RREV Academic Innovation Sustainability Template

This template provides an outline of the components required of a RREV Innovative Pilot Sustainability Plan. The information in this template will serve as the basis for requests for schools/districts to proceed with an individually designed RREV Pilot Sustainability Plan.

Section 1: Define the Primary Sustainability Need

Sustainability for your pilot innovation can be described in three different levels of impact which we will define below.

Maintain – Least amount of contextual change. You are basically working with the same group of students and teachers to solidify the potential impact of your pilot and gather enough data to consider the pilot's potential in new contexts.

Spread – Innovation or reform implemented in greater numbers of **similar grade level classrooms** and includes the activities, structures, materials, and underlying beliefs, norms, and pedagogical principles associated with the change strategy. –Coburn, 2003

Scale - Innovation or reform is implemented in greater numbers of **diverse grade level classrooms and schools** and includes the activities, structures, materials, and underlying beliefs, norms, and pedagogical principles associated with the change strategy.

A. In the table below, select the level of impact and describe the pilot-identified student needs / problems that your plan will continue to address for both the 2023/2024 school year and for the next 3-5 years.

2023 / 2024 School Year
Identify: MAINTAIN / SPREAD / SCALE

Define sustainability need(s):

- **Student, Parent, & Community Engagement**: We need to re-engage students in their learning through hands-on/minds-on projects that matter to them, their families, and community. Research shows that students who are immersed in CTE are more likely to graduate, more engaged, and have higher earning potentials. When a group of staff, parents, and community members met in 2016 to discuss school programs and facilities, they identified technical education as their top priority. Teachers, parents, and community members would often refer to the Grace Institute, which provided St. George students with access to shop and culinary arts from 1936-2006. Last summer, during a referendum vote on the project, 96.7% of those who participated voted to approve it. Parents, when they can see and touch the work of their students – whether it be a boat, a toboggan, and buoy monitoring water temperature and salinity, or miniature 3D printed house complete with working solar panels – are more excited and engaged with their children's education and the school community.
- **Technical, Social-Emotional, and Entrepreneurial Skills:** We need to ensure our students have the technical, social-emotional, and creative thinking skills to meet existing labor force demands and create the businesses and industries of the future. We can't wait until 11th grade to expose students to hands-on/minds-on, technical learning – we'll lose too many students before then. Public school curriculum focuses heavily on mathematical and verbal ability, often neglecting spatial/mechanical ability. This means we're failing to engage and prepare the next generation of carpenters, electricians, mechanics, plumbing and a variety of STEM fields. See Thomas Edsall, "We Are Leaving 'Lots of Einstein's' Behind", *The New York Times* (July 21, 2021) https://www.nytimes.com/2021/07/21/opinion/young-adults-spatial-reasoning.html.

- **Promoting Economic Growth & Community Resilience:** We need to ensure our students have the career skills to obtain high paying jobs in our town and region. This will benefit our students and local economy while strengthening the resilience of our year-round community. St. George – as well as much of Mid-coast Maine – is facing serious economic challenges due to the rising cost of housing and threats to the fishing industry. While household incomes in St. George vary quite widely, 42% of households in the community earn less than $50,000 annually. With a median household income of $41,600[1] and a median home price of $529,000, home ownership is impossible for many. In addition to high housing costs, the fishing industry faces a myriad of threats. St. George's traditional groundfishing industry has all but vanished: over the past forty years the local fleet fell from twenty boats to three, only one of which is able to fish year-round. The lobster fishery is still an economically viable profession; however, warming waters and increased regulations threaten the industry. Recent research models using a 1°C to 2°C increase in Gulf of Maine waters by 2050, predict that "lobster abundance in the Gulf of Maine will decline 42%–62% relative to the recent peak in abundance." New federal regulations also call the future of lobstering into question. In 2021, NOAA Fisheries released a ten-year plan to reduce the risk of fishing-related death or injury to right whales by 98%. Among the regulations being discussed, some include closing large areas of the Gulf of Maine to lobstering and limiting the number of lobster traps fishermen can use. The regulations must be strict enough to essentially eliminate any risk that a right whale will become harmed by lobster fishing gear. According to the Maine Lobster Association, "the [Maine] lobster industry could not survive" this new requirement. If this industry collapses – or declines significantly – the economic impact on St. George and Maine's coastal communities will be devastating.

3-5 year plan

Identify: MAINTAIN / SPREAD / SCALE

We will continue to address the student needs described above as these needs will not go away. Initial data collected provides evidence that the St. George Innovation has had a positive impact on a variety of students therefore we will scale in the following ways to continue to meet identified student needs.

- Develop CTE/Makerspace Programming Board to oversee programming and funding for CTE/Makerspace Building
- Share PreK-8 CTE Curriculum with other DOE and other schools – present at conferences; provide summer workshops for teachers from other districts
- Ongoing fundraising with donor base – utilize database of donors, newsletters, annual appeal, summer and fall fundraising/celebration events
- Hire outside organize to evaluate program to provide evidence of impact – possible partner with college or university to assist with this
- Using research and data gathered through program evaluation, share curriculum & program with other schools and communities across Maine and U.S. – partner with businesses, corporations, and trade associations to share program/curriculum
- Solidify community college connections to offer credit/credential classes in trades/technology for community members.

[1] Economic Innovation Group, Distressed Communities Interactive Map, https://eig.org/distressed-communities/2022-dci-interactive-map/?path=zip/04860 (last visited Dec. 8, 2022).

B. Identify which additional students would be impacted, targeted, or supported as a result of your sustainability plan.

Review and describe the evidence (quantitative and qualitative data and research) that demonstrates the impact your pilot had on the original student populations and describe how this data informs your choice to Maintain / Spread / Scale.

Use data that will provide evidence your innovation supports the target student population. This may include the performance of various groups of students (e.g., students in rural locales, students from low socio-economic conditions, students with disabilities, students who are Els, students at risk for dropping out, student who are homeless) with regard to academic achievement, graduation rates, social emotional and mental wellness, economic data, and/or workforce participation.

In our initial pilot, we intended to serve all St. George School students PreK-8th grade. Construction of the building has been delayed due to higher-than-expected costs, however, we have expanded CTE learning opportunities. For example, 1st grade students built wooden toolboxes in the fall and birdhouses in the spring with the help of a local contractor. Seventh grade students visited Fisher Engineering's factor in Rockland as part of their STEAM course. Middle level students were named the Overall Winners of the University of Southern Maine CubeSat Design Competition and our Lego Robotics Team won the **Championship Finalist Award in Maine's FIRST Lego League Championship** for performing strongly in the three judged areas: Core Values, Robot Design, and Innovation Project.

While data is still limited due to the delay in beginning construction, we do have some positive information. Our 3rd-8th grade students' scores in the area of Growth Mindset or in the 70th percentile nationally. We have several students graduating from high school this year that went to MCST and will be going into CTE-related fields such as boat engine repair and medicine. We need more space and equipment to fully implement our PreK-8 CTE model. All of our observations show that students who are working with their hands and minds are more engaged with their work, persevere, and learn important technical skills. Bobby Deetjen, MCST Director, reports that St. George students are ahead of their peers in technical aptitude when they arrive at MCST.

Below is our plan for expanding access to additional students:

- By 2025/26SY, 100% of St. George School students access CTE/Makerspace programming
- BY 2025/26SY, 100% of St. George School student will visit local contractors or businesses involved in the trades and technical fields
- By 2025/26SY, St. George School student engagement metrics will increase: (1) student daily attendance rate increases by 20%, (2) Social Emotional Learning (SEL) assessments will show increase in student engagement, and (3) students and staff surveys will show evidence of increased student engagement
- By 2026/27, 45% of St. George students will attend MCST while in high school (up from 25% in 2023)
- By 2026/27, 60% of St. George School students will show growth on the NWEA Math MAP (up from 40% in 2021/22SY)

Section 2: Data Informed Sustainability

A. Provide the Logic Model your school used to implement your Pilot

Resources	Strategies and Activities	Outputs	Short-Term Outcomes	Long-Term Outcomes	Impact
RREV program $$ MCST Grant for 15,000 for shop equipment ESSER Money Private donations Business sponsorships MCST Personnel – Tech Makerspace director STEAM Educator Volunteers Teachers	Develop vision for project Fundraising actives Teacher CTE working group Makerspace CTE Building Working group Community outreach Presentations Social media posts info Letters to families Building design process School-wide conversations and planning Communication and Story telling Historical research (Role of CTE / TRADES play in community – school)	• New building (Building design) • K-8 CTE Scope and sequence • K-8 CTE Programs (Carpentry, boat building, metal work, 3d design/printing, sewing) • St George Adult Ed programs	Develop CTE Scope & Sequence Design and build CTE space to house Makerspace, STEAM and K-8 CTE programs Create K-8 CTE Programming committee or working group composed of St. George School staff and Board members, MCST staff and Board members, St. George parents, and community stakeholder including local business owners and contractors Hire St. George School CTE Teacher	100% of St. George students will access K-8 CTE Programming • Social Emotional Learning (SEL) assessments will show an increase in student engagement in grades 5 – 8 • St. George School students attending MCST will demonstrate deeper understandings of CTE skills than students from schools that do not provide K-8 CTE programs as measured by feedback from MCST staff and student grades	Model for the role rural schools can play In rural economic development Increase technical / trade skills of the local labor force

B. Describe the data you collected about your innovation pilot outcomes that will be used to inform and shape your plan to MAINTAIN / SPREAD / SCALE

- A group of elementary and middle level teachers, in collaboration with school staff and MCST, developed a draft PreK-8th grade CTE scope and sequence - a groundbreaking achievement and the first of its kind in Maine and perhaps the U.S. The new curriculum expands CTE in PreK-8 classrooms and connects classes with local businesses, manufacturers, and contractors to deepen learning and expand career aspirations.
- With the help of local contractors and a construction consulting firm, the CTE Building Committee worked with our architect to redesign the new building to reduce projected construction costs by $500,000 and increasing square footage for programming. The new designs are complete and the project went out to bid in July 2023.
- St. George 3rd-5th grades, whose curriculum regularly integrates Makerspace and STEAM activities, score above the national average in the areas of Growth Mindset, Valuing of School, Self-Efficacy, and Sense of Belonging. Our middle level students score lower on the SEL assessment, but are above the national average in Growth Mindset, which involves student perceptions that they have the potential to change those factors that are central to their performance in school. Growth Mindset is a key skill we teach and reinforce through our CTE, Makerspace, and STEAM activities.
- The percentage of St. George high school students attending MCST is at 26% and we anticipate that growing next year. Bobby Deetjen, MCST Director, reports that St. George students are ahead of their peers in technical aptitude when they arrive at MCST.

- We have increased to 28 business sponsors who are supporting the project not only financially, but in their offers to work with our students as well as adults in the community. Our newest business sponsor, Seemann Composites is headquartered in Mississippi, a world leader in composite manufacturing, and a critical supplier to the U.S. Navy Submarine Fleet.
- We have two students who graduated in 2023 and attribute their decisions to pursue post-secondary studies boat engine repair and medicine to their time at MCST.
- We have not seen NWEA MAP Math growth as of yet, but we still need to complete construction of the new building, hire a CTE Teacher, and fully implement our programs.

As a result of these accomplishments, such as 28 additional business partners, our ambition to spread and serve all of the preK-8 students is realistic and the foundation for continued success is in place for educators and learners at St. George School.

C. List new data that you will need to collect to further inform and shape your plan to MAINTAIN / SPREAD / SCALE

We will continue to collect SEL and academic data after the building is completed and programs are up and running. We will also continue student and parent surveys with specific questions about their perceived impact and benefits of the CTE/Makerspace Program.

To ensure sustainability, we will closely track operational costs associated with the new building (e.g., maintenance, utilities, etc.) and programs (e.g., staffing, supplies, equipment repairs/replacement/upgrades, etc.). We want to ensure we running the program in the most cost-effective manner possible.

We will gather teacher feedback on the PreK-8 CTE curriculum and compare our curriculum with technology/STEAM standards and curriculum from other states. This will help us ensure that this is a living document that is continually revised, updated, and improved based on the experience and talents of our staff and national best practices.

As we implement our adult education and community "Open Shop" times, we will track the number of adult education courses offered as well as the number of participants in those classes. In addition, we will track the number of people and businesses accessing the CTE/Makerspace Building during Open Shop times.

Section 3: What is the intended impact of your sustainability plan

A. Describe the goals of your sustainability plan.

Consider how your plan will continue to meet the needs of the identified target student population(s) and describe changes in policy, practice, or structures necessary to MAINTAIN / SPREAD / SCALE your innovation.

2023 / 2024 School Year

Next school year, we will begin construction of the building while implementing our PreK-8 CTE Curriculum. Students will interact with the tradespeople who are constructing the CTE/Makerspace Building, thereby making the construction process into a CTE learning opportunity for students. Staff will provide feedback on the CTE Curriculum and a group will meet at the end of the year to review that feedback and update the curriculum.

We aim for every class, PreK-8, to connect with a business or individual involved in the trades or technical fields. This may involve contractors assisting students with projects such as building a birdhouse, welding demonstrations in the parking lot, or visits to manufacturing plants.

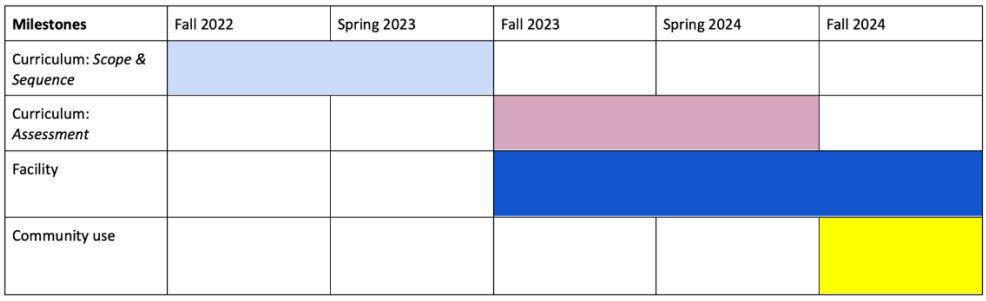
We will also create a CTE/Makerspace Board with a special responsibility to oversee the new building, develop programming, and spearhead ongoing fundraising efforts. This will help ensure there is always an organized group advocating and supporting the program.

We also plan to begin offering professional development for teachers around PreK-8 CTE during the summer. During the summer of 2024, we may offer the program at Blueberry Cove Camp (one of our community partners). Once the new building is complete, we'll offer trainings there. This will help spread PreK-8 CTE to other schools in our region and state.

3 – 5 Year Plan

- CTE/Makerspace Board established and operates annual fundraising campaign, community outreach & fundraising events in summer and fall, manages funds to supplement school district funding for CTE/Makerspace Building, connects with state and federal representatives and agencies as well as industry leaders and trade associations to expand access to CTE to all students, PreK-12 grade.
- Ongoing implementation, refinement, and review of PreK-8 CTE curriculum by CTE Curriculum Team
- Maine DOE adopts PreK-8 CTE state standards based on the St. George CTE curriculum.
- Provide summer workshops for educators from other districts to learn about PreK-8 CTE curriculum & practices
- Hire outside evaluator to measure impact of program – partner with university or college

B. UMaine GANTT Chart



Section 4: Identify Key Expenses and Necessary Resources

A. Describe budget expenditures and necessary resources required to MAINTAIN / SPREAD / SCALE your innovation through June 2024.

Essential Expenditures:

We will use the additional money toward construction costs that total $3.2 million. To date – including the $100,000 sustainability grant, we've raised over $2 million.

Necessary Resources:

These are the resources that are already in place that we will continue to count and rely on to support the innovation.

The building constructed through other federal programs (ARP ESSER), private donations, business sponsorships, a community fundraiser that allows people to purchase engraved bricks that will be incorporated into the new building design, and private foundation grants. Regular updates to our community and donors, with an online donation page run by a local nonprofit. Grants submitted with the help of two grant writers. $20,000 worth of equipment for the new building purchased through a MCST grant. Makerspace programming board, preK-8 CTE curriculum, Teacher and Director, and Community partners are vital resources to support the St. George innovation.

B. Describe budget expenditures and necessary resources required to MAINTAIN / SPREAD / SCALE your innovation BEYOND June 2024

Expenses could include staff time, materials, professional development activities, facilities, and other related expenses. This section does not need to include specific costs, but rather list out the different costs that should be considered to implement the innovation.

Essential Expenditures:

- CTE Teacher
  - $90,000 per year (salary & benefits)
- Supplies & Equipment
  - $15,000 per year
- Equipment maintenance & replacements
  - $5,000 per year

Total per year: $110,000

Necessary Resources:

In addition to the necessary resources noted above for the 2023/24 pilot implementation, the following will provide program support beyond 2024:

- Makerspace Director, and STEAM Educator positions.
- CTE professional development for all teachers, including training on how to safely use the tools and equipment in the new building.
- Annual feedback on and review of the PreK-8 CTE Curriculum
- Safety policies and protocols for the new building
- Developing structure and policies to create the CTE/Makerspace Board
- Personnel time for outreach and fundraising
- A growing number of community partners.