn from each other
- Make space available to Community College
- Would need to do background checks on adults entering day classes
- Currently have local industries partnering with MCST but would welcome more
  - The students and business partners all benefit

#### Exploration programs

- K-12 students allowed to utilize our space to discover what they might want to do
- Sending school cannot afford to buy all the equipment to enable this exploration at their schools
- MCST Currently offers Exploratory classes to freshmen of sending schools on a full year basis
  - Exploratory Program is aligned with Workplace Readiness
  - Not dictated by certificate or licensing or state regulations
  - Entire school cannot be exploratory as those programs are regulated by state statutes and industry standards
- Can it be evenings, weekends and even during summer?
  - HS students could then do their regular classes and other things at their sending school and access MCST in off time
  - Adults utilizing our technology and space to learn, create and innovate
  - Would require more teachers, maintenance staff and security
  - Used to be that way but budget cuts resulting in staff limitation ended it
    - Robotics is an example of this
    - Summer program was huge success years ago
  - Cost of day programs paid by taxpayers at sending schools per Cooperative Agreement
  - Other uses paid by fees charged
- Offer CEU credits to teachers of sending schools

- Would learn how what they teach is used hands on at MCST
- Did this in past and teachers loved it
- Had to be cut due to cost, staffing and space issues
- Need to offer soft skills so students and adults are ready to work once they leave MCST
- Utilize a section of building set up as Exploratory Studios open to not just HS students
  - Enable people with great ideas space to work on them

#### Image of CTE Schools and MCST in particular

- Guidance counselors and teachers at sending schools
  - Still see it as where they send the dumb students
  - There is push back from guidance when students indicate a desire to attend MCST
  - They see it as a waste of time for students
- Parents/peers of non CTE students look down their noses at the students who attend CTE
- People in community have no idea what truly happens at CTE
  - Not the Vocational school they remember
  - Think it is just additional cost and higher taxes
  - Do not understand programs cannot be offered at sending schools
- MCST building does not say “school”
  - Not inviting
  - Out of the way
- Need to get community into the building when classes are in session so they see what wonderful things are going on
  - Current space does not permit large numbers coming through during class time
  - People work during day so are unable to come then
    - Same problem with getting industry and business into the building during day
- Need PR to enlighten public as to what is done at MCST
  - New staff needed to do this
  - Budget concerns
- Not impossible to overcome these obstacles
  - Students find ways to make it happen

#### Facility

- Has been evaluated by the engineering staff
  - Measured, photographed, assessed
- Then analyze how these dreams/ideas expressed by us can fit into the space
  - Can we get what we need/want in the existing building
  - Can we if we add to it
  - Or do we build new
    - On current location or other

After this is all done then what

- They will present the MCST Board with the big picture based on all the information they have gathered
  - Does it need to be presented to each sending school board?
    - No, they can come to the MCST presentation
- Next steps will be determined by the MCST Board

How do we get the thousands of people in the area behind this great plan?

- Utilize talent of our students to do videos of their schools and MCST
  - Put the videos on our local TV Chanel
- Quarterly newspaper insert dedicated to the schools in the area and their great programs, students and staff
- Do informative presentation of ideas and plan on our local TV Chanel

Funding

- Money is he issue in many of the things discussed
- Need to tap into funding sources other than taxes
- Grants available
  - Need fulltime grant writer to maximize grant funding
- Can the Many Flags group offer us assistance with grant writing
- Do we form a Friends of MCST to help with fundraising

Visioning Meeting MVHS      October 15<sup>th</sup>  
Meeting Minutes

Ron opened the meeting with an overview of the State formation of CTE Regions and the laws and regulations governing same.

Students see CTE as fast tracking their education and giving them a leg up on the competition for jobs in the future. CTE is definitely not the old vocational track from high school years ago.

He asked that the people present vision CTE for next 50 years. Evaluate and implement 21<sup>st</sup> century CTE to meet the needs of future industry and business.

#### Full-day vs Half-day

- Bussing not efficient use of students time
- Students gain everything through full-day attendance
- Expanding to full days would give more program opportunities
- Better if student spends full day at MCST then a full day at MVHS
  - Maximizes learning at each school
- Clinical instructor for CNA program at MCST said as it is now
  - Students are bussed to home school then MCST so late in getting started
  - Then go to clinical at medical facility and just seem to get started when they have to pack it all in to go back to MCST
  - Frustrating for the students as well as the facility and instructor
  - Cannot get full learning experience this way
  - Need full day
- Huge issue is scheduling
  - Scheduling is dependent on each sending school
  - Do not want a student to miss a class they need to graduate and is only offered one day a week
  - A common calendar was agreed upon last year by superintendents and sent to schools who then changed it resulting in over 40 different days
    - This resulted in having to explain to the MDOE who requires five or fewer dissimilar days for Region
    - Students are still required to be at MCST for their classes
    - Results in issues for bussing and getting students home sometimes
- We have discussed this and scheduling and bussing are the problems
  - Stop being negative and do it
  - Full days so students get maximum education at both schools
- At MCST the lack of cafeteria and kitchen to feed 450 students is a problem
  - Use existing Culinary Arts class to feed them
    - Culinary Arts program must meet strict state and industry standards and cannot deviate from this to do a lunch program each day
  - Have one of the sending schools act as the supplier of the meals
    - Meals prepared off site and trucked to school
    - Or have them all bring bag lunches

- No place for them to eat
  - The current Café space seats max of 65 so not feasible
  - Cannot eat in the lab/shop areas as not sanitary or enough space
  - Would still need staff to oversee lunch time as teachers by contract need break

#### CTE/Comprehensive High School

- In southern New England CTE schools are standalone high schools
- CTE High School is a great model and is proven in other states
- Maine is not Massachusetts and state funding will not be there
- Mid-coast is mainly low income not able to support this with taxes
- Area has large elderly population on SS so hard to go to them and ask for more tax dollars
  - They now spend \$750,00 to send 125 students to MCST
    - the man's estimate not MCST provided information
- Students choose to go to their regular academic high school or the CTE High School
- Difficult to get all sending schools to agree to this
- Must be careful not to designate one College Prep high school vs CTE High School as more than 50% of current students at MCST go on to college
- Rockland needs new HS, Waldoboro needs new HS and MCST needs new building that 3 buildings at huge cost
- If you build one new CTE High School the student populations at sending schools will go down so may reduce need to build new high schools in Rockland and Waldoboro
- Must remember we are not MA or CT
- Need to realize there is a limit to how much we spend in one place or another
  - All money going to MCST is money not spent on RSU 40 schools
- Forgetting we are talking about students from all sending schools
- We are trying to give the best education with what funding we have

#### Allowing people into building anytime

- Students have access to their projects any time
  - Faculty supervision needed on machines and are not there off hours
- Summer school not as punitive but as opportunity to learn new things and experience options
- Need to be realistic, you cannot have the building open 24/7
  - Huge financial component because of supervision, staffing and maintenance
- Use SCORE volunteers to teach some off hour classes
- Use other volunteers
  - Was done in past with robotics but they did not know the equipment and in some case damaged it and in many cases left the shop space a mess
  - Would need to vet them
- Suggestion: industry send in someone to teach a course for say 6 week
  - Industries small and do not have staff to do this
- Having building empty during summer is huge waste of opportunity

#### Could industry adopt a program?



- Money is tight for them too
- Jason from Back Bay Yachts said:
  - He is working with MCST to collaborate on getting qualified workers
  - All industry in area, large or small are challenged to find staff
  - Employers spend far too much time cycling workers through the hiring process
    - They do not know how to work a full day or week
    - They have no soft skills
    - When they keep changing jobs every month or so it looks bad to a future employer
    - They have not learned the value of a good days work
- MCST students graduate with these skills and are hired out of high school
- Pen Bay Medical is desperate for good CNAs and will hire the best from MCST right out of HS
  - Turn potential students away because of lack of space
- One leading industry does not hire direct but uses temp agency so they can pay lower wages
  - Wants best trained from MCST
  - Would not fund expansion of program when requested

#### Programs

- Need better communication to let students, teachers, guidance and community know what is happening at MCST
- Need in area for electricians and plumbers so should develop these programs
  - HVAC / plumbing program
  - Electrical program
    - High cost to implement
    - No space in current building
    - Need qualified instructors
    - Must meet MDOE program requirements
    - In NY unions paid for training
      - Maine does not have this kind of union support

#### Other ways of teaching

- Students could take the core curriculum classes at MCST via technology
  - This could then allow them to attend MCST all day
  - Already have technology in sending schools and MCST
  - Students have skills already to use technology
- Asynchronous class offerings like at UROCK (UMA site in Rockland)
  - Students go online to take classes whenever it fits their schedule wherever they are
  - Students take responsibility to complete the work on time
  - Cannot be done with classes requiring equipment or labs

#### Community Participation

- End of process Lavallee Brensinger will create a need statement that we can take to the communities to brainstorm ways to solve it

- At end of the visioning process we will get information to show public
  - Common threads from all visioning meetings
  - Results of building analysis
  - Results of program evaluations
- Need to have public hearing to find out if they would support this
  - How do we get them to come
  - 500 invitations and so many posters and emails sent and very low turnout for these meetings now
  - Tell them we will do it and raise their taxes should get them to come
- All comes back to money
  - State says need to go through the process
  - State funding not there
  - Go to taxpayers for bond
  - Reach out to business and industry and private funding to lessen the bond

Visioning Meeting MCST      October 16<sup>th</sup>  
Meeting Minutes

Ron started the meeting with the explanation of MDOE formation of Regions and the regulations and rules which guide the regions. Then asked for audience participation in visioning the CTE School of the future and MCST in particular.

Full day vs Half day

- Full days on alternating days
  - All day Mon, Wed, Friday at MCST then Tues, Thurs at sending school; alternate the next week
  - Many students do not want to be at sending school all day that is why they love MCST
  - Some want to be only at MCST every day
  - Can they meet the core standards this way?
    - Virtual classes taught by a sending school teacher
    - Video online classes
    - AP classes in all subject areas are now offered online for Maine students free
    - Currently can take some core classes at MCST (English, math, social studies)
  - Can students get burned out, loose creativity and ideas
    - They finish their project then what
    - How do they keep engaged
- Former student said all day is great idea
  - Hated leaving project or class when deep into it
  - Next day had to spend time getting back into the class or his project
- Would save fuel costs for busing as half the trips
- Better use of students time as some spend about an hour a day traveling from school to school
- Mother of student says if given choice her son would come to MCST all day
- Apprenticeships with local business more likely given full day
- Less drop outs if given opportunity to attend MCST
- Social piece can be very distracting but not the case at MCST
  - Better mixing of likeminded students
  - Relationship with teachers better
  - Not the drama and social clicks found at sending schools
- Obstacles?
  - Aligning schedules in sending schools
  - Need teacher buy in
  - Sports is an issue, students have to leave MCST to get to games
    - Will continue whether full or half days
  - Extracurricular activities usually done after academic hours so not such an issue
- Certain dollar sign follows a student
  - If used to pay MCST not there for sending school
- Instructor said: now if the sending school has an event they lose that student for a half day of instruction time, if full day would lose them for full day

Open to all entire community, business and industry

- MCST has a unique place in mid-coast
  - Can be made an anchor for the area
  - Retraining and advanced training for adults
  - Future of technology
- Options now to graduating seniors
  - Go to college and leave as no jobs in area
  - Follow path parents want you to go
  - Go on welfare
- This is forward thinking
- Gives multiple pathways to success for students and adults
- After school opportunities
- Summer programs for younger students
  - They can do small exploratory sessions in each program
  - They then have a better idea of what is possible
- Need to break the stereotype of CTE
  - CTE students are seen as “those kids”
  - Need to make CTE prestigious
  - Need to show the opportunities it offers
  - Money is always the issue
- Parents concerned about mixing adults with high school age students
  - Safety issues
  - Would need policies in place
  - Not necessarily co-mingling between them
    - Could have separate area for adult students or only in evening
- Industry training
  - Need science labs for medical programs
  - Companies will pay staff to attend continuing education if job related
  - Give employees chance for advancement within company
  - Train new hires
  - If too many could pull away from time with students and their needs
    - Could be done in off hours with different staff
- Community College utilizing space in evenings/weekends
- Students now attending feel have leg up on competition

Has this type of school been created?

- Has heard this talk so many times but is it possible
- Yes, standalone CTE High Schools have been built in many communities in other states
- We need to pool resources of all sending schools
- Economically meets needs of communities
- Industry needs demand it

- This idea would open up all sorts of possibilities
- Let it become a community resource
- So much talent in the communities so bring them in as volunteer teachers
- Transportation museum already partnering with MCST
  - Built Model-T from old parts
    - Sold at auction
    - Another project already underway, bigger than last
- Can become a Maker School /Labs
  - Community access to tools and facility to develop their ideas

#### Programs

- Need to meet needs of area
- Industry driven
- Textile art
- Beautician
- Business and technology
- Entrepreneurial classes
  - How to start a business
  - How to develop ideas
  - Fair amount of federal money for development of small business
  - Make MCST business startup hub to attract funding
- Beth explained Bridge Program
- Don't muddy the waters
  - Too many outside programs or classes could take away from great programs already there

#### Facility

- Gives off a very negative image
- Looks cold, sterile
- Boring, non-descript
- Looks like a prison
- People have no idea what goes on there
- No curb appeal
- Not inviting
  - Does not make it a place you want to go into
  - Once inside they are blown away by the opportunities it offers
- Building looks so small people cannot comprehend what is inside
  - Actually is larger on inside
- Need to determine what a CTE school is supposed to look like
- Marketing to get work out about what is going on at MCST
  - Have students create art wall
    - either stand alone or on building

- Depicting what goes on in there
- Have students in film program video the programs and what they do
  - Put on local TV
  - Put on huge video display board/ sign
    - Zoning and City of Rockland sign ordinances
- It is on the OCEAN
  - How do we maximize this
  - Site location is prime
  - Set building back on site
  - How is land best used

#### Elephant in the room

- Biggest obstacle to all this is the bureaucracy of the sending schools
  - School Boards
  - Community leaders
  - Community as a whole
- So much negativity surrounding schools since the consolidation
- Need to get communities behind the school
- Encourage all who want this school vision to go back to their communities, their school boards, selectmen etc. and push for this
- Use the ripple effect of telling people all the good things that are happening and future vision
- Really need to push this plan not just tell it
  - Without the PUSH nothing will happen

## Industry Participation

Companies and businesses throughout Knox, Lincoln, and Waldo counties were contacted and asked about their interest in Mid-Coast School of Technology. Each was notified that the School is considering possible new programs and increases in cooperative opportunities; as well as possibly expanding adult education and training opportunities. Specific questions were asked to gather feedback and information:

1. Is there interest in engaging with MCST to determine new programs and resources that can be shared and supported?
2. What can MCST do to support their businesses?
3. What skills and services are needed within their business and in new employees?

## Local Business Contacted

- Fresh Catch, Dick McGee
- Pen Bay Healthcare, Erik Frederick
- SummerMaine, Fletcher Hall
- Down East Magazine, Bob Fernald
- Global Packing and Shipping, Sarah McLean
- Homes and Harbors, Stacey Palmer, Maine, Boats
- Hill's Seafood, Sam Hill
- Elliot & MacLean, Sarah Gilbert
- Bangor Savings, Skip Bates
- Adventure Advertising, Joe Ryan
- Joe Corrado Photography, Joe Corrado
- Dragon Cement, Mark Curtis
- Breakwater Design, Ginny Savage
- Machias Savings Bank, Brad Galley
- Morgan Stanley Investments, Rita West

Note: some of the businesses above had employees offer comments on behalf of the company. Follow-up with each business, and others, is needed during the next steps of the process to define specific program, support, and participation decisions.

## Participating Local Businesses in Vision Sessions

A number of local businesses participated in the Visioning Sessions that took place within the Region. It was made clear the skills and leadership qualities are in demand and will continue to be valued within the Region; this includes industries such as:

- Certified Nursing Assistant
- Health Sciences
- Composite Material Fabrication
- Business Enterprises
- Cottage Textile Industries
- Fire Fighting and EMS Services

Other businesses remain committed to the educational community. FMC is one example of industry partnering and sponsoring mini-grants for student projects at Ocean Side High School. Reaching out to discuss specific program alignments should be undertaken in the Programming phase of the next step in the process; as this will also engage the DOE.