

A REPLICABLE MODEL FOR

Regional Transformation Toward Environmental Literacy for All Students

**THE SAN MATEO COUNTY OFFICE OF
EDUCATION ENVIRONMENTAL LITERACY
AND SUSTAINABILITY INITIATIVE**



San Mateo County Office of Education



**A case for urgent action and a
roadmap for getting started.**

This paper provides an overview of the approaches that have been taken by the San Mateo County Office of Education (SMCOE), the first county office of education in California to launch a county-wide Environmental Literacy and Sustainability Initiative. SMCOE's path to whole systems integration of environmental and climate literacy and sustainable and climate-ready schools efforts is a compelling strategy and structure that can serve as a model in California and beyond. The strategies, tools, and resources shared in this document are designed to be flexible, adaptable, and relevant across the diverse geography and size of California school districts and counties.

The primary audiences for this document are individuals and agencies that want to launch (or further develop) county-wide and regional initiatives to promote environmental and climate literacy and sustainable and climate-ready schools. Secondary audiences include those at the state and national level who are investing in taking this type of work to scale in public and private school systems.

Table of Contents

Acknowledgements 4

Executive Summary 5

Introduction 6

**The San Mateo County Model for a Regional
Environmental Literacy and Sustainability Initiative** 8

Capacity Building Programs 12

Network Programs 15

Technical Assistance Services 17

Conclusion 21

Appendix A: SMCOE ELSI Staffing Model and Associated Costs 22

Appendix B: Relevant Partnerships 24

This paper was prepared by the San Mateo County Office of Education in collaboration with Ten Strands, with support from the Morgan Family Foundation.

ACKNOWLEDGEMENTS

SUPERINTENDENTS: *Anne Campbell (retired) and Nancy Magee*

SAN MATEO COUNTY OFFICE OF EDUCATION STAFF

CHANGEMAKERS ACROSS SAN MATEO COUNTY

TEN STRANDS

FUNDING AND PROGRAM SUPPORT: *City/County Association of Governments, First Republic Bank, Flows to Bay, Morgan Family Foundation, Peninsula Clean Energy, Sand Hill Foundation, San Mateo County Offices of Sustainability, and Ten Strands.*

PARTNERS: *Local student-facing program partners, supplemental curriculum partners, and the Sustainable and Climate Ready Schools Partnership Network.*

**CALIFORNIA ENVIRONMENTAL LITERACY INITIATIVE COUNTY OFFICE OF
EDUCATION INNOVATION HUB AND OTHER THOUGHT PARTNERS**

EXECUTIVE SUMMARY

We are facing a decisive moment in humanity's history that requires every sector, government, organization, and individual to take action toward building a new sustainable and climate-resilient paradigm. K–12 schools are well positioned to play a vital role in this transformation, but they need support at the federal, state, regional, and local level to do so.

In California, our 58 county offices of education (COEs) have emerged as a critical lever for advancing regional progress on environmental and climate literacy and sustainable and climate-ready schools initiatives. COEs can provide backbone support to a region, catalyzing change and engaging with those at many different levels of the education system—students, teachers, administrators, school board members, parents, and community-based partners in a way that keeps equity at the core.

This paper examines the key design principles of the first county-wide Environmental Literacy and Sustainability Initiative (ELSI) launched by a California COE. The San Mateo County Office of Education's (SMCOE's) ELSI programs and services are outlined in this paper and may serve as a model for those who want to launch (or further develop) regional and county-wide initiatives promoting environmental and climate literacy and sustainable and climate-ready schools, as well as educational leaders at the federal, state, regional, and local level who may want an example of how to design and implement an effective regional initiative.

The SMCOE ELSI model, which involves multiple stakeholders and programs, seeks to bring an environmental and sustainability focus to both campuses and the larger education system. Enacting this model across California and beyond will help all students, and the adults who support them, to be empowered with the knowledge, support, and skills they need to take meaningful action to create safe, healthy, sustainable communities and address challenges presented by climate change.

INTRODUCTION

Call to Action

For over a decade, the demand for environmentally and socially responsible action and leadership has been growing within many sectors, including government, industry, and higher education. Public opinion has also shifted toward alarm, action, and the need to promote environmental literacy. In the past few years, [this urgency has escalated](#) as we experience record climate-related disasters: specifically wildfires, drought, severe storms, floods, mudslides, biodiversity loss, and rising sea levels in California.

The K–12 education system has experienced pockets of progress toward equitably integrating environmental and climate literacy, sustainability, and climate-ready practices, but needs to act more swiftly to institutionalize policies and practices that shift the paradigm at scale. With the ongoing climate disasters significantly impacting school communities, the timing is right to reimagine K–12 schools and embrace sustainable and resilient systems that benefit our entire communities, but especially students of color and students from low-income communities as they are often disproportionately impacted by environmental and climate related injustices. Additionally, because of the expansive reach of K–12 schools, which serve nearly one in six Americans, the system is a critical lever for moving the country toward a sustainable paradigm shift.

The key role of schools in addressing climate change is highlighted in the Aspen Institute’s 2021 [K12 Climate Action Plan](#), “If all the schools in the US shift to clean energy, sustainable food use, clean transportation, and green sustainable schoolyards over the next decade, we will have successfully reduced reliance on fossil fuels for one of the largest public sectors impacting the environment. If we help schools better prepare for the impacts of climate change, we will have built a more resilient school system for our children, youth, and communities. And what makes schools especially impactful is the potential for them to transition to sustainability and build resilience while educating their students, helping prepare youth to succeed in a clean economy and confront deepening climate challenges.”

To achieve this outcome, every school district would need to develop a [climate action and adaptation plan](#), as recommended by the federal government’s [Department of Education’s Climate Adaptation Plan](#) and the Aspen Institute’s K12 Climate Action Plan. California has made some headway with plans of this type in municipal and county jurisdictions, but so far the efforts in schools is insufficient for the scale needed.

The [California Environmental Literacy Initiative](#) (CAELI), led by the nonprofit Ten Strands, has been working to implement ideas from the State’s [Blueprint for Environmental Literacy](#) since 2016. This public–private partnership has made important progress on teaching and learning, but needs to expand its focus to address buildings and grounds, and accelerate the process of scaling up across the state.

Similarly, in a related initiative, the University of California and the California State University’s joint partnership with key stakeholders, [Environmental and Climate Change Literacy Projects](#) (ECCLPs), has the mission to educate all of California’s high school graduates to be literate in climate change and environmental justice issues and solutions. Again, though, ECCLPs is mostly focused on supporting student environmental literacy by working with pre-service and in-service teachers. To maximize impact, a whole school sustainability approach needs to be prioritized. Developing and implementing such plans call for a significant amount of support from local leaders and regional backbone support systems, including state departments of education and COEs.

As K–12 education is called to play a greater role in advancing sustainability and climate change efforts, COEs are well-positioned to support and help scale this work.

A Regional Model That Can be Taken to Scale

SMCOE has been preparing its county’s educators and students for the climate crisis since the launch of its environmental literacy initiative in 2017. SMCOE now provides backbone support to local districts and schools to develop the environmental literacy of their students and establish more sustainable and climate-resilient campuses.

The structure of San Mateo County’s ELSI is outlined in this paper and may serve as a model for educational leaders at the federal, state, regional, and local level for how to design and implement an effective county-level initiative.

With at least 60 percent of California school districts ranging from small- to medium-size, COEs already provide important supports to districts, including expertise, resources, technical assistance, and connection to the broader community outside the school system. COEs can build on this relationship to accelerate efforts to equitably scale up environmental literacy, sustainability, and climate-focused initiatives in school districts. Specifically, **COEs can provide county-wide backbone support** through a comprehensive environmental literacy and sustainability initiative.

SMCOE Model is Grounded in Whole System Change Theory

SMCOE’s ELSI draws on several **change management theories** for evaluating readiness for change, designing initiatives, and managing change, and takes a whole systems approach. The SMCOE ELSI model is effective because it approaches whole school sustainability from several angles, through multiple types of programs, for all types of stakeholders, until there is a mindset shift reached by a critical mass and whole school sustainability becomes part of the culture. It also leverages the idea that as momentum of change builds in a few districts, more districts in the region are likely to prioritize whole school

sustainability, which reinforces and accelerates progress across the region.

Ultimately, the SMCOE model shows how within five years an investment in an environmental and climate literacy and/or sustainable and climate-ready schools initiative can catalyze change across the region. Enacting this model across California and beyond will help all students – and the adults who work with them – to be empowered with the knowledge, support, and skills they need to ensure access to clean air and water, healthy food, and safe schools in every US community.

Key Collaboration

SMCOE has collaborated with Ten Strands, members of the CAELI COE Innovation Hub, and other partners to develop the ideas shared in this document. The Ten Strands-CAELI-SMCOE partnership is mutually

beneficial and has been critical to accelerating environmental literacy, sustainability, and climate-readiness in California schools.

DEFINITIONS

Backbone support: Coordination by a central body that convenes a diversity of stakeholders and leads a synchronized effort to achieve a common goal.

Climate literacy (short for climate science literacy) as defined by **NOAA’s Climate.gov**: an understanding of human impacts on climate and the impacts of climate on human systems, and the ability to make informed and responsible decisions.

Climate ready (or climate resilient): Ability to anticipate, prepare for, and respond to hazardous events, trends, or disturbances related to climate in a trauma-informed way.

Environmental literacy in California, as defined by **A Blueprint for Environmental Literacy (2015)**: An environmentally literate person has the capacity to act individually and with others to support ecologically sound, economically prosperous, and equitable communities for present and future generations. Through lived experiences and education programs that include classroom-based lessons, experiential education, and outdoor learning, students will become environmentally literate, developing the knowledge, skills, and understanding of environmental principles to analyze environmental issues and make informed decisions. For more related terms, check out additional related terms in the **CAELI’s Teacher Call to Action**.

THE SAN MATEO COUNTY MODEL FOR A REGIONAL ENVIRONMENTAL LITERACY AND SUSTAINABILITY INITIATIVE

San Mateo's Environmental Literacy and Sustainability Initiative (ELSI) is the first of its kind in a county office. The initiative has been designed to be a replicable model that can be used by other county offices of education (COEs) looking to launch similar initiatives in their counties. The key elements of this initiative are outlined below as a roadmap that could be taken to scale across the state.

For narrative-focused stories of how this initiative came to be formed over time, visit:

- The California Environmental Literacy Initiative (CAELI) COE Innovation Hub's [Case Studies of Environmental Literacy and Sustainability Initiatives](#) — includes perspectives from stakeholders across the San Mateo County Office of Education (SMCOE). This paper also includes a case study on how environmental work is coming to fruition at the Orange County Department of Education.
- The SMCOE ELSI's [First Five Years Overview](#) — written from the perspective of the first ELSI coordinator, Andra Yeghoian.

*Unduplicated definition: socioeconomically disadvantaged (as determined by eligibility for free or reduced price meals), English learners, foster youth, or any combination of these designations.

COUNTY CONTEXT

SAN MATEO PROFILE

SAN MATEO COUNTY SCHOOLS DEMOGRAPHICS

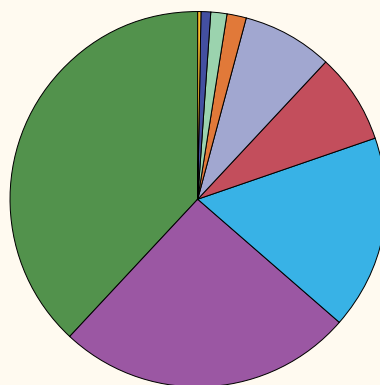
- 23** school districts (very small- to medium-sized)
- 171** public schools
- 5,100** teachers (as of 2018-19)
- 90,315** public school students (as of 2020-21)
- 38.6%** of students are unduplicated*
 - **11.6%** are enrolled in special education
 - **19.1%** are English language learners
 - **31.3%** receive free and reduced price meals
 - **33.6%** are socioeconomically disadvantaged

SAN MATEO COUNTY

Population: **765,100+**
15 cities, **5** towns, and over **20** additional unincorporated county territories
 Median Household Income: **\$101,272**

COUNTY CONTEXT

ETHNICITY MAKEUP OF SAN MATEO



Hispanic or Latino	38.0%
White	25.5%
Asian	16.8%
Filipino	7.9%
Two or More Races	7.7%
Pacific Islander	1.7%
African American	1.3%
Not Reported	1.0%
American Indian or Alaska Native	0.1%

Background and Overview of SMCOE's Environmental Literacy and Sustainability Initiative

In 2015, Ten Strands, a California nonprofit that partners with state government, local education agencies, environmental education providers, community members, and funders to make environmental literacy a reality for all California's K-12 students, secured funding from the Sand Hill Foundation in San Mateo County to pilot an environmental literacy professional development program focused on integrating environmental principles and concepts into standards-based instruction, particularly the new science standards. SMCOE seemed like a great partner for this program, as they already had a history of success with a high-quality [residential outdoor environmental education program](#) serving 4th-6th graders across the county for almost 50 years. The professional development pilot, The San Mateo Environmental Learning Collaborative (SMELC), led by the State Education and Environment Roundtable (SEER) and Ten Strands, was a great success for the teachers involved, as well as supportive in bringing together community-based partners (CBPs) focused on environmental education across the region.

By the end of the 2021-2022 school year, school districts across San Mateo County were involved at some level in environmental literacy, sustainability, and climate-ready efforts. Some districts were even in the early stages of systemic institutionalization of these efforts. Examples include multiple school districts applying for and receiving Green Ribbon recognition, the launch and continuation of several district-wide sustainability committees, leadership from chief business officers and facilities managers on green facilities efforts, leadership from teachers and principals on increasing access to high quality environmental education opportunities for students at multiple grade levels, and sustainable and climate-ready community impact projects being led by solutionary changemakers in San Mateo County schools and the greater community.

This quick timeline captures a few of the key highlights of how this initiative developed over time. For detailed history, visit the [narrative-focused stories](#).

COUNTY CONTEXT

QUICK TIMELINE

1968

San Mateo County establishes residential outdoor environmental education program

2015

Ten Strands, in partnership with SEER, launches teacher capacity building program for environmental literacy in San Mateo County

2016

SMCOE joins the Environmental Literacy Steering Committee (became the California Environmental Literacy Initiative in 2018), a public-private partnership, as a leading-edge exemplar to support other counties and districts interested in environmental literacy programs

2017

Led by visionary leader and then County Superintendent Anne Campbell, SMCOE launches environmental education program (renamed Environmental Literacy and Sustainability Initiative in 2019) with a full-time environmental education coordinator

2018

ELSI launches community-based partners network
ELSI launches awards program and annual symposium program offerings

ELSI builds out resource base and offers consultative services for integration of environmental literacy into curriculum and instruction

2019

ELSI launches youth capacity building program
ELSI hires first green facilities and operations analyst at a COE
ELSI co-founds the National COVID-19 Outdoor Learning Initiative with Green Schoolyards America, Ten Strands, and The Lawrence Hall of Science at the University of California, Berkeley, to offer a free library of ideas and resources to support using the outdoors for learning during the pandemic and beyond

ELSI launches administrator capacity building program
ELSI expands comprehensive technical assistance services for districts and key stakeholders that includes facilities, operations, community, and culture

ELSI launches monthly newsletter

ELSI is transferred to the superintendent's office, and sustainability is embedded as a core practice in SMCOE's strategic plan

2021

ELSI expands teacher fellowship to include "fishbowl" experiences for COEs and other organizations to learn from and adapt ideas

ELSI launches Sustainable and Climate Ready Schools Partnership Network

ELSI launches [environmental changemaker interview series](#)

Theory of Action: Foundations and Programs and Services

FOUNDATIONS FOR SMCOE'S ELSI

VISION: ELSI's vision has evolved over several years. At its inception in 2017, the ELSI's **vision was:** *School communities and leaders, who advocate for and prioritize whole-school sustainability integration and environmental literacy, for all students. By 2022, that vision* had evolved to reflect both greater awareness of the impacts of climate change as well as expanded capacity both at SMCOE and in school districts: *K–12 school communities in San Mateo County are models of sustainable and climate resilience, and equip students with the tools, resources, and life experiences to create an environmentally sustainable, socially just, and economically thriving world.*

MISSION: The ELSI's Mission evolved as well, from: *Through projects, programs, and events that support all stakeholders, SMCOE equips school communities with the knowledge, skills, and experiences to act individually and collectively to bring forward an environmentally sustainable, socially just, and economically thriving existence in 2017, to: Provide backbone support to San Mateo County districts and schools in prioritizing environmental and climate literacy and integrating sustainable and climate-ready practices across a school's campus, curriculum, community, and culture in 2022.*

CRITICAL PRINCIPLES AND PRACTICES: An important framing element for SMCOE's ELSI is the effective integration of the following critical principles and practices that serve as lenses for the overall mission.

Environmental Equity and Justice

Improve the lives of those who have been and will be most impacted by environmental and climate change injustices.

Health and Well-Being

Address and mitigate the impact that environmental factors and the climate crisis have on physical and mental health.

Trauma-Informed Practices

Embed practices into campus, curriculum, community, and culture that support students through challenging emotions from experiencing environmental and climate-related trauma.

Climate Resiliency

Prevent and reduce greenhouse gas emissions and adjust and reduce harmful effects of climate change.

Critical, Systems, and Solutionary Thinking

Integrate opportunities to analyze problems, identify the inhumane and unsustainable systems that perpetuate them, and develop solutions that do the most good and least harm for all.

Planning and Design

Foster a proactive and preventative approach, as opposed to reactive, to prepare future-ready students.

2022 STRATEGIC GOALS:

Goal 1 - Every district has a baseline assessment of its sustainable and climate-ready efforts, and has developed and begun implementing a strategic plan for whole school sustainability and climate-ready schools integration by 2025.

Goal 2 - Every student graduating in San Mateo County is environmentally and climate literate, meaning they are knowledgeable and prepared to take action on environmental and climate-change issues and solutions in their communities.

INTENDED CORE OUTCOMES: Sustainable and climate-resilient school communities that:

- provide equitable access to healthy spaces for children, youth, and adults to learn and play;
- minimize disruptions to learning from climate-related crises; and
- serve as a catalyst for transformative change within their communities.

Framework and Focus Areas

To promote capacity building, networking, and progress toward intended outcomes, ELSI coordinates a variety of programs and services using a holistic Sustainable and Climate-Resilient Schools Framework and nine focus areas for literacy and action.

4Cs SUSTAINABLE AND CLIMATE-RESILIENT SCHOOLS WHOLE SYSTEMS INTEGRATION FRAMEWORK

The 4Cs Sustainable and Climate-Resilient Schools Whole Systems Integration Framework clarifies how and where to operationalize principles and practices of environmental literacy, sustainability, and climate resilience across all aspects of a school community.



CAMPUS

Operations across the buildings and grounds model sustainable and resilient practices, minimize disruptions for learning, and serve as a lab for learning.



CURRICULUM

Curriculum integrates environmental and climate literacy as well as principles and practices for Solutionary Teaching and Learning



COMMUNITY & CULTURE

Evidence within the “walk” and the “talk” of the school community for prioritizing sustainability, resilience, and strategic partnerships with community-based partners.

CONSTITUENTS

STUDENTS

FACULTY & STAFF

ADMINISTRATORS

COMMUNITY-BASED PARTNERS

NINE FOCUS AREAS FOR ENVIRONMENTAL SUSTAINABILITY AND MITIGATION FOR ACTION AND LITERACY

ELSI uses nine focus areas for literacy and action to help districts understand how to operationalize principles and practices of environmental literacy, sustainability, and climate-readiness within their curriculum, facilities, and operations. The focus areas are inspired by [broader action frameworks](#) such as the [Green Ribbon Schools program](#) and the global [United Nations Sustainable Development Goals](#) framework, but are specific to everyday facilities and operations, curriculum and instruction, and local environmental issues.



FOOD SYSTEMS



AIR QUALITY



GREEN BUILDING



TRANSPORTATION



SUSTAINABLE WATERSHEDS



LAND-BASED ECOSYSTEMS



ZERO WASTE



MARINE ECOSYSTEMS & SHORELINE



ENERGY

SMCOE ELSI Programs and Services

ELSI staff worked with a team of advisors and experts on environmental education and K–12 education to understand the types of programs and services that would help catalyze change across the region and develop a plan of action. It was determined that to achieve ELSI’s goal of a transformative shift toward

sustainability and climate resiliency in San Mateo County schools, a number of coordinated programs and services focused around capacity building, networking, and technical assistance would need to be launched and evaluated for impact.

CAPACITY BUILDING PROGRAMS

Three ELSI knowledge-to-action capacity building programs support the incremental infusion of leadership for environmental and climate literacy, and sustainable and climate-ready schools efforts in San Mateo County’s K–12 education system. Each program

supports key stakeholders at different levels of the education system to develop the knowledge, skills, and values for environmental literacy and sustainability and make connections to college and career pathways.

See table on page 13

CAPACITY BUILDING PROGRAMS

	<u>SOLUTIONARY TEACHER FELLOWSHIP</u>	<u>ADMINISTRATOR FELLOWSHIP</u>	<u>YOUTH CLIMATE AMBASSADORS (YCA)</u>
STAKEHOLDERS	Teachers and community-based partners (CBPs)	Site and district administrators	9th–12th grade youth
PURPOSE	Build teacher capacity for designing and delivering solutionary units of study that are student-centered, problem- and project-based, solutions-oriented, and that integrate real-world environmental justice issues .	Build administrator capacity for managing change through the development and implementation of a sustainable and climate-ready community impact project.	Build youth capacity to analyze environmental justice issues that contribute to the global climate crisis and develop and implement local solutions that maximize good and minimize harm to people, animals, and the environment.
REQUIREMENTS	- Attend professional learning (PL) workshops - Develop and implement a solutionary unit of study with students - Present and submit case study upon completion	- Attend PL workshops - Develop and implement a community impact project - Submit case study upon completion	- Attend retreats and workshops - Develop and implement a community impact project - Present and submit case study upon completion
NEED AND INTENDED OUTCOMES	This type of training has typically been left out of teacher preparation programs; yet, it is shown to be a successful learning strategy for all types of students. Individual classrooms are a critical unit of change for sustainable and climate-ready schools, as teachers and students are often the leaders of grassroots efforts.	This type of training has typically been left out of staff and administrative training programs; yet, there are increasing curricular and facilities mandates related to sustainability. Administrators can lead school or district-wide projects to accelerate change for sustainable and climate-ready schools.	Students are looking for opportunities to do real-world problem solving on the climate crisis. There are very few high schools that offer this type of learning and leadership experience in the classroom or even in co-curricular offerings; therefore, this program seeks to provide equitable access for all students in the county.
	Develop a resource library of case studies that demonstrate and capture program success and lessons learned.		
KEY RESOURCES	Solutionary Teacher Fellowship overview Solutionary Teaching and Learning Resources (strategies, resources, and case studies) - Teacher Fellowship program reports: 2020-21 and 2021-22	Administrator Fellowship overview - Case studies from administrator fellows: 2020 Cohort and 2021 Cohort - Administrator Fellowship program report: 2020 and 2021	YCA Program overview Student community impact projects - YCA program reports: 2020, 2021, and 2022
STAFF AND PARTNERS (more details in Appendix A and B)	Environmental Literacy and Sustainability Initiative (ELSI) coordinator coordinates with instructional coaches, CBPs, and supplemental curriculum partners to facilitate PL and support fellows with unit development.	ELSI coordinator coordinates with instructional coaches and technical assistance partners to facilitate PL and support fellows with plans and implementation.	ELSI coordinator co-leads workshops and partnerships with agencies that serve as student mentors and coaches. Climate Corps fellows provide support.
	ELSI Coordinator also coordinates with funding partners to provide stipends.		

Lessons Learned

➤ **There is no right way to start this work.** All stakeholders, at all levels, need access to high-quality capacity building focused around the environment, allowing for many entry points for programs. In San Mateo County, the capacity building work started with teachers in SMELC (now the Environmental Solutionary Teacher Fellowship) in 2015.

“The simulations were my main takeaway from the session. I thoroughly enjoyed hearing the conversations from the educators about the content. It allowed me to think through how I facilitate activities with co-teachers and students. I was able to fold some of these resources into my semester one planning for this upcoming school year.”

~ 2021 Attendee of the Environmental Solutionary Teacher Fellowship Fishbowl

➤ **Being able to adapt as conditions require has been important to the success of SMCOE’s ELSI.** The initiative originally was focused on environmental education, but has grown to also include sustainability, facilities, and climate-readiness, reflecting changing requirements and conditions for schools and a more comprehensive approach.

“Implementation of my community impact project went far better than I had expected. What I learned immediately was that there is a great deal of momentum behind greening our schools in particular and environmental justice in general. I was amazed by the amount of resources both in human capital and in financial assistance there is out there. What is needed is leadership.”

~ 2020 Administrator Fellow

➤ **In addition to expanding the focus of its work, SMCOE’s ELSI has remained nimble and able to adjust its environmental literacy programs to meet the needs of those they serve.** For example, over the years, teachers shared many sticking points they reached with site and district administrators who were not ready to support environmental change. In response, the ELSI team designed and implemented

an administrative fellowship program to help generate more buy-in at the decision-making level. While this program had some initial success, ELSI paused it due to limited registrations, likely a result of administrators’ fatigue after navigating the pandemic. ELSI will continue to gauge interest and revive the administrator program if there is demand. Meanwhile, reflecting secondary students’ interest in taking action to address sustainability and climate change, interest in the Climate Youth Ambassador program continues to grow, with the number of applications for the 2022–23 school year far outstripping the number of spots available.

“The Environmental Solutionary Teacher Fellowship has completely turned around my teaching practice. I know that before joining I was very focused on content standards and not much else. I did not do much project-based learning and did not have any solutionary pieces to my curriculum. I also did not take student emotions into account, as I didn’t see how it mattered—just learn and get your work done because that is how I was taught. I am a better teacher thanks to this fellowship. My curriculum is more meaningful, students see the relevance of what they are learning to their growth into college and career adulthood. I now do a better job of helping them process thoughts and emotions as we move through the curriculum, and I think that is better whole-person learning.”

~ 2020–21 Teacher Fellow

➤ **Through the piloting of multiple programs, it became clear that cohort-based programs that provide knowledge-to-action experiences with in-depth training, reflection, and support built in, are critical to achieve long-lasting transformation and change.** Within only a few years, these capacity building efforts led to significant momentum building across the county, as there are now leaders at all different levels working toward similar outcomes.

➤ **Districts that have more student, teacher, and administrator participation in the programs tend to see the most success in moving the work forward in their districts,** as they have shared foundational knowledge among stakeholders and received support to implement projects successfully.

These districts have seen transformation beyond the buy-in and planning phases (more information on the three phases of change on page 17), and toward sustainable systemic integration through avenues such as **district-wide sustainability committees**, and Sustainable and Climate Ready Schools Action Plans. The ELSI team is working on analyzing data to understand the critical number of participants needed to reach a tipping point for action in any given district.

"I have definitely grown as a Youth Climate Ambassador since I started the program in January. I have learned a TON about climate change, gotten to meet and work with so many high schoolers around the Bay Area, and have been able to put together an awesome community impact project. I now feel so much more confident in my abilities to network with others, plan large-scale projects, and raise awareness about climate change."

~ 2020 YCA Ambassador

NETWORK PROGRAMS

The purpose of the stakeholder network program is to foster ongoing collaboration and sharing of best practices, build momentum, strengthen communication, and elevate changemakers. These programs catalyze innovation with leading-edge exemplars and serve as tools for measuring impact or providing entry points for engagement. The networks also deepen the ecosystems of support for sustainable and climate-resilient practices across the county, and can rejuvenate members who might otherwise feel isolated if their school community has not reached a critical mass of support.

See table on page 16

While some of these programs have expanded to include participants in neighboring regions, **SMCOE has found it is most beneficial to invite leaders from other COEs to observe the programs in a "fishbowl" format.** This means staff from other COEs come and observe programs in action to glean best practices and strategies that would be most relevant to take back for replication and customization in their own regions.

FORMAL NETWORK PROGRAMS

	<u>COMMUNITY BASED ENVIRONMENTAL LITERACY PARTNERS (CBEP) NETWORK</u>	<u>SUSTAINABLE AND CLIMATE READY SCHOOLS PARTNERSHIP NETWORK</u>	<u>COMMUNITIES OF PRACTICE FOR DIFFERENT STAKEHOLDERS</u>
STAKE- HOLDERS	Community-based partners (CBPs)	Educational leaders and CBPs	Educators, parents, and youth
PURPOSE	Establish county offices of education as the backbone entity within the formal education system to facilitate collaboration between CBPs and offer professional learning (PL).	Establish a strategic partnership model to direct technical assistance and funding to scale the Environmental Literacy and Sustainability Initiative (ELSI) in San Mateo County.	Provide an ongoing connection for capacity building program alumni and emerging leaders across the county who feel isolated.
FORMAT	This collective impact network is made up of 30+ nonformal CBPs (museums, zoos, nature centers, science centers, aquariums, and other similar institutions) and informal CBPs (not taking place at a traditional institution or center) that provide programs, services, and opportunities for students in San Mateo County to experience hands-on environmental education.	This network collaborates with government agencies and NGOs to efficiently integrate a comprehensive suite of sustainable and climate-ready facilities and operations services to San Mateo County school communities.	The San Mateo County Office of Education (SMCOE) convenes this network of affinity groups to exchange innovative solutions and ideas for environmental and social transformation across school communities.
NEED	While there are other regional network organizations that foster collaboration between CBPs to offer high-quality PL, there is still a need for a network run in partnership with the formal education system that can help CBPs foster stronger partnerships with districts and schools to provide state standards-aligned PL.	In the fourth year of SMCOE's ELSI, the capacity building and network programs grew demand for consultative services that support assessing, planning, and implementing ELSIs, calling for coordinated collaboration.	Because this work is still so innovative in the education field, there is a need for ongoing connections to leaders. Affinity groups include teachers, environmental club mentors, garden coordinators, counselors, parents, youth leaders, etc.
INTENDED OUTCOMES	Provide every student in every grade level in San Mateo County with a high-quality environmental education experience with a CBP that aligns to a K–12 scope and sequence of standards-aligned opportunities that provides experiential environmental learning. Increase communication and collaboration between partners to better serve school communities.	Support districts and schools to develop and implement plans to support green facilities and operations efforts. Meet growing demand for medium and advanced levels of services.	Build capacity through PL, a network of support, and resources. Increase communication and collaboration through sharing best practices, identifying opportunities for sustainable and climate-ready schools, and problem-solving for a variety of school communities.
KEY RESOURCES	1. CBEEP Network and Facilitation Structure overview 2. California Environmental Literacy Initiative CBP Hub (resource directory for California CBPs)	1. Sustainable and Climate Ready Schools Partnership Network overview	1. Community of Practice overview for 2022
STAFF AND PARTNERS (more details in Appendix A and B)	The ELSI coordinator co-chairs this network of environmental education CBPs. Expanded learning and CBP coordinators support equity goals to reach every student at every grade level. Green facilities and operations analysts (GFOAs) facilitate a CBEEP zero waste subnetwork .	The ELSI coordinator co-leads this network with the GFOA. Program partners from other agencies serve as facilitators and student coaches. The ELSI coordinator also coordinates with funding partners to provide stipends.	The ELSI coordinator, with support from Climate Corps fellows, leads the community of practice.

Additional Network Programs

Over the years, the networks across San Mateo County have strengthened both in their connections to each other and in their connection to projects and progress in school communities toward sustainability and climate readiness. The ELSI team also coordinates several other offerings that support networking and catalyzing change, including the following:

- SUSTAINABLE AND CLIMATE READY SCHOOLS CHALLENGE: CELEBRATE**
 Each spring, SMCOE facilitates a **local awards program** that identifies, recognizes, and awards champions leading impactful environmental change. This program fosters a culture of rewarding and celebrating leadership for school sustainability efforts and serves as an entry point for more robust and comprehensive awards programs such as Green Ribbon.
- ANNUAL SYMPOSIUM: NETWORK**
 This one-day annual symposium brings together all stakeholders to inspire, network, and exchange innovative solutions that are driving environmental and social transformation across school communities.
- ELSI BROADCAST: COMMUNICATE**
 Once or twice each month, ELSI issues a newsletter that features **changemakers** (many of them have participated in ELSI programs), commentaries on important regional and global climate change and sustainability, **eco-calendar** events that teachers and site-level administrators can highlight in their communities, and resources from CBPs.

Lessons Learned

➡ Strong partner and individual relationships are key to network program success. SMCOE has played a key role in connecting organizations and individuals to each other.

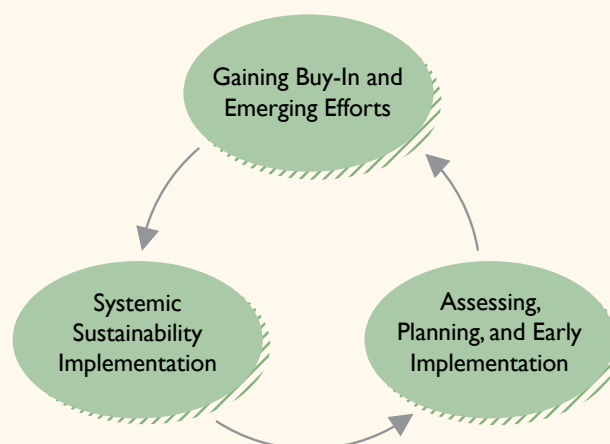
➡ It has also become clear that network programs are critical for unifying messaging across the county to define sustainability and climate-resilience progress in school communities. Regular touchpoints through network meetings and newsletter messaging help build shared understanding

of the overall purpose and focus of this work. These network programs have built a narrative that change is possible.

TECHNICAL ASSISTANCE SERVICES

ELSI technical assistance services include the various supports needed to launch and facilitate transformative change toward whole system integration of sustainable and climate-ready practices in San Mateo County schools through the three phases of change: 1. establishing buy-in; 2. assessment, strategic planning, implementation; and 3. advanced implementation and continuous improvement. This technical assistance can be any form of professional help, guidance, or support, which can be focused on building the capacity of the institution as a whole or individuals within the institution that are leading change.

THE THREE PHASES OF CHANGE FOR AN ENVIRONMENTAL LITERACY AND/OR SUSTAINABLE AND CLIMATE RESILIENT SCHOOLS



Each of the three phases of change for sustainable and climate-ready schools initiatives serve their own purpose for managing change, but initiatives can be fluid across phases. For example, efforts in the early implementation phase can reinforce buy-in.

SMCOE ELSI Programs and Services

CONSULTING AND COACHING: Provides background and overview (includes policies and expectations) on a focus area initiative, best practices, help identifying needs and assets, problem solving, access to high quality resources, and more.

TRAINING AND PROFESSIONAL LEARNING (PL): Supports integration of environmental education and sustainability into curriculum and instruction, facilities and operations, and community engagement programs into training and PL for a variety of stakeholders including faculty, staff, leadership teams, students, parents, and CBPs.

ASSESSMENT AND STRATEGIC PLANNING: Focuses on baseline or benchmark assessments, support for the development and implementation of strategic plans that focus on 4Cs integration of whole-school sustainability and climate-resilience, and/or a specific focus area of the nine focus areas for literacy and action.

PROJECT MANAGEMENT: Provides support or direct management of projects in curriculum and instruction, community engagement program development, and/or green facilities.

NETWORKING: Connects school stakeholders to relevant CBPs, utility companies, funding agencies, environmental education providers, or other school leaders in San Mateo County.

CALIFORNIA CONTEXT

The ELSI technical assistance services are primarily for scaling Sustainable and Climate Resilient Schools efforts within San Mateo County. However, through SMCOE's collaboration with the CAELI COE Innovation Hub, and with the [National Outdoor Learning Initiative](#), SMCOE's ELSI staff has also provided consultative and coaching services to other counties and districts in California and beyond.

TECHNICAL ASSISTANCE SERVICE TIERS

Districts and schools that request technical assistance consider what tier of service meets their needs. Tier I Services are generally considered available to all districts and schools, while Tier II and III Services typically require a memorandum of understanding and often a fee for service. SMCOE may also work in partnership with CBPs to better support Tier II and Tier III Services.

	TIER I SERVICES	TIER II SERVICES	TIER III SERVICES
TYPES OF SERVICES	Exploratory consultations, generalized trainings, entry-level assessment and planning, and networking	Coaching, customized training or support, mid-level assessment and planning, project management support, and customized networking	Intensive coaching, highly customized training, advanced assessment and planning, project management support, and highly customized networking
FREQUENCY	One-time or recurring	Recurring with ongoing touchpoints	Recurring and time intensive with frequent and concentrated touchpoints
LEVEL OF EXPERTISE OR CUSTOMIZATION	Beginner: Basic support with entry-level skills	Intermediate: Support requires some customization and can be provided by someone with moderate expertise	Advanced: Requires highly customized support from someone with specialized skills
CAPACITY BUILDING OUTCOME	The general goal is to build the capacity of a district or school stakeholder to ultimately lead as project manager		Outsources capacity building and technical assistance provider manages the project

SERVICE EXAMPLES

Below are example services that have been provided to districts that connect back to both the 4Cs Framework (campus, curriculum, community, and culture) and focus areas for action and literacy (energy, water, waste, etc.).

SERVICE FOCUS	OVERVIEW AND INTENDED OUTCOMES	EXAMPLE SERVICES
COMPREHENSIVE BASELINE ASSESSMENT, BENCHMARKING, AND/OR STRATEGIC PLANNING	Build a shared understanding of the current status or future goals and lay a foundation for navigating forward in a way that is proactive instead of reactive. Assessments and strategic plans can also be used as a communication tool with key stakeholders.	• Green Ribbon Awards support • Comprehensive whole-school sustainable and climate-ready baseline assessment • Local hazard and mitigation planning
CURRICULUM AND INSTRUCTION	Schools integrate environmental literacy, using California's Environmental Principles and Concepts, into each grade level and subject area (science, history-social science, English language arts, math, health, arts, etc.) so that all students have access to high-quality environmental literacy and graduate environmentally literate. This can range from supplemental curriculum integration to more in-depth knowledge-to-action solutionary-focused project-based learning units.	• Professional learning for environmental literacy teaching strategies • Integration of sustainability and project-based learning with exemplar curriculum • Connection to field-based experiences with community-based partners • Integration of trauma-informed practices with environmental and climate literacy
GREEN FACILITIES AND OPERATIONS PROJECT MANAGEMENT	Technical assistance focused on facilities and operations can be targeted to any or all of the three phases of green facilities project management, including buy-in, assessment, and strategic planning; implementation; and continuous improvement. School community intended outcomes are reduced greenhouse gas emissions, ecologically beneficial facilities and operations, and schools that are climate resilient.	• Outdoor learning assessment and preliminary planning • Focus area efforts such as zero waste, energy resiliency, water resiliency, etc.
COMMUNITY AND CULTURE SUPPORT	Technical assistance for community engagement and cultural integration of sustainable and climate-resilience focuses on institutionalizing policies and practices and providing equitable access and inclusion for all stakeholders. Intended outcomes are school communities that "walk the talk" of sustainability and have pathways for all stakeholders to engage with sustainable and climate-ready efforts.	• Leadership models and support for sustainability committees • Youth advocacy support • Support for policy integration

Lessons Learned

While ELSI staff were engaged in technical assistance from the launch of this initiative in 2017, it was in the third and fourth year of the initiative that **a comprehensive model and menu of services was developed and that SMCOE began to build out a larger staff to meet the needs and demands of the districts and schools.** Additionally, preliminary data evaluations show that there is a direct relationship between higher participation in capacity-building programs and networks, and the request for additional technical assistance support.

COUNTY CONTEXT

SMCOE equitably supports all districts with consideration of San Mateo County's significant socioeconomic divide. The table below profiles demographics from three different districts within San Mateo County that utilize technical assistance services from SMCOE's ELSI team. For examples of technical assistance support, visit the [CAELI COE Fellowship Toolkit](#), and check out resources and videos that provide examples of technical assistance.

This is largely because those schools and districts have moved past the buy-in phase and toward needing more support to assess, plan, and implement, and in some cases, institutionalize this work through pathways such as district-wide sustainability committees and in-depth PL programs. To serve districts equitably, different strategies have been utilized:

- **OUTREACH:** SMCOE's ELSI team prioritizes serving communities with more limited financial resources first, and continues to stay visible and circle back when districts and schools initially pass on an opportunity to participate.
- **SERVICE RATES:** SMCOE makes efforts to offer free or reduced rates to school districts serving higher numbers of students who are socio-economically disadvantaged. For example, while a high-income school district might pay for comprehensive baseline assessment services or district-wide PL, a lower income district might receive similar services for free.

SCHOOL DISTRICT PROFILES	RAVENSWOOD CITY SCHOOL DISTRICT	SAN CARLOS ELEMENTARY SCHOOL DISTRICT	SAN MATEO UNION HIGH SCHOOL DISTRICT
GRADE LEVELS	K–8	K–8	9–12
LOCATION	East Palo Alto	San Carlos	Central San Mateo
MEDIAN INDIVIDUAL AND HOUSEHOLD INCOME LEVEL (2019)	Individual: \$30,037 Household: \$67,087	Individual: \$84,044 Household: \$182,083	San Mateo: \$53,568; \$124,842; Burlingame: \$70,368; \$128,447 Foster City: \$78,710; \$158,529 Hillsborough: \$93,409; \$250,001 Millbrae: \$54,449; \$128,494 San Bruno: \$48,232; \$109,387
PER PUPIL SPENDING (2019–20)	\$21,772	\$13,435	\$19,318
	K–8 State Average: \$12,648		9–12 State Average: \$13,674
UNDUPLICATED STUDENT POPULATION (2019–20)	93.3%	9.6%	26.9%

CONCLUSION

Within a five-year time period, the SMCOE ELSI's capacity building programs, network programs, and technical assistance services have catalyzed a shift in the county's districts and schools toward environmental and climate literacy for all students, and sustainable and climate-ready school transformation. By replicating this compelling model for whole school sustainability innovation across the state, K-12 schools will minimize ongoing disruptions to learning from climate-related disasters and provide equitable access to safe and healthy spaces for children, youth, and adults to learn and play. To accelerate this transformative change, investments must be made at the federal, state, and local level in helping K-12 schools become sustainable and climate resilient. See Appendix A for details on what it costs to staff a model.

APPENDIX A SMCOE ELSI Staffing Model and Associated Costs

Supporting the programs and services of SMCOE’s ELSI requires a dedicated staff with expertise related to curriculum and instruction, campus facilities and operations, and community and culture.

STAFF TITLE	STAFF RESPONSIBILITY	% FULL-TIME EMPLOYEE (FTE)	FUNDING
ENVIRONMENTAL LITERACY AND SUSTAINABILITY INITIATIVE (ELSI) COORDINATOR	Oversees the ELSI, leads programs and services, and manages staff and partnerships.	100% FTE	General Fund*
GREEN FACILITIES AND OPERATIONS ANALYST	Specializes in providing Tier I, II, and III technical assistance services for districts and schools. Funding for this position is currently focused around the waste focus area.	100% FTE	Grant**
CLIMATE CORPS FELLOWS (INTERIM)	Support ELSI coordinators and analysts in achieving goals while serving 10-month terms (September–June). Currently there are two Climate Corps fellows: • Focus on overall initiative • Focus on green facilities	100% FTEs	50% General Fund and 50% grant
EXECUTIVE DIRECTOR OF COMMUNICATIONS AND STRATEGY	Serves as a supervisor for the ELSI coordinator and supports ELSI strategic thinking.	15% FTE	General Fund
ADMINISTRATIVE ASSISTANT	Supports ELSI programs and services in an administrative capacity.	50% FTE	General Fund
INTERIM SUPPORT	Additional interim support comes from the following: • Community college and college interns • High school interns • Consultants and coaches • PhD research candidates	Varies by person	Volunteer or grant funding

*State funding. The [CAELI’s COE Innovation Hub’s Environmental Literacy Leadership Case Studies](#) demonstrate how SMCOE and the Orange County Department of Education allocated funding and restructured their offices.

**Grants come from local family foundations, business and industry, local utilities, municipalities, and county agencies.

Lessons Learned

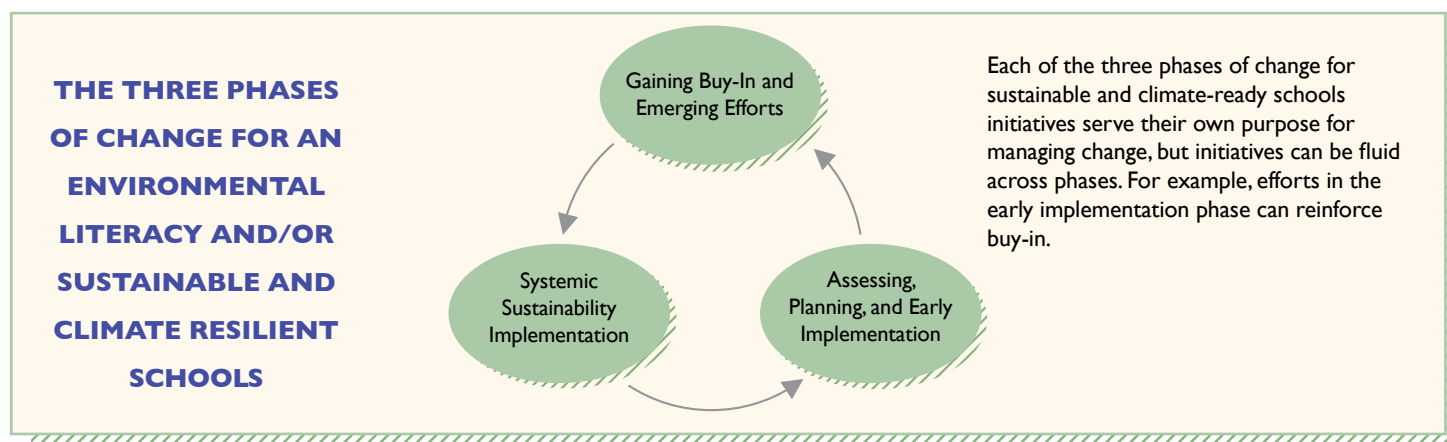
As the demand for technical assistance services increases it becomes necessary to bring on more staff who can provide Tier I–III services. Unfortunately, a trained workforce for doing sustainability work in K–12 education is not easy to find; therefore, **it is critical that the state and federal government invest in workforce development pathways that include sustainability and climate resiliency in schools.**

As initiatives grow in complexity it is also **recommended that COEs consider more robust staffing models**, including directors of sustainability or climate resiliency who oversee a program coordinator and a services coordinator, as well as green facilities and operations analysts for different focus areas (waste and consumption, energy resiliency, water resiliency, etc.).

Understanding the Investment Needed to Support Regional Models

The investment required for a COE initiative is based on the level of full-time employee (FTE) commitment that can be dedicated to moving this work through three phases of change, and the depth of programs and services being offered. As an initiative expands

beyond curriculum efforts to include campus facilities and operations or community and culture efforts, such as student engagement, the percentage of FTE commitment and the programs and services budget will need to increase.



SAMPLE ANNUAL ELSI STAFFING AND PROGRAM COSTS

In counties where initiatives have been launched, COEs have been able to use a mix of general funds and outside funds to support staff and programs.

COST ITEM	SAMPLE COST
SALARY AND BENEFITS	- Sustainability coordinator: The annual total investment required for one coordinator per California's 58 counties is \$13-\$15 million. One annual coordinator salary and benefits averages \$185,000-\$250,000. - A 10-month fellowship Climate Corps fellow averages \$25,000-\$35,000.
PROGRAMS	- The annual total investment required for programs in California's 58 counties is \$14-\$29 million. An annual programs and networks operating budget averages \$250,000-\$500,000 per COE. Average total costs per program: - Capacity building programs: - Teacher capacity building (100 teachers): \$150,000-\$170,000 - Administrative capacity building (50 administrators): \$125,000-\$140,000 - Youth program (100 students): \$115,000-\$130,000 - Network programs (depending on the number of networks and frequency of meetings): \$5,000-\$10,000 - Special projects (websites, dashboards, etc.): \$10,000-\$20,000 per year

APPENDIX B

Relevant Partnerships

The SMCOE ELSI prioritizes critical partnerships at the local, regional, state, and international scale. Example partnerships include:

INTERNAL PARTNERSHIPS: Because sustainability and climate resilience touches on all aspects of schooling (campus, curriculum, community, and culture), SMCOE's ELSI team has built capacity across SMCOE divisions and departments: including the College and Career, Safe and Supportive Schools, and Curriculum and Instruction departments and the Center for Learning Analytics. Each of these departments has a role and responsibility in the work of transitioning San Mateo County schools to be more sustainable and climate ready.

EXTERNAL PARTNERSHIPS: Strategic partnerships with external organizations can create a robust ecosystem of support and services for districts and schools. Different types of partners include:

- Public agencies: Joint powers authorities focused on conservation, efficiency, and resiliency
- Environmental education providers: Partners who can provide student-facing programs such as field trips and guest speakers
- Funding partners: These partners can provide funding for staff, programs, and services
- Regional, state, and national organizations (both governmental and NGOs)
- Green career and workforce development: Partners who provide career workforce development opportunities for curriculum, as well as internship opportunities

Many of these partners participate in the collective impact networks, as well as provide services directly to schools and districts. View full list of partners in the [ELSI Asset Map of Partnerships](#).