# **“We need to teach students how to make the change...”**

Dreams and realities of climate and sustainability action in Seattle Public Schools

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# EXECUTIVE SUMMARY

## Introduction

Today's K-12 students face a future more uncertain and perilous than any living generation has faced. Climate change is no longer abstract; human activity has already caused around 1.1-1.2℃ of warming, disrupting human lives and livelihoods and threatening the balance of life as a whole on the planet (IPCC, 2018). Continuing with 'business as usual' will lock in a future of devastating droughts, floods, winds, storms, heat, biodiversity collapse, food crop failures, freshwater shortages, ocean acidification, sea-level rise, and social instability for today's youth (Acton & Saxe, 2020; IPCC, 2018; IPCC, 2021). Indeed, the newest climate change assessment report details that unless immediate and extensive actions are taken, the disruption to the lives of our youth will be extreme (IPCC, 2021).

K-12 public school districts are a set of governmental organizations that have great, mostly unrealized, power to respond to the climate crisis. School districts exist to prepare young people for the future, and thus have special moral obligations to protect that future by reducing their environmental footprint to avoid the most catastrophic climate change scenarios, and to educate today's young people to better care for the ecosystems that support human life. Furthermore, K-12 school districts currently control the nation's largest public transportation fleet, nearly half a million diesel buses, and emit the equivalent of 18 coal-fired power plants annually -- and all of these emissions are within the public span of control, which "is critical in responding swiftly to the climate emergency" (New Buildings Institute, 2021).

Seattle Public Schools (SPS) has taken some action, especially regarding facilities, but must do more; its greatest areas for growth are in curriculum and operations. SPS has an especially

strong obligation to act considering its stated commitment to racial justice. Students of color furthest from educational justice and their families experience the impacts of climate change first and worst.

This study analyzed the current state of climate and sustainability action in Seattle Public Schools, and identified systems characteristics that support implementation, especially implementation that leads to institutionalized cultural norms. As comparison cases, the study also examined the state of racial equity action in Seattle Public Schools, and the state of climate and sustainability action in San Francisco Unified School District. Based on these analyses, specific actions are recommended to advance climate and sustainability action in Seattle Public Schools.

**Background and Context**

In 1977, the UNESCO conference in Tbilisi recognized that "the roots of the modern environmental crisis lay in the dominance of cultural values, often specific to the West, focused on unlimited growth and unchecked consumerism" (Vedwan, 2021, 137), and identified education as a key mechanism for creating cultural change. The United Nations declared 2005-2014 to be the United Nations Decade for Education for Sustainable Development (ESD). UNESCO's statement on the Decade reads,"Education alone cannot achieve a more sustainable future; however, without education and learning for sustainable development, we will not be able to reach that goal" (UNESCO, 2012). While many countries made great progress in implementing ESD during the declared decade, the United States did not participate in the global effort.

Although there has been no discernible nation-wide move for ESD or any other brand of education for sustainability, schools, districts, states, and community-based organizations have implemented these methods under various names, including green schools, whole school

sustainability framework, environment as an integrating context, and environmentally-based education. Each of these approaches describes education that takes place within a sustainably built and operated **campus**, where the school community shares a **culture** of sustainability, and the **curriculum** engages students in learning from and solving complex, local problems with an equal emphasis on technical skills/ knowledge and adaptive skills/knowledge for building sustainable economic and social systems. This paper uses the term education for sustainability (EfS) to refer to these approaches in general.

**Benefits of education for sustainability**

A significant body of research supports the qualitative observations of educators, environmentalists, and racial justice advocates that students benefit from engaging in complex, interdisciplinary environmental projects that are deeply rooted in local place and community (Feinstein, 2009). The modern movement for Black Studies that began in the 1960s has been adamant in its assertion that educational equity demands for students to receive education that is meaningful to students, useful to the community, and reflective of the realities of society and the world (Karenga, 2021). Education for sustainability does all these things, and acknowledges Afrocentric conceptions of humans as "world beings," who must walk gently, act justly, and relate rightfully with and for the Earth (Karenga, 2021), while successfully promoting academic, social-emotional, cognitive, and pro-environmental outcomes (Ardoin et al., 2018; Cordero et al., 2020; Ernst & Monroe, 2006; Kuo & Faber Taylor, 2004; Lieberman & Hoody, 1998; Schelly et al., 2010; Strife, 2010).

**Barriers to implementing education for sustainability**

Despite the many benefits of education for sustainability, examples of full implementation of its content and methods are rare. The pervasive barrier to this implementation is the self-preservationist nature of institutions (Bostrom, 2018); our schools are based on the same Western cultural values that have been cited by the UN as the underlying cause of the environmental crises we face, and they are thoroughly programmed to replicate these values via deeply entrenched and often invisible mechanisms.

Hargreaves's (2008) review of education for sustainability (EfS) programs around the world found some specific and malleable conditions that prevent wide-scale implementation of EfS:

- Time constraints: when EfS viewed as an add-on (not integrated into broader school and district goals); burdened school staff wonder how to fit it in.
- Lack of priority at highest levels: district and even local government leadership commitment is needed to create infrastructure for support and accountability that lead to long-lived, deeply practiced EfS.
- Lack of teacher efficacy: without proper training in pedagogy and curriculum of EfS, without a unifying cultural vision of EfS radiating from charismatic leaders, and without appreciation of how teacher's actions will make a difference, teachers are not motivated to engage in EfS.

A survey of K-12 sustainability professionals found that administrative support at the district level was more important than other factors, including budgetary control, as a predictor of self-reported efficacy among people in these roles, and strategic placement in the organizational chart also influences their effectiveness (Gutierrez & Metzger, 2015). The study also found that sustainability professionals have made more progress greening the campus than the curriculum; sustainability professionals in K-12 districts cite curriculum & instruction as the area over which they have the least influence (Gutierrez & Metzger, 2015).

**Catalysts of successful education for sustainability**

School transformation consultant Susan Santone (2018) identified four "Big Ideas" found in common among districts that successfully implement sustainability plans, which encompass campus, curriculum, culture, and community:

- **Big Idea 1:** Sustainability is more than the environment, it comprises the 3 E's - environment, economy, equity
- **Big Idea 2:** The classroom is embedded in the campus and larger community. Community partners can make projects happen, such as renewable energy generation, policy change, and workforce development.
- **Big Idea 3:** Sustainability must be tied to broader district goals. To ensure continual progress on sustainability goals, they must be integrated into goals for student achievement and staff development.
- **Big Idea 4:** Support and invest in teachers. Change is steered from the top-down, and driven from the bottom-up. Teachers need support in learning environmentally-based ways of doing things so that daily life is characterized by pro-environmental actions and learning that prepares students to take on "wicked problems."

The literature suggests that charismatic champions, collaborative roll-out that includes diverse perspectives (including custodians, nutrition services, students, teachers, and community members), and a willingness to engage in iterative action and continual improvement also promote successful implementation of climate and sustainability action at the district level.

**Systems theory and leadership**

Environmentalist and systems-thinker Donella Meadows articulated twelve places to intervene in a system to achieve change, with the three most powerful levers involving the paradigm lying under the system, the goals of the system, and power to add, change, or evolve system structure (Meadows n.d.). The Superintendent's hand rests on all three of these levers, but research suggests that most Superintendents do little to influence student outcomes; district characteristics outweigh the influence of the Superintendent, suggesting that those who hold this

position react to the political climate of a district more than they set it (Chingos et al., 2014). The School Board shares agenda-setting power with the Superintendent and community political factions (WSSDA, n.d.)

With all this in mind, how is Seattle Public Schools doing on climate and sustainability action, and what are the most critical next steps to advance such action in service of the seven generations to come? This paper seeks to answer those questions using document analysis and semi-structured interviews to describe climate and sustainability action in Seattle Public Schools in detail, and to sketch more limited pictures of racial equity action in Seattle Public Schools, and climate and sustainability action in San Francisco Unified School District. A summary of these findings is detailed in the figures that follow.

*Figure A: Summary of Main Case Findings*

| Key Findings of Main Case: Climate and Sustainability Action in Seattle Public Schools | |
|---|---|
| **Strengths** | • New construction is sustainably designed, surpassing Seattle's robust building code<br>• The District is implementing a systematic plan to modernize its aged building stock for efficiency<br>• The School Board unanimously passed a Clean Energy Resolution, calling for 100% carbon free buildings and transportation by 2040 |
| **Areas for improvement** | • The District does not support, and in many ways actively suppresses, efforts to integrate education for sustainability into curriculum.<br>• Internal and external communications fail to spread the word about Seattle's successes and expectations when it comes to climate and sustainability action.<br>• The District has no green purchasing or green cleaning policies in place. |
| **Systems Characteristics in Play** | • City and state policies support green buildings.<br>• A culture of performance management dating back to the No Child Left Behind era places undue emphasis on curricular orthodoxy and test scores.<br>• Policies and practices are aligned to the Strategic Plan, which is silent on climate and sustainability.<br>• SPS's sustainability professionals are siloed due to lack of connective structure, and location in the organizational chart.<br>• Lack of top-level support for climate and sustainability action, despite an emphasis on racial equity -- the intersections are not recognized by the District's agenda setters. |

*Figure B: Summary of Racial Equity Comparison Case*

| Key Findings of Racial Equity Comparison Case | |
|---|---|
| *Similarities to Main Case* | *Differences from Main Case* |
| • Insufficient curricular connections<br>• On-paper performance exceeds lived experience of educators, families, and staff.<br>• School-based staff believe central office is out of touch and behind the times, central office staff believe school staff is resistant to change. | • Strong support from highest levels of District administration<br>• Racial equity goals included in Strategic Plan<br>• Ample human resources<br>• Frequent, high-volume discourse regarding racial equity across departments and throughout School Board proceedings |

*Figure C: Summary of San Francisco Comparison Case*

| **Key Findings of San Francisco Comparison Case** | |
|---|---|
| *Similarities to Main Case* | *Differences from Main Case* |
| ● Climate and sustainability curriculum is less developed than action within facilities.<br>● School-based staff believe central office is out of touch and behind the times, central office staff believe school staff is resistant to change.<br>● Action does not reflect understanding of the interconnectedness of racial justice and climate and environmental justice. | ● Ongoing generative partnerships with city agencies strongly support climate and sustainability action.<br>● Ample human resources are provided to implement climate and sustainability action.<br>● Internal and external communication is more accessible and clear. |

**Recommended changes for SPS to advance climate and sustainability action**

Our young people's future depends upon our ability to liberate society from its current machinery that runs on carbon, white supremacy, and worker exploitation. Seattle Public Schools is a small but meaningful actor in this transformation. We can advance climate and sustainability action in SPS by taking the following high-leverage, low-cost steps:

*Human Resources recommendations*

- Rename and expand Resource Conservation department
- Establish a network of Green Teams throughout the District
- Hire an Education for Sustainability Curriculum Specialist
- Deliver professional development addressing Washington's environmental and Sustainability Standards and the District's sustainability-related policies and procedures

*Goal setting & policy alignment recommendations*

- The School Board should set vision for climate and sustainability action by
    - revising Policy 0010 Instructional Philosophy,
    - adopting an education for sustainability framework,
    - adopting a resolution calling for green workforce development and education for sustainability in Career and Technical Education.
- The Superintendent should revise the Strategic Plan to include climate and sustainability goals.
- Mandate each school to set sustainability goals in their Continuous School Improvement Plan.

*Analysis/strategy tool recommendation*

- Create/adopt a sustainability analysis tool, analogous to the racial equity analysis tool, to be applied to decisions district-wide.

*Broader policy environment recommendations*

- Establish formal, ongoing partnerships with relevant City agencies, including Office of Sustainability and Environment and the public utilities.
- Establish a day or week of climate and sustainability awareness and action, similar to the Black Lives Matter at School week supported annually by the School Board.

*Communications recommendations*

- Use every medium and venue to inform internal and external stakeholders about what has been done and what is yet to be done for climate and sustainability action in SPS.

## Introduction

*Overall, what advice would I give to teachers and to educational policy makers? I would tell them that if we get this wrong, nothing else may matter very much. ...The climate crisis is most likely the defining challenge in the lives of our youth. We do them an immense disservice if we send them into the future without adequate knowledge about the climate crisis and the skills to act.*

– Dianne Saxe, Environmental lawyer

Today's K-12 students face a future more uncertain and perilous than any living generation has faced. Climate change is no longer abstract; human activity has already caused around 1.1-1.2℃ of warming, disrupting human lives and livelihoods and threatening the balance of life as a whole on the planet (IPCC, 2018). Even if we were to immediately cease all carbon emissions, climate impacts would continue to worsen. Legacy emissions will likely cause another 0.5 ℃ of warming in the next several decades, due to Earth-system feedbacks (IPCC, 2018). We *must* cut fossil fuel use in half this decade. Continuing with 'business as usual' will lock in a future of devastating droughts, floods, winds, storms, heat, biodiversity collapse, food crop failures, freshwater shortages, ocean acidification, sea-level rise, and social instability for today's youth (Acton & Saxe, 2020; IPCC, 2018; IPCC, 2021). Indeed, the newest climate change assessment report details that unless immediate and extensive actions are taken, the disruption to the lives of our youth will be extreme (IPCC, 2021).

To make the future livable, we must both adapt to and mitigate climate change.[1] While individuals can take adaptation and mitigation actions on their own, the scope of the climate crisis can only be met by collective action at the scale of governments, corporations, and quasi-governmental organizations.

[1] Adaptation means preparing communities to endure climate impacts. Mitigation means stopping carbon emissions and drawing carbon down from the environment.

K-12 public school districts  are a set of governmental organizations that have great, mostly unrealized, power to respond to the climate crisis. School districts exist to prepare young people for the future, and thus have special moral obligations to protect that future by reducing their environmental footprint to avoid the most catastrophic climate change scenarios, and to educate today's young people to better care for the ecosystems that support human life. Furthermore, K-12 school districts currently control the nation's largest public transportation fleet, nearly half a million diesel buses, and emit the equivalent of 18 coal-fired power plants annually -- and all of these emissions are within the public span of control, which "is critical in responding swiftly to the climate emergency" (New Buildings Institute, 2021).

The school district I know best and the main focus of this study, Seattle Public Schools (SPS), is taking *some* action to mitigate climate change. However, there is a gulf between what it could do and what it has committed to do. And there is another gulf between what it has committed to do and what it actually does. And still another gulf between what it does at some schools (read: wealthier, whiter) and what it does at others (read: poor, Black & Brown).

Seattle Public Schools must do better if it is to live up to the words of its strategic plan, Seattle Excellence: "At Seattle Public Schools, we are working to dramatically improve academic and life outcomes for Students of Color by disrupting the legacies of racism in our educational system. This work supports our commitment to make sure every student graduates prepared for college, a career, and community participation" (*Seattle Excellence*). To dramatically improve life outcomes for Students of Color, SPS must work for climate justice. To disrupt legacies of racism, SPS must address environmental racism. To prepare every graduate for community participation, SPS must educate for sustainability.

**Climate Injustice**

As an organization with a stated commitment to anti-racism, SPS must work for climate justice. Here's why:

Although climate change is disproportionately caused by the wealthy (Harrabin, 2020), climate impacts and losses, both acute (as in property loss and heat exhaustion), and chronic (as in food insecurity and post-traumatic stress disorder), are predictable by skin color, zip code, and bank balance. Black, Brown, and poor people live in neighborhoods with the greatest exposure to environmental risks that are only exacerbated by climate change -- risks including storms, flooding, drought, urban heat islands, polluted air and water, and lack of access to transportation and healthy food (USGCRP, 2018). Race/ethnicity and poverty are consistently linked to worse environmental health outcomes (USGCRP, 2018), and the climate crisis is further worsening health inequities created by centuries of environmental racism (Wilson, 2020; Tessum et al., 2019).

Seattle's climate change scenario bears out this unjust distribution of impacts. The city is already seeing and will continue to see drought, power shortages, flooding and landslides, heat waves, an increase in vector borne diseases, and worsening air quality (Uhlig, 2017). For each of these climate impacts, frontline communities have greater exposure and vulnerability to the risks, "At risk communities[2] often already experience higher exposure to poor air quality and toxins, lack of access to healthy and affordable food, limited transportation options, limited access to health care services, and lack of access to health information in languages other than English" (Uhlig, 2017).

[2] Many researchers and environmental justice advocates prefer the term, "frontline communities," which acknowledges that communities marginalized by race, ethnicity, language, immigration status, and economics experience climate impacts first and worst, and are also the first to adapt to the impacts, and possess insight and capacity for solutions.

The Duwamish Valley is one of Seattle's poorest regions with among the highest concentration of BIPOC community members, and is also the area at greatest risk of flooding; neighborhoods in South Seattle with the highest concentrations of people of color have the lowest air quality and highest rates of asthma (Environmental Equity Assessment Pilot), which will only be worsened by climate change. Community-led research shows that Seattle's frontline communities are also at-risk of increased food and housing insecurity as the effects of climate change continue to worsen (Got Green, 2016).

Another kind of environmental racism, displacement through gentrification, further adds to frontline communities' vulnerability to climate impacts. Cohesive social networks help communities protect themselves and adapt to environmental hazards. However, when poor people are displaced by neighborhood gentrification, community relationships are disrupted (USGCRP, 2018). Economic refugees from the city center, pushed out to the suburban margins, increase their greenhouse gas emissions as they are forced to travel further by car for the services they need.

All these climate impacts are threat multipliers, exacerbating the stressors already experienced by low-income and Black and Brown communities in Seattle. Many community-based organizations are doing great grassroots work in the area of climate justice,[3] and environmental organizations are redeeming their history of whiteness and elitism by embracing the call for climate justice. Seattle Public Schools has the power, potential, and responsibility to advance this work in a major way.

**Seattle Public Schools**

Research suggests that school districts are in the "sweet spot" when it comes to scale for climate action, ranging from 10,000 - 100,000 people (Kwauk & Winthrop, 2021). Seattle Public

[3] Tilth Alliance, Got Green, Puget Sound Sage, WA-BLOC, Black Star Farmers, Marra Farms, International Rescue Committee just to name a few.

Schools (SPS), the largest school district in Washington, is smack dab in the middle of that sweet spot: serving over 52,000 students in 106 schools, and directly employing more than 7,500 staff. This city-sized system has great potential to respond to the climate crisis through adaptation, mitigation, and transformation.

School systems are natural focal points for climate adaptation: children are vulnerable to climate risks; schools serve as social, service, and informational hubs for families; and high-school students are a potential green workforce ready to be developed. Furthermore, SPS is the largest public landholder in Seattle (interview with Seattle School Board Director), controlling campuses that can be leveraged for green stormwater infrastructure, tree canopy establishment, and urban food security initiatives. In their call for K-12 institutions to play a leading role in the nation's climate strategy, The New Buildings Institute points out, "In many communities, school buildings serve essential functions beyond education including providing meals, hosting voting, and serving as emergency shelters. Investing in hardening our school infrastructure can support adaptation and resilience against climate impacts for all and especially the most vulnerable" (Loveland, 2021). Despite these realities, Seattle Public Schools is not working on a climate adaptation plan, and is not mentioned in the City of Seattle's plan.

Similarly, although SPS heats and cools 7.5 million $ft^2$ annually, hires a fleet of dirty diesel buses, creates millions of pounds of waste, and spends roughly $1.1 billion each year,[4] SPS does not have a comprehensive climate change mitigation plan, nor does Seattle's Climate Action Strategy include partnership and coordination with SPS. This is a big mistake, since school buildings are well poised to drive down emissions, in that they are within public control, successes

[4] Dollars spent are often used as a proxy for carbon emissions, considering the centrality of fossil fuels to our economy.

can be replicated[5], and they are owner-occupied often with strong stakeholder connection to the building (New Buildings Institute, 2021).

To protect the future for the youth, SPS must mitigate and adapt to climate change. To prepare the youth for the future, SPS must educate for sustainability. However, there is no official support at the district level for education for sustainability. Adaptation, mitigation, education. Each of these is important and valuable on its own. But working in concert, they become transformative.[6] There is perhaps no other institution that can do more to secure a livable planet than school systems, which not only occupy buildings and spend budgets, but also fundamentally shape the world view of thousands of people -- that is the job of schools, after all, to influence the way people think.

Seattle Public Schools has codified some climate and sustainability action, including the unanimous passage by the Board of Directors of the Clean Energy Resolution which mandates 100% fossil-fuels free buildings and transportation by 2040. However, a review of SPS resolutions, policies, and procedures shows that codes are not always implemented. What makes the difference between stated commitments that are vigorously enacted and those that languish on the shelf?

Personal communications with teachers, administrators, resource conservation specialists, and community partners reveal many SPS school board directors, staff, students, and families who are taking climate and sustainability action on their own at the classroom or school levels. However, barriers exist to institutionalizing such action. As long as climate and sustainability action depends on the will of individual actors, it is at risk of ending when a teacher moves or retires, a

[5] That is, designs that work well for one 500-student elementary will likely work well for another 500-student elementary, and so on.

[6] Various educational frameworks exist to describe and prescribe this synergistic interaction between facilities, operations, and teaching. These will be explored at length in the literature review.

student graduates, or a grant runs out. How do we change isolated heroic actions into systemic organizational culture?

**Purpose of the study**

This study analyzes the current state of climate and sustainability action in Seattle Public Schools, and seeks to identify the systems characteristics that support implementation, especially implementation that leads to institutionalized cultural norms. As comparison cases, the study also examines the state of racial equity action in Seattle Public Schools, and the state of climate and sustainability action in San Francisco Unified School District. Based on this analysis, specific actions are recommended to advance climate and sustainability action in Seattle Public Schools.

This research focuses on district-level action, and thus considers district structures for support and accountability and the action of district leaders, including School Board, Superintendent, and district staff. The choice to focus on the district, not individual schools, as the level of analysis was made for a few reasons. First, as mentioned, school districts are right-sized for effective climate action. Also, decision-making power regarding capital projects and curriculum adoption happens at the district level. Finally, equitable access for all students to climate and sustainability action requires the action to be implemented district-wide, not on a school-by-school basis.

## LITERATURE REVIEW

Environmental action in schools is not new. We know a lot about how and why to engage in such action, but the process of transforming schools is so challenging as to be rarely accomplished. This literature review first reviews various “brands” of education for sustainability, beginning with

the United Nations model of Education for Sustainable Development (ESD), which catalyzed a global focus on creating transformative schools that integrate sustainability action in facilities, operations, and curriculum & instruction. Next, we examine how ESD principles have shown up in the U.S. context; finally we address the newest calls for modes of education that simultaneously address social justice and climate change.

The next section of the review examines outcomes of education for sustainability, including environmental and non-environmental outcomes. Finally, because this case study seeks to understand by which levers a school district can be transformed, we take a look at the project of change management, including the political role and influence of district leadership, systems theory, cultural factors, and barriers to implementation.

This is a brief literature review to establish context for the case studies that follow, not an exhaustive review of the research into education for sustainability and change management.

*Note on language*

Around the world and throughout time, different phrases are used to discuss similar concepts: education for sustainability, education for sustainable development, green schools, whole-school framework for sustainability, environmental education, place-based education, environment as an integrating context… these are just some of the terms I encountered in my review of the literature. As an SPS educator stated, "the lingo has changed often: environmental education, outdoor education, sustainability education. All integrated in value for the planet and people on it. When we have exploitative practices and policies, we not only exploit people as we have done with colonialism and other oppressions, we exploit the planet. We must address both."

These various names refer to educational approaches that share the goal of using schools to achieve environmental and social justice ends, but they have different levels of emphasis on the school facilities versus teaching methods and curriculum.

When discussing specific studies and findings, I use the term the original authors used to describe their subject. When summarizing and synthesizing, I use the term education for sustainability as an umbrella term. Internationally, education for sustainable development (ESD) and education for sustainability (EfS) seem to be the two terms most widely used to refer to transformative education that takes place in a setting sustainably built and operated, applying learner-centered, problem-based, integrated learning methodologies to issues of local importance and environmental relevance to create social and environmental change now and in the future.

### ***What*** **is education for sustainability?**

According to Kwauk & Casey of Brookings, we are entering a fifth wave of seeking to transform education to alleviate "economic and environmental crises" (2021).

*Figure 1: History of environmental movements in education*

| late 1800s | 1960s | 1990s | 2010s | 2020s |
|---|---|---|---|---|
| Nature conservation education | Environmental education | Sustainability education | Education for Sustainability/ Education for Sustainable Development | New green learning agenda/ Climate change education |

As environmentally-focused education has evolved, it has become progressively more concerned with the interaction between humans and the non-human environment (less oriented towards "wilderness" as distinct from the human world), and simultaneously more interested in transformational education with the potential to reorganize relationships among humans and

between humans and the rest of nature (Kwauk & Casey, 2021). For the pragmatic purposes of this study, we focus on movements from the 1990s forward.

**We need a fundamental change in the way we think and act.**

– Irina Bokova, Director-General of UNESCO

*The United Nations calls for all the nations of the world to adopt Education for Sustainable Development...*

In 1977, the UNESCO conference in Tbilisi recognized that "the roots of the modern environmental crisis lay in the dominance of cultural values, often specific to the West, focused on unlimited growth and unchecked consumerism" (Vedwan, 2021, 137), and identified education as a key mechanism for creating cultural change. The United Nations declared 2005-2014 to be the United Nations Decade for Education for Sustainable Development (ESD). UNESCO's statement on the Decade reads,"Education alone cannot achieve a more sustainable future; however, without education and learning for sustainable development, we will not be able to reach that goal" (UNESCO, 2012).

Education for sustainability or sustainable development differs from education *about* sustainability or sustainable development, in that it encompasses *the way education is done*, in terms of facilities, operations *and* curriculum & instruction. ESD seeks to fundamentally change the way humans position ourselves within the natural world and the way we confront problems, teaching people to collaborate, accept uncertainty, and become systems thinkers who perceive networks of interconnected causes and effects. In addition to these habits of mind, ESD seeks to

develop commitment to values such as treasuring the natural world and guaranteeing the livelihood of all people, including future people, (Buckler & Creech, 2014).

In ESD, key sustainable development issues are integrated into teaching and learning. These include themes such as: climate change, disaster risk reduction, sustainable livelihoods, sustainable consumption and production, biodiversity and poverty reduction. ESD comprises not only these topics, but also teaching methods that develop students' capacities for critical thinking, collaboration, problem-solving, and imagination (Buckler & Creech, 2014).

ESD addresses what students learn, how students learn, and where students learn, or as is sometimes said, it encompasses curriculum, campus, and community. "Whole-institution approaches encompass mainstreaming sustainability into all aspects of the learning environment. This includes embedding sustainability in curriculum and learning processes, facilities and operations, interaction with the surrounding community, governance and capacity-building," (Buckler & Creech, 2014, p. 30).

Communities that have implemented ESD have done so through various pathways, including obtaining school or district certifications for green building and operations, collaboration with community partners, innovations in pedagogy, adoption of learning standards, and focus on teacher development (Buckler & Creech, 2014). UNESCO's Decade for ESD report stated that in every region of the world, significant progress was made in moving from awareness through planning to implementation of ESD (Buckler & Creech, 2014).

However, the United States was not mentioned once in the report.

*… but the United States does not (quite) heed the call*

Throughout the Decade for Education for Sustainable Development, many national governments put policies in place to plan for and implement ESD.The United States was an

exception to this trend, with little observable nation-wide support for ESD or education for sustainability by any name. Notably, the U.S. Department of Education's (DOE) only official program pertaining to sustainability in schools is the Green Ribbon Schools program, created in 2012, which neither mandates nor funds education for sustainability.

In its informational materials, the DOE emphasizes that their Green Ribbon Schools program is not a certification program (enforces no standards, carries no mandate), and is not a grant program (provides no funding), (US Department of Education, 2021); the Green Ribbon program simply recognizes districts and post-secondary institutions whose actions have resulted in reduced environmental impact, enhanced human health, and improved environmental literacy, (Gutierrez & Metzger, 2015.). This is consistent with the broader education policy landscape in the U.S., where rulemaking is mostly left to the states.

States have used that rulemaking power to adopt environmental learning standards, directing schools to teach *about* environmental science and problems. Consistent with our decentralized, free-market approach to education, there is a glut of curricular resources available to educators, providing lessons and projects from global, national, and local perspectives (Feinstein, 2009) that vastly overruns teachers' capacity to put them to use. This is due in part to a culture of education that holds teachers accountable for student test scores; not many teachers feel supported or empowered to address environmental learning standards, which are not targets of high-stakes testing.

Also, many of these standards do not address the *how* of teaching, which is a key component of education for sustainability; that is how it seeks to build adaptive capacity and transform social structures. For example, a multiple-choice test about carbon emissions may meet a state-adopted environmental learning standard, but it would not be an example of education for sustainability.

Overall, whole-school and whole-district buy-in for education for sustainability (EfS) is lacking throughout the U.S. K-12 education landscape. While there are educators, activists, and organizations doing great work in EfS-like fields, the "formidable [environmental education] expertise of individuals and groups [in the U.S.] is not yet reflected in system-wide change," (Feinstein, 2009, p. 4). This same paradox is reproduced on smaller scales in school districts throughout the U.S., where the expertise of a few passionate and skilled professionals in individual schools is not reflected in district-wide change.

However, some posit there may be more EfS in U.S. K-12 systems than it appears at first glance. Two main factors make it difficult to confidently assess the level of EfS in the United States: the decentralized nature of education in the U.S., and the diverse nomenclature used to refer to the same idea. Whereas few programs in the U.S. refer to themselves as education for sustainable development, environmental education, green schools, environment as integrating context, whole-school framework, education for environment and sustainability, and place-based education are all terms used to refer to education that has many of the traits and aims of EfS (Feinstein, 2009).

The diverse terminology and nuanced approaches to EfS-like education in the U.S. have historically fallen into two main categories: Green schools, which focus equally on campus, curriculum, and community; and environment-based education, which focuses more heavily on methods of teaching and learning. In the post-COVID/late-climate-crisis era, a third framework is rising - the new green learning agenda -- that explicitly links building back from the pandemic, meeting carbon reduction goals, and educating students with the technical and adaptive skills needed to transform to a green economy (Kwauk & Casey, 2021).

*Whole School Sustainability / Green Schools*

Whereas the U.S. did not join the global movement for ESD, a parallel educational paradigm arose in this country through grassroots movements in the late 1990s/early 200s, sharing many of the same means and ends as ESD:The whole-school sustainability framework (AKA green schools). Schools practicing whole school sustainability seek to ensure that facilities and operations are environmentally sustainable, that students and staff behave in green ways at school, and that environmental literacy and habits of mind for sustainability are integrated across the curriculum. "This includes school campuses that save energy and water, reduce waste and exposure to toxins, serve healthy food, and provide access to gardens, green schoolyards and outdoor education and physical activity" (Sterrett et al., 2014, p.2).

The Whole-School Sustainability Framework was developed by The Center for Green Schools. They analyzed schools and districts that have successfully implemented sustainability in facilities, operations, and curriculum & instruction and have identified nine conditions that are shared across schools and districts that have successfully implemented whole-school sustainability, grouped into three categories: Organizational Culture, Physical place, and Educational program (Barr et al., 2014). This three-pronged approach -- culture (operations), curriculum, and campus (facilities) -- is echoed in other frameworks, and can be used to analyze school district actions.

Whole-school sustainability has been described as moving away from a factory model of education characterized by rigid, linear relationships among people and among ideas, to an ecological model characterized by flexible, interconnected relationships among people, among ideas, and between people and places (Uline & Kensler, 2017). Perhaps in response to this more humane and welcoming culture, many schools practicing whole school sustainability have seen

improved attendance and retention among both students and staff, as well as improved learning outcomes as measured by standardized test scores (Uline & Kensler, 2017; Sterret et al., 2014).

Schools that wish to operate in the whole-school sustainability framework will discover that they need support at the district level in the form of "systemic overarching policies in funding allocations, hiring, promotion and purchasing, etc." (Buckler & Creech, 2014, p.88) in order to implement the framework.

*Environment-based education/ Environment as an integrating context*

Whereas green schools/ whole-school sustainability have a strong emphasis on campuses designed with naturalness and beauty as key features, environment-based education (EBE) and environment as an integrating context (EIC) education focus more closely on instructional methods. The term environment as an integrating context was coined (and copyrighted) by the State Education and Environment Roundtable (SEER), a working group of 16 state departments of education formed in 1995. According to Lieberman and Hoody (1998), EIC is a framework for interdisciplinary, collaborative, student-centered, hands-on, and engaged learning, (preface). EIC teaching methods are interdisciplinary, hands-on, problem- and project-based, taught collaboratively by teaching teams, student-centered and adaptive to student strengths and needs, and develop cognitive, behavioral, and affective understanding of the environment, including community and natural surroundings (Lieberman & Hoody, 1998). EBE is a generic (that is, non-copyrighted, non-proprietary) term for the identical educational approach (Ernst, 2006).

In this paradigm, "environment" includes the natural, built, and socio-cultural environment local to the school (Lieberman & Hoody, 1998) and education is based on complex problems within that local environment. Environment-based education can be especially empowering for Black, Brown, and poor youth, since they are most likely to be burdened by environmental harms,

including air and water pollution, food insecurity, lack of access to green space, and heat islands. Providing the opportunity to take action on the problems that confront their communities can increase students' engagement and sense of efficacy (Wheeler, 2013).

*New green learning agenda*

While education for sustainable development and education for sustainability frameworks have always included social justice and social transformation in their formulation, in the present moment, revelations brought on by responses to the pandemic and the urgency provoked by the imminent deadline for cutting carbon emissions to avoid warming over 1.5℃ have led to explicit calls to harness the power of education systems to mitigate climate change and evolve beyond social inequality. The New Buildings Institute and Brookings each published white papers in early 2021 urging the U.S. and governments worldwide to look to K-12 education as a means of transitioning to a just, carbon-free economy (New Buildings Institute, 2021; Kwauk & Casey, 2021). The Brookings paper refers to this movement as the new green learning agenda, and what is new about it is its explicit focus on creating a carbon-free, just world.

According to the New Buildings Institute, the K-12 sector "is positioned to catalyze increased awareness, public support, workforce development, innovation, and, most critically, the shifts in mindset that form the foundation for any success we might envision. Moreover, the K-12 sector is central to addressing equity and enhancing community resilience," (2021). Some school districts are beginning to take this catalytic role: 91 schools throughout 20 states are certified or on their way to becoming zero net energy buildings (meaning they consume no more energy during the year than they produce on site)[7]; and 29 states have career and technical education programs that prepare students to enter "green careers" (New Buildings Institute, 2021). As their name suggests,

[7] Seattle does not yet have a zero net energy building.

New Buildings Institute focuses on campus facilities, but also calls for schools to be included in local and regional climate mitigation and adaptation plans, with special concern for equity and co-benefits to frontline communities.

Kwauk and Casey echo UNESCO when they assert, “The values that drive the domination and exploitation of the natural world, which fuel climate change and increase humanity’s vulnerability to zoonotic disease transfer, are the same values that drive the oppression, exploitation, and violence against vulnerable groups, especially girls and women” (2021). Thus, their educational framework is explicitly a transformational one, addressing both technical and adaptive aspects of education. The new green learning agenda calls for schools to teach three sets of skills:

*Figure 2: The new green learning agenda*

| Green Jobs Skills | Green Life Skills | Green Transformation Skills |
|---|---|---|
| Technical skills for supporting transition to a carbon-free economy, such as data analysis, finance, and ecosystem management | Cross-cutting skills that facilitate both technical and adaptive competence, such as coping with uncertainty, strategic thinking, and teamwork | Adaptive skills for transforming social and economic structures, such as disruptive thinking, solidarity, and valuing indigenous knowledge |

“We should not,” they say, “settle with doing education as we know it better, but rather to push ourselves to see how education can be done differently” (Kwauk & Casey, 2021). They ask policy makers not only to address problems *in* education, such as unequal access or quality of education, but also problems *of* education, that is, its purpose.

Education has heretofore been widely conceived as a means of bringing people into society as it is and equipping them with skills and knowledge to “move up” the ladder of success. The new green agenda sees the role of education is to “strengthen society’s transformative capacity. That is, its capacity to transform both individuals and society in a deliberate way that is conscious of

planetary boundaries, in balance with the carrying capacity of the earth, and aims for the flourishment of all life, human and non-human" (Kwauk & Casey, 2021).

*Climate change education*

Although most teachers are no doubt unaware of the new green learning agenda as such, 86% of U.S. teachers polled believe climate change should be taught in school; unfortunately, about 60% do not do so because they say it is not in their subject area (Kwauk & Casey, 2021). However, some teachers do teach climate change, whether as a set of facts or as a complex problem students can help to solve. One way to position climate change education is as justice-based STEM education, which takes on the transformative nature of the new green learning agenda by "identifying the goal of climate literacy as the building of resilient sustainable communities that can reduce vulnerabilities to climate change impacts," and by "Connecting science with the social aspects of climate change," which "engaged and inspired educators to see how the phenomena impacts their own lives and their students lives" (Kirkland & Poppleton, 2021).

Some teachers fear climate change education because they are not confident in their abilities to handle a subject that can be deeply emotional and, for some, controversial. These teachers should take heart that best practices for climate change education are beginning to be understood. A systematic review of the literature found two aspects of effective climate change education were present in every study that reported positive outcomes: personal relevance and engaging teaching methods (including deliberative discussions, interacting with scientists, and inquiry approaches); in fact these two aspects are known to be markers of all effective science education (Monroe et al., 2019).

## ***Why*** **implement education for sustainability?**

*Wide-ranging benefits of education for sustainability in* ***curriculum***

Children in the U.S. who experience environment-based education also experience improved academic, social-emotional, and behavioral benefits education compared to traditional educational models, according to a significant body of research. The benefits to students do not come from field trips, outdoor experiences, and environmental science, but from engaging in complex, interdisciplinary environmental projects that are deeply rooted in local place and community (Feinstein, 2009).

In 2018, Ardoin and colleagues conducted a systematic review of 119 articles presenting empirical evidence of K-12 student outcomes of environmental education programs,[8] including outcomes in knowledge, dispositions, competencies, behavior, personal characteristics, and multi-domain outcomes (2018). The review found that 94% of articles reported positive environmental outcomes and 95% reported positive non-environmental outcomes (such as educational achievement, attendance, and positive school climate). Environmental *behaviors* were seen to be positively influenced in 83% of studies (Ardoin et al., 2018), a smaller but still significant proportion, consistent with other research that finds knowledge alone is not sufficient for effecting behavior change (Cordero et al., 2020)

More than 20 years ago, The State Education and Environment Roundtable (SEER), authors of the EIC approach, conducted a study to identify the most innovative and successful EIC programs. They compared academic, school discipline, attendance, and affective outcomes in EIC programs to traditional programs and found "better performance on standardized measures of academic achievement in reading, writing, math, science, and social studies; reduced discipline and

[8] A specific educational approach was not named in the review.

classroom management problems; increased engagement and enthusiasm for learning; and greater pride and ownership in accomplishments," -(Lieberman & Hoody, 1998). Interviews revealed that administrative support at the school and district level was essential for teachers to try out new, complex ways of teaching.

In 2010, a review of the literature reporting outcomes of EIC instruction again found consistent, marked positive effects of EIC on students' academic attainment, attendance, and attitudes toward school; students in EIC programs consistently had higher GPAs, standardized test scores, and attendance, as well as reporting greater engagement and motivation for learning (Strife).

Ernst and Monroe (2006) conducted a mixed-methods study evaluating the impact of environment-based education on high school students' critical thinking skills. Students in the study were drawn from 12 FL high schools selected for maximum difference of high school characteristics among the schools. Pre-test/post-test and post-test/control-group comparisons were made on standardized measures of critical thinking skills & disposition to use those skills. Interviews were conducted to determine which program elements teachers & students found most powerful in developing critical thinking skills & dispositions. Ernst and Monroe found that participating in environment-based education had a significant difference in both 9th and 12th graders' critical thinking skills, and on 12th graders' disposition to use them. Interviews revealed that the relevant characteristics of environment-based education were:

- interdisciplinary, environmentally themed units that encouraged students to make connections between subjects, and between academics and the real world
- open-ended projects requiring higher-level thinking skills
- student ownership of their learning
- intentional reflection on learning and on the effects of the action taken in the project.

*Benefits of sustainable **campuses***

When it comes to the effect of a green campus on student outcomes, a diverse range of studies have found that children have improved attention after being exposed to natural views and settings. Experiences of nature as slim as viewing trees and grass from an apartment (or classroom) window have been found to be predictive of greater attention and effectiveness (Kuo & Faber Taylor, 2004, p.1580).

In a rigorous single-subject research design, Kuo and Faber Taylor demonstrated that walking in a vegetated green environment, as opposed to a concrete gray one, decreases ADHD symptoms in children diagnosed with the condition. The same researchers also conducted a survey study of parents and caregivers and found a consistent advantage of activities in green settings to reduce ADHD symptoms, including after effects (2004).

Spending time in green spaces has other benefits for mental and emotional wellness: exposure to nature has been found to mitigate or buffer childhood stress that can lead to depression and mental and emotional unwellness (Wells & Evans, 2003 as cited in Strife, 2010). Research has also found that playing in nature can reduce or even eliminate violent behavior and bullying among children (Strife, 2010).

This is an example of how climate adaptation actions (such as green roofs, rain gardens, and depaving) can provide co-benefits for children in schools. Greening the school environment can cool buildings, filter water, increase biodiversity, reduce bullying, and boost concentration.

*Health benefits of sustainable school **cultures***

A school culture of environmentally sustainable policies and practices also has co-benefits for children's mental and physical health. For example, the American Public Health Association finds that efforts to reduce carbon emissions also reduce obesity-related illnesses among children.

Dr. Frumkin, director of the Center for Disease Control's Center for Environmental Health, asserts "a simple intervention like walking to school is a climate change intervention, an obesity intervention, a diabetes intervention, a safety intervention," (Borenstein, 2007, quoted in Strife, 2010, p. 181). This is also an example of the kind of systems thinking education for sustainability seeks to cultivate among young people: how does one small change influence a complex system?

Eliminating toxic cleaning chemicals from schools is another example of a pro-environmental action that has co-benefits for student and staff health. According to Sustainable Jersey for Schools, "Green cleaning products offer effective performance while minimizing effects on health, environment, and worker safety. Schools can also save money by using green cleaning products while improving indoor air quality and reducing pollution and adverse health effects," (New Jersey Sustainability Baseline Assessment). The switch to green cleaning products is one of dozens inventoried in Sustainable Jersey for Schools' baseline assessment. Enacting sustainability in facilities and operations allows districts to conserve resources while promoting students' health and well-being.

*Benefits of education for sustainability to the **community***

Many school districts have contentious relationships with the families they serve, based on generations of mistrust and a lack of shared goals. Environment-based education provides the opportunity for schools to build new relationships with communities, relationships in which schools prioritize community concerns and actively engage with community problems. In Australia, a country that has marginalized and oppressed its indigenous communities for centuries and has also done significant work to embrace education for sustainability, researchers note "The goal of sustainability has redefined the role of schools and their relationship with the community. The focus has shifted beyond 'what to teach students' and 'how they are behaving' to seeing schools as a focal

point where children, adults and the community interact and learn together," (Henderson & Tilbury, 2004).

School districts committed to education for sustainability can apply their resources to solving community problems. For example, 14 million school days are missed per year due to asthma caused by polluted air, which disproportionately affects Black and Brown students (New Buildings Institute, 2021). This is a problem that can be studied by students at the local level and directly addressed through sustainable transportation and tree planting, actions within the school district's purview. Another example might be including students in the 6,000 schools that lie in flood plains in the U.S. in designing nature-based stormwater solutions (Kwauk & Winthrop, 2021).

When school districts commit to sustainability, they can directly benefit their communities economically. The process of greening campuses and school transport is "an opportunity to create family-sustaining jobs in communities worldwide," the Reopen and Rebuild America's Schools Act is projected to create two million jobs (Loveland, 2021).

*Effect of education for sustainability on pro-environmental behaviors*

By all rights, education for sustainability should result in people living in more sustainable ways in their daily lives. Specific elements of culture and curriculum seem to be more important than others for effecting meaningful and lasting change in behavior.

*Figure 3: Elements that promote pro-environmental behavior changes*

| Elements of Culture & Curriculum that promote pro-environmental behavior changes |
| --- |
| Charismatic leaders<br>Effective communication<br>Personal efficacy/agency toward action<br>Group efficacy<br>Collective ownership<br>Supportive policy environment<br>Personal connection to environmental learning |

Schelly et al. (2010) conducted a mixed-methods study to determine what factors enabled Ft. Collins's Rocky High, housed in an aged building, to reduce its electricity use below that of the district's LEED school. They found that charismatic leaders in diverse roles in the school, effective communication to staff, students, and community about expectations for pro-environmental behaviors and the accumulated positive consequences of those behaviors, and the enhancement of personal and group efficacy resulted in a "holistic conservation culture," at a high school with an aged and inefficient building (Schelly et al., 2010, p. 328).

Interestingly, this study found that efficacy (personal and group) was more important than personal beliefs about the environment in creating behavior change. Efficacy was fostered at Rocky by clear communication from school and district leadership about the positive impacts staff & students were having on energy consumption through small behavioral changes (such as turning off lights and computers). Also, administrators included custodians and students in decision-making processes related to energy savings, increasing ownership and efficacy.

The authors also found that the culture of conservation that was created at Rocky High School did not happen in isolation, but in the context of a school district taking sustainability action. Rocky cut its energy consumption in half because it was supported by district policies, incentives, and actions in service of sustainable schools, (Schelly et al., 2010). As previously mentioned, school-wide sustainability rarely happens without "district or regional commitments to sustainability," (Feinstein, 2009, 29).

Cordero et al. (2020) found positive effects of climate change education on students' emissions-reducing behaviors were maintained five years after they completed an intensive climate change education course at the university. The researchers estimated that the course motivated the average course graduate to make behavior changes that cut their individual emissions by 2.86 tons

of CO2 per year, meaning that if this intervention were scaled the reductions in carbon emissions would be similar to those achieved by rooftop solar or electric vehicles. Consistent with prior research, they found that personal relevance and "personal agency toward action," (or personal efficacy) were the mediating factors that led to behavior change. The course included reflection assignments designed to help students identify climate change impacts in their lives and work, and a community action project that developed personal agency toward action (Cordero et al., 2020).

## ***How*** **can we get education for sustainability in every school?**

Considering that it has good outcomes for student learning and health, co-benefits for communities, and is part of the solution to the existential threat of climate change, why do so few students go to schools that manifest sustainability in their campuses, curricula, cultures, and communities?

### *Barriers to sustainable schools*

The greatest strength of education for sustainability is the greatest obstacle standing in its way: it is transformative. Education for sustainability moves away from the factory model of education, with its high degree of certainty, rigid hierarchy, and discrete goals, to an ecological model, with high degrees of uncertainty, democratic and inclusive processes, and messy goals (Uline & Kensler). The district that fully adopts education for sustainability is a fish that learns to change their own aquarium water.

In their theoretical review of the literature on learning for sustainability, Bostrom et al. challenged the optimistic, individualistic view of learning that dominates the literature by elaborating a perspective on learning that, "acknowledges the structural and cultural inertias that prevent social change, and the societal and personal conflicts such change involve," (2018, p.2)

According to their analysis, attempts at education for sustainability that fail to engage the conflict dimension will ultimately fail to transform societies and institutions.

K-12 educational institutions (like all social contexts, according to Bostrom et al.), are characterized by conditions that "are reproduced and appear normal, natural,and inevitable through the dissemination of dominant discourses and beliefs," (p. 7). Institutions are naturally conservative; they suppress conflict to preserve stability, and since conflict or a "crack" in the status quo is required for transformation, the institution that succeeds at suppressing conflict will reject new ways of doing things. Bostrom et al. report "public administration research shows that many public organizations may be characterized as anxious and careful in their approach to change and thus more often opt for the "safer choice" based on previous experiences," (2018, p. 5). Thus, educational institutions resist transformative education for sustainability because they resist change, both to their own operations and to the social context within which they are situated.

Intuitively, we might cite cost as a key barrier to implementing EfS, but in fact many of the changes needed, even when it comes to campuses, do not add cost compared to current practices, especially when lifetime operations costs are figured into the analysis. Hargreaves's (2008) review of education for sustainability (EfS) programs around the world found common pitfalls preventing wide-scale implementation of EfS, none of which involve budget:

- Time constraints: when EfS viewed as an add-on, (not integrated into broader school and district goals), burdened school staff wonder how to fit it in.
- Lack of priority at highest levels: district and even local government leadership commitment is needed to create infrastructure for support and accountability that lead to long-lived, deeply practiced EfS.
- Lack of teacher efficacy: without proper training in pedagogy and curriculum of EfS, without a unifying cultural vision of EfS radiating from charismatic leaders, and without appreciation of how teacher's actions will make a difference, teachers are not motivated to engage in EfS.

Many school districts in the U.S. have created positions specifically dedicated to implementing sustainability measures in campus facilities and operations and conserving resources; the contexts in which these positions exist can facilitate or hinder their effectiveness in working toward sustainability goals. Gutierrez and Metzger conducted a mixed-methods study with sustainability professionals in K-12 districts nationwide. They found that administrative support at the district level was more important than other factors, including budgetary control, as a predictor of self-reported efficacy. Strategic placement of sustainability professionals in the organizational chart also influences their effectiveness (Gutierrez & Metzger, 2015).

The study also found that sustainability professionals have made more progress greening the campus than the curriculum; sustainability professionals in K-12 districts cite curriculum & instruction as the area over which they have the least influence (Gutierrez & Metzger, 2015). "Based on the data gathered from survey respondents and interviewees, working within facilities and operations departments enables them to effectively impact the staff who manage buildings. However, when they do not have commitment from their district leaders, it becomes more difficult to expand programs that are not necessarily under the purview of facilities, such as purchasing and curriculum (Gutierrez & Metzger, 2015, p.15).

Gutierrez and Metzger, like Hargreaves, found that time constraints and conflicting mandates compete for school professionals' time and energy, meaning that administrators and staff will not focus on sustainability goals if district leadership does not demonstrate a strong commitment to those goals. Especially considering the siloed nature of most school districts' hierarchies (rigid divisions based on the factory model of education), sustainability professionals are at risk of languishing away with little influence over district culture, curriculum, and practices if

they lack the administrative support they need to engage school staff and community partners in meaningful action for sustainability (Gutierrez & Metzger, 2015).

*Factors promoting sustainable schools*

According to UNESCO's review of the Decade of Education for Sustainable Development, systemic change requires educators to rethink common understandings of a "good education" to include "relevance, purpose and values for sustainability," as well as the institutionalization of ESD, "beyond the efforts of individual leaders and champions," so that ESD efforts can continue when political climates and personnel change (Buckler & Creech, 2014, p. 32). This transformation of organizational culture is "multifaceted and complex but may also be the most effective way of translating new norms into everyday practice," (Schelly et al., 2010, p. 339).

School sustainability consultant Susan Santone explains that sustainability practices can only be effective and long-lived when they become "business as usual. This means a model for change that impacts policy, leadership, resource allocation, curriculum, instruction, assessment and community engagement," (Santone 2018). Santone identifies four "Big Ideas" found in common among districts that successfully implement sustainability plans, which encompass campus, curriculum, culture, and community:

- **Big Idea 1:** Sustainability is more than the environment, it comprises the 3 E's - environment, economy, equity
- **Big Idea 2:** The classroom is embedded in the campus and larger community. Community partners can make projects happen, such as renewable energy generation, policy changes, and workforce development.
- **Big Idea 3:** Sustainability must be tied to broader district goals. To ensure continual progress on sustainability goals, they must be integrated into goals for student achievement and staff development.
- **Big Idea 4:** Support and invest in teachers. Change is steered from the top-down, and driven from the bottom-up. Teachers need support in learning environmentally-based ways of doing things so that daily life is characterized by pro-environmental actions and learning that prepares students to take on "wicked problems."

A brief case study of successful transformation to education for sustainability in the Scarsdale, NY district illustrates generalizable principles. In the beginning, the district leader saw *An Inconvenient Truth,* which challenged his way of thinking, prompted reflection, and led to strong motivation to act on sustainability. The Superintendent selected a charismatic champion, retired educator Steve Frantz, to follow through on his vision. Next, that champion partnered with community organizations to conduct professional development and capacity building for teachers and school administrators to integrate sustainability across the curriculum. Teachers and school administrators then engaged students, community, and the school board, who all worked collaboratively to set greenhouse gas reduction targets. They created a positive feedback loop for environmental behaviors by instituting a shared savings program, in which schools received some of the money they saved through utility conservation efforts could then spend those funds on additional environmental projects. The whole district took a learning and iterative approach to making changes for sustainability, resulting in hyper-local sustainability knowledge among the whole community. As one example, the district's Director of Sustainability noted , "On pasta days, the students rinse the containers because the county requires that all commingles brought to their facility must be relatively clean" (Frantz, 2021).

Ultimately, in this story of transformation, a district leader (with power over the organizational chart) had a transformative experience. He empowered a charismatic champion (Frantz) to focus solely on transforming the district toward sustainability. Frantz started not with buildings, but with people, working with on-the-ground staff to integrate sustainability into existing structures. Momentum was created by successes, and a culture of continual improvement allows the Scarsdale district to continue to adapt to become more sustainable. Cultural transformation seems to have begun.

If every district superintendent viewed *An Inconvenient Truth*,[9] would we have universal K-12 education for sustainability in this country? Are superintendents such powerful change agents?

**Inertia and transformation in institutions**

> *The shared idea in the minds of society, the great big unstated assumptions — unstated because unnecessary to state; everyone already knows them — constitute that society's paradigm, or deepest set of beliefs about how the world works. There is a difference between nouns and verbs. Money measures something real and has real meaning (therefore people who are paid less are literally worth less). Growth is good. Nature is a stock of resources to be converted to human purposes. Evolution stopped with the emergence of Homo sapiens. One can "own" land. Those are just a few of the paradigmatic assumptions of our current culture, all of which have utterly dumfounded [sic]other cultures, who thought them not the least bit obvious.*
>
> - Donella Meadows, environmental scientist

*Systems theory and leverage points*

Acclaimed environmental scientist and systems theorist Donella Meadows identified twelve leverage points -- places in a system where huge system-wide changes can be produced by small shifts. In her essay, Meadows also posits that the leverage points most relevant to a specific system can be found by noticing where the attention flows in the system; the most important lever to move will be the one that agents of the status quo are pushing firmly in the direction the change agent *does not* want it to go (2021). I provide selected examples from the Seattle Public Schools system to illustrate her leverage points.

[9] Or saw the sky turned black and orange by wildfire smoke, or lost community members to extreme heat, or had their boots wet by the rising sea...

*Figure 4: Meadows's leverage points with selected examples from Seattle Public Schools*

| MEADOWS'S (2021) PLACES TO INTERVENE IN A SYSTEM (in increasing order of effectiveness) | EXAMPLE FROM SEATTLE PUBLIC SCHOOLS |
|---|---|
| 12. Constants, parameters, numbers (such as subsidies, taxes, standards). | Test score goals, performance evaluations for teachers |
| 11. The sizes of buffers and other stabilizing stocks, relative to their flows. | Adopted curricula, existing staff, existing buildings |
| 10. The structure of material stocks and flows | Student assignment plan, annual budget |
| 9. The lengths of delays, relative to the rate of system change. | The common delay is one school year, student outcomes are believed to reflect the education students received that same year. |
| 8. The strength of negative feedback loops, relative to the impacts they are trying to correct against. | Policies designed to solve racial disproportionality in academic achievement test scores |
| 7. The gain around driving positive feedback loops. | Reproduction of social injustices that drive racial disproportionality in academic achievement test scores |
| 6. The structure of information flows (who does and does not have access to information). | Self-explanatory |
| 5. The rules of the system (such as incentives, punishments, constraints). | Washington Administrative Code, policies, procedures, collective bargaining agreements |
| 4. The power to add, change, evolve, or self-organize system structure. | Autonomy at the classroom or school level |
| 3. The goals of the system. | Strategic Plan, test scores |
| 2. The mindset or paradigm out of which the system — its goals, structure, rules, delays, parameters — arises. | Schools are businesses, student test scores and graduation rates are the product |
| 1. The power to transcend paradigms | N/A this leverage point refers to spiritual enlightenment |

District leaders -- superintendents, school boards, and some high-level district staff -- control many of these leverage points and so, theoretically, control whether the system changes. Meadows makes the important distinction, “Changing players in the system is a low-level intervention, as long as the players fit into the same old system. The exception to that rule is at the top, where a single player can have the power to change the system’s goal,” (2021).

She also provides advice paraphrased from Thomas Kuhn for pressing on leverage point #2, the system’s paradigm. To change a paradigm:

- Keep pointing at the anomalies and failures in the old paradigm
- Keep coming loudly & with assurance from the new paradigm
- Insert people with the new paradigm in places of visibility and power
- Ignore reactionaries, work with change agents and the vast middle ground of the open-minded
(Meadows, 2021)

*District politics and district leaders*

Strong district leadership and administrative support at the district level often has been cited as a necessary precondition to the creation of sustainability culture and the implementation of sustainability action plans in K-12 districts (Barr et al., 2014; Gutierrez & Metzger, 2015; Hargreaves, 2008; Santone, 2018; Schelly et al., 2010).

Belief in the power of superintendents to transform education has been supported by private philanthropy. The Broad Foundation has pursued a strategy of education reform via the goal of propelling graduates of the Broad Superintendents Academy to assume leadership of 25 of the 75 largest school districts in the nation; as of 2014 it had fallen just short of its goal, with Broad alums occupying top or high-level leadership positions in 21 of the largest school districts in the U.S. (Chingos, 2014).

Research into the influence of the superintendent on district outcomes has yielded mixed results. Waters and Marzano's 2006 meta-analysis of 27 studies that examined relationships between district leadership and student academic outcomes found five leadership actions to be significantly correlated with improved outcomes, all pertaining to setting aligned goals (Washington State School Directors Association, n.d.). Note that goal-setting is a powerful leverage point in Meadow's theoretical framework.

On the other hand, in the Brookings analysis, tellingly titled "School superintendents: Vital or irrelevant?" superintendents were found to account for just 0.3% of difference in student test scores, and exceptionally effective superintendents could not reliably be identified by the data. On the other hand, districts account for 1.7% of the variance (Chingos et al., 2014). The study's authors conclude, "Our finding that districts account for much more variance in student achievement than superintendents was unexpected and suggests that superintendents are, at least in part, imperfect reflectors of the civic values, investments, and supports of the school districts in which they serve," (p. 13). Echoing Meadows's observation that "changing players in the system is a low-level intervention," Chingos et al. advise, "in the end, it is the system that promotes or hinders student achievement. Superintendents are largely indistinguishable," ( 1).

Despite the continuity of outcomes preceding and following a superintendent's tenure,the superintendent is always under threat of replacement by the school board as a means of effecting change. The dissatisfaction theory of democracy posits that urban superintendents, in particular, must be involved in change efforts or be replaced. Beliefs that a superintendent can "turn a district around" may be based on an outdated conception of the role.

Grogan's post-modern, feminist inquiry into the role of the superintendent found the role of the superintendency has shifted from one of moral leadership to one of political career-making

(Grogan, 2000). The superintendent is still popularly viewed as an agent of change, one who works for a better society tomorrow through better schools today. However, as Grogan noted and consistent with the findings of Chingos et al., previous reform strategies (including outcomes- and evidence-based education and business models of reform), have had little sustained success.

Grogan also noted that, due to the ongoing churn of superintendents through districts (according to Chingos et al., the average tenure is 3-4 years), they will not remain in a locality long enough to manifest the vision that got them selected for the job, and thus there is a force more powerful than the superintendent shaping districts' culture, mission, and vision. Namely, "The discourse of educational leadership that informs school boards and consultants of what to look for in a potential superintendent is a force more powerful than the hopes or wishes of a superintendent. A community's expectations for what a superintendent must accomplish and how he or she should accomplish it exert a tremendous influence over the school leader," (Grogan, 2000, p. 134).

Thus, while superintendents theoretically hold several of Meadows's levers, they are motivated to move them in the direction that will please the school board and the community, in order to preserve their tenure which is under constant threat.

School boards comprise at least some part of the "district characteristics" that Chingos et al. found to influence student outcomes more powerfully than superintendents. Boards share the goal-setting and rule-making power of the superintendent, and also respond to political climates and community desires. The Washington State School Directors Association (WSSDA, the professional association of School Board Directors, which also produces model policy), views the proper role of the School Board as setting aligned goals for the district and protecting those goals from competing, detracting goals. WSSDA conceptualizes the natural unifying goal of school districts as raising student test scores. However, this is not the only unifying goal a district can have. Schools could

also be dedicated to protecting their students' futures by finding "solutions to continued unsustainability and surpassed planetary boundaries [that] require not only scientific and technological advances but also profound social and cultural change" (Bostrom, et al. 2018).

**Returning to place**

Washington state is often cited as an innovator in environmental education, and it is one of just a few states to have formal curriculum and teacher preparation standards that address sustainability (Feinstein, 2009). Washington state standards adopted in 2008 mandate that all teachers "prepare [k-12] students to be responsible citizens for an environmentally sustainable, globally interconnected and diverse society, (Feinstein, 2009, p. 21). In Seattle Public Schools (SPS), these standards are being implemented only in isolated cases and in the face of a district environment that is hostile to environmental and sustainability standards.

At Emerson Elementary in Southeast Seattle in the 2019-20 school year, over half of families experienced food insecurity and relied on weekly groceries from the food bank. These are families of color, immigrant families, and often living in substandard housing that, on visual inspection, looks unlikely to bear up to flooding or severe storms. One family was without electricity for weeks, and living in a mold-infested home, due to the negligence of their landlord. These are the students who SPS refers to as "furthest from educational justice," and whom SPS has promised to prioritize (*Seattle Excellence*, 2019).

Knowing that our families face food insecurity, creating a project to grow organic food to share with families would be a stellar example of education for sustainability. When the UN championed education for sustainable development, it was motivated by the understanding that poverty and environmental degradation can be (must be) solved in tandem, and that schools as institutions are perfectly positioned to implement these co-solutions. SPS has a social work

response to the problems of survival our students and families face. However, if the district took an education for sustainability approach, students and families could be empowered through their schools to solve the problems themselves, while also restoring ecosystems.

If, as Grogan argued (2000, p. 133) we need a new superintendent for the 21st century, one who is "prepared to change practices and policies that continue to disadvantage children in poverty, children of color, and other children who are outside the mainstream," and to do this by paying caring attention to communities and local contexts, then education for sustainable development offers the most comprehensive framework for carrying out that change.

**Summary of Key Findings from Literature Review**

- Education has an important role to play in the cultural, economic, and technological transformations that must take place for humanity to survive on this planet.
- The teaching methods that promote those transformations benefit students' academic, cognitive, physical, and social-emotional development, and also benefit the broader school community.
- Sustainable school campuses are an integral part of education for sustainability, and they can also help municipalities meet their goals for climate change mitigation and adaptation.
- Factors that have been found to promote education for sustainability include: alignment of goals, collaboration with the whole school community (teachers, students, custodians, nutrition services staff, and more), robust staffing strategically deployed throughout the organizational chart, and a supportive state & local policy environment.
- Factors that have been found to impede education for sustainability include: time constraints, lack of priority for sustainability at the highest levels of leadership, lack of teacher efficacy ("Even if I knew what to do, it doesn't matter whether I do it"), siloing of sustainability in facilities and operations, and tendencies of institutional systems to resist change.
- Systems theory offers leverage points where small changes can yield big differences, including flow of communication, rule-making, goal-setting, and the paradigm that underlies the whole system.
- The Superintendent, School Board, and political climate of the community influence one another and influence student outcomes.

# METHODOLOGY

## Research design

This qualitative case study uses robust document analysis, semi-structured interviews, and an assessment tool to describe the case of sustainability and climate action within Seattle Public Schools (SPS) as its main case. In addition to describing the overall level of action, the study seeks to identify systems characteristics that may support or inhibit successful climate and sustainability action.

The study also includes two limited comparison cases. Racial equity action in SPS is examined through document analysis, current performance is described with an emphasis on elements similar to or different from the main case; systems characteristics that support or inhibit that action are identified. The second limited comparison case examines climate and sustainability action in San Francisco Unified School District (SFUSD), relying on a more limited document analysis and a smaller set of semi-structured interviews to describe SFUSD's current level of performance only in those areas identified as marked strengths or weaknesses in the SPS climate & sustainability case.

Informational interviews and literature review indicated that district leadership, communication flows, and staffing considerations would likely be relevant systems characteristics to consider. Although these themes were identified as potentially important from the outset, the main study was open-ended and exploratory.

The two SPS case studies were conducted semi-concurrently, with the bulk of the climate and sustainability case completed before the racial equity case began. The SFUSD case was completed after the two SPS cases, except that the SFUSD interviews took place during the data

collection for the SPS cases. In general, the cases informed and influenced each other. The scopes of the comparison studies were defined by findings of the main study.

**Case selection and characteristics**

Climate and sustainability action in Seattle Public Schools was selected as the main case based on the availability of key informants, the known presence of at least some climate and sustainability action, and the size (and therefore potential impact) of the district. It was also selected because the researcher lives in the community and works in SPS and would like to advance climate and sustainability action in the District.

The pro-environmental political climate within and surrounding the district is salient to this case. Failures to implement climate and sustainability action in a left-leaning community with a reputation for pro-environmental attitudes, in a state with a governor whose presidential candidacy was based on climate action, should illuminate difficulties in implementing climate and sustainability action in best-case scenarios.

Racial equity action in Seattle Public Schools was selected as a comparison case while conducting the document analysis for the climate and sustainability case. Transformative education for sustainability addresses both racial equity and climate & sustainability; viewing how these two interconnected concepts have been separated and differentially implemented should yield important insights into systems characteristics that promote or inhibit transformation. Environmental justice is a key component of racial equity *and* education for sustainability, although it is not addressed as such in SPS. The District's strong stated commitment to and efforts to enact racial equity highlight systems characteristics relevant to climate and sustainability action.

Climate and sustainability action in SFUSD was selected as a comparison case because of availability of at least one key informant, and similarities to SPS in terms of size, stated

commitment to racial equity, and position within a left-leaning community characterized by gross wealth inequality. Informational interviews also suggested that San Francisco is often viewed as a rival to Seattle, which could add to the salience of study findings for motivating action in SPS, a key purpose of the study.

## Methods

### *Role of the researcher*

In this study, the role of the researcher is highly relevant first and foremost because as a community member in Seattle and employee of SPS, my motive for conducting this research is to understand how to best advance climate and sustainability action in the District. My role as an SPS educator has also been invaluable for gaining access to sites and individuals, and for interpreting results through the lens of practical application to SPS. I have taught in SPS for 15 years. My administrator and a director working in the central office introduced me to key informants in SPS for my initial informational interviews. These resource conservation professionals in SPS introduced me to their networks, including counterparts in San Francisco, which helped to clarify relevant themes for the assessment tool and to focus the analysis on the role of leadership. Being an educator aided my credibility with these new contacts.

As a long-time teacher who has participated in a variety of teams and change initiatives at the school and district level, I am familiar with some types of infrastructure for accountability and support that drive action at schools, as well as the mechanisms by which elements of the strategic plan get pushed out from top levels of administration to the classroom. I am also familiar with the discrepancy between facts on the ground and facts on paper in terms of climate and sustainability action. I rely on this knowledge during all phases of the project, to formulate interview questions and interpret data.

*Informational interviews*

The first phase of the study was a round of semi-structured interviews with district and community professionals with knowledge of climate and sustainability action within Seattle Public Schools (SPS) or other K-12 districts. This phase relied on the researcher's personal networks as a veteran educator in SPS for first contacts, and subsequently on snowball sampling to interview a total of nine subjects, including four Resource Conservation Specialists, four community-based organization representatives, and an administrator. During this phase, a school board resolution regarding clean energy was passed. I attended the school board meeting and took note of several of the speakers and requested interviews with them, ultimately speaking with a school board director, a climate education subject matter expert, and two SPS educators identified from the Board meeting. All of these initial subjects were strongly in favor of increasing climate and sustainability action in SPS.

Open-ended informational interview protocols (Appendix A) were developed for different roles: educator, administrator, sustainability professional, school board director, or community-based organization representative. Interviews were recorded via verbatim notes. The purpose of these background interviews was to understand at a high level the degree to which climate and sustainability action is currently implemented in SPS, and to understand what kind of research project might serve to advance climate and sustainability action. Snowball sampling resulted in connections to professionals in other districts, who I spoke with to get a broad picture of climate and sustainability in their district. These sustainability professionals, while they may be biased in terms of their strong support for environmental action, are the best sources of information about district-wide climate and sustainability action. From these informational interviews, key themes emerged which informed the focus of the case study.  Several of the subjects from the informational

interviews (School Board director, community-based organization representative, and Resource Conservation Specialists) were interviewed again after the documentary analysis; details on the methods used for the second round of interviews are described in the Data Sources section on page 53 of this report.

*Assessment tool*

An assessment tool (Appendix B) was adapted from the Sustainable Jersey for Schools New Jersey Sustainability Baseline Assessment Sustainability Wellness Check (NJSBA) and the Cloud Institute's Education for Sustainability Strengths Assessment (EfS SA). First, any item on the assessments where "District" was identified as the scope for the item was included. Items that were not directly related to environmental sustainability (eg. items referring to physical education, format of the breakfast program, etc.) were omitted. Additional items were created to address themes that arose in informational interviews that were not included in the source assessments. Each item on the assessment tool has a 6-point response scale ranging from 0 = not addressed, 1= recommended/considered, 2 = stated commitment, 3 = articulated plan (identified goals and strategies), 4 = implemented action, and 5 = implemented and monitored over time, with space for additional comments.

**Data sources: Seattle Public Schools**

This case study relies on document analysis and semi-structured interviews. For the main case, document analysis was used to complete as much of the assessment and describe the case as thoroughly as possible, with unanswerable or uncertain questions flagged for follow-up in interviews with informants. The starting year for the review was 2017, as the Trump administration's withdrawal from the Paris Accords in that year spurred many cities to take more

aggressive climate action. However, earlier Seattle Schools documents and City of Seattle plans were also included in the review if they were referenced in the later sample.

*Document analysis*

Document analysis began with the November, 2020 report prepared by McLennan Design, "Seattle Public Schools: Sustainability Vision, Goals and Strategy." Policies and procedures named in the document were reviewed. The Seattle Public Schools website was then mined for information relevant to the assessment tool, systems characteristics, and additional relevant sources. A broad net was cast, including any webpage that might include language to demonstrate SPS climate and sustainability action.

Minutes from the Seattle Schools Board of Directors Operations Committee and Curriculum & Instruction Committee for the years 2016/2017 through 2020/2021 were analyzed using an even broader net; all minutes were read and language relevant to themes from the assessment tool or background interviews was captured. Additionally, for agenda items with a strong connection to education for sustainability (capital projects, building maintenance, science and social studies curriculum), the agenda item was captured whether or not the minutes indicated discussion of sustainability topics (for example, the science curriculum updates rarely show sustainability language, but they were logged with the note "no sustainability language").

While reviewing the minutes, information relevant to racial equity action was also captured, including any discussion of the primary racial equity policy, the racial equity tool, or racial equity questions or concerns raised by Directors or staff.

All sustainability-related School Board policies or resolutions, superintendent procedures, and school district reports referenced in the minutes were read and analyzed to complete the assessment tool, describe the case, and reveal themes for systems characteristics that promote or

inhibit climate and sustainability action. The thread was pulled in the same way for racial equity-related documents.

Continuous school improvement plans (CSIPs) for 2020-21 were searched for eight terms related to education for sustainability: sustain, environmental, place-based, 21st century, conserv, steward, project, and green. Any CSIP that contained one of those words was read more carefully for evidence of education for sustainability in the CSIP.

To glean information regarding superintendent action and rhetoric, internet searches were conducted using the search terms Superintendent Juneau climate change; Superintendent Juneau sustainability; Superintendent Denise Juneau environmental; Superintendent Larry Nyland sustainability; Superintendent Larry Nyland Climate change. Because very few relevant sources were uncovered using these obvious, broad terms, more granular searches were not conducted.

For the racial equity case, the search terms Superintendent Juneau racial equity and Superintendent Larry Nyland were used. Relevant local news coverage was found, and embedded links to related news coverage were also followed. The African American Male Advisory Committee recommendations to Superintendent Nyland were also mentioned in a news article and found using internet search.

SPS webpages relevant to racial equity action were also reviewed to define certain characteristics of the case, such as staffing and follow through on stated commitments.

A complete index of documents used for the SPS climate and sustainability case is listed in Appendix E, and for the racial equity case in Appendix F.

*Semi-structured interviews*

Informational interviews conducted in the first phase were analyzed for information that could be used to complete the assessment tool and highlight systems characteristics that promote or inhibit change.

A second round of semi-structured interviews were conducted with two Resource Conservation Specialists, three educators, and a School Board Director. These interviews were used to verify or revise determinations recorded on the assessment tool, fill in missing information, and provide additional depth, nuance, and richness to the case study. The interviews were conducted via tele-conference, telephone, or in-person, and verbatim notes were taken.

No interviews were conducted specifically to research the racial equity case, but relevant information from the climate and sustainability interviews was included.

**Data sources: SFUSD**

*Document analysis*

Documents were sought out to discover SFUSD's current performance in the areas of climate and sustainability action where SPS was found to have marked strengths or marked weaknesses. This included the SFSD Carbon Reduction Plan and Owner Project Requirements, the carbon neutrality school board resolution, and web pages related to curriculum and instruction.

*Semi-structured interviews*

A follow-up interview was conducted with a resource conservation manager, a school administrator, and a former director of sustainability for SFUSD. Attempts were made to interview an environmental literacy curriculum specialist, but they were unsuccessful. Verbatim notes were taken during the interviews, which were conducted via tele-conference and phone.

**Analysis strategies**

Documentary evidence and the verbatim interview notes were analyzed in four ways: applying the assessment tool, constructing the story of change, describing select features of current performance, and identifying systems characteristics that promote or inhibit action.

For the main case only (climate and sustainability action in Seattle Public Schools), the District Climate & Sustainability Action Assessment (Appendix B) was completed first by documentary analysis, then from the interviews. Each document analyzed was indexed with a number, and the assessment items annotated with the number of the data source(s) used to arrive at the score. Items were scored on a 6-point scale where 0=not addressed, 1=recommended or considered, 2=stated commitment, 3=articulated plan (identified goals and strategies), 4=implemented action, and 5=implemented and monitored over time. Where no evidence was found of a practice for an assessment item following the analysis of 74 documents, interview notes, internet search for evidence of Superintendent rhetoric, and follow-up interviews, that item was scored a zero. Some items also were scored zero if the documentary evidence showed that policies in place were contrary to the practice described in the assessment item. The completed SPS assessment tool is linked in Appendix C, and the items and scores are listed as Appendix D.

When sources gave ambiguous evidence for scoring an item, follow-up interviews were used to clarify the correct score. Where sources gave conflicting evidence (e.g. sometimes this is implemented, sometimes it is not), the more generous score was awarded. The key question for the assessment tool, for which interviews were the illuminating source of information, is: What is the gap between what is written on paper and what is done day-to-day?

For both Seattle Public Schools cases (the main case of climate and sustainability action and the comparison case of racial equity action), any documents, including interview notes, that told

when or how a relevant action was initiated, codified, or first implemented were used to reconstruct a chronological story of change. Specific questions identified prior to the beginning of the study to be answered in the story of change include:

- Who initiated climate and sustainability action? Through what means?
- Through which process were changes codified (board resolution, strategic plan, operating procedure, labor agreement, etc.)?
- At what stage is this change: initiation, codification, implementation, or cultural norm?

For the comparison cases, documents and interview notes were analyzed to describe features of the case that showed similarities or contrast with the main case. Climate and sustainability action in SFUSD was analyzed only for the areas that were discussed as marked strengths or weaknesses in SPS. Racial equity action in SPS was analyzed in areas that reinforced themes from the main case, either through similar outcomes or differing outcomes. The main analysis question for analyzing select features of current performance in the comparison cases was:

- How is the current state of action in this case similar to or different from the state of climate & sustainability action in SPS?

The main case and both comparison cases were analyzed for systems characteristics that promote or impede action. I took note of initiatives that gained foothold and those that stalled, and of the specific practices and resources that seemed to promote or block action throughout the years of SPS documents analyzed. These were logged as notes throughout the document analysis, and further explored in follow-up interviews. Key questions that guided analysis included:

- What rhetoric and actions did the superintendent take to support the change toward climate and sustainability/ racial equity action?
- What indications are present that this action is a cultural norm?
- What culture-building actions were taken, and by whom?
- What salient differences are there in the actions that have become cultural norms and those that faded away or are the work of isolated champions?

### *Reporting results*

For the main case, I reported on the three strongest areas from the assessment tool, and three of the weakest areas that were also highly significant (they were identified as themes in interviews and/or they have significant potential impacts). Each strength and weakness is discussed in terms of:

- Current performance: describe the evidence that this item is a strength or a weakness
- Policy environment: What district and local policies influence this performance?
- District structures: What staffing considerations, rules, or flows of resources influence this performance?

For the comparison cases, I present:

- One current performance section describing elements that are related to strengths and weaknesses in the main case
- One analysis of the relevant policy
- One analysis of relevant structures

### *Recommended actions*

Based on my interpretation of the three cases, I recommend actions for different stakeholders to take to advance climate and sustainability action in SPS. These actions are selected because they are high-leverage or low-cost (cost understood broadly to encompass financial, temporal, and political capital). Actions are believed to be high-leverage if they could bring about systems characteristics similar to those believed to promote action, based on analysis of case study data. Recommended actions are related back to Meadows' leverage points.

### *Limitations*

This study has several limitations. First, like any case study, the relationships and themes found are particular to the cases included here and may not apply in districts with different

characteristics. Selection of different cases may have led to different findings. As mentioned, Seattle and San Francisco are situated within a left-leaning political climate. It is unlikely that districts in right-leaning communities will have the same stories of change, and this study does not address how climate and sustainability action can be facilitated in such settings.

Also, due to time limitations and districts' current preoccupation with reopening strategies for the 2021-22 school year as the COVID-19 pandemic wanes, interviews were held with fewer informants than would be ideal. Not only that, but data that would be reported via annual reports was missing due to the pandemic; this is especially relevant for the SPS racial equity case for which student outcome data was thin.

Despite these limitations, a case study design is the best suited to answer this research question. This is because school districts are too complex, dynamic, and idiosyncratic for narrower methods to capture. Only by using multiple data sources to get a picture of the district as a whole can one gain insight into how the different components work together to promote or inhibit climate and sustainability action.

My positionality as an educator in schools in SPS with no focus on climate or sustainability action could lead me to misinterpret the state of the district as a whole. In some cases, my experience may help to contextualize information and to see connections or contradictions. In other cases, it may lead me to misinterpret evidence. While follow-up interviews can counterbalance some of this error, it is inevitable that the interpretations here will be tinted by my experience. A superintendent, janitor, parent, student, or environmental scientist may view the case differently, as may a teacher in a school that stands out for its Green Team and innovative sustainability practices at the school level. This case only adds one voice to the conversation -- a conversation that is too

small and quiet considering the potential impact of school districts taking comprehensive climate and sustainability action.

# CLIMATE AND SUSTAINABILITY ACTION IN SEATTLE PUBLIC SCHOOLS

## A Parable

We sat in a comfortable classroom in a recently modernized, historic school building. Although we were on the second floor on a warm and sunny day, the room was kept cool by a breeze and partially drawn blinds. The lights were off, as the room was naturally lit from the skylights in the corridor and the unshaded parts of the windows. A twenty-year veteran teacher, Ms. E, met with me to talk about the innovative work she had done in 2015-2017 for which she had won an environmental education award. I learned of her work through the SPS Green Ribbon Schools nomination form where her name was listed, among other award-winning educators recognized for their work in some aspect of education for sustainability.

She told me of the exciting work she did with the second grade students: collaborating with naturalists to study the bog adjacent to their school, participating in an Ivy League university's citizen ornithologist project, traveling three times a year to a local organic farm… She described monthly family science nights in which more than half of the school's families, many of whom are living in poverty and do not speak English, traveled to a community park and participated in hands-on science activities alongside their children. And she told me how she taught the second grade social studies standards (all about community) by taking field trips to familiar places in the hyperlocal community, and novel places in the broader Seattle community, and documenting these travels on classroom and personal student maps.

And then she told me that her principal notified her that in the 2017-18 school year she was only allowed to take a maximum of two field trips, and they had to be directly connected to reading or math standards. When Ms. E asked for a rationale, she was told that her students weren't

spending enough “seat time in front of the adopted curriculum,” and that the principal was not convinced that her place-based, immersive educational  program would be successful in raising the students’ standardized test scores.

Ms. E advocated for her students by writing to the superintendent and to her principal’s supervisor, as well as speaking to the school board. The principal’s supervisor supported the principal’s decision. Her school board representative did not respond to her, but that same week did go to bat for another school (with a more organized PTA and a more middle class, whiter school community) who had been told by the fire department that teachers would have to remove string lights from their classroom because they violated fire code.

In the end, Ms. E stepped back from teaching and took a job as an instructional assistant at a different school. The award-winning program she had spearheaded ended with her departure.

By the way, Seattle Schools was awarded the Green Ribbon Schools certification.

Ms. E's story contains many key themes that surfaced in describing the current performance of climate and sustainability action in Seattle Public Schools:

*Figure 5: Key themes in SPS current climate and sustainability performance*

| Key Themes in Seattle Public Schools' Current Climate & Sustainability Performance | | |
|---|---|---|
| Performance Descriptor | Domain | Theme |
| Strength | Buildings | A portfolio featuring many beautiful buildings, whether built from scratch at cutting-edge levels of sustainability, or intelligently modernized for efficiency |
| Strength | Aspirations | Innovative teachers and passionate sustainability advocates taking remarkable action |
| Weakness | Curriculum orthodoxy | Radical adherence to adopted curriculum and misunderstanding of teaching and learning as the input of instructional materials for the output of test scores |
| Weakness | Lack of top-level district support | No symbolic or structural support at the district level for education for sustainability, despite Washington's state mandate to teach environmental and sustainability standards |
| Weakness | Inequity | Unequal opportunities between schools based on wealth & political power of parent community |
| Weakness | Implementation gap | A gap between on-paper performance and on-the-ground performance |

When it comes to climate and sustainability action, Seattle does many things well; many are working hard to reduce SPS's carbon footprint and to teach students for the future. But we have a long way to go to institutionalize even the most basic principles of sustainability beyond green buildings. Applying the District Climate and Sustainability Action Assessment to documentary evidence and interview notes revealed marked strengths and weaknesses in SPS's climate and sustainability action.

## Assessment Results

Nineteen out of 55 items on the District Climate and Sustainability Action Assessment were scored at level 0 – not addressed/no evidence. Another eight items were scored at Level 1, meaning the action had been recommended or discussed, but not codified or implemented. Another 14 actions are Level 2, meaning they have been named in resolutions, policies, or procedures, or other aspirational document, and two additional items were scored Level 3 because fully articulated plans were found; no evidence of implementation was found for these 16 assessment items. Evidence was found that seven actions on the assessment were implemented, and five more are implemented and regularly monitored. This means Seattle Schools currently has no intention to undertake about half of the actions on the assessment, has said it will do about 1/3 of actions, but does not seem to be doing them, and is implementing about 1/5 of listed actions.

The items for which SPS scored Level 4 or 5 are displayed in Figure 6. Items scored Levels 0-3 are too numerous to display here, but the completed Assessment tool, including notes and index of sources,  is located at Appendix C, and a list of items and scores is in Appendix C.

*Figure 6: Seattle Public Schools' highest scoring items from the District Climate & Sustainability Action Assessment*

| Implemented Actions (Level 4) | Implemented and Monitored Actions (Level 5) |
|---|---|
| The District actively supports the establishment and operation of school/community gardens on school grounds.<br><br>The District maintains green infrastructure such as green roofs, rain gardens, cisterns, tree canopy, etc. on (some of) its campuses.<br><br>The District actively pursues outside funding partners and leverages available incentive programs in the private and public sectors to ensure sufficient funding for environmental goals and mandates.<br><br>The District serves locally sourced foods on a daily basis and provides complementary educational activities to students that emphasize food, farming, and nutrition.<br><br>The District develops and implements projects that showcase approaches to sustainability not otherwise listed on this assessment<br><br>The District is implementing a plan to increase its use of renewable energy. | The Superintendent has adopted procedures on energy conservation, which are implemented throughout the District.<br><br>The District monitors its utility use and takes action to conserve resources.<br><br>The District has a plan for waste reduction, including conducting regular waste audits.<br><br>District facilities are designed, built, retrofitted, and operated to meet third-party standards for sustainability.<br><br>The District upgrades the efficiency of its aged school buildings on an ongoing basis, according to an intentional plan. |

## Strengths

Document review and interviews revealed that Seattle Public Schools' greatest strengths are in its buildings (new construction and modernization of aged buildings), utilities conservation, and recent commitment to decarbonize Seattle Schools. These areas are governed by school board resolutions & policy and superintendent procedure and supported by city and state policies and funding. Human resources with key expertise and dispositions are dedicated to carrying out these functions, and systems such as regular meetings and reporting requirements support the ongoing implementation of these efforts.

**New construction**

> *We sit in on design calls for every new school: Kimball, Viewlands, Northgate, Rainier Beach, Lincoln Phase II, Van Asselt addition, we're in design calls with capital leaders, with very progressive architects willing to work with us to push the envelope on sustainability goals.*
>
> – Resource Conservation Specialist

*Overview*

Seattle Schools builds highly efficient school buildings with cutting-edge features that not only conserve resources but also provide educational opportunities. This work is supported by local and state policies and earmarked funding, and by an oversight committee structure that allows for industry experts not employed by the district to monitor and advise on capital projects. The District could do better by using more rigorous standards requiring regenerative (not just sustainable) design, adopting procedures that build lifetime savings of green design into cost-benefit analyses, connecting buildings to teaching & learning, and connecting capital projects to green workforce development for SPS students.

*Current level of performance*

The newest buildings in Seattle's portfolio operate almost twice as efficiently as the Washington average for school buildings, having energy use intensity (EUI) in the 20s as opposed to an average of 40 (Building Excellence/Buildings Technology and Academics Capital Programs (BEX/BTA) Oversight Committee Meeting Minutes, January 2019). Ten out of 104 schools have solar panels, and twelve have geothermal heat pumps. LED lights and digital lighting controls, passive design, and choice of building materials also contribute to school buildings' efficiency. According to a Resource Conservation Specialist, "We are designing these amazing, energy efficient buildings that are some of the highest operating buildings in the country."

During the period included in this study, the design process for a replacement building for Kimball elementary school, a 50-year old building in one of Seattle's most racially and culturally diverse neighborhoods, was underway and detailed information was captured in meeting minutes. When the architects in charge of the project presented their designs to the Oversight Committee, industry experts on the committee had questions and suggestions to further increase the sustainability of the design:

> Mr. Love presented the proposed methods for incorporating sustainability into the new building.
> a. He reviewed passive design strategies such as classroom orientation for daylight, shading from trees, and window glazing to allow natural light, and ventilation methods.
> b. He conveyed active strategies such as a ground source well field, decoupling ventilation from heating to use outside air, and establishing the southern portion of the building as flat area for future UV arrays.
> 8. Mr. Srdar highlighted the philosophical underpinning of applying neuroscience with design. He discussed the benefits of access to nature for both students and teachers.
> 9. SPS Senior Project Manager Eric Becker asked the team to discuss the passive Trombe Wall. Mr. Love described a double-skinned glazing system and Trombe Wall to support ventilation.
> 10. Daniel Williams asked if there were opportunities for fully passive operation of the air through the facility.
> (BEX/BTA Oversight Committee Meeting Minutes, June 2020).

Passive design strategies were also discussed for the design of Northgate and Viewlands Elementary schools, which were in the initial phases during early 2020, including placement of stairwells to facilitate ventilation, air-tight building envelope, window materials, and building placement (BEX/BTA Oversight Committee Meeting Minutes, January 2020).

Initial plans for the replacement building for Rainier Beach High School included planning for embodied carbon, studying the feasibility of daylighting, addressing stormwater (important because RBHS is at high risk of flooding according to FloodFactor), and installing a ground source heat loop, as well as incorporating passive design filters. McLennan Design, an international leader in regenerative building design and the creator of the Living Building Challenge certification

program for climate-positive[10] and biophilic facilities, has been engaged as a consultant on this design project.

Figure 7 summarizes the conservation measures built into capital projects that were reported to the Board in 2018-19. The figure shows that some design features, such as low-flow fixtures and lighting controls, are built into every project, while other features (notably HVAC systems) are selected on a site-specific basis. This list of projects coupled with the Oversight Committee Minutes paint the picture of sustained, consistent effort to make new construction in SPS as sustainable as possible.

[10] Climate positive and carbon negative are two ways of saying the same thing – the building draws down carbon from the atmosphere in its construction and/or operation.

*Figure 7: Conservation of natural resources in capital projects, 2018-19*

| Conservation of Natural Resources in Capital Projects, 2018-19[11] | | |
|---|---|---|
| Report Year | School | Conservation Measures |
| 2018-19 | Olympic Hills | Ground source water to air heat pump HVAC & kitchen refrigeration systems<br>Time-controlled electric outlets<br>Occupancy-sensing HVAC & lighting controls<br>Enhanced thermal envelope<br>Energy Star appliances and office equipment<br>Low-flow fixtures, Smart irrigation system<br>Energy monitoring & metering controls<br>Dedicated composting & recycling stations |
| 2018-19 | Webster | Air to water source heat pumps & high-efficiency gas boilers<br>Time-controlled electric outlets<br>Occupancy-sensing HVAC & lighting controls<br>Enhanced thermal envelope<br>Energy Star appliances and office equipment<br>Low-flow fixtures, Smart irrigation system<br>Energy monitoring & metering controls<br>Dedicated composting & recycling stations |
| 2018-19 | Meany | High-efficiency gas boilers<br>Time-controlled electric outlets<br>Occupancy-sensing HVAC & lighting controls<br>Enhanced thermal envelope<br>Energy Star appliances and office equipment<br>Low-flow fixtures, Smart irrigation system<br>Energy monitoring & metering controls<br>Dedicated composting & recycling stations |
| 2018-19 | Loyal Heights | Geothermal wells serving water to water heat pumps<br>Minimum ventilation, dedicated outside air HVAC with heat recovery in high-volume zones<br>Natural ventilation “stack effect” relief air in common areas<br>Occupant-controlled ceiling fans<br>Time-controlled electric outlets<br>Occupancy-sensing HVAC & lighting controls<br>Enhanced thermal envelope<br>Energy Star appliances and office equipment<br>Low-flow fixtures, Smart irrigation system<br>Energy monitoring & metering controls<br>Dedicated composting & recycling stations |
| 2018-19 | E.C. Hughes | High-efficient gas boilers<br>Dedicated outdoor air system, minimum ventilation with fin pipe perimeter heating<br>Occupant-controlled ceiling fans<br>Time-controlled electric outlets<br>Occupancy-sensing HVAC & lighting controls<br>Enhanced thermal envelope<br>Energy Star appliances and office equipment<br>Low-flow fixtures, Smart irrigation system<br>Energy monitoring & metering controls<br>Dedicated composting & recycling stations |

[11] Annual Reports of Resource Conservation Measures Employed in Capital Projects, 2018-19. This report was not available for any other years considered in the case study.

In addition to sustainable design features, school designs under review between January 2017 and June 2021 incorporated equity considerations. For example, about 25% of Northgate Elementary's student population is homeless, thus the building design included features such as a family room and space for social service agencies who partner with the school, as well as a focus on creating an overall welcoming environment. For the new Rainier Beach high school building, a school that has a plurality of Black students and a strong connection to the Southend's Black community, Moody Nolan, the largest Black-owned architecture firm in the U.S., was chosen to lead the project. Additionally, school design advisory teams (SDAT) were created in each case that included family and community members, and extra care and effort was taken to reach out to underrepresented folks to include them on the SDATs (BEX/BTA Oversight Committee Meeting Minutes, January 2020).

It is important to note that capital projects budgets consistently operate in the black,[12] and demonstrably lower operations costs through sustainable design. Project funds, which originate from levies approved by city voters, are carefully tracked and overseen to make sure they are being spent as intended; if the public loses confidence in the effectiveness of these funds, future levies are unlikely to be approved. District staff, school board members, and members of the BEX/BTA Capital Programs Oversight Committee have all remarked on multiple occasions that the achievement of sustainability goals via BEX/BTA funds, along with efficient operation that saves lifetime costs, are strong marketing points for future levies. For example, a Committee member's comments captured in the October 2018 minutes: "Daniel Williams suggested that demonstrating that schools are more efficient, and saving money, is a strong talking point. Flip Herndon agreed,

[12] Underspend from BEX II was combined with the Seattle City Light grant to fund installation of solar panels at six schools.

explaining that the district can show that it has delivered the projects promised in BTA III and BEX IV."

While SPS shows strong performance in green design and building, the District has also stated aspirations for continued improvement in this area. "Seattle Public Schools: Sustainability Vision, Goals and Strategy," (McClennan, 2020) challenges Seattle Schools to move beyond sustainable design to regenerative design. According to the report authors, the Washington Sustainable Schools Protocol is equivalent to LEED Gold certification status, which is moving toward neutrality but does not necessarily yield environmental benefits. A more ambitious certification program is the Living Building Challenge administered by the Living Futures Institute, which prescribes buildings with regenerative, positive environmental impact.

The Green Resolution (2012/13) calls specifically for two elementary schools, one K-8, and one middle school to be built to Living Building Challenge standards. This has not yet occurred; a new high school is being built with the Living Building Challenge criteria in mind, although due to limiting factors it will not meet the certification standard. According to a Resource Conservation Specialist, "not even one school has been built to the LBC standards, as directed by the Green Resolution, but we are at least moving in that direction. I think the limiting factor exercise will be illuminating for many people to give everyone a better understanding of why this change is so challenging." (personal communication with Resource Conservation Specialists, July 26, 2021).

Another key area in which educators, district staff, and community members would like to see improvement is the integration of SPS's green buildings into teaching and learning. An educator stated:

> The District really cares about the building being set up a certain way, but it didn't seem like there was much thought about how to [bring] sustainability into the classroom. … Hazel-Wolf [K-8 STEM School] has a hanging indoor garden space, but there is no connection between instruction and that space. Teachers have not

> received any training about what it is or how it can be educational. The School Board has the best intentions, but because board members are not educators, there hasn't been as much thought about how to translate building updates into instruction. There hasn't been any communication about how to use it. At Hazel-Wolf teachers didn't really use the space

A Resource Conservation Manager commented, “I see a gap between Capital and the Classroom,” and a representative from a community based organization cited an attitude from the District that, “"We are in a green building, so we're done!" The lack of climate and sustainability action in curriculum came up in other contexts as well, and will be a main focus of this report.

*Policy environment*

Seattle Public Schools’ strong performance in the area of new buildings is supported by robust, aligned policy at the district, state, and city levels. First, the School Board’s Green Resolution (Resolution No. 2012/13-12) orders that every major capital project “meets high environmental standards that reduce operating costs,” by incorporating “passive design principles, low-footprint, flexible building systems, low-maintenance and non-toxic materials, water conservation and catchment.” The resolution also requires that each capital project begin with an intense collaborative design process, known as a charrette, to generate a range of sustainable design options. Green landscaping, including the selection of native and drought-resistant plants, is also mandated by the Green Resolution, as well as restoration of habitat and daylighting of streams, where it is “cost-effective” and feasible to do so. Efforts to comply with these portions of the resolution are evident throughout the minutes of the Operations and BEX/BTA Capital Programs Oversight Committees.

In September 2017, then-Superintendent Larry Nyland signed Superintendent Procedure 6810, which is the long-term resource conservation plan for the District. Most of the procedure defines operations,[13] but twelve items refer to new construction and remodels, including the responsibility to identify the maintenance and operation budget prior to construction,[14] to provide annual reports to the School Board on the conservation measures applied in capital projects, and to review the actual utility use vs. projected utility use of the new building one, two, and five years after construction.

In June 2020, the School Board reinforced commitment to sustainable design in major capital projects via the Facilities Planning and Capital Levy Planning policies, which state that "The Board strives to reduce district operating costs and carbon emissions by using designs that create conservation opportunities and minimize negative impacts on the environment, while considering the lifecycle costs of the projects," and that "Environmental impacts shall be minimized." These policies cross-reference other relevant policies: 6810, Natural Resources Conservation, and 6890, State Environmental Policy Act Compliance.

Resolution 2020/21-18 The Clean Energy Resolution, passed in February 2021, further states that all new construction from April 10, 2021 forward will "prioritize zero carbon energy sources," and calls for all buildings to be zero carbon by 2040.

State policies that support the sustainable design and construction of new Seattle Schools buildings include both mandates and sources of funding. The 2005 High-Performance Public Buildings law requires state funded facilities to be built green, specifically using passive design principles. The Washington Sustainable School Protocol also sets forth design criteria governing

[13] Including micro-level directives for turning off lights and unplugging appliances, temperature set-points, irrigation procedures, and so on.

[14] Which helps planning teams to estimate the lifetime savings of efficient building materials, mechanical, and electrical systems, especially those that may have greater up-front cost.

energy code, site selection, transportation, stormwater management, water, materials and waste, materials procurement, indoor environmental quality, electric lighting quality, and education & operations (WSSP, 2018). These criteria must be met in order for the District to access state funding including the State Construction Assistance Program (SCAP) and other grant programs.

City policies also support sustainable design and construction of new school buildings; Seattle's energy code is stricter than the State's, and the installation of solar panels at six schools was made possible by funding from Seattle City Light. Major capital projects are funded through two kinds of levies approved by city voters: Building Excellence (BEX) and Buildings, Technology, and Academics/Athletics (BTA) levies.[15]

*District structures*

The successful implementation of the Green Resolution and the sustainability provisions in the Facilities Planning and Capital Levy Planning policies is largely due to the highly functional BEX/BTA Capital Programs Oversight Committee. This committee is comprised of two School Board Directors and eleven community members who may be "architects, construction managers, attorneys, contractors, subcontractors, parents, and others as appropriate." The charge of the Committee is to "monitor the implementation of all approved projects and make recommendations for compliance with goals, priorities, scope, budget, schedule, revenue, and other significant factors," (Committee Charge: Building Excellence (BEX) and Buildings, Technology, and Academics (BTA) Capital Programs Oversight Committee, 2018). Top-level district administrators refer to the Committee as "a good group of individuals," who offer their professional expertise to advise the district on matters of cost and green projects (Operations Committee Minutes, March 2017).

[15]Initially, these funds had different purposes, but now they largely overlap and are administered together.

Review of the Committee's minutes reveals that this independent panel, which includes national leaders in sustainable architecture, is invaluable to maintaining a focus on sustainability and pushing the District to continually raise expectations for its building portfolio. The word "carbon" came up five times in the 56 meeting minutes (in the phrases carbon footprint, zero carbon, carbon sequestration, and embodied carbon), versus one time in 160 meeting minutes of the School Board Operations Committee, whose agenda items have considerable overlap with those of the Oversight Committee. This shows that the expertise and dispositions of the Oversight Committee members are very important in advancing sustainability goals in new construction.

Several conversations captured in the Oversight Committee's minutes include the belief that initial investments in sustainable design lower lifetime operations cost, in addition to providing the public goods of a reduced carbon footprint and conserved resources, and the aspiration to institutionalize this belief in accounting procedures. As a top-level district administrator said, "more efficient buildings mean less money out of operations for maintenance. Those funds can then be applied to curriculum and teachers," and the Director of Capital Projects & Planning stated he doesn't want to compromise on the quality of selected materials or systems in new construction because he wants to minimize impacts to the general fund in the lifetime of the building, and cited the contributions of the Committee members in achieving the gains in efficiency.

Thus, SPS's strong performance in sustainable design and construction of new buildings is supported by relevant District policy and procedures, state and city policies and funding opportunities, and time and human resources dedicated to the ongoing monitoring and advancement of sustainable design and construction.

On the other hand, relying on a volunteer committee to institutionalize this important work has its drawbacks. The BEX/BTA Oversight Committee is currently down four members, and the

remaining seven members have stayed on past the original tenure. Also, participation in volunteer committees is often inequitable. As a school board member stated, “They are still trying to fill the BEX/BTA Oversight Committee. ...Sadly, there are so many older white people in the environmental field. They are worried that it will be hard to get enough diversity. A lot of times, it is the same people sitting on every board.”

### Upgrades of aged buildings

*Overview*

SPS conducts scheduled maintenance and modernization of the older building in its portfolio, resulting in significant improvements to the energy efficiency of buildings. This process is supported by policies at the District and City level, and by human resources. The District could consider setting a more ambitious and strategic timetable for modernizing its aged buildings and working with the City’s landmarking process to remove restrictions that prevent efficiency upgrades in landmarked buildings.

*Current level of performance*

In SPS, “We have more old schools than new. We have a 20-year plan for renovations” (interview with School Board Director). In addition to new construction, BEX/BTA funding provides for modernization of aged buildings, and 89 out of 106 schools have been retrofitted for energy, water, and/or waste, according to McLennan Design’s 2020 report. The City’s building tune-up program requires buildings 50,000 sq ft or larger to be tuned up every five years, checking 10-15% of system components. SPS exceeds this standard by checking 100% of system components at the 5-year tune-up. Common upgrades performed when buildings are tuned up include converting to LED lights with digital controls, replacing existing HVAC system with

ground source heat pumps, installing more efficient windows and doors, and more efficient insulation.

The Clean Energy Resolution estimates a $1.3 billion price tag for completing the retrofits to achieve carbon neutrality. To implement the Clean Energy Resolution, SPS is contracting with a consultant whose job will include a technical review of SPS's building portfolio in order to determine the most effective stepwise plan for upgrading old buildings. This plan will also be informed by a task force including custodial staff, subject matter experts, and community members, who will help to highlight equity concerns in the implementation plan.

According to "Seattle Public Schools: Sustainability Vision, Goals and Strategy," (McLennan, 2020), Seattle could be not only carbon neutral but carbon negative (actively drawing down atmospheric carbon dioxide) by 2030 if the district doubled the rate at which it retrofits aged buildings and installs renewables.

*Policy environment*

The Guiding Principles created by the District to guide implementation of projects funded by the BTA V levy state include a clause on Environmental Sustainability and Climate Resilience, which states:

> As identified in Board-adopted climate crisis resolutions, focus on reducing the district's energy usage, greenhouse gas emissions, and the District's carbon footprint without limiting efforts to reduce to just buildings; prioritize and utilize green building methods that center environmental justice principles, including planning for solar options and geothermal, when replacing or expanding buildings, or repairing/updating existing buildings or building systems.

These actions are to support the goal that, "Students, their families, and educators will work and learn in school facilities that support their health, their environment, and their futures."

Resolution 2012/13-12 the Green Resolution also applies to remodels and modernizations that fall in the category of "major capital projects," and also specifically states that the District shall "apply its sustainable building criteria when making improvements and addressing maintenance backlogs in existing buildings." Resolution 2020/21-18 The Clean Energy Resolution, passed in February 2021, also states that all renovation from April 10, 2021 forward will "prioritize zero carbon energy sources."

As mentioned, Seattle's Building Tune-Up Ordinance requires all buildings 50,000 square feet or larger to be tuned up every 5 years. However, some City policies also have a negative impact on efforts to update old buildings: the minutes and informant interviews revealed many instances where a school building's landmarked status prevented updates to the buildings (such as more efficient windows) that would conserve resources. In my personal experience, the nascent garden club at our elementary school was not allowed to install a rain cistern because of the building's landmarked status.

*District structures*

The District employs four retro-commissioning agents to carry out the building tune-ups. The Director of Capital Projects & Planning reports on the tune-ups to the School Board Operations Committee, which formally approves them, and the BEX/BTA Oversight Committee monitors the upgrade projects if they are sizable enough to be brought before them. It is evident from the Operations Committee minutes, in which the Director of Capital Projects & Planning repeatedly explains the same forms, processes, and terms, that School Board Directors are not given any orientation or training to the basic principles of capital projects, and therefore Board approval is not a value-adding process.

**Utility conservation**

> *The building isn't just green -- it may have green features, but it is the way you use it that makes a difference. You could still be wasting all of the food -- you are technically sorting, but you are still generating hundreds of pounds of food waste.*
>
> – Community-Based Organization Representative

*Overview*

The District has a detailed plan for conservation set forth in Superintendent Procedure 6810SP Conservation of Natural Resources, adopted September 2017. Three Resource Conservation Specialists monitor utility usage and provide technical assistance, leadership, and (in some cases) grant-funding to schools to make changes to reduce their consumption. Student-led Green Teams often focus their work on utility conservation. The City of Seattle supports utility conservation in SPS through grants and city policies that promote resource conservation. Conservation efforts would be amplified if there was more focus from administrators and school staff and better inclusion of custodial staff in utility conservation goals and methods.

*Current level of performance*

The District monitors its utility use, takes action to conserve resources and has a plan for waste reduction, including conducting regular waste audits. Utility conservation work is led by "three Resource Conservation Specialists in the Facilities Operations Department. Their focus is to manage current utility expenses (electricity, natural gas, water/sewer, and solid waste) through low-cost/no-cost operating strategies" (Resource Conservation webpage). The District exceeded its target of 37 Energy Use Intensity (EUI) or less, reducing from an average EUI of 43 in 2010 to 36 in 2010. National average for K-12 schools is 48.5 (SPS Board passes clean energy resolution), and depending on climate variables, an EUI of 20 or less may be fulfilled entirely with on-site renewables generation (San Francisco Unified School District Carbon Reduction Plan, 2020).

The goal for water use is 75 gallons per student per month or less; SPS decreased its water use 7.5% between 2008 and 2016 by installing low-flow fixtures, installing synthetic turf, and minimizing irrigation. SPS also works with Seattle Public Utilities (SPU) on stormwater diversion projects; in 2020/21 PU provided $87,000 of grant funding for cistern and rainwater demonstration projects at ten schools. According to a Resource Conservation SPecialist:

> One of the things I am looking at is stormwater and surface water. A lot of people don't think of that as a utility, but when I look at our pie chart of where we spend money, last year $3.1 million on surface water, this year $3.4 million on surface water. It's a really hard ship to change the course of. I've been having conversations with people about what we can do to manage those fees.... It's a multi-prong approach and one of the prongs that helps with that is citerns, rain barrels, rain gardens (green schoolyards), there is a business case to it. It helps us manage the watershed better and be better stewards of the land we occupy, but it also creates a credit. We have these things all over the district.

The target for waste is four cubic feet per student per month or less; the District composts food waste and recycles a wide range of materials at every school in compliance with Seattle ordinances that prohibit food waste and recyclables from going to the landfill. Water-bottle filling stations have also been installed across the district. Many student-led Green Teams focus on waste reduction and implement changes such as durable trays and utensils in the cafeteria, desktop compost bins, and education campaigns. However, a community-based organization representative noted there can be push-back on these efforts:

> A common theme we come across is when youth are trying to do projects that change the recycling or compost program at the school, there might be pushback from the custodial staff. A Sustainability Director could help coordinate work between departments [to create] change that is also satisfactory to the custodial staff.

Composting paper towels is a specific example of difficulty in changing procedures in order to conserve resources. When School Board Director Lisa Rivera Smith was elected, one of her

goals was to compost paper towels in the bathrooms.This would seem like a simple goal that could be accomplished without controversy, but:

> Paper towels are compostable, but if they are sourced from a bathroom, you have to have a restroom composting agreement. The contract needs to be annual, initiated by the principal, and there need to be signs. We were using Cedar Grove's agreement, but it is based on business. A principal refused to sign. [A high school] composted paper towels renegade-style without an agreement. [Director of Operations] has said pilot schools might try it out.
>
> (interview with Resource Conservation Specialist)

Both a School Board Director and a CBO representative commented that they believe SPS is violating City code by putting paper towels in the landfill.

SPS has adopted standardized procedures for conserving resources, itemized in Superintendent Procedure 6810SP, Conservation of Natural Resources. Procedure 6810SP is a highly prescriptive document that specifies heating/cooling set points, lighting hours, and irrigation procedures, and bans the use of personal appliances (except for fans) in classrooms. The Procedure also directs school staff to minimize the use of paper copies, and charges building administrators with educating staff on resource conservation procedures and regularly sharing the school's utility usage data with the school community. The Procedure intends for building administrators to take responsibility for staff and student compliance with conservation procedures, with RCS monitoring progress and offering technical assistance to schools. According to interviews with educators, CBO staff, RCS, School Board Director, and administrator, as well as my own experience as an SPS educator in three different schools, it is not common practice for building administrators to promote or require resource conservation.

SPS formerly (through 2017-18) had a Shared Savings program in which schools received a portion of the money they were able to save on utilities; this money could be invested in further conservation efforts at the schools. In 2017-18, 83 out of 104 schools participated in the Shared

Savings program and a total of $47,400 was distributed to the schools (Utility Data webpage) According to a Resource Conservation Specialist:

> Shared Savings program funds (schools reduce their utility costs and get access to a pool of money based on their savings and can use the money for other sustainability related projects. Some focus on facilities, gardening supplies) -- principals' discretion for how to get used -- Some schools have thousands, others have a couple hundred…

The Resource Conservation Specialists (RCS) put the Shared Savings Program on hiatus, "The shared savings program was discontinued. It was inequitable because new schools automatically meet the targets. We want to go with a model like [San Francisco's] Earth Day Every Day."[16] They also stated, "Resource Conservation wants their own budget for grants, rebates, and incentives, we could use that money for more things," (interview with Resource Conservation Specialist).

The RCS have responsibilities well beyond working with schools to reduce utility use, "All things green or sustainable land in our laps. When it comes through, they say they want a lot of things without understanding who will do these things." They also create and maintain the Resource Conservation webpages, and routinely seek out and apply for grants to fund conservation initiatives. They say of their role, "What we are beholden to is our ability to save the District money on the utility budget," and, "None of us got into this line of work because we were passionate about saving money. But in our world, conservation and saving money go hand in hand." The ability to positively impact the SPS budget, both by reducing utility costs, and by locating grant funding, is a source of autonomy and power for the small, siloed Resource Conservation department. According to one RCS, "You can't argue with money. Money is a job creator. I'm looking [for funding for communities and schools to get projects done]," and "I work for Facilities & Operations and also

[16] This program is discussed in the SFUSD comparison case.

Capital -- have good relationships with people in both departments -- I can get funding and then say "oops!" I got money for this, now I guess we will have to do it." This is one route RCS have taken to advance climate and sustainability action in the absence of top-level support.

This lack of top-level support for resource conservation and the silo-ing of all sustainability efforts in the three-person Resource Conservation department limits the scope of conservation in SPS. As one Resource Conservation Specialist stated, "Our ability to have impact is limited to Facilities & Capital, not curriculum, transportation, or food services." Former RCS staff were censured when they tried to reach out directly via an all-staff email:

> There is a legacy of my predecessors in this role maybe towed the line too far and that has been a barrier for us. It's always a dance. The way we communicate. There was some incident several years ago where someone in my role [sent] out an email district-wide or to all principals, and maybe had a tone, but they got in trouble for that. 'You need to turn the lights off, not have space heaters, or mini-fridges.' We are still feeling the impact of that …

The RCS have limited opportunities to educate building occupants on conservation procedures and opportunities for increased conservation. They have 5-10 minutes to introduce themselves to building administrators at the annual School Leadership Institute and briefly discuss the services they can offer to schools. One of the RCS multiplies this opportunity by personally sorting waste at lunchtime during the Institute and informally educating administrators about waste reduction as they dispose of their lunch waste. The RCS also have a few minutes in front of custodial and grounds staff at their annual summit. The lack of contact between RCS and school-based staff is likely largely responsible for the failure of administrators to carry out the letter and spirit of 6810SP.

Resource Conservation staff and CBO staff who work with them believe conservation efforts would be greatly strengthened by top-down leadership, "If we had a superintendent that

would embrace this message, that would do a lot more to guide this work. Our team is limited by the silo we are in, but if we had top-down leadership we could do so much more," and "no one listens to 'those people in facilities.'" (interview with Resource Conservation Specialist). One suggestion that surfaced in multiple interviews was the creation of a Director of Sustainability position, "[The Resource Conservation] department is tucked in facilities and is focused on reduction in utilities, but a Sustainability Director could focus on all the ways sustainability can come into play, including curriculum, economics, and social -- all the elements that aren't just utilities -- elevate the work youth are already doing" (interview with Community-Based Organization representative). "The current superintendent has given no interest at all to this topic. The idea of a sustainability director came from our team. We want someone in a Director role. I don't believe we have the leadership to drive holistic sustainability across the district" (interview with Resource Conservation Specialist).

Despite the barriers to resource conservation efforts caused by the limited staff assigned to the job, the inadequate communication channels, the inequities between old and new buildings, and the lack of top-down leadership, SPS has lowered its consumption of energy and water and its waste production, and it continually monitors its utility data, making conservation of utilities an overall strength for the District.

*Policy environment*

The utilities conservation program is governed by Superintendent Procedure 6810SP Conservation of Natural Resources, Board Resolution 2012/13-12 the Green Resolution, Resolution 2020/21-18, Transitioning Seattle Public Schools to 100% Clean and Renewable Energy. As discussed in *Current performance*, many of these procedures are not adhered to throughout the district.

At the city level, Seattle Public Utilities (SPU) has a RainWise program that provides grant funding and technical assistance for green stormwater management, including rain gardens, cisterns, and depaving. The RCS work closely with SPU; as mentioned, they provided $87,000 of grant funding in 2020/21 for green stormwater infrastructure projects on school grounds. Seattle's Building Tune-Up ordinance also promotes utility conservation by requiring the district to assess its aged buildings every five years and carry out no- or low-cost solutions to improve efficiency.

In terms of waste management, the City of Seattle has prohibited recyclables in landfill containers since 2005, and food waste since 2015. A citywide ban on plastic straw and utensils was enacted in 2018. Water-bottle filling stations were funded by a $140,000 grant from the City of Seattle. These city policies facilitate SPS's waste diversion goals and establish composting and recycling as community norms.

*District structures*

There are inadequate structures to fully support utility conservation efforts. As a Resource Conservation Specialist said, "The level of priority that the district places on resource conservation and sustainability is proven by the fact that there are only 3 of us." These three people must not only monitor and reduce utility usage for 106 schools plus the district headquarters, but also to conduct internal and external communication campaigns and to implement "green" initiatives adopted by the School Board or Superintendent.

Furthermore, the isolation of the Resource Conservation staff in facilities, with no connective tissue or interdepartmental champion, limits their effectiveness, consistent with Gutierrez and Metzger's (2015) findings about the value of strategic placement in the organization chart.

**Clean Energy Resolution**

> *Two climate plans have gotten approved, that's a great first step. Actually follow through on the steps as outlined and commit to this in a way that isn't just for press coverage, but really to make changes. It's easy for these types of plans to end up where these things aren't really happening.*
>
> -- CBO representative

*Overview*

This exciting development in SPS calls for 100% carbon-free buildings and transportation by 2040 and includes soft provisions that could result in implementation of education for sustainability in schools across the District. However, structures, specifically human resources and funding, are lacking to ensure the implementation of this resolution. Political will to implement and follow-through will be required.

*Current performance*

In February 2021, SPS joined a handful of school districts throughout the nation that have committed to fossil-free buildings and transportation when the School Board unanimously passed Resolution 2020/21-18 Transitioning Seattle Public Schools to 100% Clean and Renewable Energy. The Resolution states that SPS will have 100% carbon-free electricity[17] in its buildings by January 2027, and will operate 100% fossil-fuels free, including all buildings and transportation, by 2040. Although these are the headlines of the resolution, it contains many other important provisions, "This is a pinnacle because it is going to revolutionize the District and it is going to take 20 years," said a School Board Member.

[17] Seattle City Light's power mix contains no natural gas or coal, but during times of high load they may purchase electricity generated by gas or coal to augment supply. Seattle City Light states that 91% of their electricity is from clean, non-polluting sources. SPS plans to make up the 9% gap with on-site generation of renewables.

This resolution was sponsored by School Board Directors Zachary DeWolf and Lisa Rivera-Smith, and was largely inspired by student activism. DeWolf was moved by the address given by Garfield High School's valedictorian at the 2019 graduation,[18] which "demanded that all adults do everything in their power to address the climate crisis, which is barreling toward a point of no return" (School Board Action Report, January 14, 2021, 1), and Rivera-Smith was inspired by her time spent advising youth in the Hamilton International Middle School Green Team.

The Directors worked with the Sierra Club using their 100% Clean Energy School Districts Organizing Handbook and Toolkit to develop the initial resolution, and then undertook a months-long community engagement process to build District and community support for the resolution. Although there was robust community engagement, many in SPS were unaware that this campaign was underway. At my school, neither the administrator at my school nor any of the staff (including myself) was aware of the Resolution until the Monday before the final Board vote. Many teachers I talk to are still unaware that this resolution was passed, and the Superintendent has not spoken publicly on the Resolution, reinforcing the perception that "The current superintendent has given no interest at all to this topic" (interview with Resource Conservation Specialist). .

The first step in achieving these goals has recently been taken, that of engaging a consulting firm to undertake a technical review of SPS's building portfolio and vehicle fleets[19] and lead a community task force that will oversee the development of a concrete plan for electrifying all buildings and vehicles, increasing efficiency, and installing renewable energy generation equipment.

[18] This address was part of an organized campaign called Class of 0000 in which graduating seniors used their speeches to call for immediate action on climate change. "0000" stands for zero emissions, zero excuses.
[19] Including white fleet, class 5 and 7 trucks, and school buses

Assembling the task force is the next step; representatives will be recruited from resource conservation, budget, facilities, transportation, maintenance, and racial equity advancement departments, members of the BEX/BTA oversight committee, as well as community stakeholders, clean energy experts, labor partners, and tribal representatives. The original intent of the Resolution was for a one-year task force to begin April 2021, but it has been extended to a two-year task force that has not yet been assembled as of August 2021.

The Clean Energy Resolution also requires the implementation plan to address teaching and learning. It must include recommendations for integrating climate science and climate justice into curriculum and incorporating facilities into project- and place-based learning opportunities. It also should explore or make suggestions for how schools can incorporate sustainability goals into their Comprehensive School Improvement Plans (CSIP). If the task force's recommendations in these areas are carried out, that provision could lead to the implementation of education for sustainability throughout SPS.

Further, the Resolution declares support for a statewide legislative agenda for decarbonization and electrification and calls for collaboration with city, state, and federal agencies in order to take "swift, effective action on the climate emergency to protect current and future students, their families, and the communities in which they live."

The Resolution estimates that converting old buildings from gas to electric will cost $1.3 billion, and replacing SPS's light duty fleet will cost $87,000 - $2,500,000 more than replacing the fleet with combustion engines. Assuming 10% of the fleet is replaced each year, it is estimated that SPS will save $1.1 million in fuel costs and $3.4 million in maintenance costs over the course of ten years. This tension between initial outlay and distributed long-term savings surfaced throughout the case study.

The Resolution calls for reports on implementation progress in three ways: quarterly updates to  written in Friday memos to the Board, twice-yearly presentations to the board, and full benchmarking including GHG emissions inventory every three years. Frequent updates to the board are key for keeping projects on-track; they indicate the importance assigned to a project. For example, prior to 2019 there were no regular updates for Resolution 2012/13-12 the Green Resolution, until a School Board Director called for annual updates. This move signaled an upgrade in the importance assigned to the work addressed in the Green Resolution.

Frequent updates are important because without them, it is not unusual for resolutions and even policy and procedure to be forgotten as staff and board membership turn over.  When School Board Directors join the Board, they are given three binders full of resolutions, policies, and procedures, without guidance as to their responsibilities and opportunities for monitoring and enforcing the rules therein. As a School Board Director stated, making sure the Clean Energy Resolution is fulfilled, "is going to take a lot of handing it off to new boards and new superintendents. Policies are made and resolutions are made and 20 years from now no one remembers. We don't have a staff person who follows the continuity of previous resolutions." They went on to say,  "We can have all the policy on paper we want and it doesn't make it happen. Director DeWolf is going to be out of here soon. I need to put a sticky note on my screen. We are all about equity, and I might be the strongest fighter for sustainability goals." An educator shared their perspective on the District's track record for follow-through, "The hardest part is not passing the resolution, it is the follow-up. The School Board passes progressive resolutions, but doesn't follow through."

*Policy environment*

The Clean Energy Resolution builds on Resolution 2012/13-12 The Green Resolution, and in a way replaces 2006/07-18 Climate Change Resolution, a resolution passed in 2006 that called on SPS to conduct a greenhouse gas (GHG) emissions inventory and for each department within the District to make a plan for GHG reduction, and also to join the Seattle Climate Partnership. That resolution was shelved and not implemented, which is a cautionary tale for the Clean Energy Resolution. According to the current Resource Conservation Specialists, who joined the District after the Climate Change Resolution became defunct, that Resolution "Just got put on a shelf. ...The work they did is not well documented. Stopped being reported, stopped happening."

Seattle's Building Tune-Up Ordinance and building and energy codes promote efficient buildings, but SPS will have to exceed these standards in order to meet its decarbonization targets. Just before the School Board passed its Clean Energy Resolution, the City of Seattle ordered all new commercial and large multi-family residential[20] buildings to be built all-electric. Therefore, electric systems are becoming the norm, suggesting that expertise for design, installation, and repair will become more readily available, facilitating SPS in meeting its carbon-free goals. Seattle City Light provides some financial assistance for installing solar panels; In 2020/21 school year, Seattle City Light awarded $150,000 to Seattle for installation at six schools.

At the state level, according to SB 5116 all of Washington's electricity must be carbon-free by 2045 (Specht, 2019). This transition will help SPS meet its goals as renewable energy generation is increased statewide to replace the energy that is currently generated by coal and gas.

*District structures*

School Board Director Rivera-Smith has made a personal commitment to champion and shepherd the implementation of this resolution. This resolution provides for a task force to oversee

[20] Five-stories and larger

the creation of the roadmap to decarbonization. However, the work of the task force must be guided, supported, and followed through on by SPS staff. It appears there are not adequate structures in place to coordinate the work of all the departments whose work is needed to successfully implement this resolution. The inadequacy of supporting structures and resources for implementation is evidenced by the fact that four months after the task force was to begin, recruitment process had not yet been defined. According to one of the Resource Conservation Specialists who have been tasked with following through on the task force, "When it comes through, they say they want a lot of things without understanding who will do these things."

## Areas for Improvement

Although the majority of assessment items received scores of three or less showing that the actions named are not being implemented, one area for improvement was mentioned in every interview I conducted and consistently surfaced in the document review: SPS curriculum & instruction does not include education for sustainability. In fact, interviews often revealed District actions actively working *against* education for sustainability as an approach, specifically when it comes to methods that extend learning beyond the classroom and promote problem solving, collaboration, and successful negotiation of complexity and uncertainty, as well as promoting pro-environmental values. In addition to this glaring deficit, two other high leverage areas for improvement are communication regarding climate and sustainability action, both internal and external, and purchasing.

## Curriculum

> *In 1996 I went to a meeting with John Stanford and he kicked off this program called stewardship 2000. He kicked it off with my lifelong hero, Dr. Jane Goodall. I have a letter drafted to the Superintendent right now: 'Welcome, 25 years later we're still waiting for sustainability in education in SPS.' There has not been a connection between the curriculum stuff and the buildings stuff.*
>
> -- SPS Educator

*Overview*

Since 1990, environmental education has been a mandatory area for instruction in Washington public schools, "(6) Pursuant to RCW 28A.230.020 instruction about conservation, natural resources, and the environment shall be provided at all grade levels in an interdisciplinary manner through science, the social studies, the humanities, and other appropriate areas with an emphasis on solving the problems of human adaptation to the environment, " (WAC 392-410-115:). In 2008, the Washington Office of the Superintendent of Public Instruction (OSPI) published environmental education learning standards which are to be taught in an interdisciplinary manner at all grade levels. These standards were revised in 2014 to reflect updated standards in literacy, math, and science.[21] However, the District has no structures in place to support teachers nor hold them accountable for teaching these standards. While some teachers may do so, it is on their own initiative (and often at their own risk). Thus, SPS *as a district* fails to teach these standards.

At the District Departmental level, neither Washington's environmental education standards nor any other education for sustainability-type framework has been aligned to standards or curricula in other subject areas to facilitate integration. The District has not formally adopted, nor does it actively support, teachers' use of "off-the-shelf" supplemental curricular resources for education for sustainability. The District's policies and procedures do nominally promote place-based education

[21] Common Core standards in literacy & math and Next Generation Science Standards

for students; however, these policies and procedures are not implemented throughout the District, and in at least some cases, building administrators prevent teachers from implementing place-based education.

Although the District has named some intentions to teach students to be good environmental stewards in its policies, procedures, and educational specifications, its fundamental focus on test scores outputs and "teaching the curriculum with fidelity" precludes education for sustainability. Lack of connective tissue between Operations (the division where the strengths in climate and sustainability action live in SPS) and the divisions that govern teaching and learning (Academics; Schools & Continuous Improvement, Student Supports; Equity, Partnerships & Engagement) results in "a stark disconnect between what they teach and where they teach" (interview with Community-Based Organization Representative).

In SPS, students have inequitable access to education for sustainability depending on to which school and to which teacher they are assigned. Although some District documents call for education for sustainability in some capacity, and Washington state mandates the teaching environmental and sustainability standards, there are no structures of support or accountability to ensure follow through on these mandates.

*Current performance*

In my 16 years as a teacher and 15 years as a parent in Seattle Public Schools, during which I taught in three schools and my kids attended eight, I have seen one example of school-wide education for sustainability, which was the opportunity for all $4^{th}$ & $5^{th}$ graders to go to an outdoor education camp on the nearby Olympic Peninsula. All other examples of education for sustainability I encountered were extra-curricular or teacher-specific. Prior to conducting this study, I was unaware of the Superintendent Procedure for Conservation of Natural Resources and the

Green Resolution, as well as Washington's Environmental and Sustainability Standards. I have never taught in a building with exceptional green design features, in fact I taught for four years in a school with a broken boiler that would sometimes make our rooms over 80 degrees, or leave them at 50 degrees, for hours while we waited for repairs. Because of this, I was living in a different district from the one I have come to know by reading the minutes of the BEX/BTA Oversight Committee and McClennan report.

I am not alone in this feeling of disconnection between the exciting progress SPS is making in facilities and capital projects and the day-to-day experience for students and teachers. Educators, Resource Conservation Specialists, representatives of community-based organizations (CBOs), and School Board Director all cited a disconnect between the District's sustainability goals and teaching & learning. As one educator stated, the District needs to make:

> ...direct connections between resolutions and policy and district curriculum resources. The district now has a mandated science curriculum. I don't love Amplify[22] in general, but it's a good first step. But… from an educator perspective, it doesn't seem they are making any visible connection between climate justice and the curriculum we are being trained to use.

A CBO representative echoed that sentiment, citing the District's adherence to curriculum orthodoxy (teaching purchased curriculum just as they are written) as a barrier to implementing education for sustainability, "Seattle is a beast. We have reached out to their science department – hot and cold, sometimes we make progress and sometimes it's adopted curriculum orthodoxy. Teachers aren't able to make the connection between what they are teaching students and the place they are teaching."

When telling the story of her principal ending her place-based learning program, Ms. E said, "One of the things I told my principal – if I can only take two field trips a year and I have to take

[22] Amplify is the District's adopted science curriculum for K-8.

them around reading and math – there are all these other standards. Why are you not allowing me to teach these standards?" And another CBO states, "There is resistance from the district for teaching outside. In science education – a stark disconnect between what they teach and where they teach."

Science curriculum

Although education for sustainability is an approach that can be activated in all subject areas, and interdisciplinary integration of environmental education is mandated by Washington OSPI, people tend to bring up science education first when discussing teaching about climate and sustainability, "Science is where we live -- haven't been able to make the connection to get all the way," said a Resource Conservation Specialist. Environmental science is an important aspect of education for sustainability, and problem-solving, hands-on pedagogy is a perfect fit for authentic science education.

This case study draws on meeting minutes of the Curriculum & Instruction (later Student Services, Curriculum & Instruction) Committee from January 2017 through June 2021. Beginning in February 2018, the minutes include discussion and action related to the adoption of K-12 science curriculum.[23] The science curriculum in use at that time was at least 20 years old and did not address the Next Generation Science Standards, which were adopted by Washington OSPI in 2013.

Between January 2017 and June 2021, the science materials adoption was on the agenda 20 times. Queries related to education for sustainability surfaced in four of those instances; each of the queries were agreed to be followed up on in Friday Memos,[24] but were not further considered in the

[23] The adoption of the new science curriculum was a highly controversial saga for reasons that have nothing to do with the focus of our case study. Several programs were piloted and the one chosen was not the most highly ranked by users. Community members were upset by lack of transparency in the process, and there were rumors of undue influence from organizations that contributed grant monies to procure the program.

[24] Every Friday Superintendent Juneau (July 2018 – May 2021) sent a memo to the Board with highlights from her weekly school visit and follow-up information from staff, including updates on implementation of Board resolutions & policies and strategic plan goals and also requests for specific information from the Board.

Committee. The queries were regarding 1) a Director's belief that expeditionary learning would be challenging for students with special needs and some other populations, 2) the fact that Amplify (the science curriculum adopted for grades K-8) was developed in California and is not Washington focused, 3) whether the curriculum addresses the climate crisis, and 4) a general inquiry about project-based learning.

Although 2018-2021 was a period in which worldwide focus on climate change increased, especially among youth, there was little indication that District decision-makers were making the connection between science curriculum and climate change. The lack of connection is corroborated by interviews with educators and CBO staff, with one of the latter saying they (unsuccessfully) "struggled to work with the science department to embed sustainability education into science," and one of the former saying, "I'm on the Teacher advisory board at my school for science education. From an educator perspective, it doesn't seem they are making a visible connection between climate justice and the curriculum we are being trained to use." Another educator lamented that "They have adopted all these curriculum, but they are not relevant. They fail to acknowledge the place we are in," and noted that the science curriculum adoption was a missed opportunity to "lift up the practice of great teachers."

Career & Technical Education curriculum

Another discipline where education for sustainability is a natural fit is career and technical education (CTE). Washington State graduation requirements include 1.5 credits (three semesters) of CTE for every student. As the New Buildings Institute points out, "Every year, the United States graduates 3 million students from high school. The mindsets and skills of those graduates will define the preparedness and the competitiveness of our workforce to thrive in a clean energy future" (Loveland, 2021).

For at least a decade, professional literature in the CTE field has emphasized the importance of green workforce development, which includes greened jobs (jobs that are being done in a new way to meet sustainability goals, such as a welding job that was in a coal plant is now in a wind plant), green-enhanced jobs (such as design or finance incorporating sustainability principles), and new green jobs (such as carbon sequestration and regenerative agriculture) (Stone, 2010). According to green CTE proponents, "sustainability is a new workforce readiness skill," and "Green job skills and knowledge built on concepts of sustainability. green technologies, green standards, green processes,and life cycle analysis apply to every current CTE program" (Stone, 2010).

The CTE department in Seattle Schools does not offer those opportunities to students, at least in part because it is chronically under-resourced.[25] The Curriculum & Instruction (C&I) Committee minutes paint a clear picture of CTE programs in SPS wasting away and failing to attract student enrollment. A CBO representative who recently graduated from SPS asked, "What is CTE? I never heard of it." And my own son, considering his post-high school prospects, said to me "I feel like the skills needed for the future are totally different from what I learned in school. And I don't even know what they are." According to the High School Adoptions webpage of the Instructional Materials department, the newest textbook adopted for CTE was published in 1999. An Instructional Materials Specialist confirmed that these were the most recently adopted texts, although she allowed that CTE teachers probably were finding and using more current materials. The lack of newly adopted materials demonstrates the low priority of CTE in the District's allocation of resources.

[25] I attempted to interview educators or district staff in the CTE department for this case study, but the program manager position is currently unfilled and no other educators responded to my requests.

The School Board's Resolution 2017/18-3 CTE states, "We recognize that under the current budget and organizational constraints, CTE programs cannot sustainably operate at the highest quality levels and their potential for expansion is severely limited. We encourage our partners - parents, parent organizations, higher education, labor-based organizations, and others - to join us in support of sustainably funding, implementing, and expanding high-quality middle and high-school CTE programs in Seattle Public Schools," admitting that the program is starved for resources.

Seattle Schools' CTE webpage does not contain any language referring to sustainability, green workforce development, or other considerations for career preparation in our era of ongoing and accelerating climate change. Of the seven CTE pathways identified in SPS, none are explicitly related to ecology, environment, or sustainability; the closest category is Science, Technology, Engineering, and Mathematics (STEM). In the minutes reviewed in this study, CTE was discussed 16 times; none of those discussions included language related to sustainability or green workforce development.

Additionally, in the CTE annual reports filed in 2018/19 and 2019/20,[26] the latter of which included the new Five-Year Plan (2020-2025), there was only one instance of language referring to sustainability, environment, ecology, or climate change: a field trip titled "Hub Alliance Community Climate Change" that was offered as a career exploration activity. The CTE plan for the years 2020-2025 contains no mention of the transition to a carbon-free economy. The CTE Department's Strategy #1 is to "Evaluate CTE program offerings to provide viable career pathways for future & current workforce demands," but while most would agree that the transition to a carbon-free economy is a major factor in future workforce demands, this element is not addressed in any CTE documents examined for this study.

[26] Due to the pandemic and staffing changes (departure of CTE program director), no annual report was filed 2020/21.

The absence of consideration of climate change and green workforce development at the district level does not mean there is no such action being taken by individual CTE instructors or CTE departments at the school level. However, as a district SPS has not set the expectation that CTE courses will directly address climate change, nor have they invested in teacher capacity to teach content and skills for the green economy, nor the resources to connect students to rich experiences in green workforce development. An educator asked, "Why is the CTE program so separate from the science program? ... I was hopeful in that green sector space... We need to put the youth to work -- pulling ivy, counting fish, checking brakes….Reaching our students furthest from educational justice by creating real and relevant opportunities to protect our place and planet."

Pedagogy

Education for sustainability encompasses not only the content, but the methods used to convey that content and the habits of mind nurtured by teachers and learning experiences. EfS seeks not only to teach students about climate change, biodiversity, sustainable economies, and disaster risk management, but also to raise thinkers who position themselves within (not upon) the natural world, who collaborate and imagine in order to solve complex problems, who can tolerate uncertainty and complexity, and who value the lives of humans and nonhumans, present and future (Buckler & Creech, 2014). To educate for sustainability, educators use methods that position students as sources and seekers of information, collaborators, and decision-makers. They use methods that highlight complexity and interconnectedness of phenomena. And they structure learning experiences in which students can participate in solving problems faced by their communities. The table below offers just a few examples of teaching methods used in education for sustainability.

*Figure 8: A few selected examples of teaching methods for education for sustainability*

| **Selected Examples of Methods for Education for Sustainability** | |
|---|---|
| Example teaching method | Source |
| Give students multiple opportunities to show what they know | Learning in Places Collective, 2020 |
| Include or connect "cutting edge" science to needs in learners' communities | |
| Make space for learners to authentically deliberate about phenomena and decision | |
| Confront and challenge assumptions about the race, ethnicities, religions, class, gender identities, and/or family configurations of learners and their families | |
| Field Investigations: This includes collecting quantitative (numerical data such as counts) and qualitative (descriptive) data while in the field using observations. | |
| Encourage multi-sensory observations | |
| Observe phenomena across multiple spatial and temporal scales. | |
| Community-Based Research: This includes reaching out to or interviewing community members about a part of the socio-ecological phenomenon the learners are exploring. | |
| Learn outdoors in places that matter for learners and their families | |
| Engage learners' lived experiences, cultural practices, and home languages | |
| Have students take observation walks with their families, and interview them on class topics | |
| Background Research: This includes finding information that is already out there related to the socio-ecological phenomenon. For example: reference books, internet searches, podcasts, and more | |
| Ask "Should We" Questions | |

| | |
|---|---|
| Ask Investigation questions | |
| Engage students in the **W**icked problem, **E**xperiences, **A**vailable **R**esources, **S**olution-Innovation (WEARS) process | Jensen et al., 2019 |
| Build class activities around articulated weekly themes | Burns et al., 2019 |
| Have learners identify connections between sustainability issues discussed in class and current events | |
| Incorporate participatory experiences that allow students to take action on issues studied in the course or program. | |
| Create an interactive, dynamic relationship between instructor and learners | |
| Introduce multiple perspectives, including "perspectives that are non-dominant or that challenge the dominant cultural or economic perspectives," such as "Indigenous perspectives, hopeful perspectives, non-human perspectives, and perspectives that highlight power and privilege." | |
| Have learners find and articulate points of synthesis and divergence between Traditional Ecological Knowledge and Western Science sustainability perspectives | |
| Invite guest speakers that highlight diverse perspectives of sustainability and related topics. | |

Does SPS commit to and support the use of teaching methods that develop these cross-cutting skills and habits of mind at every school? The 2020-2021 Continuous School Improvement Plans (CSIPs)[27] of each school were reviewed for evidence of education for sustainability.[28] Nearly

[27] These documents are renewed annually by each school and identify goals aligned with the DIstrict's strategic plan, as well as strategies for meeting the goals. The CSIP guides staffing, professional development, and budget allocations for the school.

[28] Each CSIP was first scanned for search terms that might signal education for sustainability. The search terms were sustain*, environmental, place-based, 21st Century, conserv*, steward*, project, and green, where * indicates any letters could come after the asterisk (thus allowing sustainable, sustainably, sustainability, and so on). When any one of these words were found, the whole plan was read to locate examples of EfS pedagogy. Thirty-eight out of 104

25% of schools (25 out of 106) appeared to have some component of EfS pedagogy included in their CSIP, with project-based learning being the most commonly cited EfS-related strategy, included in 22 CSIPs. However, six of those schools identified project-based learning as a strategy only for advanced learners, not the student body as a whole. When read to determine whether the CSIP revealed an aspiration toward education for sustainability -- that is, education to engage students in complex, authentic learning that equips students with the knowledge, skills, and dispositions to confront the environmental and social crises humanity faces -- eleven schools were determined to demonstrate this aspiration in their CSIPs.

Examples of this aspirational language include, "Our school-wide guiding question is: How are we making an impact in the world? As a school, we are deeply committed to utilizing research-based, culturally responsive teaching practices to empower every explorer to be a compassionate global citizen, responsible environmental steward and active social justice champion...." (Queen Anne Elementary CSIP, 2020); or, "We will improve educational outcomes for all of our students by partnering with the Seward Park Audubon Center to bring naturalists into the classroom and children out into nature" (Orca K-8 CSIP, 2020). This shows that there is expertise for EfS in SPS today, and that there are people who value this kind of learning for all students. However, eleven out of 106 schools is less than 10%, meaning more than 90% of students do not have access to schools that aspire to educate for sustainability. Thus, these examples do not indicate support at the district level for EfS methods.

Interviews with Seattle Schools teachers, administrator, CBO representative, and resource conservation specialists reveal that not only does SPS not support, in some cases it actively

schools had an initial hit for the key terms, and of those 25 showed evidence of any kind of EfS pedagogy, with project-based learning being the most common feature.

discourages such methods. In fact, the holistic, complex, problem-, project-, or place-based methods of EfS seem to be consistently discouraged at high-poverty schools serving majority people of color.

Ms. E, the teacher whose innovative place-based 2nd grade curriculum was introduced in the parable at the beginning of this case, had successfully developed community partnerships with naturalists, local museums, and organic farmers, and used the bog neighboring her school for authentic science education. After three years, the program was shut down by the principal because, "the principal and I have very different philosophies. She didn't see that it was raising test scores. There was not enough seat time in front of the curriculum." However, when Ms. E left to work at a wealthier, whiter school with a more active PTA, she discovered, "there are other white and privileged schools where I could do this… it is maddening to me what they are allowed or encouraged to do. We are continuing to hold students back. We talk about equity, but we are the ones who are actively accelerating students of privilege and decelerating students who are underserved."

Another elementary teacher reported:

> The District could do more in terms of supporting educators especially at 'Schools of Promise,'[29] there is really an opportunity to show that what they actually need is holistic education and to show that's what they're prioritizing. There is a lot of language being thrown around, but there is less focus on 'How do all students deserve holistic education?'

The CSIP review bears out these educators' observations -- of the 16 schools that report project-based learning for all students, six of them are neighborhood schools with automatic assignment whereas nine are option schools, which families must apply for their students to attend,

[29] Schools of Promise is the designation the District gives to the 13 schools that have the highest population of African American male students, the group prioritized in the *Seattle Excellence* strategic plan's targeted universalism approach

and one is a school only for students in grades 1-5 who have tested into the Highly Capable Cohort (segregated schooling for students performing at or above the 98th percentile). There are only 15 option schools in the District; nine of them feature project-based learning. There are 81[30] regular neighborhood schools in the District; six of them feature project-based learning. In almost every case, option schools are wealthier and whiter than their nearest neighborhood school. This shows that there is unequal access to the complex, engaging methods of education for sustainability across the District.

Mr. C, a middle school science teacher at a neighborhood school, also experienced push-back from district-level administrators. Mr. C was part of the Social Focus Initiative, a self-organized team of science teachers that found current issues related to the Amplify science curriculum's units. For example, in the 7th grade unit on chemical reactions, Amplify presents the information in the context of a fictional farm town with polluted water. This teacher supplemented that unit with readings and videos about the real water pollution in Flint, and connected with a classroom in Flint via videoconference so his students could talk to the young people living with poisoned water.

Another example is how they connected the Light Waves unit, which presents information in the context of skin cancer in Australia, to the colonial story of Australia. This teacher remarked how powerful it was to teach classrooms of students with dark skin how the melanin in their skin, so often a risk factor in U.S. society, can be a super protective power.[31]

Although not named as such by the educators involved, this work falls in the category of education for sustainability in that it used real-world complex problems to educate students,

[30] There are 104 total schools in SPS. In addition to the 15 option schools, there are special schools for special purposes, such as alternative high school programs and home-schooling hubs.

[31] Which is not to say that folks with dark skin are invulnerable to melanoma, sun screen is important for protecting all colors of skin.

positioned students as agents rather than passive recipients of information, and incorporated issues of racial equity into the conversation. “Teachers were working on it and we were showing it to people, ‘here's this supplemental piece you can weave into Amplify to make it more relevant and address environmental justice.’” The Social Focus Initiative was effectively discontinued by the district-level science department. “[The head of the district science department] then made it official and told people not to use any of the teacher-created materials, and they would make an official set of materials and then run a pilot.”

Another educator with significant expertise in incorporating socially focused questions in science education shared their experience with the Initiative:

> It's been my career's work to do social focused initiatives. ... I applied to be part of the team and I was told I didn't know about Amplify and could not would not be involved in that work. I was told it was going to be introduced [in the 2020/21] school year. Then it was put off. The excuse was the pandemic and we have to get everyone on board. I was told it has morphed and shifted. I was told some people are in charge and other people aren't allowed to add to it. We were told we couldn't do it. One of my units is metabolism and I did some research on food deserts and wanted to do a project related to that and was told not to because no one else was going to and no one else could. It “wasn't ready yet.”

Showing a disconnect between the teacher’s experience and what is recorded in District reports, in their reports of equity-focused initiatives presented to the Board in 2019-20 and 2020-21, the Science Department mentioned the Social Focus Initiative and took credit for leading the work to, “ground science to the concerns and experiences of traditionally marginalized communities and identities” (Annual Report for Policy 0030 -- Ensuring Educational and Racial Equity, 2020). In this report, Social Focus Questions are described as seeking:

> ... to develop critical consciousness within the science classroom. The question is designed to be socially responsible for how the unit’s field of science/topic focus may have (or has had) on society, locally and globally, particularly the impact on marginalized communities. Social Focus Questions are designed to advance science education to be multi-dimensional layering interest and identity into the 3

> dimensions of science education: Science and Engineering Practices, Crosscutting Concepts and Disciplinary Core Ideas. This initiative aligns to the National Research Council's Framework for Science education. ...
> (Annual Report for Policy 0030 -- Ensuring Educational and Racial Equity, 2020, pp. 46)

In the report, the Science Department's Social Focus Initiative is described as a multi-year pilot in partnership with University of Washington. Pilot programs make good sense to test educational approaches that are unproven, or that may be unpopular with teachers and school communities. However, in this case, incorporating socially focused questions into science education is a proven technique, teachers were excited about it, and students were engaged. The pilot served to derail the initiative, consistent with a pattern of discouraging grassroots innovations, "We have all these policies in place that don;t let us be creative and use the resources of the community" (interview with SPS educator).

Another example of this contradiction is the $300,000 Learning in Places grant, an exciting partnership among SPS, University of Washington, and the organic gardening and environmental stewardship organization the Tilth Alliance "to investigate the impacts of NGSS aligned field-based science pedagogies on learning that utilize learning gardens and other walkable greenspaces. The project will work with PK-2 grade teachers over four years to develop comprehensive models of field-based science learning pedagogies and to develop and extend units that focus on socioecologic challenges and decision-making" (*Inventory - seattle public schools*. (n.d.).).

Learning in Places is a great program that could provide education for sustainability to perhaps hundreds of students. But at the same time, teachers who are not involved in the pilot face bureaucratic barriers to simple, no-cost place-based educational opportunities such as walking field trips. To take students on a walking field trip, a teacher must follow a multi-step process of obtaining the principal's permission and sending home a permission form each time, even if they

are only walking around the block. As an SPS educator said, “let’s get a walking field trip form on file….A simple walking field trip form...teachers could have the freedom of taking kids outside and away from computers.”

Mr. C also raised the issue of barriers to field trips, “We don't take field trips -- it's so frustrating. Push back from admin -- what are your learning targets?” The focus on tested academic standards contributes to the confinement of learning to the classroom and adopted curriculum, despite the fact that field trips can be a powerful community-building and motivational experience for students. Mr. C said, “I go on this trip and feel like I'm part of something bigger. I feel like this teacher cares about me as a person.” A field trip on its own is not education for sustainability, but connecting the school to the community *is* an essential tenet of education for sustainability, which is being impeded due to a strong focus on tested learning targets.

In addition to push-back from administration, conflicting priorities and workload can prevent teachers from engaging their students in complex, place-based learning experiences. Mr. C remarked, “I feel like that is a huge gap… the connection between students and the Earth. … Students were not involved in planning the rain garden. [Our school] doesn't work with community organizations. The time I connected with Flint was the first time I tried to connect, I realized how much work it is. That was a ton of work on top of regular teacher work.”

These conversations reveal two forces that prevent teachers from using education for sustainability methods: 1) restrictions from school and district administrators due to laser focus on reading and math purchased curriculum and learning targets, and 2) multiple pressures of the job leaving no time or energy to develop these methods. Both forces are stronger at “Schools of Promise,” due to external pressure to raise test scores. As Ms. E said, “When I stepped back, I could

see how principals at Title I schools also have people telling them 'Your test scores have to go up,'... I think the Principal wanted to show the district, 'I am turning this school around.'"

Teachers' experiences are consistent with Board's Policy 0010 Instructional Philosophy,[32] which contains no reference to problem-solving, complex instruction, place-based learning, or the dispositional outcomes of education for sustainability.

Cultural factors

SPS leaders have inherited and continue to perpetuate cultural beliefs about teaching & learning that work against education for sustainability. Educators' experiences show that focus on test scores and curriculum orthodoxy are barriers to teaching Washington's Environmental and Sustainability Standards, and to using place-based, problem-based, and holistic teaching methods. These themes are found throughout School Board committee meeting minutes and surfaced in interviews with educators and CBO representatives. Discourse, codes, and actions reveal a strong belief that instructional materials are the input of teaching and test scores are the output of learning, and that equitable access is best achieved by teaching the adopted curriculum without deviation. The blindness to/silence on sustainability, both by individuals and foundational documents (mission, vision, strategic plan) also contribute to a culture that is hostile to education for sustainability.

In the minutes of the Curriculum & Instruction (later Student Services, Curriculum & Instruction) Committee from January 2017- May 2021, several topics were discussed repeatedly over time: materials adoption, elimination of racial disproportionality in student outcomes, establishment of an ethnic studies program, roll-out of Since Time Immemorial Native education

[32] Incidentally, the School Board Director interviewed for this case study was unfamiliar with this policy, even though during their tenure they had to vote on matters related to teaching and learning.

curriculum, improving the career & technical education (CTE) program, student assignment plan & issues of school capacity, services for highly capable students, testing & data, and technology. Professional development was discussed related to ethnic studies and to training teachers to teach adopted curricula with fidelity.

In these discussions, only one comment was captured in the notes pertaining to *how* students are taught, "Director Harris commented about how challenging expeditionary learning could be for special education, option schools, looped classrooms and dual language teachers," (December 2018). This comment suggests a negative attitude towards expeditionary learning,[33] and the belief that some groups of students are not able to access complex, project-based instruction, a belief that was also seen in the CSIP review where many schools listed project-based learning as a strategy only for advanced learners.

Seattle Schools maintains an Instructional Materials Committee that reviews and makes recommendations about adopting new materials, but there is no similar committee related to identifying effective practices in methods and rolling these out throughout the district. A School Board Director confirmed that the focus is on materials selection, "The adoption committee and [Instructional Materials Committee] are looking at this as 'here are our options for materials.'" This is important because the intent of education for sustainability is not just to equip students with technical skills and knowledge by teaching *about* the consequences of our unsustainable global systems, but also to equip them with the adaptive skills and dispositions needed to solve these problems. This cannot be achieved without attention to methods.[34]

[33] Expeditionary learning is a type of project-based learning.

[34] A lack of attention to instructional methods also has racial equity considerations, which will be discussed in the comparison case of racial equity action in SPS.

In addition to focus on materials and purchased curriculum as the input of teaching & learning, Curriculum & Instruction Committee minutes reveal a focus on student test scores as the output of teaching and learning. Besides assessment scores, the only other student outcomes that are considered in four and a half years of C&I Committee discourse are participation in the highly capable program/advanced placement courses and "career readiness" (in discussion of CTE programs).

The emphasis on test scores is incompatible with education for sustainability on a few levels. On the surface, the focus on standardized tests drives attention and resources away from the Environmental and Sustainability Standards because those are not tested. On a deeper level, It is well established that standardized tests measure assimilation to the dominant culture as much as they measure academic skills.[35] That is, they measure skills and knowledge that have been identified as critical for (economic) success in the context of "cultural values, often specific to the West, focused on unlimited growth and unchecked consumerism," (Vedwan, 2021, 137).

To implement transformational education, school systems must start measuring new outcomes, including student outcomes that show readiness to grapple with the environmental and social crises humanity faces today. How those outcomes might be measured is beyond the scope of this case study, but there are many NGOs and CBOs with frameworks for education for sustainability (or 21st century skills) that include methods of assessment.[36]

[35] For example, performing well on tests requires individual effort without communication or collaboration with others, and the use of knowledge and skills in a decontextualized format. Often, test items are multiple choice format, in which selecting the correct answer requires the test-taker to either share or be able to anticipate the underlying assumptions the test-maker used to construct the answer. There is a large body of research and theory that explores these concepts.

[36] Such as the Center for Ecoliteracy, the Cloud Institute, Learning in Places, and the North American Association for Environmental Education (to name a few).

In the culture of instruction in SPS, the input is instructional materials, the output is test scores, and the safeguard to ensure uninterrupted flow from input to output is curriculum orthodoxy.[37] As an SPS Educator noted, "We have all these policies in place that don't let us be creative and use the resources of the community." The professional development discussed in the minutes reviewed for this case study was for "rolling out" curriculum, and focused on equipping teachers with technical skills for delivering adopted curriculum. Educators' experiences show that school and district level administrators will prohibit teaching that subtracts from "seat time in front of the adopted curriculum" or adds complexity to the adopted curriculum. CBO representatives report having long-standing partnerships ended coincident with the adoption of new curriculum, "people come in with exciting ideas and then the structure limits them -- that was the time when they were shopping around for curriculum. I was told 'We are no longer focusing on those [learning standards]' -- no explanation -- and [our organization] just got ghosted."

Comments from the minutes that affirm this preference for curriculum orthodoxy among district administrators include:

- [Curriculum & Instruction staff] replied that the message for teachers is to teach it as intended.
- [School Board Director] asked if teachers are expected to teach as intended. [Science department head] replied that they are asking teachers to follow the instructional materials and adjust and make accommodations on behalf of students.
- She added that the best ways to make sure schools have relevant and appropriate materials are to have approved curriculum materials similar to the science instructional materials adoptions, and not to allow waivers.

This tendency toward "teacher-proofing" and insistence on strict adherence to curriculum as written seems to be especially pronounced in Schools of Promise. As educators interviewed for this case

[37] AKA teaching with fidelity, or teaching as intended

study stated, there is more leeway for holistic teaching and risk-taking at wealthier schools with more organized parent communities.

However, even in wealthier, whiter schools, educators' efforts at education for sustainability get diminished and undermined:

> For more than 16 years I have been teaching stormwater education. Because it is our largest menace to the Puget Sound and that was prior to the explosion boom of Puget Sound[38] and it is only getting worse... The stormwater project that I did and another teacher at Denny did a fantastic Bog to Bay project looking at all these intercultural connections... District leadership told both of us that they were "pet projects" and shut us down."

In reporting their work to advance racial equity, the District Curriculum & Instruction Department reported an initiative that calls into question whether curriculum orthodoxy is related to instructional quality. They conducted a research study into the differences in math proficiency outcomes for schools that have received a waiver from the District to teach math using other than the district-adopted curriculum and found no statistically significant differences in outcomes between waiver and non-waiver schools. District staff offered that these results could mean there is no difference in the effectiveness of the various instructional materials, or that teachers were unofficially deviating from the adopted curriculum, without their schools having obtained a waiver.

Interestingly, they found greater differences between characteristics of waiver and non-waiver schools than in mathematical outcomes: waiver schools were less likely to serve students who are learning English and more likely to serve students who qualify for the highly capable (gifted) program, (Annual Report for Policy 0030 -- Ensuring Educational and Racial Equity, 2020). In SPS, those designations track strongly with race and socio-economic status. They also track with standardized test scores, which connects the distinction between "waiver" and "non-

[38] Referring to the rapid population growth of the region.

waiver" schools to the SPS Performance Management Policy, which has a major influence on the culture of teaching and learning in SPS.

School Board Policy A02.00 Performance Management was adopted in 2010 and has never been revisited. This policy is the local-level embodiment of the No Child Left Behind Act, with its emphasis on test data and punishments for schools that do not meet annual growth targets. The Performance Management Policy calls for schools to be segmented and ranked according to both their absolute performance on state standards tests, and their yearly growth on those tests.[39] Differences in performance between high-income and low-income students are also considered. The Policy states:

> In general, schools that are high-performing on multiple dimensions will be given greater autonomy in specific areas. Schools that are making solid growth and meeting their annual performance targets will receive the targeted support to continue on their trajectory. And schools that are not meeting their annual performance targets will receive prescriptive guidance from the district." This prescriptive guidance can include change of leadership, change of staff, change of "curricular materials and/or programs" and even school closure.

While this Policy is ten years old and may no longer be something the Board would pass if it were introduced today, the performance management system is still in place and the overall cultural belief in the linear input of instructional materials as-scripted leading to the desired outcome of student test scores remains dominant in Seattle Schools, as evidenced by teacher experiences and the discourse of the Curriculum & Instruction Committee of the Board. This orientation poses a barrier to the implementation of education for sustainability in SPS.

An identical orientation is found in the publications of the Washington State School Directors' Association (WSSDA), the professional organization that defines best practice for school boards in Washington. SPS School Board Committee Minutes revealed that many SPS policies are

[39] Leading to a four-quadrant segmentation system: low performance/low growth, low performance/high growth, high performance/low growth, high performance/high growth.

based on the model policies WSSDA publishes. This helps to ensure that SPS policy is aligned with state law, but it also encodes WSSDA's agenda into SPS policies and procedures.

According to WSSDA, "As policymakers, school boards have a critical role in ensuring that students learn what they need to know to be prepared as productive citizens and that they are able to demonstrate that knowledge on state and local measures of achievement" (n.d., p. 1). They go on to specify, "In this policy role, they adopt curriculum frameworks and approve textbooks, establish assessment requirements that provide performance data for monitoring student achievement goals, and establish human resource structures that reflect a commitment to the support of student learning" (p. 2). WSSDA influences the orientation and policy-making of the SPS School Board, and they have a clear focus on curriculum and textbooks as inputs, and test scores as outputs. These common cultural factors inhibit education for sustainability at SPS.

Silos

The large gap between climate and sustainability action in facilities and operations versus in teaching and learning is also a result of the siloed nature of the respective departments. There is no connective tissue between facilities and curriculum that would allow the shared ownership of sustainability action to develop. In five-and-a-half years of committee meeting minutes, there were only two comments made by School Board Directors about cross-committee collaboration.[40] There is no staff member or structure in place for communicating about sustainability between facilities and curriculum.

Interviews revealed four specific conditions that worsen the silo effect:

[40] In April 2020, a Director on the Operations Committee planned to connect with Curriculum & Instruction about pursuing opportunities to teach technical theater in a "state of the art" theater included in a high school modernization & remodel project. In May 2020, a Director on the C&I Committee asked how the CTE department was included in the design stage of a high school replacement (new construction) project.

1) **SPS has no cross-departmental structures to facilitate communication and concerted action.** When discussing the value of a District-level Green Team that used to exist at SPS, a participant said those meetings gave valuable cross-pollination between disciplines and allowed all workers to contribute to process improvement, as in the highly functional Six Sigma approach or Toyota's culture of continual improvement; the Green Team structure gave staff an opportunity to say, "'This is what I see in my work, and this is how we can improve it.' Waste also includes wasted time. We need to feel that our voice matters, we can make improvements."

A representative from the King County Green Schools Program[41] described their observations of Districts that succeed in implementing climate and sustainability action and education, "Some districts have systems in place, a Green Team leader at each school. In two districts, the curriculum directors are leading the work. They have monthly district-wide green team meetings to share practices, a network of people sharing practices. Most of those district-wide green team meetings include teachers, parent/family and community volunteers, and district directors of curriculum/teaching and learning, facilities, and nutrition services."

2) **SPS has no one in a cabinet-level position directly responsible for sustainability or environmental justice.** A CBO representative stated, "Director of Sustainability could aid the work. Having someone whose job is specifically about sustainability means that more resources will be funneled through that lens." Resource Conservation Specialists have advocated for this, but also acknowledge funding constraints, "We proposed Environmental Justice coordinator as a job,

[41] The King County Green Schools Program (KCGSP) is an assistance and recognition program funded by King County Solid Waste Division, whose main funding source is landfill fees at the King County Cedar Hills Regional Landfill. Because Seattle ships its garbage to landfills outside King County and is not a King County landfill rate payer, KCGSP does not assist Seattle Schools. The KCGSP service area includes the other 18 school districts in King County, and program areas include waste reduction, recycling, energy conservation, water conservation, healthy schools, and transportation.

Portland has one. The idea of creating new jobs in COVID is pretty much not going to happen this year. We are pretty constrained by budget at the moment." And on another occasion, were less optimistic about the idea, stating that cabinet-level staff do not always follow through consistently with how they are paid and, "There are more meaningful ways to get things done through relationships and conversations than through top-down." A School Board Director also expressed support for creating this position, "We had a meeting with the Resource Conservation team and part of their plan was a dedicated Director of Sustainability. It could be their job to make sure we are remembering and following through on those commitments. We didn't add to the Clean Energy Resolution because we wanted to keep it very focused. And also recognize the reality of our funding position. It could be someone's position now is turned into that. It would be a great needed thing."

**3) Unlike other subject areas addressed in Washington State Standards, there is no environmental and sustainability curriculum specialist/ coach.** [42] Ms. E stated, " if there was just from higher up where they say 'this is acceptable.' Just like we have literacy coaches, let's get a sustainability/project-based learning coach in schools." District staff in the Self-Help Department expressed, "There isn't that curriculum leader. Without this person, some kids get [outdoor education] and some don't.

Another educator described the need for the kinds of support that a coach or curriculum specialist would give, "Teachers don't think science is as important as math. Teachers need more support in how to implement these kinds of things," and "Teachers also need access to other resources. Like I think it would be helpful for the District to provide more digital resources for

[42] SPS currently has district-level curriculum specialists and coaches that work with schools in literacy, math, science, social-emotional learning, behavior, special education, and racial equity.

teachers to implement on a daily basis. If students aren't engaged, teachers won't spend a lot of extra time finding extra science materials, because they don't know where to look."

Another educator offered to help with curricular connections when the Resource Conservation department was first established, but her offer was declined: "There's two pieces - policy and curriculum. And Seattle has not seen the connection. When [the Resource Conservation department] started I was like 'yippee!' I'll help with curriculum, and they were like 'we're in facilities.'"

**4) The Superintendent has shown no support for or interest in climate change, environmental justice, or education for sustainability.** According to a Resource Conservation Specialist, "If we had a superintendent that would embrace this message, that would do a lot more to guide this work. Our team is limited by the silo we are in, but if we had top-down leadership we could do so much more." And according to a representative from the King County Green Schools Program, "districts that have strong support for sustainability from the top, and more resources, make progress district-wide with sustainability policies and procedures -- and also with education for sustainability at each school."

<u>Person-dependent</u>

Although the district-wide implementation of education for sustainability in teaching & learning is level zero, there are many individual teachers, student-led Green Teams, and schools that are taking climate and sustainability action. This case study has reported just a couple of examples of such action. District staff, CBO representatives, educators, and School Board Director all highlighted the person-dependent nature of climate and sustainability action in SPS.

The Self-Help Projects Department, which supports schools with improvements to buildings and grounds and has assisted with many green schoolyard projects[43] cited that their resources (money and technical assistance) go to the same schools over and over because those are the schools at which they have contacts, either a sustainability champion on staff or someone on the PTA[44] who is interested in greening the schoolyard, "Because it's volunteer-initiated, there is no way to gauge how often those things happen. Sometimes we have the same dozen or so schools coming up all the time. We are working to address an equitable solution." They also cited the teacher-to-teacher variation in access to the educational value of green schoolyards, "We already do green schoolyards in Seattle. The connection that is missing is the curriculum connection, without it being the one teacher who brings their kids outside. Our sites as a whole would be better served if everyone could come out."

One of the School Board Directors who co-sponsored the Clean Energy Resolution shared that they were the lead of the Green Team at their children's middle school as a parent volunteer for five years, and that when they moved on from the school, the work stopped. They commented, "There is only so much bandwidth for people to do things. Some schools have really active Green Teams, but then as people move on, no one carries it on. Or PTA funding -- if you don't have a strong PTA to carry it on…." As a representative of the King County Green Schools Program related, "Even in a district or school that has been working on this for 5 or more years, if a key staff leader or champion leaves, sometimes it is challenging to keep the momentum going. We try to work with at least 2 people, so if someone leaves there is someone else (and preferably a team of

[43]The definition of green schoolyards is broad, but in SPS it generally refers to the inclusion of natural elements and learning gardens, rain gardens, rain cisterns, and depaving projects.

[44] Parent Teacher Association, or sometimes PTSA, Parent Teacher Student Association

people) who knows what is happening and is actively engaged. If a key leader leaves, sometimes the green team disappears and the practices disappear."

As Ms. E and Mr. C's stories show, teachers who implement education for sustainability on any scale are taking the risk of censure from school or district administrators. When they act alone, they are likely to lose any challenge. However, if there were a district-wide network of such educators, or a point person at the District whose job included supporting teachers' implementation of education for sustainability, teachers would be in a more secure position and it is likely more teachers would engage in the work.

Racial equity

Isolated climate and sustainability action is inherently less efficient and effective than collective action, and it is also inequitable. Schools with more financial resources and better organized parent communities have more discretionary time and money to invest in education for sustainability. As discussed previously, the Performance Management Policy of SPS keeps the pressure on schools with lower test scores to focus on math and reading at the expense of other experiences.

It is well known that there is a gap in academic achievement (as measured by standardized test scores) between poor students and middle-class/wealthy students and between Black & Brown students and white students, regardless of income. This discrepancy was initially referred to as the achievement gap, and many people now prefer the term educational debt, as the gap in achievement scores can be clearly understood as resulting from decades of exclusionary and oppressive educational and social policies that have disadvantaged Black & Brown students. A related concept is that of "opportunity gap," which properly refers to racialized differences in experiences (both in and out of the classroom) that prepare students for academic success. However, in Seattle Schools,

the phrase “opportunity gap” is routinely used to mean the same thing as “achievement gap” – a difference in achievement on academic tests. The phrase “opportunity gap” is used because “achievement gap” has connotations that affirm white supremacist beliefs in the inferiority of Black & Brown people. However, switching out the phrase is conflating two distinct concepts: achievement gap refers to the output, opportunity gap refers to the input.

This is relevant to education for sustainability because the rich, student-centered learning experiences that are hallmarks of EfS are a viable means of closing the *opportunity gap,* which may also narrow the *achievement gap*. Put another way, EfS can begin to pay down the educational debt. Ms. E spoke about the importance of education for sustainability[45] in closing the opportunity gap:

> My last year of teaching, I had been asked to speak at Oxbow Organic Farm, the Burke Museum asked for a statement for their fundraiser, Meany Hall did the same. We always sent thank you cards and I would always say to them , "You are helping to close the Opportunity Gap in a way I never can." I hate the way we use the term opportunity gap and achievement gap interchangeably. Until we get the input right, we won't get the output. I can never do that in the classroom.

Yet lack of district-wide support for EfS allows wealthier, whiter schools to obtain these rich experiences through PTA funding and their high test scores allow them to operate with “earned autonomy” and “budget flexibility for discretionary spending,” while poorer schools with majority students of color “receive prescriptive guidance from the district,” (Policy A02.00, Seattle Public Schools Board of Directors, 2010).

This is an especially troubling state of affairs considering SPS’s commitment to racial equity, which is encoded in strategic plan, policy, and procedure, invested in with financial and human resources, and routinely invoked in discourse. Failure to support EfS district-wide deprives

[45] Although she did not use this term, her program of place-based education including observation and stewardship of the natural environment surrounding the school clearly meets the definition of EfS.

students of color furthest from educational justice[46] of rich, complex instruction. Also, because these same students are disproportionately impacted by environmental bads (poor air quality, lack of access to green space, food insecurity, urban heat islands, displacement, flood risk), depriving them of the knowledge and tools to address environmental crises is detrimental to their health and futures. As an educator committed to climate and sustainability action stated, "Across the board in terms of climate justice -- all of these things go hand in hand. For the district to truly support climate justice, they have to support racial justice, they have to support Native justice, they have to make it clear these things are all connected."

Many interviewees acknowledged that students are aware of these interconnections, yet the school system lags behind. A school board director said, "It's true [there is no racial justice without climate justice], but I don't know how many people are seeing that connection. A lot of people were seeing it, especially students," and a CBO rep who works with student-led Green Teams stated that when it comes to racial justice and climate justice, "youth see them as interconnected and are not willing to discuss them in isolation."

Failure to address environmental and climate justice as a top priority district wide sends the message to students, especially students of color furthest from educational justice who are already experiencing the impacts of environmental racism, that the school system is not that interested in what are literally matters of life and death for our students.

[46] SPS documents refer to students of color, students furthest from educational justice, and students of color furthest from educational justice. Students furthest from educational justice includes Black, Latinx, Indigenous, Southeast Asian, and Pacific Islander students as well as students living in poverty, those with disabilities, and English Language Learners. Students of color furthest from educational justice would exclude white, multiracial, or some Asian-ethnicity students living in poverty, with disabilities, or who are English Language Learners. Although these are the technical definitions of the term, in discourse they are often used imprecisely. In all cases, African American males are especially prioritized for services and resources, according to the philosophy of targeted universalism, which states that policies, procedures, and practices designed to uplift the most marginalized or disadvantaged members of the community should benefit all people in the community.

A CBO representative spoke on their personal experience as a student in SPS:

> At Denny and Sealth,[47] it seemed like two different worlds. My neighborhood was completely different from school -- even the neighborhood was totally different. It made things harder because it felt like people didn;t care. Especially when it's at school when it's supposed to feel like people care about you. If there had been a program like Duwamish Valley Youth Corps, it would have kept me connected for sure. Would this program at the school be tied back to the community? If the program was tied back to the community, it would make me feel cared for.

*Policy environment*

School Board Resolution 2020-21-18 the Clean Energy Resolution contains this clause, "the implementation plan shall include recommendations for integrating climate science and climate justice into curriculum, incorporating school facilities resource conservation efforts into project-and place-based learning, professional development opportunities for teachers, and student learning opportunities in STEM that leverage Career and Technical Education career pathways." Resolution 2012-13-12 the Green Resolution makes reference to designing buildings to maximize educational opportunities and restoring natural habitat on the school grounds in order to facilitate environmental studies, although the Resolution does not actually mandate those studies to take place.

The educational specifications for high schools and elementary schools (2015) both call for buildings and grounds to allow for outdoor education; the high school specs go further to include references to green technology and science education within CTE offerings and farm-to-table education including opportunities to grow, cook, and taste fresh food and visit local farms, (Seattle Schools Educational Specifications for High Schools).

Schools' budgets, staffing, and professional development are defined by their Continuous School Improvement Plan (CSIP), which is updated annually. In turn, all CSIPs are to be aligned to the District's Strategic Plan. Therefore, the absence of commitment to climate and sustainability

[47] Two schools in SPS.

action in the Strategic Plan leads to the same absence in CSIPs which leads to no support or accountability for following through on the educational opportunities described in the educational specifications. The Clean Energy Resolution calls for the implementation task force to consider options for including school-based sustainability goals in every school's CSIP.

As mentioned in the current performance section, the state of Washington does have environmental education standards, which are to be taught in an interdisciplinary fashion at every grade level, meaning that they should be integrated into literacy, math, science, and social studies curricula. The standards clearly call for education for sustainability to be included in the educational program of every public school in the state:

> **Standard 1: Ecological, Social, and Economic Systems**
> Students develop knowledge of the interconnections and interdependency of ecological, social, and economic systems. They demonstrate understanding of how the health of these systems determines the sustainability of natural and human communities at local, regional, national, tribal, and global levels.
>
> **Standard 2: The Natural and Built Environment**
> Students engage in inquiry and systems thinking and use information gained through learning experiences in, about, and for the environment to understand the structure, components, and processes of natural and human-built environments.
>
> **Standard 3: Sustainability and Civic Responsibility**
> Students develop and apply the knowledge, perspective, vision, skills, and habits of mind necessary to make personal and collective decisions and take actions that promote sustainability.

Critically, there is no statewide assessment in place for these standards, and no infrastructure of support or accountability for teaching them.

*District structures*

Simply put, there are no district structures in place to promote climate and sustainability action in the teaching & learning of Seattle Public Schools. Common structures that enable other types of teaching include district level staff (coaches, specialists, and consulting teachers) that

provide resources and professional development to school-based teachers, goals in the CSIP, and district-adopted materials and resources. None of these structures exist to facilitate education for sustainability in SPS.

**Communication**

*It's so pathetic, the lack of people in the district who know about us. Communication is our Achilles heel. We do all this work behind the scenes and our story is poorly told/ We don't have a lot of access to principals, teachers, or students.*

– Resource Conservation Specialist

*Overview*

SPS does little to support communication regarding climate and sustainability action. Expectations and successes are not publicized internally or externally. Opportunities for building momentum for climate and sustainability action through media exposure are missed. The Seattle Public Schools website is difficult to navigate, cluttered, and outdated. Staff without professional communications or IT expertise are expected to manage their own webpages. Communications support is recognized by district staff and the School Board as being a valuable resource for the success of initiatives, but there is not a system for intentionally deploying this resource. There are inadequate structures for face-to-face communication regarding climate and sustainability action.

*Current performance*

<u>External communications</u>

Because of insufficient allocation of human resources and lack of predictable and consistent procedures, communication about conservation efforts within the District and to the community is poor. The District website -- which is outdated, unattractive, and difficult to navigate -- does not include easily accessible pages that report district goals for sustainability and progress on those goals. The webpages which come the closest to meeting this criterion are the Utility Conservation

and Utility Data pages, which are each four levels removed from the Home page. These pages explain the overall goal of resource conservation, but do not clearly list conservation goals. To find data about current performance on the goals, one must click on links to open documents which list every school's total utility usage. This provides a wealth of data for those who are motivated to find and understand the data, but it does not clearly and simply communicate the goals or current performance to the broader community. As an SPS educator noted, "Science teachers don't know that there's a report of all the water usage."

Also, much of the information is now out of date as two programs featured on the webpages (Shared Savings and Conservation Award Champions) are no longer active. There are helpful resources on the webpages, such as checklists for opening and closing classrooms, posters to educate students about waste sorting, and even documentaries about food waste, but it takes time and motivation to find these resources.

There is no routine communication structure to spread news about successes and expectations for climate and sustainability action, such as a dedicated column in the School Beat newsletter, periodic email blast to building staff, or regular updates to the School Board. This prevents successes from being communicated in a way that promotes group efficacy and establishes a culture of conservation in SPS. Research has shown that regular communication about goals, successes, and expectations is a key component of establishing a culture of sustainability in a school (Schelly et al., 2010). Regular communication keeps momentum and focus on a project, and increases its success, but RCS have expressed that they lack the technical skills and time to maintain an easily accessible website and that they are "not allowed" to send all-staff emails.

Review of School Board committee meeting minutes revealed that for high-priority projects, staff from the Communications Department are often dedicated to the project. For example, to communicate with families about a levy vote:

> Communication strategies for BEX V include print, social media, radio, brochures, our annual report to community which will be distributed to all families and our levy information brochure. SPS is working on branding with Strategies 360. Concerning messaging - clarifying property state tax, city levy, public needs to map of [sic] puzzle piece
> (Operations Committee Meeting Minutes, June 2018)

Or regarding an instructional materials update, "K-8 adoption communications plan... Spanish adoption communications plan...How do we connect instructional materials adoption to the work of the ethnic study groups?" (Curriculum & Instruction Committee Meeting Minutes, August 2018). And when the student rights and responsibilities handbook was updated, "Director Harris also requested communicating all the changes to parents and the community in School Beat," (Curriculum & Instruction Committee Meeting Minutes, May 2019).

It is clear that communications is a resource in SPS, and one that is not distributed evenly, "Dir. Harris noted confusion that the Department of Teaching & Learning does not have a communications professional attached to that department. Dr. Kinoshita noted that we had one in years past and was unfortunately cut in the budget adjustments last year,"(Curriculum & Instruction Committee Meeting Minutes, January 2018)

In a November 2020 update to the Operations Committee about the Green Resolution, "The Resource Conservation Team requested support developing dashboards and a communication plan to share successes and goals with the public," (Operations Committee Meeting MInutes, November 2020). Both San Francisco and Portland have such dashboards, and it makes it easy to see where progress is being made and where it is needed, and equally importantly, it signals to schools and to the wider community that resource conservation and shrinking our environmental footprint is a

District value. Having data accessible in a dashboard format also makes it usable for teaching and learning. A Resource Conservation Specialist stated, “We want to provide tools that will make resources available to teachers to make [resource conservation] visceral.”

The SPS newsroom webpage shows very little publicity related to climate and sustainability action. The page has two columns: News Releases and SPS In the News. At the time of this writing, SPS Press Releases lists 28 links to press releases prepared by SPS’s Media Relations department. Of these, two have content related to climate and sustainability action: one is about the passage of the Clean Energy Resolution and another is about celebrating Billy Frank, Jr. Day. [48]

Of the 64 articles linked in the SPS In the News column, one is about the Clean Energy Resolution. An effective communications campaign to build momentum and establish a cultural norm of climate and sustainability action would issue press releases any time something relevant occurs. Examples of missed opportunities for storytelling that occurred during the time period examined for this case study include multiple examples of breaking ground on sustainably designed new construction, multiple examples of retrofitting aged buildings for efficiency, the completion of a third-party engineering report that revealed that SPS’s average EUI is half that of the state average, installation of solar panels at six schools, and the receipt of the Green Ribbon Schools award. As shown at Rocky High School (Schelly et al., 2012), when sustainability is part of “who we are and what we do,” building occupants can make behavioral adjustments that outperform LEED construction in terms of resource conservation. But in SPS, little energy is devoted to external communications about climate and sustainability action.

The What’s New webpage lists 67 articles about current happenings in SPS, including 17 related to capital projects. This case study has established that capital projects routinely include

[48]Billy Frank, Jr. is a revered local activist for tribal sovereignty and fishing rights.

significant sustainable design features and are chiefly responsible for the reduced energy use across the district, but only one phrase related to this is included in the blurb under the headline on the webpage, to wit, “The metal clad wood windows greatly improve energy efficiency and occupant comfort,” (https://www.seattleschools.org/district/calendars/news/what_s_new) . If you click on “Read More” and go to the full SPS article, you get more details, such as, “All three schools include sustainable design features that work toward the district’s net-zero energy goals and eliminate the use of fossil fuels. Geothermal heating and energy-efficient LED lighting reduce energy usage. Each school is being built to accommodate installation of solar panels in the future” (Construction Starts This Summer, 2018). However, an effective communications plan seeking to maximize opportunities to establish sustainability as a cultural norm would tout the sustainable design “above the fold,” so that skimming the What’s New webpage leads the reader to understand that the District is using levy funds to build sustainable, efficient buildings that lower the District’s carbon footprint and also save on operations costs. The webpage itself as it stands gives no indication that SPS cares at all about the environmental impact of its capital projects.

Internal communications

Just as there is a lack of effective communication to the community about SPS’s work in climate and sustainability, there is no system in place for internal communications to make SPS staff aware of successes or expectations related to climate and sustainability. As mentioned previously, “Seattle Public Schools: Sustainability Vision, Goals, and Strategy,” (McLennan, 2020) identifies storytelling as a key deficit in SPS’s sustainability work. According to a School Board Director, “[Sustainability is] a lot more prominent in our district than many people realize and I try to highlight that in board meetings.”

Superintendent Procedure 6810SP calls for principals to communicate their schools' resource conservation efforts and achievements to the school community, but there is no accountability for this expectation, nor is it clear that principals are aware of the expectation. In addition to written communication, presentations during the School Leadership Institute and the mandatory professional development that occurs prior to the first day of school each year are opportunities to communicate district-wide expectations and successes. Climate and sustainability are absent from these culture-building events, with the exception of the RCS interaction described in the Utility conservation section of this report.

Disconnect

The lack of communication about successes in and expectations for climate and sustainability action contributes to a sense of disconnection between teachers and district staff, not just on climate and sustainability, but on issues of justice in general. From an educator's perspective, "Most teachers are really disconnected from what the district is doing, and also from Seattle organizing. There is a major disconnect between teachers and the district," and "a lot of students and educators have important ideas about climate that aren't being listened to at the District level. For example, Fridays for the Future has a lot of support among educators, but district leaders and the School Board don't listen" (interview with SPS Educator). On the other hand, from a School Board Director's perspective, when it comes to change based on policy, "I don't know how well that trickles down to the schools. Because of our distributed model of leadership."

*Policy environment*

There are some limited mentions of communication in Procedure 6810SP Natural Resources Conservation that have already been mentioned in this report: principals are to communicate utility usage data and conservation procedures to the school community, and to post signs to remind the

school community to take specific actions to conserve resources. Other relevant resolutions, policies, and procedures are silent on communication.

*District structures*

There are no structures in place specifically to facilitate communication about climate and sustainability action in SPS. No human resources from the communications, media operations, or web content and design departments are dedicated to Resource Conservation or Capital Projects & Planning. The public process for working with the communications department is posted on the Communications Department webpage, accessible through the Departments page from the Home page of the SPS website. From there, navigating to the FAQs page locates the question "How do I get news about my school out to the community?" which answered with a list of communication channels, including the bi-weekly School Beat newsletter which is sent to family and staff, the News page of the SPS website, social media, and press releases to media outlets. An email address is provided. Six staff members are listed on the Communication Department Contacts page, although there may be more junior staff not listed on the page. No one from the Communication Department responded to my requests for an interview.

**Purchasing**

*Overview*

The District does not implement an environmentally preferred purchasing policy, nor does it purchase green cleaning products and equipment. School staff are not encouraged to conserve resources, including paper. In fact, certain budget and inventory practices encourage over-consumption. Environmentally preferred purchasing is suggested in procedure, but this provision is ignored. The Clean Energy Resolution contains two provisions that could influence purchasing.

*Current performance*

Although there are 18 items on the District Climate & Sustainability Action Assessment on which SPS was rated a zero, purchasing is discussed here because it has a large impact on sustainability and can only realistically be achieved at the district level. McLennan Design recommended for SPS to adopt a green purchasing policy in its vision and goals report (2020). Seattle Public Schools has no system in place to encourage or require environmentally preferred purchasing. The Procurement and Distribution department's goals are:

- Compliance: Ensure the integrity of our business processes
- Service Delivery: Consistently meet service and delivery standards
- Fiscal Integrity: Be good stewards of public funds

There is no mention of environmental considerations or sustainability on the webpage, nor in the School Board's procurement policy (Policy 6220). However, the department did reduce paper use in the procurement process by 80% by introducing paperless requisitions.

School Board Committee minutes reveal many opportunities to inquire about environmentally preferred purchasing or the impacts of purchasing choices, such as during instructional materials adoption and purchase of furniture. On only one occasion did a Director ask about the environmental footprint of a vendor (in this case, the yearbook vendor).[49]

A green cleaning program is another facet of purchasing, including both supplies and equipment. According to the New Jersey Sustainability Baseline Assessment, green cleaning methods have environmental, health, and cost benefits. SPS has not adopted a green cleaning policy and committee meeting minutes contain no references to green cleaning policy. When asked if SPS has a green cleaning policy, a Resource Conservation Specialist reported that they field calls from community members asking about green cleaning policy and "we don't have one."

[49] Director DeWolf in December 2019. The valedictorian speech that influenced DeWolf so strongly was in June 2019.

Nutrition services represents a partial exception to the failure to consider sustainability in SPS purchasing and consumption. Through its Washington Grown program, Nutrition Services purchases locally produced foods for daily use. According to the Washington Grown webpage of Seattle Public Schools, "Nutrition Services has a long standing history of working with its prime produce vendor, Duck Delivery of Washington, Inc. to source locally grown produce…" Sustainability was cited as one consideration in forming the vendor partnership with Duck Delivery:

> In 2007 United Salad Co., Duck Delivery Produce, Inc and Duck Delivery of Washington, Inc. became the first Food Alliance Certified Distributors in the United States. This recognition followed a rigorous third-party audit covering a variety of industry and consumer concerns including conservation, safe and fair working conditions, recycling, quality control, food safety and traceability of sustainably-grown products.

The Director of Nutrition Services has made a stated commitment to further increasing locally sourced and culturally appropriate food (Operations Committee Minutes, June 2020).

*Policy environment*

Superintendent Procedure 6810SP Conservation of Natural Resources states, "The District should purchase recycled content and environmentally preferable supplies when the cost and functionality is equivalent to other supplies." This is already a soft statement of preference, not a mandate, but there is no evidence that recycled and environmentally preferable supplies are routinely considered to determine whether the cost and functionality is equivalent.[50] The procedure also states that, "All District staff should minimize paper and copier use." Obviously, "minimize" is a subjective term, and this provision is not enforced via quotas.

[50] Including the qualifier of equivalent functionality reveals and perpetuates a false belief that sustainably produced materials are of lesser quality than unsustainably produced ones.

The Clean Energy Resolution also makes a soft request, “the task force may also explore additional aspects of climate sustainability, including carbon-intensive food and materials consumption, waste…” It remains to be seen whether the task force takes up this optional line of business.

School Board Policy 6705 Food Service and Nutrition, adopted in July, 2017, states that “the Board encourages the use of high quality, organically and locally grown food … “ and this is carried out through SPS’s partnership with Duck Distribution for the supply of locally produced food.

This case study did not reveal any city or state policies relevant to SPS purchasing.

*District structures*

There are no district structures in place to facilitate sustainable purchasing practices.

## RACIAL EQUITY ADVANCEMENT IN SEATTLE PUBLIC SCHOOLS:

## A Limited Comparison Case Study

*Overview comparison*

Racial equity action in SPS is grounded in Policy 0030 Ensuring Educational and Racial Equity. This policy was adopted the same year as the Green Resolution, but the two codes have gone on to lead different life stories in SPS. Seattle Public Schools' implementation of racial equity action is institutionalized through policy alignment, robust staffing, high-frequency of discourse and symbolic value, and infrastructure of support and accountability. In all those ways, it differs from climate and sustainability action, which is siloed, under-resourced, rarely discussed, and neither supported nor enforced.

The case of racial equity action in SPS is a model for insititutionalizing a progressive cultural norm in a K-12 district. Over the past decade, SPS's policies, accountability tools, staffing, and discourse have moved racial equity from a peripheral concern championed by a few committed staff, often in the face of opposition and at personal risk to their careers, to a central concern and a rubric for decision-making throughout all departments of the District. Racial equity has been firmly set as the top agenda item for Seattle Public Schools. The success of this transformation offers key insights for moving climate and sustainability action from the periphery to the center of SPS activity.

But. Racial equity action has not been an unequivocal success~~,~~ The sincerity, depth, and effectiveness of racial equity action in SPS is questioned by some students, staff, and community members, and we remain a long way from the day when students of color thrive in our district. Although African American male students are prioritized in the Strategic Plan, outcomes for these students during the period investigated in this case study show only so much benefit.

The limits of transformation are as instructive for climate and sustainability action as are the successes, illuminating places where -- despite significant commitment and investment in transformation -- institutional inertia, legacy systems, and hegemony limit that transformation. Notably, curriculum and instruction has not made meaningful changes for racial equity. This case study examines similarities in ideal models of teaching and learning for racial justice and for sustainability, and posits that to take truly transformational action, the District must change what and how it teaches young people.

*Current Performance*

Leadership commitment to racial equity

School Board Policy 0030 Ensuring Educational and Racial Equity was adopted in August 2012 under the leadership of Jose Banda, who was Superintendent of Seattle Public Schools from 2012-2014. In this policy, SPS makes eight commitments: equitable access, racial equity analysis, workforce equity, professional development, welcoming school environments, partnerships, multiple pathways to success, and recognizing diversity.

Policy 0030 has been championed by the three subsequent superintendents[51] and has had far-reaching, consistent influence on the District's symbolic, structural, human resources, and political dimensions, although less actual impact on student outcomes. The policy has influenced planning and decision-making at the district level throughout three superintendent tenures, and its expression has become increasingly bold and clear: in the 2019-2024 Strategic Plan, the District promises to ensure racial equity in SPS, "unapologetically address the needs of students of color

[51] Dr. Larry Nyland (2015-2018), Dr. Denise Juneau (2018-2021), Dr. Brent Jones (Interim Superintendent, 2021-present)

who are furthest from educational justice, and work to undo the legacies of racism in our educational system…" (Seattle Excellence, 2019).

SPS leadership, both District staff and School Board, have strong nominal commitment to racial equity. In their 2020 development goals, the SPS Board of Directors committed $50,000 to a sequence of professional development aimed at meeting the following goals aligned to the Strategic Plan:

- Pro-Black Agenda. Assertively engage in pro-Black relationship building, dialogue and normalization of the centering of Black voices in Seattle Public Schools
- Model anti-racism via policy and decolonization of our leadership practice
- Participate in training pertaining to: Ethnic Studies pedagogy, Since Time Immemorial, and Anti-Racism in Policy Making

(Adoption of 2020 Board Goals and Objectives, 2020)

Superintendent Juneau (2018-2021) has made frequent and unequivocal statements in support of racial equity, whereas she made no public statements in support of climate and sustainability action, (although she has also been accused by some racial justice advocates of working against racial equity in SPS, especially regarding supporting employees of color and her handling of the ethnic studies initiative).

Analysis of School Board Committee minutes reveals that the value of racial equity had already been established as a key priority -- regularly invoked and supported with structural, human, and financial resources -- by January 2017. The following excerpt from the minutes of the January 2017 C & I Committee Meeting reveals several themes relevant to the institutionalization of racial equity action in SPS. Bracketed, italicized annotations analyze these themes.

> **Superintendent SMART Goal 2, Eliminating Opportunity Gaps (EOG)** *[The Superintendent included explicit racial equity goals in the strategic plan.]*

Keisha Scarlett provided an overview of the handout provided. She noted the work across all departments and to de-silo the work of race and equity across the district by institutionalizing race and equity work across departments. *[Strong top-down leadership with high-level champions allow cross-departmental implementation of racial equity action.]*

Ms. Scarlett noted the EOG initiatives, as listed on the handout, as well as the building leadership team (BLT) trainings that will be coming up later in September and again in October. She noted the Racial Equity Team's expansion, working with the Seattle Education Association (SEA) to launch Saturday institutes starting November 4. *[A network of Racial Equity Teams takes action at the school level, and facilitates dissemination of information, both school-to-school and from central office to the schools.]*

Ms. Scarlett noted high quality learning events at Time, Responsibility, or Incentives (TRI) day with school teams and central office in regards to institutionalize racial equity. She noted 200 central office leaders and staff joined a half day training, and the feedback received was that it was too short and staff wanted a longer discussion opportunities. *[Mandatory professional development is provided to school staff and building administrators.]*

Ms. Scarlett noted that the African American Males Advisory Committee (AAMAC) final recommendations to the Superintendent are coming up on September 28th . *[A community task force has convened and is delivering recommendations directly to the Superintendent.]*

She noted important recommendations coming from the team and highlighted the work with HR on the affirmative action plan to align Policy No. 0030, Racial Equity, with affirmative action plan. *[Specific department policies are revised to align with Policy 0030.]*

She outlined that the digital equity toolkit, with six modules have been completed and ready. *[The digital toolkit is another avenue of mandatory professional development.]*

Ms. Scarlett noted the Ensuring Educational and Racial equity posters that are posted around the district office and also up at each school. *[The policy is communicated clearly and simply in a poster format, which is uniformly distributed throughout schools from central office.]*

She noted instruction that was presented to school and district leaders at Leadership Learning Day (LLD) and will soon be translated in to the 9 top languages for families. *[The policy is communicated to all families.]*

Ms. Scarlett noted the Ethnic Studies task force group meeting where they shared the curriculum overview that they are working on, including themes and essential

> questions. She noted culturally responsive teaching practices training to pull together a grand convening of the community and district staff to connect with each other. *[Curriculum and teaching methods are included in the implementation of the policy, through professional development and curriculum development.]*
>
> Dr. Anderson and Dr. Beaver are preparing to share the work with research findings and getting feedback across the country. She noted that SPS is leading the way in many ways per conversations she has had with other districts... they are looking at the City of Seattle's Race and Social Justice Initiative model of change management teams and leads, which may be replicated as a potential model to organize our upcoming Central Office Racial Equity team. *[Implementation of the policy is viewed as a change management project, and an intentional strategy is being considered. The Central Office Racial Equity team de-silos racial equity work and establishes consistent expectations across departments.]*

Professional development, human resources, policy alignment, and communication and accountability structure have been critical for establishing racial equity as a cultural norm in Seattle Public Schools. The minutes reviewed for this case study contain 42 mentions of racial equity; the most frequent sub-topics were application of the racial equity analysis tool, ethnic studies, and racial disproportionality in program composition (including both teachers and students).

This case study also draws upon Annual Reports for Policy 0030 from 2018-19, 2019-20, and 2020-21; a table of all District initiatives included in the reports is presented in Appendix I. Analysis of these initiatives shows that the District has embedded racial equity in a wide range of activities, with focus on professional development, partnerships with community and families, and revising policies. Not all of Policy 0030's eight commitments are acted on equally: multiple pathways to success and recognizing diversity are aligned to only a few initiatives compared to equitable access, professional development, welcoming school environments, and partnerships.

The sections that follow describe key initiatives in greater detail.

Racial Equity Analysis Tool

A cornerstone of the implementation of Policy 0030 is the District's Racial Equity Analysis Tool (Appendix H), designed to interrupt status quo decision-making that reproduces racism; this

tool is routinely applied to all Board and District staff actions; minutes contain multiple examples of Directors and district staff holding each other accountable for applying the tool to proposals, as well as discussing nuances of application and seeking expert help in applying the tool. This discourse shows that the racial equity analysis tool has been effective in prompting SPS decision-makers to consider the racial equity dimensions of a wide variety of actions.

The page that hosts the Tool states:

> It is the moral and ethical responsibility and a top priority for Seattle Public Schools to provide equity access and opportunity for every student, and to eliminate racial inequity in our educational and administrative system. Research indicates that racial disparities exist in virtually every key indicator of child, family, and community well-being.
>
> The Racial Equity Analysis Tool lays out a clear process and a set of questions to guide the development, implementation and evaluation of significant policies, initiatives, professional development, programs, instructional practices, and budget issues to address the impacts on racial equity.
> (Racial Equity Analysis Tool, n.d.)

The Department of Racial Equity Advancement (DREA) provides training to Board members, staff, and community members (such as oversight committee or task force members) to help them use the tool effectively, and has also prepared a Facilitator's Guide.

Even with these safeguards, it must be acknowledged that the REA Tool is only as effective as the group applying it. For example, an item on the tool asks, "What are the potential benefits or unintended consequences" of the decision under consideration. If the decision-making group does not include people with lived experience or earned understanding of how racism operates and self-replicates, it is likely to be blind to unintended consequences.

School-based mechanisms

A School Board Director says of racial equity as a cultural norm in SPS, "Racial justice is embedded at the very top. [Superintendent Denise Juneau] did an amazing job. At the top level we

are steeped in racial justice. You can't do anything without being asked ‘did you do an equity analysis on that?’ I don't know how well that trickles down to the schools. Because of our distributed model of leadership.”

Notably, interviews revealed educators often have the opposite perception: that the District is engaged in lip-service while school staff are genuinely implementing racial equity action, saying “I think the District staff and the school board and the leaders at the district need to spend more time building authentic relationships with community orgs and Center for Race and Equity,” and “The hardest part is not passing the resolution, it is the follow-up. The SB passes progressive resolutions, but doesn't follow through. Like the race & equity policy…” (interview with SPS educator). Ms. E said, “We are continuing to hold students back. We talk about equity, but we are the ones who are actively accelerating students of privilege and decelerating students who are underserved.”

This perception also holds true among families and community members. In a Seattle Times article (Morton, 2018) about racial equity in SPS, a community activist for racial equity in education was quoted as saying:

> The district, as an institution, doesn’t care about students of color... That’s not to say teachers and principals and individuals don’t get it. But, historically, (our education system) was never really designed to uplift families and students of color. Despite all the flowery talk that I hear about equity, there continues to be a big gap between what the district says and what it does.

Whether the District pushes schools forward or schools pull the District along, several mechanisms institutionalize racial equity action at the school level, including the Continuous School Improvement Plan (CSIP), mandatory professional development, HR practices, and a network of racial equity teams. CSIP goals must address racial equity by setting goals to reduce or eliminate racial disparities in academics, attendance, and discipline, prioritizing improved outcomes for Black boys and young men first.

All teachers are required to complete DREA's on-line training, the Eliminating Opportunity Gaps toolkit. In the district-wide professional development days that occur prior to the first day of school, there has been strong focus on racial equity for the past several years, including two full days of racial equity training prior to the start of the 2020-21 school year. Topics covered in these trainings include Seattle's history of redlining and housing discrimination, implicit bias, culturally responsive teaching, identity development, and more.

Is this professional development effective? According to a School Board Director:

> It's hard to teach an old dog new tricks -- Some people are saying "Of course we have racial equity. I'm not a racist!" The Racial Equity training we had was a 300-person Teams call, and some teachers were like "I already know this," and others were like "What is this we're talking about?" Smaller trainings are better. It has been embraced at [the District central office] -- new hires come in and they know already. It's more about working with 20-year teacher.

This quote suggests that professional development has had less impact on the anti-racist disposition of the teaching force than have changes in HR practices seeking to hire anti-racist educators and teachers of color.

Workforce equity

Besides investing in professional development for educators already employed by SPS, the District has also invested in a workforce development program to increase the proportion of teachers of color in SPS. It is widely known that teaching is overwhelmingly a profession of white women, with that demographic comprising more than 80% of teachers in most schools. Many students of color go their whole school career without having a teacher who shares their racial identity. In 2018-19, about 20% of SPS educators were people of color, although the student body is over half students of color, (Annual Annual Report Policy 0030 –Ensuring Educational and Racial Equity, 2019).

The Academy for Rising Educators (ARE) recruits high school students and adults employed as instructional assistants in SPS and supports them in attaining AA degrees, which is a prerequisite for participating in the Classified to Certificated program, a program to facilitate instructional assistants becoming certificated teachers. This program has successfully increased the proportion of future teachers who are people of color, including Black males.[52]

The Human Resources department has also taken efforts to recruit and retain a racially diverse workforce. They updated the mandatory site-based hiring training to focus on how hiring teams can combat implicit bias and developed partnerships with historically Black colleges and universities, (Annual Report on Policy 0030 -- Ensuring Educational and Racial Equity, 2020). Their work has resulted in more teachers and administrators of color being hired: in 2019-20, 27.1% of teachers hired identified as people of color (compared to 26.4% the previous year), and the percentage of school leaders who identify as people of color increased significantly, from 35% to 57% (Annual Report on Policy 0030 -- Ensuring Educational and Racial Equity, 2020).

Besides hiring, retention of teachers of color is critical for creating a workforce that reflects the demographics of SPS's students. To address this goal, SPS partnered with the University of Washington in 2019-20 and 2020-21 to analyze the retention of teachers of color. They found no statistically significant difference between the mobility or attrition of teachers of color compared to white teachers during the years examined (2013-2021).

Another important aspect of workforce equity pertains to the Teacher Leader Cadre (TLC). TLC teachers offer peer-mentorship and coaching to other teachers, and also receive additional

[52] Program participation: Seattle Central College (Associates Degree-seeking, including High School Promise students): 37 (ALL candidates of color/8 African American Males) •Traditional Classified to Certificated (certificate, Bachelor's or Master's seeking): 15 (9 candidates of color/4 African American Males) •Seattle Teaching Residency: 28 accepts, 4 pending (Annual Report for Policy 0030 -- Ensuring Educational and Racial Equity, 2021)

professional development and a stipend. The HR department changed policies to correct inequities in the TLC hiring process:

> Starting in 2018, the Teacher Leader Cadre (TLC) revamped its hiring process. Prior to 2018, hiring was determined solely by the school principal and buildings were not required to notify all staff of TLC openings. The current hiring process requires buildings to notify all certificated employees of TLC openings. Further, if more applications are received than positions are available, the applicants must be interviewed using the site-based hiring process. ... In part due to the changes in hiring practices, the percentage of teachers of color represented in the program has increased from 16% in '18-'19 to 26% in '20-'21. In the last year it has increased by 6 percentage points.
> (Annual Report for Policy 0030 – Ensuring Educational and Racial Equity, 2021).

Racial Equity Teams

Racial Equity Teams are a critical part of racial equity work in SPS. According to the Department of Racial Equity Advancement, "The Racial Equity Team program acts as a key lever in operationalizing the commitments of Policy #0030 and advancing racial equity in our school buildings. In alignment with the 2019-2024 Strategic Plan, RETs strive to systematize racial equity across Seattle Public Schools and work towards racial justice," (Annual Report for Policy 0030 – Ensuring Educational and Racial Equity, 2020).

Beginning in 2014-15, RETs were rolled out in cohorts through an application process; there are now 49 RETs in SPS, and an additional twelve teams will begin their work in 2021-22, (Annual Report for Policy 0030 – Ensuring Educational and Racial Equity, 2021). Teachers, administrators, other school staff, family members, and students (in high schools) can sit on RETs; SPS employees on the team receive a small stipend.[53] Each RET sets goals tailored to the needs of its school community, and receives support through coaching and professional development to meet those goals.

[53] The RET receives a $2500 stipend to be divided among RET members.

A research partnership between the SEA's Center for Racial Equity and the University of Washington's College of Education conducted a mixed-methods study, published in December 2019, to understand the work, successes, and barriers of RETs, as well as the impacts on student outcomes. They found four key themes across the RETs:

1. RETs promoted racial literacy and conversations about race in schools
2. RETs need technical assistance moving from theory to practice
3. Key resources for RET success include principal support and access to all-staff professional development time
4. Barriers to RET success include resistance from other educators, lack of in-house expertise, and decision-making power

The study also found, "no systemic patterns of RET effects on student average perceptions on school climate, teachers' average perceptions on working conditions, and school average test scores." (Barajas-Lopez et al., 2019, p. 4). The researchers noted that case study data did suggest that some RETs might be more effective than others, but did not elaborate on that finding, rather suggested the need for further research to identify relevant factors for effective RETs.

RETs have a district level counterpart, the Central Office Racial Equity (CORE) team. This team works to develop the capacity of district-level decision makers to prioritize and act on racial equity from their position in the SPS system. The Department of Racial Equity Advancement works to develop each member of the CORE Team by:

> taking on different stances in different spaces including: calibrating (alignment to policies and the Strategic Plan), consulting (providing feedback, advice, resources), collaborating (partnering on a co-developed project), and 1-1 coaching (deeper work for reflection, growth, and action). We refer to these as the "4Cs," and each are power professional development and adult learning levers to advance racial equity in our system,"
> (Annual Report for Policy 0030 – Ensuring Educational and Racial Equity, 2020).

Student and Community Voice

The Department of African American Male Achievement convenes an African American Male Student Leadership Council which provides input to various District initiatives and committees. A member of the Council describes the group this way in his "Student-Written Story: Nothing about us without us" (Ajala, 2020) :

> With the AAMA Student Leadership Council, we are the precedent of student leadership. AAMA operates solely around the motto "nothing about us without us." What this means is that not a single adult or figure of authority makes a decision that concerns us and our being, as young Black male scholars, without our input and verification. AAMA teaches us the value of our voice and our presence in every room we enter, whether this be a district meeting or community meeting.

The District has also conducted focus groups to learn more about racial disproportionality in discipline and used the findings to update the Student Rights & Responsibilities Handbook. Key insights from the student focus groups for reducing discipline incidents and creating welcoming environments for students of color included:

- It is all about building relationships with your students – connect before you correct
- Greet ALL students daily so that they feel welcome
- Understand each student's CURRENCY – their strengths
- Recognize students need consistency, love, support, boundaries and encouragement
- Be aware of your own biases, triggers, and expectations

(Annual Report for Policy 0030 – Ensuring Educational and Racial Equity, 2020)

Similarly, in 2019-20 the District began meeting with families from the major racial/cultural groups within SPS to learn their priorities and needs, (Annual Report for Policy 0030 – Ensuring Educational and Racial Equity, 2020).

It is important to put this work in historical context, because SPS has a history of engaging the community but failing to act on the community's recommendations. In September 2017, the African American Male Advisory Committee (AAMAC) made recommendations to Superintendent Nyland in the areas of attendance, college & career readiness, community partnerships, family engagement, and policy & practice, (African American Male Advisory Committee, 2017). Unfortunately, many of the problems the AAMAC recommendations were designed to solve are still the status quo years later (and had been status quo for decades before; recommendations from a 1986 task force were very similar to the 2017 recommendations) (Morton, 2018): African American male students disconnected from (many) school communities, unwieldy and alienating processes for families getting information or partnering with the District, and curriculum not reflective of the lived experience of African American male youth. In the same Seattle Times article (2018), Morton quotes the grandmother of an African American student in SPS had this to say:

> "They've been dealing with these same issues for decades," Gibson said. "And they keep coming up with these lovely documents and plans that float for a while and then disappear." It's up to the district's leaders whether these efforts wither and die, she said. "They want to appear to want to deal with our kids, and we go through these exercises. But we never make the real commitment to make a change."

On the other hand, some youth feel more positively. As a member of the African American Male Student Leadership Council wrote, speaking of his participation in District planning meetings to reopen schools in September 2020 during COVID, "we want to be invited to important meetings no matter how long they are, but we also want you to take our feedback and actually implement it. Because at the end of the day, nothing can be about us without us!" (Trevon, 2020).

Student outcomes

One cannot overstate the complexity of achieving racial equity in K-12 education, and many people believe that racial equity progress is especially difficult to achieve in Seattle (Krupnick,

2018). An explicit focus on racial equity in Policy and in the Strategic Plan has led to institutional processes and ample discourse aimed at racial equity. Processes have resulted in a more racially diverse workforce. But, when it comes to student outcomes, has tangible progress been made? What is the evidence that students of color, and Black males in particular, are benefiting from the adult activity described in this case study?

In 2017-18, six years after the adoption of Policy 0030, the District Scorecard reported that racial gaps were closing for high school graduation and enrollment in college level courses during high school, but not for literacy or math proficiency on state standard tests; also, suspension rates had fallen district-wide, but Black male students were still suspended at higher rates than other groups, and racial disparities in perceptions of schools as welcoming environments persisted (2018-19 District Scorecard).

Nonetheless, the strategy has shown some relative improvements for Black males compared with other students furthest from educational justice. For example, In the first year of the Seattle Excellence Strategic Plan, which focuses on academic, attendance, and discipline metrics for African American males first, attendance and discipline data for Black males and for other students of color furthest from educational justice both showed some improvement between 2018-19 and 2019-20, with improvement for Black males being somewhat higher. In that year, the rate of African American males attending more than 90% of school days increased 2.2% to 69.1% (n=4,068), while attendance for students of color furthest from educational justice increased 0.6% to 71.1% (n=18,937)Similarly, the rate of discipline incidents among African American males dropped by 9.3 incidents per 100 students (from 15.9 per 100 students in 2018-19 to 6.6 per 100 students [n=4,289] in 2019-20), while the rate for all students of color furthest from educational

justice dropped by only 3.3 incidents per 100 students (from 6.8 per 100 students in 2018-19 to 3.5 per 100 students [n=19,895] in 2019-20).

Between 2018-19 and 2019-20, the rate of African American male 9th graders on-track for graduation continued to increase, moving 17 percentage points from 70.9% to 87.9% (n=280). All students of color furthest from educational justice also improved, but less steeply: moving about 14 percentage points from 76.3% to 87.2% (n=1,418). On the other hand, the four-year graduation rate improved about half as much for African American males (two percentage points, from 73.8% to 75.8%, n=322) than the comparison group (about four percentage points, from 75.6% to 79.8%, n=1,514)

It is important to keep in mind that these changes in attendance, discipline, and academic progress also took place during school closures due to COVID, so it is difficult to determine whether SPS's efforts are creating racial equity for students. It is also difficult to conceptualize these changes without comparisons to white students, the students who benefit the most from SPS. Does data show that African American males and all students of color furthest from educational justice are beginning to benefit from SPS policies and practices at a similar rate to white students?

The only category for which data is presented to compare outcomes for white students versus students of color is referrals for the Highly Capable program. In that case, changes in policy and procedure resulted in a 90% increase in referrals among African American males (from 87 students in 2018-19 to 165 students in 2019-20), and a 48% increase in referrals among all students of color furthest from educational justice, (from 557 students in 2018-19 to 823 students in 2019-20). In comparison, referrals for white students increased by 11% over the same time period, (from 2,750 students in 2018-19 to 3,043 students in 2019-20).

Overall, it appears African American males have begun to receive more benefits from the SPS institution, yet there is little indication that African American males have begun to thrive in SPS as a result of the concerted efforts towards targeted universalism. Possibly, African American males in the youngest grades are reaping more benefits, since their whole experience in the District has coincided with the Seattle Excellence Strategic Plan; the Plan's goal for 3rd grade reading was not reported on, due to assessments being canceled because of the pandemic. Lack of data due to COVID, plus the manner in which the data is reported without comparison to the status of white students, makes it hard to contextualize and fully understand the data.[54]

It is possible that the initiatives carried out beginning in 2018 have begun to change the culture and mindset of the adults in the SPS system, leading them to recognize racial equity as a priority and giving them tools to analyze current policies, procedures, and practices for racial equity implications. Over time, this change in adults should lead to a change in student experiences. On the other hand, it is possible that SPS has confused activity with movement; there are certainly many educators and community members who are harshly critical of Superintendent Juneau's handling of racial equity, despite the strength of her stated commitment to that value, which she says stems in part form her lived experience as a Native American woman (Johnson, 2020).

Superintendent rhetoric and action[55]

Did Juneau's rhetoric and action support racial equity action? It depends who you ask. Superintendent Juneau joined Seattle Public Schools when a political climate for racial equity was established, but during her tenure this commitment was further articulated and institutionalized,

[54] Setting aside the question of whether SPS is using the right metrics and assessment tools used to measure holistic progress for African American males.

[55] This case study will only consider what Juneau said and did, as there is more information available about her tenure, regarding both specific District initiatives and her own rhetoric and actions.

especially in terms of expanding anti-racist professional development and bringing student voice closer to the seat of power. SPS issued a statement in Fall 2020 defending Juneau's record on racial equity, a record "that includes bi-monthly meetings with NAACP Seattle-King County leadership, an increase in hiring of BIPOC teachers over the last three school years, and plans to launch a Black Studies course [in Spring 2021]," (MYNorthwest Staff, 2020).

On the other hand, in an open letter to the School Board calling for her removal, the NAACP Education Chair for Washington, Oregon, and Alaska, Rita Green, criticized Juneau for central office staffing issues, failing to address racist discipline practices,[56] ignoring hate crimes,[57] consistently placing white people in charge of decisions meant to impact students of color, attacking ethnic studies, failing to provide equitable services to students of color with IEPs, eliminating school-community voice in the process for hiring principals, failing to collaborate with community based organizations and youth advisory groups, and failing to "move the needle" on high school graduation and discipline rates for Native students (Green, 2020).

Not all community activists share Green's view, however; supporters also drafted an open letter. This group acknowledged that Juneau inherited a district plagued by racial inequity, and continued to advance racial equity action even while facing the challenges of the COVID-19 pandemic (Beard et al., 2020). Ultimately, Juneau stepped down, citing her difficult relationship with the School Board as a key factor in her departure: "'It's been a struggle,' she said of her relationship with the school board. She thinks the board should aim for a culture of collaboration with the next superintendent it hires. 'We weren't able to build that great working relationship,' she

[56] Including school staff calling the police on students

[57] A swastika was spray-painted at an elementary school and the official response treated the incident as ordinary vandalism

said," (Blankinship, 2021). The SEA union rep assembly voted "no confidence" in Juneau in March 2021, and she vacated her office in May.

Despite the controversy over the specific actions Superintendent Juneau took or failed to take to create racial equity in Seattle Public Schools, there is no question that Juneau publicly and frequently stated her personal commitment to racial equity, from before she assumed leadership of SPS to after she stepped down, and took many concrete actions aimed at creating racial equity. In this case, superintendent rhetoric and action was associated with district-level racial equity action, just as lack of superintendent rhetoric and action was associated with lack of district-level climate and sustainability action. Yet, the previous review of student outcomes proves that despite the concerted effort towards racial equity, district-level action has not been associated with meaningful measurable outcomes.

Three explanations for the lack of outcomes present themselves: 1) SPS lacks the technical expertise to plan and carry out racial equity action; 2) the complex adaptive challenge of creating racial equity in a historically racist institution takes a long time, no matter how well crafted the actions may be, and 3) racial equity action has failed to address the most foundational aspects of the SPS system, and instead has functioned as an add-on or nibbled around the edges.

All three of these explanations are likely true to varying degrees. When it comes to technical expertise, SPS has engaged with leading racial equity experts and community members with lived experience for years, accruing a deep store cache of technical knowledge, definitions, and state of the art practices, although the adaptive capacity for implementing this knowledge seems to lag behind, resulting in incomplete application of received wisdom. When it comes to the long arc of change, there is evidence that as time goes by changes are accelerating. The Seattle Times exposed recommendations in a 1986 task force report nearly identical to the 2017 AAMAC

recommendations, showing little had changed in 30 years. But now, in 2021, we see progress made year over year in recruiting educators of color, and increasingly pro-Black rhetoric. Perhaps past changes are beginning to result in positive feedback loops that will continue to accelerate movement toward racial justice. This paper will zero in on the third explanation - a failure to engage with the foundations of the school system, specifically examining a sphere of action that was also a weakness of climate and sustainability action: curriculum.

Policy 0030's commitments to Multiple pathways to success and Recognizing diversity seem well-suited for expression in instruction. However, the contributions of the Curriculum, Assessment, and Instruction Department to the Annual Reports for Policy 0030 focus largely on equitable access to adopted curriculum, without approaches that are evidently "targeted" to support African American males or other students of color furthest from educational justice.

Curriculum: Black Lives Matter at School Week

SPS's annual recognition of Black Lives Matter at School began with a one-day show of solidarity in October 2016. The effort immediately expanded to a week-long focus on current and historical movements for Black liberation, with lesson plans provided to the schools from a district-wide working group. Each year 2017-18 through 2020-21, the School Board passed a Resolution affirming that Black lives matter and encouraging all schools to participate in BLM at School Week (Board Resolutions 2017/18-14, 2018/19-17, 2019/20-23, and 2020/21-17). This annual curricular event contributes to the district-wide norm of valuing racial equity, but its short duration and existence as an add-on prevent Black Lives Matter at School from being a transformational program.

Curriculum: Ethnic studies

During the time frame examined for this case study, ethnic studies became a high-visibility issue in SPS. The first resolution in favor of ethnic studies (Resolution 2016/17-17) was passed by the School Board in July 2017 in response to community organizing and activism, including the work of the NAACP Youth Council. The resolution directed that ethnic studies be written into the strategic plan, and that the Superintendent assess the current state of ethnic studies within SPS and formulate recommendations for systematizing ethnic studies throughout the District, including an implementation calendar.

Following the Resolution, groups were formed to develop the curriculum, which was to be integrated into all subject areas and taught K-12. This effort was supported by financial resources: paid staff and stipends for educators who contributed to the work group. It was also supported by Board attention, with frequent ethnic studies updates presented to the Board.

However, C & I Committee minutes also show that the work of the ethnic studies team was thwarted in some respects. The Ethnic Studies Program Manager, Tracy Castro-Gill, reported that lack of support from principals, district-level administrators, and some staff was making it difficult to gain traction on embedding ethnic studies throughout core instructional areas (September 2019). A long, slow process for revising the policy on curriculum adoption also delayed the work on establishing ethnic studies curriculum throughout SPS. Despite these obstacles, the work advanced as the working group developed instructional units, created or codified courses at the high school level, and worked on a unifying framework for ethnic studies in SPS.

That work was very much interrupted when Castro-Gill was placed on administrative leave and removed from the Program Manager position (McKenna, 2020). According to Green's open letter, Juneau wrote a letter to OSPI to rescind Castro-Gill's teaching credential (2020). Much has

not been made public about this situation, but some say that Castro-Gill was removed from her position because people were uncomfortable with her forceful challenging of racist comments, policies, and practices in the district (McKenna, 2020). Following Castro-Gill's removal, the Ethnic Studies department was also moved from Curriculum & Instruction to the Department of Racial Equity Advancement, which Castro-Gill perceives as the tokenization and marginalization of the ethnic studies initiative (McKenna, 2020).

However, the 2020 Annual Report for Policy 0030 paints a very different picture of ethnic studies in SPS:

> Ethnic Studies is a top priority for Seattle Public Schools. What began as a response to a resolution by the National Association for the Advancement of Colored People (NAACP) in January 2017, has grown to a robust professional development series, frameworks in nine curricular areas, six cross-credited high school courses for core graduation requirements, and a systemic shift in anti-racist teaching and learning in Seattle Public Schools. The future of Ethnic Studies includes a dedicated website, continuation of the successful summer institute, further development of frameworks in fine arts and world languages, adoption of the Social Justice Standards, completion of a scope and sequence, and planning for adoption of the frameworks.

This portrait of the state of ethnic studies in SPS is at odds with reality on the ground. Despite three years of work, ethnic studies frameworks have still not been adopted by the District and many teachers are unaware of ethnic studies or the supports available for integrating ethnic studies into their teaching. Thus, ethnic studies is an initiative for racial equity that has been partially implemented, but in a way that has frustrated and disillusioned those who pushed for it initially. There is a gap between the actual implementation of ethnic studies and the way it is presented in the Annual Report.

Ethnic studies is a research-validated vehicle for improving outcomes for students of color, yet it has not been fully implemented despite calls from educators, youth, and community activists.

Much more effort and money was put into color-blind math and science curriculum, despite the District's professed commitment to targeted universalism.

Curriculum: AAMAC recommendations & education for sustainability

Many of the initiatives carried out 2018-2021 act upon the 2017 AAMAC recommendations, such as those focused on developing teachers' cultural responsiveness, increasing the proportion of teachers of color (especially Black male teachers), forming partnerships with families, and identifying CBOs and programs that benefit Black male students. However, the recommendations for targeting curriculum for the benefit of African American male students have not been embraced; in fact they have in some ways been thwarted by the District's enforcement of curriculum orthodoxy and focus on standardized, purchased curriculum.

Notably, the AAMAC recommendations for curriculum share many characteristics with education for sustainability. The recommendations call for rooting curriculum in the histories, cultures, and lives of the classroom community. They call for increased problem-solving, citizenship, and innovation through project- and problem-based pedagogy. They call for linking classroom learning with meeting community needs. Although AAMAC does not use the term "sustainability," the program they are describing fits the definition of EfS.

*Figure 9: Curricular recommendations from African American Male Advisory Committee, 2017*

| 2017 AAMAC Recommendations to the Superintendent pertaining to Curriculum | | |
|---|---|---|
| Area | Goal | Notable language from Action Steps, Results |
| Attendance | African American male scholars are engaged and excited about learning. | ● Review mandated curriculum and interview staff and African American male students<br>● Improve relevance of lessons/assessments |
| College & Career Readiness | Promote student self-efficacy and commitment to social justice and citizenship through positive relationships and equity-conscious school communities | Increased:<br>● community-based decision making<br>● participation in active citizenship community, locally, nationally, and worldwide<br>● problem-solving<br>● innovation<br>● linking classroom learning with meeting community needs |
| College & Career Readiness | Increase access to rigorous, experiential, hands-on, project-based learning | ...using project-based learning builds 21st century skills for HS students (comparable effects with service learning and problem-based pedagogy) |

It is possible that outcomes have not greatly changed for African American male students throughout the nine years Policy 0030 has been in place because the central part of schooling -- the instruction and learning experiences -- have not changed. If anything, they have become more regimented and uniform during that same time period, as a Resource Conservation Specialist stated, "The district is going in a way that is no longer supportive of place-based, project-based learning as far as science goes. I see us going the opposite direction."

Curriculum: Connections between racial equity and education for sustainability

*If you don't have equity built into sustainability, you don't really have sustainability.*

-- Resource Conservation Specialist

It is possible that nearly a decade of targeted, district-wide action for racial equity has not resulted in strongly improved outcomes for students because this action falls short of transformation. Education for sustainability offers a transformative educational framework that

simultaneously addresses racial justice and climate change. As a CBO representative noted about the "intersectionality of environmental issues and other social issues," the "youth see them as interconnected and are not willing to discuss them in isolation."

Education for sustainability offers a framework that could advance racial equity along with climate and sustainability goals. As an SPS educator stated, "Across the board in terms of climate justice -- all of these things go hand in hand. For the district to truly support climate justice, they have to support racial justice, they have to support Native justice, they have to make it clear these things are all connected." A CBO representative who works closely with high school Green Teams observed, "South End Seattle schools[58] are more interested in food-related projects. What they think they can accomplish is more tamped down." Education for sustainability could directly address food-related projects by growing food on campus or connecting to community organizations that conduct organic farming or distribute surplus food to avoid waste. These are environmental issues that are also issues of social and racial justice. Education for sustainability could also directly address "tamped down" student expectations by engaging them as agents of change addressing these real-world problems.

In his keynote address during the Liberation through Anti-Racist Education summit offered by Seattle Public Schools in August 2021, Dr. Maulana Karenga, the creator of Kwanza, the nguzo saba, and the Afrocentric educational framework Kawaida, had this to say about the proper role of education:

> This is our duty: to know our past and honor it. To engage our present and improve it. To imagine a whole new future and forge it in the most ethical, effective, and expansive ways.

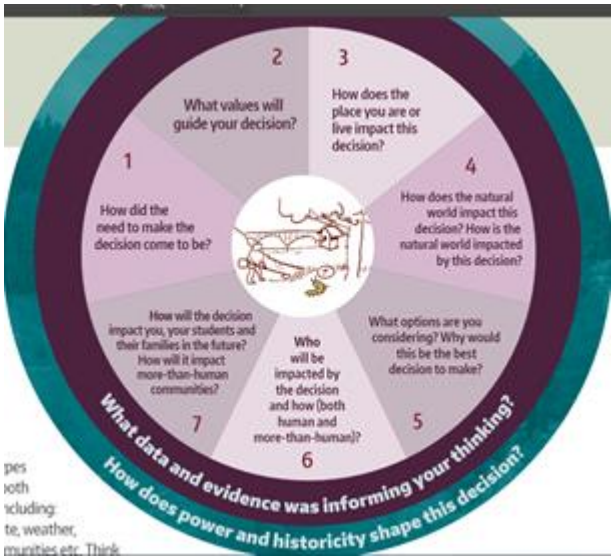
[58] In general, schools in the South End have more students of color and higher poverty rates, compared to schools in other regions of the city.

Dr. Karenga spoke of the traditional African conception of the human being as a world being, walimwengu in Kiswahili, a self-definition that recognizes that, "the world is our sanctuary and sustenance," and we have a reciprocal obligation to care for it and keep it (Karenga, 2021). Dr. Karenga paraphrased Dr. George Washington Carver in describing the relationship we should cultivate with the Earth, "Treat the Earth like a lover and if you treat her right, she will give up her secrets like a lover does," and he advised teachers to teach students to "Walk gently. Act justly. Relate rightfully in and for the world" (Karenga, 2021). Figure 10 on page 157 gives more examples of conceptual overlaps between Afrocentric education and education for sustainability.

The transformative education called for by luminaries in the field of Afrocentric education (a highly developed example of targeted universalism to benefit African American students) embraces educating students to have a reciprocal relationship with nature. In a mirror image, frameworks for education for sustainability call for educating students to challenge racial oppression and to connect with their own cultural heritage and lived experience (Learning in Places Collective, 2020; Burns et al., 2019). And both approaches, like the AAMAC recommendations, call strongly for place-based, problem-based education that links classroom learning to solving the problems faced by the community. Dr. Karenga was speaking of the Kawaida framework, but his words are just as apt to describe the mission of education for sustainability when he proclaimed that a "relevant education must be meaningful to the student, useful to the community, and reflective of the reality of society and the world" (Karenga 2021).[59]

[59] The Ethnic Studies Department and Department of Racial Equity Advancement sponsored the professional development that brought Dr. Karenga to speak. About 200 educators and administrators participated in the professional development, which is less than 10% of staff. Because it was an opt-in, unpaid PD, the people who attended were likely those already interested in liberatory education. However, the Chief Academic Officer was in

*Figure 10:A sample of conceptual overlaps between Afrocentric education and education for sustainability*

<table>
<tr><td colspan="2">Afrocentric education and education for sustainability position students as change-makers</td></tr>
<tr><td>Afrocentric education</td><td> 
The Kemetic creative mandate:<br>Restore that which is in ruin and make it more beautiful than before.<br><br>Represented by the dung beetle who transforms feces into shelter and food for its offspring.<br>(Hardiman, 2021).</td></tr>
<tr><td>Education for sustainability</td><td> 

“Should We?” Question framework<br><br>Teachers:<br>• consider impacts to and from the natural world when deliberating about big questions or decisions with learners<br>• support learners in imagining their futures, and the futures of more-than-human communities as part of socio-ecological systems<br><br>(Learning in Places Collective, 2020)</td></tr>
<tr><td>Afrocentric education</td><td>“Our children must never lose their zeal for building a better world,” (Mary McLeod Bethune, quoted by Karenga, 2021).</td></tr>
<tr><td>Education for Sustainability</td><td>Approach 3, perhaps the most radical and important of the three, focuses on developing “skills for green transformation” by transforming mindsets and confronting the underlying structures of inequality and systems of oppression that sustain climate vulnerability. It positions green skills like disruptive thinking and political agency as core pieces of a larger framework of change that includes attention to the opportunity structures that enable or inhibit individual and collective climate action. It argues that through the development of [young people’s] feminist planetary conscious and the active disruption of gender inequality, education can seed the social transformation needed to achieve the 1.5°C target.<br>(Kwauk & Casey, 2021, p. 9)</td></tr>
</table>

attendance and strongly endorsed Dr. Karenga’s words. It remains to be seen whether these transformational concepts will flourish in SPS.

*Policy Environment*

As explained throughout this case, Policy 0030 drives racial equity action in Seattle Public Schools. The Seattle Excellence Strategic Plan (2019-2024) operationalizes 0030 by establishing targeted universalism as the District's theory of action, and focusing first on targeting strategies to benefit African American males. Because CSIPs must be aligned with the Strategic Plan, and budgets, staffing, and professional development must be aligned with the CSIP, there is strong policy alignment in support of racial equity action. Annual reporting requirements and regular updates to the Board ensure ongoing work and constant awareness of this policy.

The School Board has adopted several resolutions in support of racial equity, and is in the process of formulating a foundational policy affirming anti-racism in SPS.

*Figure 12: School Board resolutions in support of racial equity*

| School Board Resolutions in Support of Racial Equity | | |
|---|---|---|
| Year | Resolution | Key Quotes |
| 2017 | 2016/17-17<br>Supporting Ethnic Studies in Seattle Public Schools | We direct the Superintendent to create a schedule in calendar year 2017 and subsequently implement plans for district-wide integration of ethnic studies into existing and future K-12 curriculum, including courses required for graduation, while taking into consideration budget constraints, and report regularly to the School Board's Curriculum & Instruction Policy Committee on implementation status. |
| 2018 | 2017/18-14<br>To declare that the lives of black students matter, as well as the lives of all of our students of color, and that we encourage participation district-wide in the Nation Black Lives Matter At School Week from Feb. 5-7, 2018. | ● the problems of society are mirrored in schools, and these problems can only be fully addressed with a united effort of community and school coming together for the betterment of our students' future;<br>● the Seattle School Board declares that the lives of our black students matter, as well as the lives of all of our students of color |
| 2019 | 2018/19-17<br>Black Lives Matter in Schools Week | shouting loudly that "Black Lives Matter" does not negate our commitment to ALL of our students, but rather elevating Black students struggle to trust that our society values them, we must affirm that their lives, specifically, matter |
| 2020 | 2019/20-23<br>Declaring that the lives of black students matter; and, that we | BE IT FURTHER RESOLVED.i that the Seattle School Board affirms the demands of the Black Lives Matter at Schools movement: l) End "zero tolerance" discipline, and implement |

| | | |
|---|---|---|
| | encourage participation district-wide in the national Black Lives Matter At School Week | restorative justice 2) Hire more black teachers 3) Mandate black history and ethnic studies in K-12 curriculum 4) Fund counselors not cops |
| 2020 | 2019/20-38<br>Affirming SPS Commitment to Black students | ● BE IT FURTHER RESOLVED, that the Seattle School Board supports defunding police, i.e. reducing police funding so as to increase social service funding, positively impact safety and well-being of our students while reducing police violence.<br>● BE IT FURTHER RESOLVED, that the Board directs Superintendent Juneau to (1) develop a Black studies curriculum for use in grades K-5 that will intertwine anti-racist Black language, pedagogy and practices through all subjects and (2) create a stand-alone Black studies course for middle and high school students that will be required for graduation from Seattle Public Schools. We expect this work to go through an extensive community engagement process including, but not limited to, the Office of African American Male Achievement Student Advisory Council, NAACP Youth Council, and other groups or individuals of Black educators, students, community-based organizations, and organizers.<br>● BE IT FURTHER RESOLVED, that the District will commit to a moratorium on the utilization of the Seattle Police Department's School Emphasis Officers and School Resources Officers programs and providing replacements supported by community. The duration of the moratorium is indefinite. |
| 2021 | 2020/21-17<br>Declaring that the lives of Black students matter, as well as the lives of all of our underserved students; that we affirm the demands of the Black Lives Matter At School Movement, and that we encourage participation district-wide in the national Black Lives Matter At School Week from February 1-5, 2021 and Year of Purpose 2020-21 | In the wake of the murders of George Floyd, Ahmaud Arbery, Breonna Taylor, Tony McDade, and too many other others named and unnamed, Black Lives Matter in Schools has called for a “Year of Purpose: a great Uprising for Black Lives has swept the nation and the world, inciting new urgency and radical possibilities for advancing abolitionist practice and uprooting institutional racism. ...The centerpiece of the Year of Purpose is asking educators to reflect on their own work in relationship to antiracist pedagogy and abolitionist practice, persistently challenging themselves to center Black lives in their classrooms.” |

It is clear from these resolutions that the Board has a strong stated commitment to racial equity, consistent with progressive racial equity discourse, such as calling for defunding police, positively affirming the demands of Black Lives Matter at Schools, and encouraging educators to embrace anti-racist and abolitionist practices.

Collective Bargaining Agreements (CBAs) between the District and the Seattle Educators’ Association have further reinforced commitment to racial equity action. It was in the 2014 CBA that Racial Equity Teams were established, along with a structure for expanding them throughout

the District and supporting them with coaching, professional development, and a communication network. As an SPS educator observed, "I think the Union is doing a pretty good job. I think they are working hard to be as progressive, climate justice, and racial justice focused as they can."

*District Structures*

The Superintendent has unilateral power to reorganize central office staff, "Every superintendent comes in and does a re-org; the Board does not have to approve those positions" (interview with School Board Director). Superintendent Juneau's reorganization of district staff helped institutionalize racial equity as a cultural norm in SPS. She formed the Department of African American Male Achievement as a Department directly under the Superintendent, with the Chief of the Department reporting directly to the Superintendent; AAMA currently has four staff. There is also the Department of Racial Equity Advancement (DREA) that sits under the Chief of Equity, Partnerships, and Engagement; this department has five staff, with a sixth coming on board in 2021-22.

Racial equity teams drive school-specific actions, and the African American Male Student Leadership Council brings student voice to district decision-making.

*Intersections with Climate and Sustainability Action*

Strategic plan & CSIP alignment

The case of racial equity action in Seattle Public Schools demonstrates the importance of the Strategic Plan for driving action. The Strategic Plan's focus on African American males is operationalized partly through CSIP goals that address outcomes for subgroups at the school level. This targeted, prescriptive approach to school-based goal setting could also be used to drive climate and sustainability action, if the Strategic Plan were revised to include commitment to climate and sustainability action, both in facilities & operations and curriculum & instruction.

District-wide network of school-based teams

The RET structure is a simple and effective method for raising awareness of racial equity issues, establishing common language across the District, and establishing connective tissue between SPS staff interested in the same issue. Although RETs have thus far shown little effect on student outcomes (Barajas-Lopez et al., 2019), the structure has allowed for communication and awareness so that people advocating for racial equity do not feel isolated, and have a sense of momentum in the District. The opposite is true for climate and sustainability action, where teachers are not aware of action taking place elsewhere in the District, even large District-wide action such as the Clean Energy Resolution, which leads to discouragement and disillusionment. Establishing a network of Green Teams could help generate group efficacy instead.

Curriculum

The curriculum changes that were being asked for in 2017 by the AAMAC are the same curriculum changes informants described when asked about education for sustainability. In both cases, reliance on standardized curriculum implemented with fidelity is working against what is best for students. Equipped with the Washington Environmental and Sustainability Standards and the AAMAC recommendations for project-based learning linking classroom learning to meeting community needs, educators have a strong defense for implementing EfS on a bottom-up basis.

Capital projects

Of the eleven elementary and two K-8 schools identified as Priority Schools in the Strategic Plan due to their high proportions of African American male students, only two (15%) were newly constructed or significantly modernized/renovated post-2013 when the Green Resolution was

adopted (Facilities Master Plan Update 2018[60]). One was built in 2017, one more has a replacement building project underway; the old building was demolished in 2018 (BEX/BTA Oversight Committee Minutes, October 2018). Thus, only one Priority School is located in a building constructed since SPS made a commitment to sustainable buildings. On the other hand, 13 of the 61 non-priority elementary and K-8 schools (21%) were constructed or significantly modernized/renovated post-2014. Furthermore, in the three capital levies passed most recently, only two of the funded projects were at priority schools (including the new construction of a replacement school already mentioned).

Minutes from a BEX/BTA Oversight Committee meeting demonstrate that Board Directors and district staff are aware of the relationship between capital projects and racial equity:

> [School Board Director] cited the difference between prioritizing racial equity instead of capacity when evaluating proposed projects for the district, such that a focus on capacity reinforced an implicit racial bias by limiting the projects in minority communities in the district. Prioritizing racial equity brought more projects to improve the condition of school buildings in underserved communities.
>
> b.[Director of Capital Projects] reported that the Capital Projects Department desires to analyze the education outcomes of BEX IV schools to identify the impact the buildings are having on student learning. He cited that while we know new and renovated buildings influence student enrollment, we still need to evaluate how they influence educational outcomes
> (December 2018)

| Levy | Year Passed | # Priority elementary/K-8 school projects | # non-Priority elementary/K-8 school projects |
|---|---|---|---|
| BEX IV | 2013 | 2 | 10 |
| BTA IV | 2016 | 0 | 3 |
| BEX V | 2019 | 0 | 8 |

[60] Although this Plan was published 2018, the inventory of buildings and their ages has been updated since, reflecting capital projects completed as late as 2020.

Of special note in this table is BEX V, passed in 2019 after the adoption of the Strategic Plan and the identification of the 13 priority schools, which shows zero capital projects in Priority Schools.

Wicked problems

> *In environment and sustainability, change is very slow in our world. I've gotten used to hearing no more than yes. There's this culture in the district of kicking the can down the road, not just on this topic but on a lot of things.*
>
> -- Resource Conservation Specialist

Creating racial equity within a system rooted in racial oppression is very difficult. It is not only the school system that has been based on over a century of exclusionary and discriminatory practices, but it is the community, region, nation, and trans-national ideo-economic system within which the school system is situated. This makes creating racial equity and undoing racism a wicked problem[61] that will require iteration and innovation to solve. Likewise, climate and sustainability action is a wicked problem. It is not only the school system that has acted with blatant disregard for its natural environment and the limits of human consumption, but the community, region, nation, and trans-national ideo-economic system within which the school system is situated. This makes thinking and acting sustainably a wicked problem that will require iteration and innovation to solve. In both cases, actors in the school system need to apply cross-cutting skills identified in the new green learning agenda, including adaptability, collaboration,communication, coping with uncertainty, creativity, critical thinking and reasoning, open-mindedness, problem-solving, resilience, and teamwork (Kwauk & Casey, 2021).

[61] According to the Interaction Design Foundation, "Wicked problems are problems with many interdependent factors making them *seem* impossible to solve. Because the factors are often incomplete, in flux, and difficult to define, solving wicked problems requires a deep understanding of the stakeholders involved, and an innovative approach provided by design thinking. Complex issues such as healthcare and education are examples of wicked problems." (https://www.interaction-design.org/literature/topics/wicked-problems)

Nature abhors a silo: Environmental justice is racial justice

Seattle Public Schools' approach to racial equity has been very much focused on what happens within the school building. On the one hand, this is correct, because real harm is often done to students of color within the school system. The familiar concept of the school-to-prison pipeline demonstrates that inadequate educational opportunities and punitive, exclusionary discipline beginning in elementary school are strongly correlated with later incarceration, among other unjust life outcomes. On the other hand, history has shown that this approach to racial equity that starts and stops at the schoolhouse door has had little measurable effect on the outcomes for African American male students in SPS.

This may be because we are attempting to engage with *students* while failing to engage with *people*. Students have discipline incidents and test scores. People have those too, but they also live in communities, have family members and community connections, and struggle with real issues in daily life. The AAMAC recommendation to link classroom learning to meeting community needs points at the need for SPS to show its concern for the full liberation and well-being of students of color furthest from educational justice.

Education for sustainability offers a pathway for this whole-person approach, by focusing on local issues of environmental justice. As a group, African American male students in SPS and their families contend with several major issues of environmental justice: unequal access to healthy outdoor spaces, poor air quality, lack of neighborhood tree canopy & green space,[62] food apartheid & food insecurity, unequal access to pathways for green jobs/jobs of the future, and displacement/threat of displacement. All of these problems could be meaningfully addressed within

[62] This lack contributes to urban heat island effects, poor air quality, flood risks, and the mental health detriments caused by lack of access to green space.

an education for sustainability framework that starts with the problem and engages students in learning about and enacting solutions. As an SPS educator stated, “Intersection of social justice and ecology has always been hand-in-hand. SPS has been extremely short-sighted in looking at the holistic opportunities and has merely jumped on new trends in education over the years. It's not new to value people or the planet.”

Policy 0030 and the AAMAC recommendations also highlight the importance of community partnerships to benefit African American male students. The Seattle area is home to many environmental justice organizations working on these issues. This paper has previously named some obstacles to partnering with CBOs, such as curriculum orthodoxy, lack of point people at the schools for forming the partnership, and unequal funding. Focus on building these partnerships at the district level and making them available to schools in a consistent, predictable way would help to put these valuable community resources to use.

*Figure 11: Community-based environmental justice organizations*

| **Some Local Community Based Organizations with Environmental Justice Focus** | |
|---|---|
| ***Organization*** | ***Environmental Justice Focus*** |
| Black Star Farmers | Food apartheid, food insecurity |
| Hip Hop Is Green | Food apartheid, food insecurity |
| Y-We | Food apartheid, food insecurity, unequal access to healthy outdoor spaces |
| Rainier Beach Urban Farm and Wetlands | Food apartheid, food insecurity, unequal access to healthy outdoor spaces |
| Duwamish Valley Youth Corps | Poor air quality, lack of neighborhood tree canopy & green space, unequal access to pathways for green jobs/jobs of the future, displacement/threat of displacement |
| Rainier Beach Action Coalition | Food apartheid, food insecurity, displacement/threat of displacement |
| EarthGen | Food apartheid, poor air quality |

## CLIMATE AND SUSTAINABILITY ACTION IN SAN FRANCISCO UNIFIED SCHOOL DISTRICT (SFUSD):

## A Limited Comparison Case Study

*Big districts like SFUSD & SPS claim to do a lot of big stuff, but it isn't felt at the school level.*

- Sustainability Manager, SFUSD

*Overview comparison*

San Francisco was chosen as a comparison case because it shares many similarities with Seattle that are likely to influence climate and sustainability action. Both San Francisco and Seattle are well known for left-leaning politics, pro-environmental policies and culture, and great wealth inequality, especially along racial lines. Importantly, both cities have ample carbon-free electricity, which aids decarbonization of buildings in that once buildings are electrified they are nearly carbon free. SFUSD began its decarbonization process at least four years ahead of Seattle, and has a fully articulated plan to Seattle's aspirational resolution.

Compared to SPS, SFUSD does a better job communicating expectations and successes in sustainability, and integrating sustainability action into curriculum. This is partly due to the city and state policy and funding environment, which helps drive climate and sustainability action by making certain changes inevitable and also by funding staff in SFUSD's Sustainability Office. Both districts have inequitable access to education for sustainability from school to school, based on resources and personal interest. Both districts make a commitment to racial justice, but fail to acknowledge environmental justice as central to racial justice.

Overall, the case of climate and sustainability action in SFUSD demonstrates that it is possible for a large, urban district that contends with multiple pressures and priorities to take greater climate and sustainability action than SPS has done, and that state and local policies and leadership priorities play a strong facilitating role in implementation of climate and sustainability action.

*Current Performance*

The full Climate and Sustainability Action assessment was not applied to SFUSD. The District's current performance is analyzed only in areas identified as strengths or weaknesses in SPS: carbon neutral buildings (including new construction and modernization/renovation)[63], carbon neutral transportation, utility conservation, curriculum, communications, and purchasing.

Carbon neutral buildings

Like SPS, SFUSD was recognized as a Green Ribbon district by the US Department of Education. SFUSD also received the "Best of Green Schools" award for industry transformation from the USGBC's Center for Green Schools.

The San Francisco Unified School District opened its first Zero Carbon school building in October 2019. The school was designed to operate at an EUI below 15, and to ensure that its post-occupancy energy usage matches the modeling; "All building occupants received a tour of sustainable building features and have been trained on the proper operation of heating and lighting systems" (SFUSD Project Requirements, 2020, p.4). As of January 2021, SFUSD had seven other Zero Net Energy buildings under design or construction, (Carbon Neutral Portfolio: From Vision to

[63] These three topics were treated separately in the SPS case, due to the fact that sustainability action in capital projects predated the SPS CLean Energy Resolution. In the case of SFUSD, the resolution for carbon neutrality occurred near the beginning of the focus period for this study and set the context for sustainability in capital projects throughout the study period.

Strategy event description, 2021). SFUSD started on the journey to carbon zero before SPS, and has moved quickly to implement its plans.

In 2017, the San Francisco Unified School District passed a resolution in support of carbon neutral schools. Its main provisions are shown in the table below, contrasted with SPS's Clean Energy Resolution.

*Figure 12: Side-by-side comparison of Seattle and San Francisco school boards' carbon reduction plans*

| **Side-by-Side Comparison of SPS and SFUSD Carbon Reduction Resolutions** | | |
|---|---|---|
| Element | SPS | SFUSD |
| Year adopted | 2021 | 2017 |
| Deadline for zero carbon | 2040 | 2040 |
| Mandate for new construction | Prohibits new fossil fuel infrastructure | Mandates energy usage low enough to be met by on-site renewables |
| Natural gas reduction benchmarks | None specified | 30% by 2020<br>50% by 2030 |
| Water conservation goals | Task force may explore | 30% by 2020<br>50% by 2030 |
| Decarbonizing fleets | Prioritize purchase of zero-emissions vehicles where options are available that meet need & cost considerations, and where charging infrastructure exists | • Purchase only zero-emissions vehicles beginning in 2017<br>• Use renewable diesel for buses by 2020<br>• All fleets electric or low-carbon fuel by 2030 |
| On-site utility production | Not addressed | 100% of power by 2050<br>50% of water by 2050 |
| Equity concerns | • Community-based planning process<br>• Co-benefit of infrastructure development & job opportunities for frontline & underserved communities<br>• Explore energy resilience to make schools community hubs | Not addressed |
| Advocacy | • Use purchasing power to influence vendors to employ clean energy<br>• Pursue legislative agenda for decarbonization | Not addressed |

Side-by-side comparison reveals that the SPS resolution takes a more holistic but less well-defined approach than the SFUSD resolution, which spells out clear targets in terms of buildings, fleets, renewables, and conservation of resources.

This may reflect the fact that the SFUSD resolution came about after a carbon reduction plan had already been prepared by the Director of Sustainability, in conjunction with other facilities, maintenance, and grounds staff: “We did it the other way around because we were short a superintendent at the time. We made the plan [thinking] when we have a superintendent we can bring the plan to the Board. We made the plan first and so it was easy to pass,” says the former Director of Sustainability for SFUSD.

The team that created the plan went to work soon after California mandated half of all buildings to be carbon neutral by 2030. They began by making site visits to carbon neutral buildings. The team included building and grounds staff from the beginning, since there is “always tension between facilities and operations,” in that building and grounds staff (operations) must maintain whatever systems are installed, but many of the buildings and grounds professionals are not familiar with some of the newer systems. This team also met every two weeks to work on developing the carbon reduction plan.

The next step was to conduct energy analyses of previously completed modernization projects, to determine which elements were the most important for decarbonization, but they stopped doing these analyses because they were, “all coming back the same -- basically you need to do a heat pump. You solve the efficiency problem and electrify the building at the same time. These are all technologies that are tried and true, [you just need] the willpower.”

This collaboration led to a Zero Net Energy Staircase, sequencing actions for Zero Net Energy from most attainable to most ambitious. The first step is a shared savings program, in which

conservation champions and data analysis are utilized, alongside commissioning and small-scale tune-ups, to reduce energy use in a building. The next step is replacing lighting systems with LED lights, occupant-sensors, and daylighting controls. The next level is to address the building envelope, making upgrades such as higher-efficiency windows and insulation, improving air-tightness, and installing solar tubes and light shelves. After the envelope comes heating, including heat pump hot water, point source domestic hot water, variable refrigerant flow, and solar hot water. The final step of the ZNE staircase is energy supply: on-site renewables, battery storage, and electric vehicle charging.

This stair-step strategy allows for modernization, which is costlier and more complicated than new green construction, to be spread out over several funding cycles, and also strategically focuses on reducing energy consumption first, including reducing heating load by improving the building envelope before installing new heating systems (SFUSD Project Requirements, 2020). According to SFUSD's former Director of Sustainability, this staircase also increases buy-in from the buildings and grounds staff who are responsible for ongoing building maintenance, because changes to lighting and building envelopes do not require any changes to buildings and grounds work streams.

As SFUSD began to implement projects along the staircase, facilities planners solicited feedback from building and grounds staff during and after these projects. This helped with buy-in from the buildings and grounds staff, which is a big part of the change management project of going carbon neutral, according to the former SFUSD Director of Sustainability, "Keep buildings and grounds in the loop and remember it is going to be a change management project. One thing for them to keep in mind is that this change is going to take decades. If there is staff that works only on natural gas, they will continue to do so, the important thing is the new hires."

The strategy developed by the collaborative team is codified in two documents: the Carbon Reduction Plan and the Project Requirements.

> The Carbon Reduction Plan is outward-facing and lays out the framework and different components, but doesn't get into the nitty gritty. When we handed the plan to architects they would come back with a natural gas plan. SFUSD Project Requirements -- [project requirements are] usually a document that architects draft and then run it by the owner. We created general project requirements that explain to all architects and internal stakeholders what the buildings will look like. That is where the rubber hits the road.
> (interview with former SFUSD Sustainability Director)

The Project Requirements (PR) address both new construction and renovations. Several of the PR's provisions are also in practice in SPS, such as requiring a sustainability-focused design charette at the beginning of the project (although SFUSD's is specifically aimed at designing a building that operates at 20 EUI or less), use of a design-build procurement process, stating a preference for solar readiness in new design, obtaining post-occupancy commissioning reports to make sure buildings are operated as intended, and addressing tune-ups of aged buildings.

However, SFUSD's PRs also have some features that set that district's capital projects ahead of those in SPS, and which SPS should consider adopting as it defines its own decarbonization plan:

**Energy modeling:** The PRs call for a comprehensive energy model, stating "design decisions shall be evaluated against a constantly refined energy model from the earliest stages of a project." The document prescribes "building form, massing, roof layout, lighting, HVAC systems, and plug loads…(including security cameras, emergency lighting, IT equipment, fire alarms, and kitchen equipment)," should be captured in the energy model (SFUSD Project Requirements, 2020).

**Training and stewardship:** Recognizing the importance of occupant stewardship to the low-energy operation of the building, the PRs call for thorough training of building and grounds

staff and all occupants to “instill a culture of stewardship that will benefit both the building and the environment”; this training is routinely implemented as  part of capital projects in SFUSD.

**Plumbing for rainwater:** As of 2020, SFUSD had already built one school that uses captured rainwater to flush toilets, and all new buildings in SFUSD are now plumbed for rainwater. Precise specifications (including water line installation, roofing materials, and more) are included in the PR document. This is important from a water conservation standpoint, but also because San Francisco, like Seattle, relies on hydro-electric power which will be impacted by increased drought due to climate change; maximizing on-site water attachment reduces the draw on the watershed.

According to SFUSD’s former Director of Sustainability, cost is not the barrier to implementing zero net energy school buildings, because many of the elements of ZNE design are not more expensive; especially when they are included in conjunction with other modernizations, “If you are adding air conditioning, you can add a heat pump at no extra cost and you need the electric system anyway, so you have a zero-dollar switch.” Rather, the important thing is bringing all the relevant people along and making sure they are educated on the new standards:

> It is good to have someone to remind you to look at the plans. In the early phases you need checks and balances. If the head of the bond [project] is totally bought in and says, "We are doing this," people will be afraid to do anything else. If it is Board policy you are 80% there. If there was an education campaign -- a couple of emails and a flyer that summarizes the resolution that is broadly distributed...One thing I did while we were developing the policy, I had a presentation to explain to the project managers -- this is the policy, this is how it is implemented.
> (interview with former SFUSD Sustainability Director)

<u>Carbon neutral transportation</u>

Decarbonizing transportation, a task which SPS has agreed to do, but not yet begun to implement, has proved more challenging than decarbonizing buildings for SFUSD.  Their strategy includes both switching the school bus fleet and other District vehicles to electric or low-carbon fuel, and encouraging families to walk, bike, carpool, or take transit to school.

Despite efforts to encourage lower emissions transportation choices, 46% of students traveled to school by solo car trips, a proportion that has remained more or less constant since at least 2011 (SFUSD Carbon Reduction Plan, 2020).

When it comes to school buses, SFUSD is "working with the SFUSD Transportation Department to incorporate a mandate to use renewable diesel into the next bus contract,"; this approach was chosen because renewable diesel cuts GHG emissions by over 60% and is used by both the City of San Francisco and the San Jose school district, while electric buses are cost prohibitive (SFUSD Carbon Reduction Plan, 2020). SFUSD is waiting for prices to drop on electric vans and buses before mandating electrification; although there are rebate options from the state and lifetime operations cost of electric vehicles in much lower, the up-front cost of fleet electrification is still a barrier (SFUSD Carbon Reduction Plan, 2020).

Utility conservation

Like SPS, SFUSD has set targets for waste reduction, water use, and energy use, and it monitors its progress towards those goals. Unlike SPS, from 2008- 2021 utility conservation work was housed within a larger Office of Sustainability, comprised of a Director of Sustainability (a currently unfilled position), and energy manager (currently unfilled), a manager of green schoolyards & safe routes to school, a zero waste manager, and a data analyst. This organization changed during the data collection period for this case study, and the sustainability staff were dispersed throughout other departments under the rationale that sustainability was sufficiently integrated into the culture of SFUSD that a separate office was no longer needed.[64]

A Sustainability Snapshot dashboard displays each school's progress toward the District's energy conservation, water conservation, waste reduction, and sustainable transportation goals.

[64] This will be discussed in greater detail in the District Structures section of this case.

However, the dashboard is out of date because of difficulties built into the data collection process. According to a Sustainability Manager, “Single-car trips to school was surveyed in person twice a year. We haven't updated the sustainability snapshot in a long time because of all that work.” Furthermore, the waste reduction metric can only be changed if someone changes the number/size of waste receptacles on site at the school; that is, some schools may not be filling their dumpsters, but waste reduction is measured by the number of dumpsters.

A Sustainability Manager at SFUSD cites the same problem with the utility conservation program in SFUSD that led SPS to abandon the shared savings programs: school communities housed in new buildings featuring the greenest design meet or exceed the conservation targets without much effort, while school communities in aged buildings cannot meet the targets despite significant effort.

Communications

SFUSD communicates a commitment to climate and sustainability action through its website. The Sustainability Office homepage clearly states the District’s Five Sustainability Pillars and the goals for each pillar.

*Figure 13: SFUSD's Sustainability Pillars from the SFUSD Website*


The website was created by the zero waste manager and the data analyst, and although it is aesthetically pleasing, clear, and conveys SFUSD's commitment to sustainability, the website is out of date because there are not sufficient human resources to maintain it. Despite that important drawback, the site is easier to use than the SPS site, due in part to its use of graphic organizers and

its simpler hierarchy of pages. This makes it easy for the community to learn about what is going on in SFUSD when it comes to sustainability.

From the home page, visitors can navigate to more information about each of the sustainability pillars, including what District staff are doing to achieve the goals, and what visitors (students, staff, or families) can do. They can also navigate to the sustainability snapshots page, where they can check any school's progress on energy use, water use, waste reduction, and sustainable transportation.

Like SPS, the zero waste manager reports that the SFUSD sustainability office does not have a communications plan, nor are human resources from the communications department dedicated to the sustainability office. Like SPS, despite SFUSD being a sustainability leader among school districts, there is no climate or sustainability news on the News page of the SFUSD website.

When it comes to internal communications, sustainability staff are able to access a predictable, consistent system for contacting SFUSD employees: an employee announcement page on the website that is also distributed via e-mail blasts. However, more is needed to spread the word about sustainability action widely and evenly. According to a Sustainability Manager, a lot of individual effort is needed to connect with school staff who otherwise might not know about the Sustainability Office: "I would go and try to table at the New Teacher Orientation, the Admin Institute, the Technology Fair -- go to District Wide events and try to talk as much as I can about our office and how they can get involved."

The Sustainability Office is beginning to try to use communications in a new way to strategically form coalitions with buildings and grounds staff, whose sweat equity is needed to realize the goals of the 5 Sustainability Pillars. "We want to realign our website with… 'How can

you work with your custodian at your site to be a good steward?'... We want to incentivize the behaviors that help the custodians and groundskeepers," said a Sustainability Manager.

The Sustainability Office's publications are well-produced and feature a consistent logo bearing the phrase "Sustainable SFUSD."

*Figure 14: Sustainable SFUSD logo*


Overall, the strong web presence and accessibility of information about climate and sustainability action in SFUSD -- while communications power could be harnessed better -- does send the message to staff and community that sustainability is important in SFUSD. This should add to a sense of group-efficacy, "this is what we do here, it makes a difference, and I can help," which research has shown to be associated with meaningful environmental action (Schelly et al., 2010; Cordero et al., 2020).

Curriculum

The educator and resource conservation manager interviewed for this case study reported some efforts towards integrating education for sustainability into curriculum and instruction in San Francisco Unified School District, but also a desire for greater integration, and a sense that SFUSD's sustainability efforts fall short of transforming learning. According to a resource conservation manager:

> We've been trying to bridge that gap into the certificated world. It's always been a hard leap. [Staff person] is our C&I mole. She's constantly digesting our work and trying to build those connections. There was one really cool attempt to bridge -- ... [C & I staff person] took the 5 sustainability pillars and the sustainability snapshot and they wrote a lesson into the curriculum: a major assignment researching human

> impact on climate and [then students framed a] proposal to the District Sustainability Office or City proposing what could be done better.

This is a strong example of curricular integration, however, this is an optional lesson, and many teachers opt not to teach it, perhaps because it is out of their comfort zone or it gets squeezed out by other curricular demands.

A school administrator who has taken sabbatical to lead a BIPOC Climate Justice Advisory Council had this to say about climate education in SFUSD:

> [The District] has made written commitments to facilities goals – using renewable resources and ways to save energy –using more solar power...Given that we are in the business of teaching & learning, there is nothing written about curriculum! How do we make sure all of our pre-K through 12 kids graduate climate literate?

To support her point, SFUSD's mission, vision, strategic plan, and graduate profile do not mention climate, environment, or sustainability. Despite these shortcomings, SFUSD appears to have taken some climate and sustainability action on the curricular side. At least three relevant programs are found on the SFUSD website: Career Pathways, Neighborhood Nature, and Earth Day Every Day.

According to the Career Pathways link on the High School Curriculum webpage, SFUSD offers 49 career pathways in 13 industry sectors, including two sectors that specifically address green workforce development: Agriculture & Natural Resources and Energy, Environment, and Utilities. There is only one pathway within the Agriculture & Natural Resources sector, offered at one high school: Urban Agriculture, "The Urban Agriculture pathway ... is a 2-3 year course sequence that covers the fundamental principles of organic farming, the science behind plants and soil, and the study of our food system through American Democracy and Economics. Students are exposed to the many careers

available in the food industry: From farming, to urban parks, to distribution and retail" (SFUSD Career and Technical Education).

Within Energy, Environment, and Utilities, there are three pathways offered at four high schools: Wilderness Arts & Literacy Collaborative Academy, Environmental Science Pathway, and Green Academy. The Green Academy appears to be a fully developed example of education for sustainability; its educational framework is encapsulated in the figure below:

*Figure 15: SFUSD's Green Academy curriculum diagram*


- **Get connected:** systems thinking and permaculture
- **Rethink:** composting, there is no waste in nature
- **Encounter Water**: water conservation & catchment
- **Eat Green:** sustainable and organic food production
- **Nothing Wasted:** sustainable lifestyle, alternative energy, transportation, and products and packaging

The Wilderness Arts & Literacy Collaborative Academy is another example of the integrated, holistic approach of education for sustainability. In WALC, "Students utilize environmental education as the central, unifying theme integrating science, English, social science, technology, and math" (WALC Pathway). On the other hand, the Environmental Science pathway appears to represent a more traditional, departmentalized approach for teaching students about the environment (technical knowledge), without necessarily addressing social, economic, or cultural transformation (adaptive skills).

While these programs appear to be exemplary curricular programs in climate and sustainability action, like the handful of programs in SPS that take a place-based or project-based approach to learning, only a small subset of students has access to these programs. As an SFUSD administrator emphasized, "being climate literate is not an add-on!" yet this is how climate literacy is currently treated. As this administrator asked"How do we make sure all of our pre-K through 12 kids graduate climate literate?"

The other two examples of climate and sustainability action in curriculum in SFUSD are found on the science curriculum home page, on a sub-page titled Environmental Science and Justice. On this page, there are links to 22 episodes of Neighborhood Nature -- local environmental studies documentaries produced by environmentalists at the SFUSD Environmental Science Center. Each episode focuses on an important part of the San Francisco ecosystem, including redwood trees, red-tailed hawks, and banana slugs, as well as human interactions with the natural world, such as crabbing or different ways to be a naturalist.

Also linked on the Environmental Science and Justice page is the Earth Day Every Day resource. This collaboration between SFUSD's Science Department and Sustainability Office, titled with the tagline "We Educate Good Ancestors," provides teachers with one-off lessons as well as extended units for integrating environmental studies and sustainability into their curriculum (Earth Day Every Day, 2021). The resources are presented in a Google Doc, a format which is easier to update than a webpage, and all of the links appear to be current.

*Figure 16: SFUSD's Earth Day Every Day curricular resource*

| What's Available on the Earth Day, Every Day Resource Page | | |
|---|---|---|
| Section Title | Summary of Offerings | Example Titles |
| Earth Day Challenges & Contests | Local & national contests for older students | Beyond Plastics Meme Contest |
| Every Day Earth Day | Multimedia resources focused on teaching students to be good environmental stewards | • Anti-Racism Daily: This is Our Home Earth Week Series: A week-long, youth-led series on the future of the planet.<br>• SFUSD Office of Sustainability. Carbon Neutral Schools BOE Resolution & Carbon Reduction Plan. Learn about SFUSD's ambitious plans!<br>• Green Careers Webinar Library (6-12) 40+ videos to inspire your students in their exploration of a sustainable future. |
| Outdoor Learning | Resources to support teachers who want to take learning outside | • SFUSD Outdoor Learning Guidance<br>• LHS Environmental Literacy Curricular Connections for Amplify Science (K-5). You're already teaching Amplify -- now take it outside! |
| Climate Justice = Racial Justice = Environmental Justice = Social Justice | Multi-media resources teaching about the intersection between racial/social justice, climate, and the environment | • Youth vs Apocalypse Climate Justice Curriculum Toolkit (3-12)<br>• Local organizations to join and take ACTION. |
| Teachers Want to Learn, Too! | Professional development resources | • SEI's Webinars: Ecological Economics & Policy, Intro to SketchUp, Energy Audits, Air Quality and more!<br>• Climate Change Education: A Model of Justice-Oriented STEM Education |

While this resource does not represent the ultimate in supporting teachers to teach climate and sustainability (and holding them accountable for doing so), it does signal approval and

encouragement from the District Science Department for incorporating education for sustainability, and makes a public statement linking climate and environmental justice to racial justice.

The Earth Day Every Day activities are also linked to a competition sponsored by the Sustainability Office. Schools and classrooms that participate in Earth Day Every Day curricular activities, as well as other actions that further the 5 Sustainability Pillars, earn points and can receive recognition in the District. It is also worth restating here that one of SFUSD's 5 Sustainability Pillars is for every student to have a meaningful interaction with nature every day. While the Resource Conservation Manager discussed difficulties with operationalizing and measuring this goal, the clearly stated aspiration signals to teachers that they are encouraged and expected to make this happen.

These climate and environmental justice curriculum offerings are made possible by the existence of an Environmental Literacy Content Specialist position in the curriculum department. Unlike SPS, where curriculum specialists are generally charged with ensuring that adopted curricula are being taught "with fidelity," SFUSD's curriculum specialist has specifically linked enhancements and supplements to the adopted curriculum (SFUSD also uses Amplify science, as shown in the Earth Day Every Day table).

SFUSD actively supports teachers' use of "off-the-shelf" supplemental curricular resources addressing education for sustainability. Yet, there is unequal access from school to school. In discussing inequitable participation in the Earth Day Every Day challenge, a resource conservation manager explained:

> Schools that earn the most points are predictably schools that have a really high-functioning PTA or are a well-resourced school so that the principal, staff, or parents have the peace of mind to sign up, OR we have established a connection with someone at that school. At Lincoln High School, there is a teacher who teaches a 9/10 Green Academy -- since I knew her, I could explain it to her in more detail. If we don't know someone who is running a sustainable system at school, it makes it a

> lot harder. The idea is to create behavior change. It takes a willing person or a school that has a lot of time and resources.

And a school administrator noted, "The frustration is that [sustainability] is posed to people as an invitation – I took up the invitation and made time for it." While there are more resources for climate and sustainability education available to staff in SFUSD compared to SPS, neither district has the infrastructure of support and accountability needed to ensure climate and sustainability education is implemented district-wide.

Purchasing

SFUSD had initiated an effort to reduce waste and to sustainably source items purchased for the schools. This was explained on the "What We Do" section of the waste reduction webpage:

> **Green Purchasing:** The Sustainability Office is working with the Purchasing Department to stock environmentally preferable products in the SFUSD Warehouse.

However, a recent change to the purchasing procedures for the District has potentially undone any progress made via informal efforts toward green purchasing (there has never been a formal green purchasing agreement). According to a Resource Conservation Manager:

> We just switched to Amazon business plan where all clerks can purchase directly from Amazon using their budgets -- the waste, the incessant buying of shit. We already have so much surplus at the end of the year.

In terms of sustainability in purchasing, SFUSD and SPS appear to be at the same level of performance, lacking district-wide rules for sustainable purchasing.

*Policy Environment*

SFUSD's climate and sustainability action takes place in the context of some of our nation's strongest state and local climate policies. In the 2017 Resolution in support of carbon neutral schools, the Board cited California's policies demanding 40% reduction in greenhouse gases by 2030 and 80% reduction by 2050, and all new commercial buildings to be zero net energy by 2030,

and all existing buildings to halve their energy use by 2030. The Resolution also cites financial incentives based on utility company policies and State rebates for electric vehicles, (Resolution 176-27A1, 2017). Strong political and financial support from state and local governments defrays the economic and potential political cost of committing to strong climate and sustainability action.

*District Structures*

City partnerships

In addition to policies that facilitate, and in many cases mandate, sustainability action, the City of San Francisco promotes climate and sustainability action in SFUSD through on-going partnership. In fact, the City directly funds positions in the SFUSD Sustainability Office. According to a Resource Conservation Manager:

> [Then Mayor] Gavin Newsom wanted to fund a position in the school district; the City funded the director of sustainability [through] Public Utilities and the Office of the Environment. Our success relies heavily on city support. The Safe Routes to School program is state funded, and through San Francisco Municipal Transportation Agency -- they apply for the grant and then recruit nonprofits to promote walking & biking activities at school and one liaison at the district coordinates with partners. Shared savings [utility conservation] at SFUSD was funded by Prop 39.

The close relationship between SFUSD and the City of San Francisco has continued to evolve over time. San Francisco recently levied a tax/fee on all commercial property owners for stormwater overflow based on their square footage of impervious surface to incentivize depaving and create groundwater filtration; this source also helps fund the SFUSD Sustainability Office. They also work concurrently on projects through a predictable, consistent relationship, "For waste, I meet bi-monthly with the School Education Team and Recology that works in the City's Department of the Environment. They do school-based education for all the schools in the city."

According to a school administrator, the City works with SFUSD to implement its Climate Action Plan, "they have 10-points, and one point is social justice, getting youth and families

involved." The City has also declared a climate emergency, although the SFSD Board of Education has not. It appears that in some ways, the City both pushes and pulls the District along.

Staffing/Organizational chart

As mentioned, SFUSD has more staff dedicated to sustainability work than SPS, which allows more work to be done. Whereas SPS has three Resource Conservation Specialists (one each for water conservation, energy conservation, and waste reduction), SFUSD has the same three Conservation professionals (although their roles are slightly different), plus a dedicated data analyst and a cabinet-level Director.[65]

Before the Director left the District, he had also advocated for a position to specifically monitor and coordinate carbon reduction efforts:

> Our energy manager was going to bond meetings and advocating for boilers being replaced with heat pumps and electric vehicle replacement. Even though we passed the resolution and have the plan, it still is not fully accepted into the day-to-day goings on. Before Nick left he created a position who would sit in Bonds and Buildings & Grounds -- would report to both of those departments to balance the needs. There is constant tension between the maintenance of new electrified heating/cooling equipment. The custodial staff was trained on boilers. ... Right now there is no one sitting on those meetings. It needs a person to advocate for the carbon reduction plan. …

Throughout all three cases, it has been proven important not only to have sufficient human resources, but also to locate those resources strategically in the organizational chart so they have pull and communication with key people.

Interestingly, during the time this study was being conducted, SFUSD hired a new Chief Facilities Officer. This Chief Officer has stated a commitment for San Francisco to be the greenest school district in the nation, and she believes that the culture of sustainability has been well enough established that a separate Sustainability Office is no longer needed, thus the Sustainability

[65] As mentioned, the Director and the Energy Manager have been unfilled for the 2020-21 school year.

Managers have been subsumed under different departments: Zero Waste under Custodial, Safe Routes to School under Transportation...

> Chief Facilities Officer has done some reorganization … Her vision was that we no longer need a separate Office of Sustainability. Our Director has advocated for Sustainability since 2008. Now the new CFO says we are embedded. ... We pushed back because we still feel we need a director and a lot of advocating. What this implies is that we won't need an advocate -- we pass a Board Resolution and there is no need to advocate. It still feels like there is that need for carbon neutrality, greening schoolyards, and stormwater management -- still need data, financial incentives. There is a lot of arguing and a lot of it comes from the maintenance side. Her plan is to fuel direct money into Maintenance and Buildings & Grounds department for professional development. She came from Parks & Rec -- she wants to green the heck out of the schoolyards -- innovate and think outside the box -- adopt a cat for integrated pest management. [Buildings & Grounds] have run on low resources so they are trying to cut the work they do -- keep it minimal to provide high quality work. She realizes the problem is lack of resources so they can hire and fill empty positions and give them training and support. Change of leadership has been involved in this also -- new Custodial Director & Manager, New Landscaping Manager. The resources are starting to trickle down. There was an effort made to hire new Directors committed to Sustainability Pillars.

Time will tell whether this reorganization advances or impedes climate and sustainability action in SFUSD. A Sustainability Manager previously expressed that a main frustration in their work was, "not having a strong advocate at the top like a superintendent or chief. Board members can only pass resolutions, they can't help a lot. Trying to get continued momentum to work on this. As the sustainability office, we are continuously involved in our daily jobs, but at the same time we are charged with leading the vision for the future." Perhaps new leadership at the Chief level will relieve Managers of the pressure of leading the vision for the future.

A school administrator also cites lack of time as a main barrier to climate and sustainability action in SFUSD. There is "not active opposition," to climate and sustainability action they say, "time is a barrier. I had the gift of time. If I return as a site administrator, I wouldn't have the time to put into this."

*Intersections and Implications for Climate and Sustainability Action in Seattle Public Schools*

Role of top-down leadership

In both SPS and SFUSD, interviewees cited the importance of top-level leadership to achieving climate and sustainability action. A Sustainability Manager in SFUSD said:

> If we had spoken 2 years ago, I would have been so confident with all the work we were doing and the direction we were going. But now, with the pandemic and the change in leadership -- it all depends on the new leadership -- everything I have shared is a lot in flux. In terms of carbon reduction and our board resolution, we are moving towards those. There has been no traction in hiring that bond, energy person [and we need them in those meetings because] once the boiler gets put in, it's there for 30 years.

Similar to SPS, the perception among staff is that the highest levels of District leadership are not committed to climate and sustainability action. A Sustainability Manager said:

> The District is more equity-focused. Closing the academic achievement gap for Brown and Black students. Getting top-down support has been one of the most difficult things for the [Sustainability] Office. You get lucky if you have a superintendent who is already committed to sustainability. Technology has been a big focus -- 1:1 devices. It is hard to take the whole vision of what a climate justice, resilient district looks like.

And a school administrator views the momentum for climate and sustainability action as mainly rising from schools upward, saying "There are allies all throughout the school district – most are teachers and administrators, a few from the central office." and:

> Everyone is figuring out the urgency of climate justice at different times in their own pace – not coming from School Board or Superintendent yet. Our opportunity is to show how what we are doing is aligned to our goals for students already –[aligned to our] graduate profiles for 5$^{th}$ and 12$^{th}$ grade -- being climate literate is not an add-on!

Because of the urgency of the climate crisis, it is frustrating to many that climate and sustainability action does not receive unequivocal support from the top-down. As a school administrator said, "I wish somebody who makes decisions district-wide would make the path irresistible."

Moving from aspiration to action

The case of climate and sustainability action in SPS showed clearly that there is aspiration on the part of the School Board and many educators to take strong climate and sustainability action. The SPS Clean Energy Resolution lays out an ambitious plan that also addresses social justice issues while pledging to decarbonize the District. However, there is a gap between aspiration and action.

The theme of difficulty in moving from aspiration to action also arose in the SFUSD case. A Sustainability Manager talks about the work SFUSD did to come up with a comprehensive sustainability plan, or at least the vision that would lead to a plan:

> We got down to that broad, deep visioning process in 2019 -- design thinking, a 6-month process with teachers and students... So many solutions came out of that. They broke down into four categories -- campus, community, curriculum, culture. Campus is the physical elements -- greenscapes that capture water, compost & recycling in every area of the school, carbon-free electricity… Culture is everyone knows how to get involved, principals giving announcements that integrate climate justice & sustainability, mission statements, family engagement -- every school has their own culture. Community is really leveraging the city and organizations to get this to work. The next steps are a vague vision, we need to find funding. We lost capacity with teachers and students needing to get to work, and then COVID hit.

The work of the BIPOC Climate Justice Advisory Committee shows that even during the busy school year, even during the pandemic, educators want to see strong, comprehensive climate and sustainability action. In Spring 2021, at least 45 educators attended meetings and worked in teams to learn more about education for sustainability and environmental justice, and organized to urge SFUSD's Board to pass a Resolution declaring a climate emergency.

Connecting climate justice to racial justice

Another similarity between SPS and SFUSD is that both districts have strong stated commitments to racial equity, but those commitments are not leveraged as strongly as they could be

to motivate climate and sustainability action. Stated another way, environmental justice is not considered central to racial justice, despite the fact that environmental racism is a main driver of health and wealth gaps for Black and Brown people.

As in SPS, racial equity in SFUSD is institutionalized via foundational documents and professional development. According to a school administrator, "It's in our mission statement -- teaching for equity and social justice has been our goal for the last six years. Where we run into a problem is in the execution." Every site administrator must attend an admin institute annually, which has focused on racial equity for the last two to three years. Administrators then must lead racial equity training at their school sites. Though the training is mandatory for administrators, it is still optional for staff, and it is "not framed in the teacher's union contract." In this regard, SPS's commitment to racial equity is more strongly communicated to staff through mandatory training. However, in both districts there is a perception of some of the professional development work being more perfunctory than transformational.

Neither district has any mandated professional development for administrators in sustainability. According to a school administrator, until the BIPOC Advisory Committee, there was "No organization, department, or group of people doing climate justice [in SFUSD]. In monthly meetings with [the Environmental Literacy Content Specialist], the idea came to focus on prioritizing BIPOC and maybe expanding in the future -- to have [racial justice] in the center, not the periphery, right from the beginning."

The Advisory Committee hopes to engage in transformational climate justice work, and one example discussed is "Urban food sovereignty… how does every school have an aquaponic farm? [That's] starting in one school in San Francisco." While there are many approaches that might achieve these ends, finding a way to integrate urban food sovereignty across the district in an

equitable manner is critical.  Engaging with the environmental justice issue of food sovereignty is linking classroom learning to meeting community needs, as SPS's AAMAC asked schools to do. Initiatives such as these are still fertile areas for growth in both school districts

## RECOMMENDATIONS FOR ADVANCING CLIMATE AND SUSTAINABILITY ACTION IN SEATTLE PUBLIC SCHOOLS

*Overview*

Across the cases presented in this report, certain system characteristics were found to promote district-wide action. These fall in the following areas:

- Human resources (including professional development and teams/committees)
- Goal alignment
- Analysis/strategy tools
- Broader policy environment (including local and state politics, union action and community political discourse).

Communication is a fifth, cross-cutting characteristic that supports and catalyzes the others.

These case study findings are consistent with themes from the literature review, which revealed similar factors promote education for sustainability: alignment of goals, collaboration with the whole school community (teachers, students, custodians, nutrition services staff, and more), robust staffing strategically deployed throughout the organizational chart, and a supportive state & local policy environment. Recommendations made here seek to foster those factors, as well as to undo factors that have been found to impede education for sustainability, such as time constraints, lack of priority for sustainability at the highest levels of leadership, lack of teacher efficacy ("Even if I knew what to do, it doesn't matter whether I do it"), siloing of sustainability in facilities and operations, lack of curricular support, and tendencies of institutional systems to resist change.

Analysis of the SPS racial equity action case is particularly relevant in selecting high-leverage action steps for advancing climate and sustainability action in Seattle Public Schools; similar or even identical structures to those that have established racial equity as a cultural norm in SPS can be put to work for climate and sustainability action. The SPS cases suggest that transforming curriculum is critical for meeting the goals of racial equity and climate and

sustainability action. Since there seems to be a metaphorical blood-brain barrier insulating teaching and learning from meaningful change, recommendations are offered that seem likely to effect change, but may be neutralized by the institution's strong inertia and conservative impulse when it comes to preserving the status quo in teaching and learning, which this study argues is a strong bias for standardized curriculum delivered with fidelity in the service of high standardized test scores.

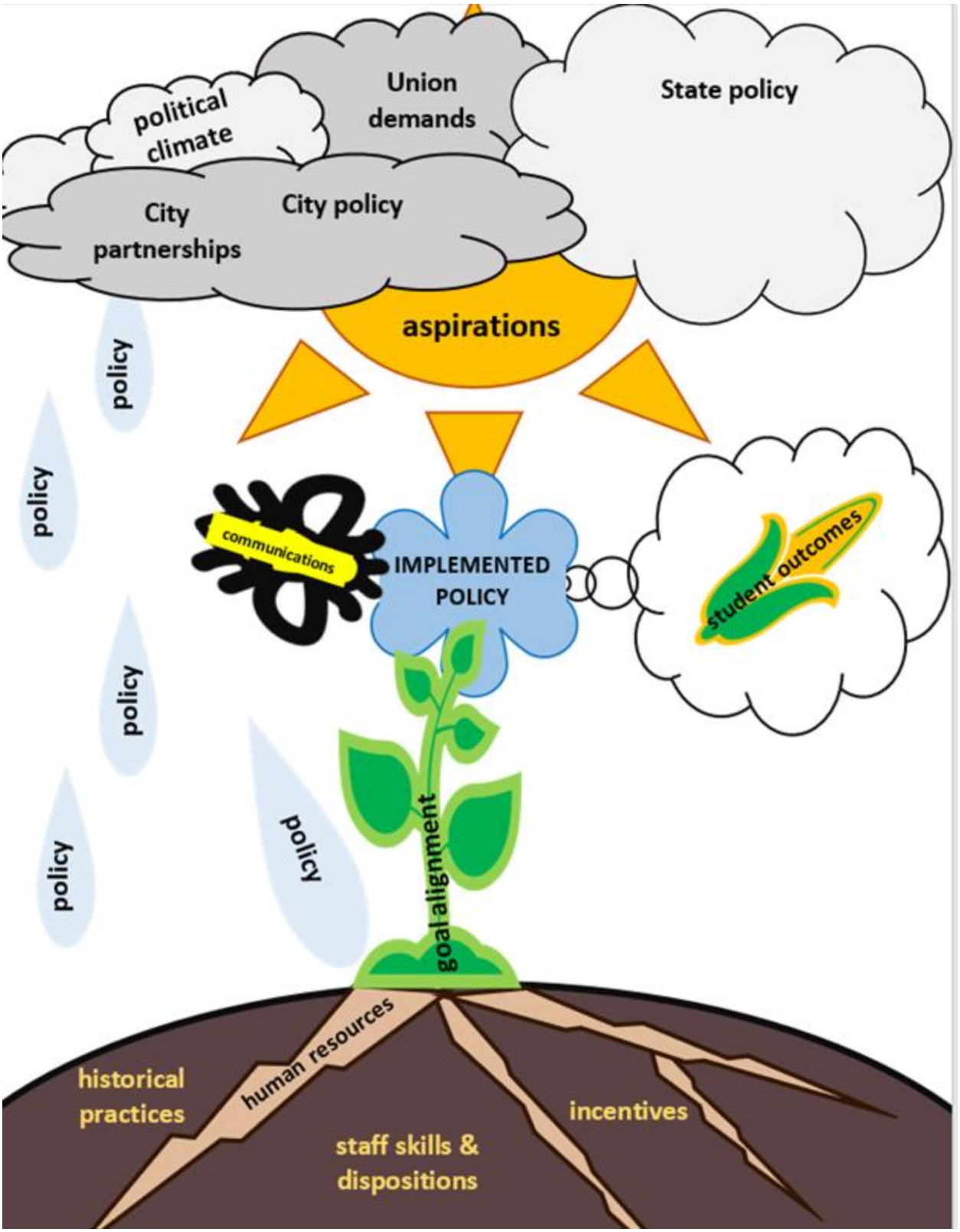



*Figure 17: An ecological model of systems characteristics influencing policy implementation in SPS*

## Human Resources Recommendations

*Recommendation #1: Rename and Expand the Resource Conservation Office*

Racial equity action in SPS has been positioned as valuable and materially advanced by dedicating resources in two departments: Department of Racial Equity Advancement and Office of African American Male Achievement. Similarly, value and functionality has been ascribed to climate and sustainability action in SFUSD by having a Sustainability Office with a cabinet-level director position.

The Resource Conservation Specialist position in SPS is officially charged with helping schools to save money on utilities, but they have expanded their roles by obtaining grants for other sustainability projects, (“I can get funding and then say "oops!" I got money for this, now I guess we will have to do it,”), and have had their roles expanded as “anything green lands in our laps,” (interview with Resource Conservation Specialist). Because RCS are currently used for functions well beyond the stated job description of working to save money by reducing utility usage, this reality should be acknowledged and their important work should be supported by fully staffing the group and renaming it as the Sustainability Department or Climate and Sustainability Department, to emphasize the immediate work that must be done to mitigate climate change and the long-term work that needs to be done to fully integrate sustainability into every facet of SPS.

This is especially important now that the Clean Energy Resolution has been passed and must be carried out. SFUSD’s experience shows that constant vigilance is needed to make zero carbon the new normal, “ Our energy manager was going to bond meetings and advocating for boilers being replaced with heat pumps and electric vehicle replacement. Even though we passed the resolution and have the plan -- it still is not fully accepted into the day-to-day goings on. ... Needs a

person to advocate for the carbon reduction plan" (interview with SFUSD Resource Conservation Manager).

A fully staffed department with equal status in the organizational chart would include a cabinet-level director, a recommendation that surfaced in interviews with people from many different roles. A champion at the cabinet level could increase the salience of conservation goals in every conversation, and create "pull" with curriculum & instruction, transportation, and nutrition services. A CBO representative commented, "A Director of Sustainability could aid this work. Having someone whose job is specifically about sustainability means that more resources will be funneled through that lens," and an RCS stated, "We want someone in a Director role. I don't believe we have the leadership to drive holistic sustainability across the district."

A fully staffed Climate and Sustainability Department would have the human resources capacity to oversee the implementation of the Clean Energy Resolution, coordinate across departments including with curriculum & instruction and the Department of Racial Equity Advancement to promote climate justice. A fully staffed department would also include a communications specialist or data analyst to communicate successes and expectations internally and externally. Schelly et al. found that clear, consistent communication about utility usage was a key factor that contributed to occupants reducing energy usage, despite the aged condition of their building (2010). Since the average age of SPS's portfolio of 104 buildings is 32 years old, and the facilities master plan will not see all buildings modernized until 2040 (McClennan, 2020), investing in communications to promote conservation behavior in every school would be a powerful action for reducing SPS's environmental footprint. SFUSD has a data analyst role, which has helped to create and maintain an attractive, accessible website that allows staff, students, and community members to easily see schools' and the district's progress towards sustainability goals.

*Figure 18: Summary of Recommendation 1*

| **Recommendation 1: Expand and Rename Resource Conservation Department** | |
|---|---|
| What | Rename the Resource Conservation Department as the Sustainability Department or Clean Energy and Sustainability Department, to reflect the scope of work.<br><br>Add a full-time position at the same level as Resource Conservation Specialists.<br><br>Add a director-level position. |
| Who | The Superintendent has the power to unilaterally reorganize the district and create positions. |
| When | The Interim Superintendent just reorganized the District; the new Superintendent will be hired in 2022 and should take this action then. |
| Inputs needed | Money to pay for the new FTE<br>Leadership advocacy to bolster the legitimacy and value of this department<br>Community advocacy to push the Superintendent to take this action |
| Systems levers<br>(1 is most powerful,<br>12 is least powerful) | 10. The structure of material stocks and flows (human resources for climate and sustainability action).<br>6. The structure of information flows (who does and does not have access to information). |

*Recommendation #2: Create a Network of Green Teams [or Climate and Environmental Justice Teams]*

To make climate and sustainability action part of the culture district-wide, every school should have a Green Team;[66] the District should offer a small stipend to staff for leading the Team, as well as regular training and networking opportunities for the Team leaders.

Green Teams exist at every high school and some other schools in SPS in the form of student-led clubs. While some Green Teams have made impressive strides in raising awareness of

[66] The term "Green Team" was used by interview subjects and so is used here, but a more pointed name such as Climate and Environmental Justice Team would signal the needs to act urgently for climate and holistically for racial justice and environmental sustainability.

environmental issues and conserving resources in their school communities, student-led groups cannot be expected to transform teaching and learning in their school. However, Green Teams comprised of administrators, teaching staff, office staff, custodial staff, nutrition services staff, students, families, community members could affect such change. Whereas student-led Green Teams can accomplish about one goal per year at the school level, a school-based team could accomplish numerous goals at the school level and have access to decision-makers to press for district-wide changes. A model for this structure already exists in the District's Racial Equity Teams (RET).

RETs analyze school-level data and set goals for eliminating racial disproportionality in academics, attendance, and discipline by developing staff capacity for anti-racist teaching, revising policies and procedures that have racist outcomes, and putting student-centered structures in place. RETs from across the District come together several times a year for additional training from District specialists and outside experts in a train-the-trainer model. These summits give teams the opportunity to communicate with one another, and provide a channel for disseminating information from the District's Department of Racial Equity Advancement to the schools. In addition to providing human resources and professional development to support the RETs, each RET receives a $2,500 stipend to support its work.

Like education for sustainability, teaching for racial justice comprises both immediate actions and long-term cultural transformation. A network of interactive teams is a good, adaptive structure for this kind of complex problem-solving, allowing both individualized school-by-school approaches and district-wide values and momentum. Research into RET effectiveness found that they were effective in raising the volume and frequency of racial equity discourse, also a goal for Green Teams -- to raise awareness and normalize discussion of climate, sustainability, and

environmental justice. The same research found that RETs needed technical assistance in moving from theory to practice, support from administration, access to all-staff PD time, and decision-making power in order to be effective. These conditions will also be needed in order for the Green Team structure to effect change.

A network of school Green Teams would facilitate communication between schools, inspiring one another to adopt behaviors and champion initiatives and sharing effective practices in teaching and learning. This would also support teachers who may not implement education for sustainability because they feel isolated or at-risk of censure.

These Teams would also create opportunities for communication and support to flow to and from custodial and nutrition services staff, which would have multiple benefits. Seattle Public Schools is consistently short on nutrition services and custodial staff. This indicates that the positions are not compensated well enough and the work is not valued or respected enough to attract and retain workers. When people are not paid well and do not feel valued, they are more resistant to change.

Sustainability professionals[67]and CBO representatives identified resistance from custodial and ground staff as being a barrier to implementing sustainability action. In SPS, that resistance is mostly overcome via interpersonal relationships. In SFUSD, the new head of the facilities department is investing in professional development for custodial and grounds staff, and these professionals were included from the beginning in preparing SFUD's Carbon Reduction Plan.

When a culture of shared ownership of sustainability is created among all SPS staff, that means that countless decisions will be made with sustainability in mind. According to one School Board Director, during a playground renovation project at Wing Luke Elementary School, the

[67] RCS in Seattle Schools, sustainability manager and former Director of Sustainability for San Francisco Unified School District

original plan called for 20-30 tons of dirt to be removed from the site and disposed of. But a contractor made a different decision, thinking of the environmental impact of driving the dirt through the neighborhood where the school children live, a neighborhood that already has poor air quality due to air traffic and proximity of two highways (Robinson, 2021). Knowing that transporting the dirt would put particulates in the air, the contractor asked to change the plan and use the dirt on-site. They raised the playground and installed French drains, which also improved the schoolyard's drainage. It cost more initially, but in the long run the playground is better designed and the air quality was protected. This is an example of a fairly large-scale decision that had a financial cost associated with it, but many smaller no-cost decisions are made throughout the course of many workdays, and when sustainability is embedded in the mindset of everyone in the organization, resources are more likely to be conserved. Decisions like this could be fostered and celebrated by this cross-departmental network of Green Teams.

Establishing this network would also have the co-benefit of identifying a point person at each school for community-based organizations or District staff who have sustainability projects, programs, resources, or funding to reach out to. Currently, schools that already have a program in place get increased flow of resources and opportunities, and schools that have little or nothing started continue to get little or nothing, "There are resources, but they don't get distributed equally or not everyone is aware of what's available" (interview with CBO representative). A Green Team lead at each school could help to equitably distribute the flow of resources for climate and sustainability action. Other districts already use networks of Green Teams to implement climate and sustainability action, as noted on page 112.

Because Green Teams need significant buy-in from staff in order to be successful, the Union is the most logical route for pursuing a network of Green Teams. The Union took a similar action to

create RETs; these teams were first included in the collective bargaining agreement (CBA) negotiated between the Seattle educators' Association and the District in 2015.

The Union may wish to name these teams Environmental Justice teams, signaling the link to racial justice. However named, the creation of these teams would add symbolic, structural, and human resources value to climate and sustainability action, and contribute to an organized base of political power that could advocate for further action.

*Figure 19: Summary of Recommendation 2*

| **Recommendation 2: Establish a Network of Green Teams** | |
|---|---|
| What | Roll-out school-based Green Teams composed of admin, teachers, custodians, nutrition services, students, families, and CBOs.<br><br>Convene teams several times a year for professional development and networking |
| Who | The Union, in negotiation with District leadership, via collective bargaining agreement (CBA) |
| When | At next negotiation of CBA, 2022 |
| Inputs needed | Money for stipends and convenings<br>District staff FTE to support school-based teams<br>Advocacy from Union members that this is desired action |
| Systems levers<br>(1 is most powerful,<br>12 is least powerful) | 7. The gain around driving positive feedback loops.<br>6. The structure of information flows (who does and does not have access to information).<br>4. The power to add, change, evolve, or self-organize system structure |

*Recommendation #3: Education for Sustainability Curriculum Specialist*

Just as the District has specialists for social-emotional learning, racial equity advancement, literacy, science, social studies, special education, and math, it should have at least one specialist who can build capacity among teachers for education for sustainability. This person could connect teachers with resources and be a thought partner for teachers who are interested in implementing

education for sustainability, but do not feel ready to do so independently. This position could also support the Green Teams (or Climate and Environmental Justice Teams).

This position could raise awareness among teachers of the existence of Washington's Environmental and Sustainability Standards, which are not widely known by teachers in SPS, and support integration of these standards at all grade levels. To increase uptake, the Curriculum Specialist should align the Standards to adopted curricula in literacy, math, and science, which would help teachers solve the problem of conflicting priorities and time constraints. This Specialist could also highlight inspiring, innovative work being done in the District in order to build a culture of education for sustainability, and could connect teachers to grant funding and other opportunities.

SFUSD has such a position, who is responsible for creating the Earth Day Every Day resource for teachers, creating outdoor education guidelines, and "digesting" the work of the Sustainability Department and "trying to build those connections" with the curriculum & instruction department (interview with SFUSD Resource Conservation Manager). Where SFUSD is ahead of SPS in district-wide implementation of EfS, it seems directly attributable to the work of this educator.

*Figure 20: Summary of Recommendation 3*

| **Recommendation 3: Hire an Education for Sustainability Curriculum Specialist** | |
|---|---|
| What | Create or repurpose a curriculum specialist position focused on the Washington Environmental and Sustainability Standards and Education for Sustainability methods. |
| Who | Three possibilities:<br>● The Union, in negotiation with District leadership, via collective bargaining agreement (CBA)<br>● District staff (new Science Program Manager, or new CTE Program Manager)<br>● Superintendent via reorganization |
| When | Depends on route (see three options for Who) |
| Inputs needed | Money for FTE<br>Adopted Education for Sustainability framework |
| Systems levers<br>(1 is most powerful,<br>12 is least powerful) | 6. The structure of information flows (who does and does not have access to information).<br>2. The mindset or paradigm out of which the system — its goals, structure, rules, delays, parameters — arises |

*Recommendation #4: Professional development*

Four strands of professional development could advance climate and sustainability action in SPS. The first three are centered around building group efficacy by communicating successes and expectations for pro-environmental behaviors, including the Environmental & Sustainability standards. The fourth focuses exclusively on teaching and learning. Recommendations for professional development are partially contingent on other actions (Recommendation #3: Education for Sustainability Curriculum Specialist and Recommendation #5: Create a Policy Environment that Supports Implementing Washington State Environmental & Sustainability Standards, Recommendation #7: Include Sustainability Goals in the CSIP). Professional development is governed in part by the Human Resources Department, the Superintendent, the School Board, and the Union. Specifically, the Union works with District staff to plan and deliver the mandatory TRI-Days PD.

TRI-Days (Mandatory)

Informing all employees in SPS of the District's climate and sustainability successes and expectations can promote further action throughout the District and encourage people who are unaware that SPS has taken any steps to address the climate crisis. One of the most powerful communication and agenda-setting resources in the District is dedicated time during the days of professional development that occur before the first day of school, known as TRI-days. Recent years have seen the District's emphasis on social-emotional learning and racial equity made manifest by mandatory content during those days. This content is often communicated through short videos that are screened by each school staff in their own location.

Key content to be shared during TRI-days includes:

- The Clean Energy Resolution: why it was passed, what it calls for, what is being done and what will be done next, how and why to talk about the resolution with students and families.
- Superintendent Procedure 6810SP Conservation of Natural Resources: why it is important, what you can do, what successes have already been accomplished in resource conservation in our district.
- Washington's Environmental and Sustainability Standards: what they are, why they are important, and that the District supports teachers in teaching these standards.
- Additional resources available: Once implemented, introduce the Department of Sustainability and its Director, and explain their role and what they can do for your school; Who the Resource Conservation Specialists and Self-Help Department are and what they can do for your school; Community-based organizations who can provide lessons or other resources to your students. Once implemented, who the Green Team (CEJ Team) members are for our school and how they can support staff and students.

During the district-wide professional development days before the 2021/22 school year, it should be mandatory for administrators to present information about the Clean Energy Resolution and inform staff how they can contribute to the advancement of the Resolution's goals. As a Resource Conservation Specialist often repeats, "The first R is reduce." Achieving zero carbon will

require not only technological solutions, but also the collective effort of building occupants in terms of how they use and travel to the building.

Group efficacy is a key predictor of sustainability action (Schelly et al., 2010). Group efficacy, a spirit of "Si se puede," is promoted by showing the community what we have already accomplished and how it was done. Spreading the word that the activism of students, staff, and community have resulted in a promise to be a zero carbon district in the next two decades should energize people to contribute to the efforts.

This PD described here is specifically aimed at closing the gap between facilities and occupant behavior, and raising staff awareness about the climate and sustainability action that is already taking place. Because the TRI-days PD is a one-off, not an extended series, and multiple goals need to be met in a short timeframe, this strand of PD has the value of communicating the importance of climate and sustainability action and building group efficacy by communicating successes and expectations. Building capacity for comprehensive education for sustainability cannot take place in this abbreviated context, but including this introductory information in the TRI-days training would signal the importance and set the stage for future trainings.

Onboarding and initial use training (Mandatory)

The onboarding process for new employees is another ideal time to educate people about the adopted conservation procedures. All SPS employees must complete a series of on-line modules about racial equity; a similar on-line training series could inform people about sustainability targets and what they are expected to do to contribute to meeting those targets, and also introduce employees to the resources and opportunities available for advancing sustainability goals. This on-boarding training should also introduce teachers to the Washington State Environmental and Sustainability Standards, and clearly state that all teachers are responsible for teaching these

standards, and provide resources for further support, including the Environmental Justice Curriculum Specialist, and the fully staffed Climate and Sustainability Department. This is also an opportunity for the District to communicate to teachers that they are supported in teaching issues of climate and environmental justice, and will be supported in the event of family complaints or pushback from their school administrator.

Professional development for administrators (Mandatory)

Under 6810 SP, administrators are responsible for posting signage that reminds building occupants of conservation procedures, and for communicating to school communities about their consumption and progress toward conservation goals. While this is an expectation, there is no infrastructure of support or accountability to make this happen. Periodic refreshers on conservation procedures and model signage would signal to administrators that utility conservation is an important expectation and that they have the power and responsibility to lead sustainable use of resources in their schools. Paper waste[68] and food waste are two key areas where the building's green design or modernization is irrelevant: only the people in the building affect these metrics. Administrators should be supported and held accountable in communicating expectations for paper and food waste reduction to staff, and school communities should work together to set goals for waste reduction and develop strategies.

[68] In my experience, paper is viewed as a very low-value, almost infinite resource. Schools I have worked in have consistently run through their paper budget months before the school year ends, and then continue to use more paper purchased through other funds. We need to change the way we think about paper and only use it when it is truly necessary.

Washington State Environmental and Sustainability Standards and Education for Sustainability Methods (opt-in under present structures, make mandatory if Recommendation #5 is implemented)[69]

Via Green Teams, coaching from the Education for Sustainability Curriculum Specialist, and workshops, this strand of professional development would help teachers integrate the Environmental and Sustainability Standards into core instruction and to design and implement place-based and problem-based learning. If the School Board were to adopt a specific EfS framework (See Recommendation #5), this PD could build teachers' capacity to implement the framework, especially showing teachers how to integrate the E&S standards into core curriculum. This integration is key to overcoming the time-pressure barriers that are likely to prevent teachers from addressing the E & S standards. The integration also underscores that climate and sustainability education is "not an add-on," just as racial equity is not an add-on, but rather a fundamental shift in values, perceptions, and practice.

Professional development is absolutely essential and has a yawning gap to close, considering that many teachers are unaware of even the existence of the Environmental & Sustainability Standards, let alone methods for integrating them into teaching. Professional development has brought teachers from not-knowing to commonly implementing specific practices for racial equity, such as trauma-informed classroom management, restorative justice, and culturally responsive teaching.

Besides equipping teachers with technical skills and motivation to teach for sustainability, this professional development would build adaptive capacity by creating opportunities for

[69] Professional development can only be mandated in certain circumstances in SPS. If curricular materials were adopted for EfS, then teachers could be mandated to take initial-use training. There are a few other specific conditions that allow the District to mandate PD. Otherwise, according to the CBA, Professional Development opportunities are optional for staff.

communication, networking, and symbolic and social practices that can begin to establish sustainability as a cultural norm.

*Figure 21: Summary of Recommendation 4*

| **Recommendation 4: Professional Development** | |
|---|---|
| What | Provide professional development via:<br>● TRI-Days mandatory session<br>● Onboarding mandatory session<br>● School Leadership Institute mandatory session (for admin)<br>● Coaching, Green Team summits, and workshops |
| Who | Human Resources, Superintendent & Cabinet, Union |
| When | Beginning in Summer 2022 |
| Inputs needed | Agreement among District Leadership and Union to devote time and energy to this PD<br>Hiring of EfS Curriculum Specialist<br>Adoption of EfS framework in Support of Implementing Washington State Environmental and Sustainability Standards (School Board)<br>Addition of Sustainability Goals in CSIP<br><br>Money for consultants or guest speakers |
| Systems levers<br>(1 is most powerful,<br>12 is least powerful) | 6. The structure of information flows (who does and does not have access to information).<br>2. The mindset or paradigm out of which the system — its goals, structure, rules, delays, parameters — arises |

## Goal Alignment Recommendations

The case study revealed an emphasis on top-down alignment of goals in SPS, starting with School Board Policy 0030, which is operationalized in the Strategic Plan and activated in schools via the Continuous School Improvement Plan (CSIP), "...the strategic plan, data governance and CSIPs all need to be aligned with the policy" (Curriculum & Instruction Committee Meeting Minutes, September 2018). The presence of racial equity goals in the Strategic Plan has driven considerable activity throughout the district, and mandated CSIP goals centering on outcomes for

students of color furthest from educational justice and especially African American males determines budget, staffing, and professional development at each school. Thus, absences of policy and goals calling for climate and sustainability action contribute to the lack of district-wide implementation of such action.

There is policy governing sustainability in capital projects, and this policy is operationalized through guiding principles for the BEX and BTA levies and the work of the BEX/BTA Oversight Committee. However, there is no policy calling for climate and sustainability action in curriculum and instruction, which was found to be a marked weakness of climate and sustainability action in SPS.

*Recommendation #5: Create a District Policy Environment that Supports Implementing Washington's Environmental and Sustainability Standards.*

An essential step to creating climate and sustainability action in SPS is to adopt governing policies that establish climate and sustainability action as a priority beyond buildings. Just as SPS' racial equity action has been initiated and fostered by policy and resolutions that carry both symbolic weight and structural resources, so too must climate and sustainability action be supported by top-level directives.

The School Board has the power and responsibility to create the policy environment for climate and sustainability action. According to the Washington State School Directors' Association (WSSDA), the role of the school board is to set the policy priorities of the district and protect those priorities from conflicting interests that would detract from or dilute them (n.d.). While WSSDA views the paramount duty of a school board as promoting student achievement as measured by test scores, the SPS Board of Directors has made it clear that they view SPS as a political agent and are willing to set transformative policy priorities for racial equity and climate and sustainability.

According to an SPS administrator, “The School Board has more power in Seattle than in other districts,” and a School Board Director described the role of the Board as, “The School Board sets vision and goals and then Superintendent runs with it.” The School Board recently set the vision of a carbon-free district by the year 2040, which the Superintendent must “run with” and operationalize throughout the District (see Recommendation #6). But the Board has not set a vision for taking climate and sustainability action through curriculum and instruction. There are several actions the Board can take to set that vision.

Adopt an Education for Sustainability Framework

The School Board must make a formal commitment to Washington State Environmental and Sustainability Standards, and adopt an Education for Sustainability framework to support the implementation of those standards. Formal adoption of this framework is the first step in curricular reforms that are essential to advance climate and sustainability action at SPS.

During the period examined for this case study, the team working on ethnic studies pushed the School Board to adopt an ethnic studies framework. Adopting a framework, rather than a curriculum, makes sense for learning that is meant to be integrated throughout all subjects. The adoption of a framework would protect educators like Ms. E and Mr. C, whose attempts at education for sustainability were shut down by administrators at the school or district level.

As a new adoption, it would create an opportunity for professional development (see Recommendation #4), and provide a basis for the coaching and capacity-building offered by the EfS Curriculum Specialist (see Recommendation #3). This would equip teachers with a common language for discussing the ends and means of education for sustainability, and with a basic tool kit to get started on what is for many quite a new way of approaching teaching.

Several organizations have published frameworks for education for sustainability. The discourse prompted by debating and selecting a specific framework will educate School Board Directors and District staff about what EfS is and why it is important. SPS should select a framework that most clearly aligns with its racial equity action.

The policy should mandate monthly updates, as was done with the K-12 science adoption, to ensure follow through, and should specifically call for the creation of an Education for Sustainability Curriculum Specialist, and a working group to integrate the Washington State Environmental and Sustainability Standards into adopted curriculum in literacy, math, science, and social studies. The policy should also explicitly state support for place-based education, including streamlined, predictable, consistent procedures for engaging with community-based organizations, and support for field trips.

Revise Policy 0010 Instructional Philosophy

The zero-series of policy comprises foundational documents that define the philosophy and goals of SPS. This case study found that two policies in this series, Policy 0030 Ensuring Educational and Racial Equity and Policy 0020 Performance Management, powerfully shape the District's actions. School Board Policy 0010 Instructional Philosophy was cited in the resolution in support of ethnic studies, showing its relevance for curricular adoption. The Instructional Philosophy policy contains two bullet points that could be amended to explicitly support education for sustainability:

- Basic education designed to provide a broad-based, culturally responsive education in areas not measured by state or federally mandated standardized tests, such as music, visual and performing arts, physical education, career and technical educations, and social-emotional learning...
  and

- A goal that all students will: develop and demonstrate creative and critical thinking skill; communicate their ideas and understandings effectively; use

> technology effectively and responsibly; and achieve at levels that meet or exceed state and district learning standards...

The first bullet quoted should be amended to specifically include teaching Washington's Environmental and Sustainability Standards, and also to contain stronger wording emphasizing that every child has a right to education in these areas, regardless of their performance on state standard tests in literacy and math.

The second bullet should be amended to include the soft skills and habits of mind named in the Environmental and Sustainability Standards, to wit, "communication, collaboration, and imagination... flexibility, commitment, appreciation, humor, confidence, and determination." This list is not the be-all, end-all of dispositions for sustainability, but it is good enough. And in the context of SPS, which is policy and aspiration rich and implementation poor, it is important to align and streamline efforts. Furthermore, it is politically indefensible to challenge language taken directly from the state standards.

These amendments would also be consistent with the Clean Energy Resolution, which states, "the implementation plan shall include recommendations for integrating climate science and climate justice into curriculum, incorporating school facilities resource conservation efforts into project-and place-based learning, ..."

The revisions should also include language from the African American Male Advisory Council recommendations, calling for project-based learning and "linking classroom learning to meeting community needs." This act would have a symbolic value, signalling to the Superintendent and top-level District staff that the School Board values complex, problem- and place-based instruction for all students in SPS, not as an add-on to adopted curriculum as a reward for passing state standards tests, but as a right for all students.

It is not clear that this Policy directs any structural resources such as professional development or staffing, and there are no reporting requirements associated with this Policy. However, it sets the tone for professional development, coaching, and future curriculum adoption, and brings the question of Instructional Philosophy before the Board who, as discussed previously in this report, tend to consider teaching as being based mostly on instructional materials which are evaluated in terms of their test-score outcomes. For real climate and sustainability action to occur on the curriculum side, the Board must develop a more holistic view of teaching and learning. Changing the culture of curriculum & instruction in SPS should benefit both climate and sustainability and racial equity action.

Adopt a Resolution Calling for Green Workforce Development and Education for Sustainability in CTE

This case study has revealed that CTE is critically under-resourced and undervalued in SPS. Today's high school students, who are entering the workforce during the decade during which humans must completely stop burning fossil fuels, as well as transform economies and society in other ways to create a sustainable future, should experience CTE as an introduction to green careers. The current state of CTE in SPS does not address this economic transition, leaving graduates to feel unprepared for meaningful work.

It is widely accepted that decarbonizing the economy and adapting to climate change will generate thousands of new jobs and transform the landscape of work. SPS has a moral obligation to provide this information about future jobs to *every student* in SPS, not only those who have already developed an interest in ecology or related fields. Furthermore, career paths that are not obviously "green," (e.g. medicine, graphic design, accounting & finance, every field) should be taught in the context of decarbonization and adaptation.

The School Board can improve the condition of CTE in SPS by adopting a Green Workforce Development resolution. This resolution should be prepared in conjunction with community-based organizations that have expertise and infrastructure for green workforce development, and also with the City, which runs several post-secondary apprenticeships in construction and stormwater infrastructure that could be linked to SPS efforts. Racial Equity Advancement staff within the District and advocates in the community (especially those with a focus on wealth development such as Africatown and King County Equity Now) should also be involved in the creation of the Resolution to ensure that it serves to advance racial justice.

The Resolution should also include a process for communicating about CTE opportunities to every family and every middle school student. High Schools should be mandated to include a CTE goal in their CSIP. Updates should be made to the Student Services Curriculum & Instruction Committee at least quarterly, addressing progress on professional development, supplies & equipment, teaching resources, partnerships, and participation in CTE. The Resolution should also call for a student survey to be conducted annually, to collect information on how well CTE offerings are meeting student needs and how they can be further refined.

A Green Workforce Development Resolution would add symbolic value, signaling that SPS values CTE and recognizes that changes must be made to meet the current environmental crises. It would also add structural value, directing program resources, professional development, and communications, and providing means for accountability. The Resolution would also add human resources value, by investing in CTE educators, a group that has been neglected and marginalized in SPS. By working through a coalition of community-based partners, racial equity advocates, and a department in desperate need of investment, this Resolution should be highly politically viable.

Because CTE has been neglected and under-invested, it is well-positioned for this transformation. Unlike Science, CTE has not had a recent wave of curriculum adoption resulting in staunch supporters of the new status quo. The Clean Energy Resolution also supports greening CTE, stating that the implementation plan should include "student learning opportunities in STEM that leverage Career and Technical Education career pathways."

CTE is a graduation requirement for all high school students, so should be a priority investment. Linking CTE updates to economic growth and climate action for the city is also sure to gain political support.

*Figure 22: Summary of Recommendation 5*

| **Recommendation 5: Create a District Policy Environment that Supports Implementing Washington State Environmental & Sustainability Standards** | |
|---|---|
| What | Undertake the following to set the vision for education for sustainability:<br>● Revise Policy 0010 Instructional Philosophy<br>● Adopt an Education for Sustainability framework<br>● Adopt a Resolution calling for Green Workforce Development and Education for Sustainability in CTE |
| Who | Seattle Public Schools Board of Directors |
| When | Immediately |
| Inputs needed | Advocacy from community in support of these actions<br>Presentation of education for sustainability frameworks from which to select<br>Input from relevant stakeholders to draft CTE Resolution |
| Systems levers<br>(1 is most powerful,<br>12 is least powerful) | 5. The rules of the system (such as incentives, punishments, constraints).<br>4. The power to add, change, evolve, or self-organize system structure.<br>3. The goals of the system.<br>2. The mindset or paradigm out of which the system — its goals, structure, rules, delays, parameters — arises. |

*Recommendation #6: Revise Strategic Plan to include Climate and Sustainability Goals*

As established in the SPS racial equity case, Strategic Plan goals have enormous power to set agenda and direct resources. The Committee Minutes reviewed for this study were studded with

references to alignment with the Strategic Plan, even in contexts that are not obviously related such as when "[District staff] delivered a PowerPoint presentation conveying initial concepts of how to support the focus of the district's new strategic plan (third grade students reading at level, with special attention to African American males) with capacity planning" (Operations Committee Meeting Minutes, June 2019).

Therefore, the Strategic Plan should be amended now to address climate and sustainability action. It is inexcusable for an organization devoted to the care and education of young people to be silent on climate and environmental crises in 2021. And this silence does not go unnoticed by the youth:

> The biggest thing that has been coming up in my convos with youth over the last several years is the urgency around climate change is increasing. Youth that are in school right now have grown up their entire lives hearing about how we are all doomed and there is political unwillingness to do anything about it. The change I've been seeing is that it is landing on youth psychologically in a really heavy way -- lacking optimism, aren't a lot of solutions and older generations are saying "We can't figure it out, it's on you." feeling the burden and little hope.
>
> (interview with CBO representative)

To maintain alignment, the Strategic Plan can be amended to include goals based on the EfS framework the School Board adopts. This would be consistent with the vision-setting role of the Board and the executive role of the Superintendent. The goals must address both the facilities & operations (campus) and curriculum & instruction (curriculum) sides of climate and sustainability action, and should also explicitly connect to racial equity goals, to address the fact that, "It's true [there is no racial justice without climate justice], but I don't know how many people are seeing that connection" (interview with School Board Director).

The revision of the Strategic Plan should not be done quietly, but should be taken advantage of as an opportunity for the District leader to show public support for climate and sustainability

action. As one Resource Conservation Specialist noted in our interview, "If we had a superintendent that would embrace this message, that would do a lot more to guide this work." Part of the Superintendent's agenda-setting power lies in their rhetoric in public venues including media appearances, town halls, and formal addresses. Taking these opportunities to affirm SPS's commitment to climate and sustainability action can help to establish the cultural norm.

*Figure 23: Summary of Recommendation 6*

| **Recommendation 6: Revise Strategic Plan to include Climate and Sustainability Goals** | |
|---|---|
| What | Revise the Strategic Plan to include goals that address both the campus and curriculum sides of climate and sustainability action and explicitly connect to racial equity goals. |
| Who | Superintendent |
| When | Soon after taking office in January 2022 |
| Inputs needed | Advocacy from community in support of this action<br>Board's adoption of education for sustainability frameworks |
| Systems levers<br>(1 is most powerful,<br>12 is least powerful) | 5. The rules of the system (such as incentives, punishments, constraints).<br>4. The power to add, change, evolve, or self-organize system structure.<br>3. The goals of the system.<br>2. The mindset or paradigm out of which the system — its goals, structure, rules, delays, parameters — arises. |

### *Recommendation #7: Mandate Climate and Sustainability Goals in CSIP*

Continuous School Improvement Plans (CSIPs) drive budget, professional development, staffing, and focus at the school level. The CSIP is a key mechanism by which racial equity action is institutionalized throughout SPS. To align with the Strategic Plan, which employs a targeted universalism[70] approach focused on African American males, CSIPs must set goals focused on

[70] According to "Targeted Universalism: A primer," published by UC Berkeley's Othering & Belonging INstitute, the initial articulators of the targeted universalism approach, "Targeted universalism means setting universal goals pursued by targeted processes to achieve those goals. Within a targeted universalism framework, universal goals are

achieving racial equity in academic outcomes, attendance, and discipline. Currently, all schools are mandated to have goals in 3rd grade literacy (for elementary and K-8 schools), 7th Grade Math (for middle schools), or progress toward graduation (for high schools); Safe & Welcoming Environment; and Family & Community Engagement. The CSIP also contains the strategies the school uses to meet those goals, which includes both boiler plate language from the District regarding systematic use of data to identify student needs and monitor progress, and school-specific descriptions of instructional programs.

The minutes of the C&I committee contain multiple references to the CSIP, its alignment to the Strategic Plan, and its importance for directing school resources and activity. This suggests that the CSIP is a viable pathway for the inclusion of education for sustainability in every school. This strategy is also supported by the Clean Energy Resolution, which specifies that the task force should explore the possibility of mandating sustainability goals in every CSIP.

If every school were required to address some form of climate and sustainability action, whether in terms of conservation, community partnerships, or instruction, that would greatly multiply climate and sustainability action and awareness in SPS. To support schools who may not know where to start with climate and sustainability goals, school-level actions could be pulled out of Procedure 6810SP and the Green Resolution. Actions could be as simple as posting signage reminding building occupants of steps for conservation, scheduling "What Goes Where?"

established for all groups concerned. The strategies developed to achieve those goals are targeted, based upon how different groups are situated within structures, culture, and across geographies to obtain the universal goal. Targeted universalism is goal oriented, and the processes are directed in service of the explicit, universal goal." However, this is rarely how targeted universalism is presented at SPS. See this boiler plate language from the CSIP, explaining SPS's approach to targeted universalism, "By focusing on students of color who are furthest from educational justice, especially African American males, we will make the greatest progress toward our collective vision. We believe that an intentional focus on African American males will ultimately benefit every student" As you can see by comparing these two descriptions, a key element of targeted universalism is lost in translation, namely that each group should receive targeted strategies according to their situations.

assemblies for the student body, or an initiative to promote walking or biking to school. Schools that are ready for more ambitious action could work on depaving projects, citizen science, outdoor education, food sovereignty, or other initiatives that require more sustained, coordinated efforts.

Requiring CSIPs to address climate and sustainability action would add symbolic value, by signaling that climate and sustainability is foundational to SPS, and structural value by compelling action (of any magnitude) at the level of each school. This would increase equitable distribution of climate and sustainability action. It would also authorize teachers to incorporate climate and sustainability action into their instruction, whereas now many school administrators discourage their staff from doing so, in favor of "seat time in front of the curriculum."

*Figure 24: Summary of Recommendation 7*

| **Recommendation 7: Require CSIPs to Address Climate and Sustainability Action** | |
|---|---|
| What | Require schools to set a goal in campus and/or curriculum sustainability. Provide options based in policy and procedure from which schools can select, as a means of supporting schools that are at zero capacity for climate and sustainability action. |
| Who | Superintendent |
| When | Upon revising Strategic Plan |
| Inputs needed | Advocacy from community in support of this action<br>Revised Strategic Plan<br>Clean Energy Resolution and work of the task force<br>Procedure 6810SP Conservation of Natural Resources |
| Systems levers<br>(1 is most powerful,<br>12 is least powerful) | 5. The rules of the system (such as incentives, punishments, constraints).<br>4. The power to add, change, evolve, or self-organize system structure.<br>3. The goals of the system.<br>2. The mindset or paradigm out of which the system — its goals, structure, rules, delays, parameters — arises. |

## Analysis/strategy Tool Recommendations

*Recommendation #8: Adopt a Sustainability Analysis Tool*

The Equity Analysis tool employed by SPS was shown to have far-reaching influence on the discourse and decision-making of the School Board and District Staff. In SFUSD, the decarbonization staircase is a similar tool that results in coordinated, strategic action in pursuit of a complex goal. To advance climate and sustainability action on every campus, every community, in curriculum, and in the culture, SPS should create and/or adopt a sustainability analysis tool, train decision-makers on its use, and define which decisions must be analyzed with the tool, including prompting this analysis by including the tool on relevant forms. These recommended implementation steps parallel how the Equity Analysis tool is used in SPS, which have been shown to be critical to the progress that has been made thus far in SPS. A similar level of analysis and accountability needs to be built into efforts to progress in climate and sustainability action.

Analysis tools can transform the way players in the system think, as well as affecting individual decisions at any scale. The minutes reviewed for this study revealed numerous discussions of the proper application of the Equity Analysis tool, and frequent queries as to whether the Tool had been applied to a proposed action. This shows that the tool keeps the value of racial equity top of mind for decision-makers, and prompts them to engage with the complexity of racial equity issues.

In informational interviews, I was informed that Tahoma School District uses a sustainability analysis tool to guide their decisions across the district, and they are known for being leaders in sustainability.[71] SPS could start with models of sustainability analysis

[71] Staff from the Tahoma district did not respond to my requests for interviews.

tools that are in use, and tailor the tools to setting-specific needs. Key questions to include on the Tool, in order that it be aligned with existing policy and goals, would be "What are possible co-benefits of this action for students and families of color furthest from educational justice?"; "What carbon emissions are caused by this action?"; "What waste is created by this action?"; "What energy use is demanded by this action?"; and "What water use is demanded by this action?" A working group formed from Resource COnservation Specialists, EfS Curriculum Specialist (if hired), members of the BEX/BTA Oversight Committee, Community-Based Organizations, and other interested parties could develop this Analysis Tool over a 6-12 month period. This tool should incorporate recommendations of the Clean Energy Task Force. A set of related tools might be desirable, with each one tailored to a different sphere of action (e.g. selecting a curricular assessment would have different impacts from changing a bus route).

*Figure 25: Summary of Recommendation 8*

| **Recommendation 8: Adopt a Sustainability Analysis Tool** | |
|---|---|
| What | Through a working group of stakeholders, develop an analysis tool to be applied to decisions and proposed actions to determine its consequences for climate and sustainability. |
| Who | Superintendent would adopt this tool in a set of procedures. |
| When | 2023/24 school year, following recommendations form Clean Energy Task Force and a work period |
| Inputs needed | Advocacy from community in support of this action<br>Recommendations from Clean Energy Task Force<br>Revision of Strategic Plan to identify Climate and Sustainability Action as a District priority<br>Model tools from school districts or other organizations<br>Time & human resources to train decision-makers on the tool |
| Systems levers<br>(1 is most powerful,<br>12 is least powerful) | 5. The rules of the system (such as incentives, punishments, constraints).<br>3. The goals of the system.<br>2. The mindset or paradigm out of which the system — its goals, structure, rules, delays, parameters — arises. |

## Broader Policy Environment Recommendations

*Recommendation #9: Formal, ongoing relationships with City agencies*

An SFUSD Resource Conservation Manager revealed that city partnerships are an important resource for implementation of climate and sustainability action. They reported:

> ...programs that allowed me to engage my peers in energy savings, composting & recycling, and walking/biking/public transit. All heavily supported by city or state. Compost/ recycling was started by City Office of the environment -- they have a school-based project team that does education & outreach to local residents. Robust school education team started the compost/ recycling with the waste hauler. Gavin Newsom wanted to fund a position in the school district, a city-funded director of sustainability … funded by PUD & Office of Environment. Our success relies heavily on city support. Safe Routes to School program is state funded, and SF Municipal Transportation Agency -- they apply for the grant and then recruit nonprofits to promote walking & biking activities at school. One liaison at district coordinates with partners. Shared savings at SFUSD was funded by[California] Prop 39.

Relationships with the City can provide financial and logistical resources, and lead to a coordinated community where the schools do not have to go it alone and are not duplicating other efforts. Ongoing relationships with city agencies also help city officials remain aware that school districts occupy much land, employ many people, communicate daily with many more, and spend much money in the city, and therefore should be included in every climate and sustainability initiative the city undertakes. Staff in the SFUSD Sustainability Department have regular meetings with city agencies to facilitate moving together on climate and sustainability goals.

On the other hand, when it comes to relationships between the City of Seattle and SPS, a Resource Conservation Specialist says:

> Not specifically tied to climate work. We have individual relationships with people in the city for project-specific needs. Relationships are grassroots, not institutionalized. Getting on the same page with the people at the bottom of the organizational chart. If we move on, all those relationships and knowledge are gone. From a resilience perspective, the city assumes SPS facilities can be used, but that is not communicated.

Both the District and the City would benefit from a closer working relationship. Especially as SPS transitions its transportation fleet to electric and will need to rely on the City's electrical grid, and meanwhile has capacity to generate renewables that can also benefit the City.

Partnerships between the City and District can also influence the student experience. An SPS educator suggested an important condition for improved climate and sustainability action is, "More transparency in City-School partnerships. I have hope for a new mayor and new superintendent to meet and say 'wouldn't it be great if kids could be in parks? wouldn't it be great if kids were [taking field trips]on [Metro] buses?'" in support of outdoor and place-based education.

The case of climate and sustainability action in SFUSD demonstrates that city and state policies can greatly influence the resources available to schools for climate and sustainability action (through funding mechanisms), and the cost-benefit analysis of those actions (through incentives and penalties). In turn, motivating the school district to act benefits the city by helping meet climate and sustainability targets.

City and State policies that mandate or promote electrification, prohibit natural gas, mandate or promote electric vehicles. and fortify the city's electrical grid will accelerate SPS's efforts to decarbonize buildings and transportation. Financial incentives or imperatives for rainwater catchment and plumbing for toilet flushing and irrigation will also benefit SPS's climate and sustainability action, not only by conserving water, but also by aiding the electrical grid. Seattle is able to enjoy nearly carbon-free electricity due to our reliance on hydroelectric power (according to Seattle City Light, 91% of the city's electricity is hydro-power). As climate change impacts result in longer, hotter, drier summers and more frequent droughts, easing the strain on the water supply

will help keep power flowing (for the newly electrified buildings and vehicles). Communication and partnership can result in virtuous cycles rather than unintended consequences.

As mentioned in the introduction, Seattle's climate plans do not include SPS as a partner. There is a growing realization nationwide that K-12 districts are powerful partners in mitigation and adaptation. The experiences of SFUSD further confirm that cities and districts can help each other meet climate and sustainability goals. Thinking broadly, a relationship with the City can help to link classroom learning to meeting community needs, as called for by the AAMAC recommendations. Currently, for example, the City and SPS are working separately on band-aid solutions to food insecurity. Working together could result in transformative, sustainable food sovereignty, as high school students learn principles of regenerative farming, upon surplus publicly owned land.

Seattle is currently electing a new mayor and SPS is searching for a new superintendent. If the public makes it clear that it wants a strong City-District partnership on climate and sustainability, 2022 could be an opportunity to establish this synergistic relationship. In the absence of a partnership formed at the highest levels, including City representatives on the Clean Energy Task Force, the BEX/BTA Oversight Committee, and other standing groups could still form productive alliances.

*Figure 26: Summary of Recommendation 9*

| **Recommendation 9: Build formal, ongoing relationships with City agencies** | |
|---|---|
| What | Create structures for monthly contact between the City and SPS to achieve shared climate and sustainability goals. |
| Who | Superintendent could reach out to Mayor, or District staff could include their counterparts in working groups and task forces |
| When | Beginning January 2022 |
| Inputs needed | Advocacy from community in support of this action<br>Access to recruitment process for working groups, committees, and task forces |
| Systems levers<br>(1 is most powerful,<br>12 is least powerful) | 7. The gain around driving positive feedback loops.<br>6. The structure of information flows (who does and does not have access to information).<br>4. The power to add, change, evolve, or self-organize system structure.<br>2. The mindset or paradigm out of which the system — its goals, structure, rules, delays, parameters — arises. |

*Recommendation #10: Declare a day or week of Climate and Sustainability Action and Awareness near the start of every school year*

Just as the Union declared a day of action for Black Lives Matter in October 2016, and the School Board adopted resolutions 2017/18 through 2020/21 in support of Black Lives Matter, helping to institutionalize racial equity as a cultural norm, the same should be done for climate and sustainability action near the start of every school year. There are many opportunities to do this in coordination with national or global efforts, such as the Fridays for Future movement. An option might be to coordinate this action with the annual Conference of the Parties (COP)to the UN Framework Convention on Climate Change, the world's highest level engagement with climate change policy. This year, the COP 26 United Nations Climate Change Conference will take place October 31 - November 12, 2021 in Glasgow.

In addition, the School Board could reinvigorate climate and sustainability action later in the year, by passing resolutions honoring to Earth Day (April 22) and Billy Frank, Jr. Day (March 9) reaffirming the Board's commitment to climate and sustainability action, and encouraging schools to teach lessons and have events that spread awareness and encourage action, just as they did for Black Lives Matter at School. While these would be impactful, it is important to recognize they fall much later in the school year, and thus should be supplemental to a new day or week of action that sets the needed tone for climate and sustainability action early in the school year.

The current political climate in SPS is different for racial equity than for climate and sustainability: for the former, an actor loses social capital if they do not affirm its value; there is no such cost when actors in SPS overlook climate and sustainability. A day or week of action could begin to shift that cultural climate.[72]

Students, who are at the greatest personal risk from climate impacts, will directly benefit from knowing that their school system is taking action to mitigate climate change. Knowing that the adults at school are actually taking meaningful action to defend their future should alleviate some of the heavy anxiety and depression today's youth grapple with.

Superintendents are politicians; they are the thermometers and the community is the thermostat (Grogan, 2000; Chingos et al., 2014). When the community focus is on climate and sustainability action, the Superintendent will respond. The Superintendent, through power to unilaterally reorganize district staff (such as by creating a department of sustainability), and through the strategic plan, directs the resources needed to follow through on climate and sustainability action. A day or week of action can help students, educators, and community members who feel

[72] An active union member told me that SEA has passed several resolutions related to climate education and climate change. If this is the case, knowledge about this has remained internal to union reps. I reached out to SEA officers on more than one occasion during this study and did not receive a reply.

passionately about climate and sustainability action to find each other and thus catalyze sustained action.

An isolated day or week is more symbolic than substantive, but establishing climate and sustainability action as a cultural norm requires symbolic action. This week or day communicates to SPS employees that climate and sustainability action is a value, and gives an opportunity to shine a light on the actions already being taken in the district. Like cloud-seeding, the establishment of a largely symbolic day or week of action provides a point around which energy can coalesce. School staff, students, families, and community members can perceive where action is happening already, and be encouraged to take action themselves.

This is a very low-stakes action that is unlikely to meet with any opposition,[73] does not have to be carefully crafted because it only pertains to a day or a week, and could turn up the volume on climate and sustainability action in SPS.

*Figure 27: Summary of Recommendation 10*

| **Recommendation 10: Declare a day or week of Climate and Sustainability Action and Awareness near the start of every school year** | |
|---|---|
| What | Declare a district-wide day or week of climate and sustainability action, including shows of solidarity and lesson plans |
| Who | Seattle Educators' Association and/or Seattle Public Schools Board of Directors |
| When | 2021/22 School Year |
| Inputs needed | Advocacy from community in support of this action<br>Lesson plans<br>Marketing assets -- T-shirts, social media post templates, press releases |
| Systems levers<br>(1 is most powerful,<br>12 is least powerful) | 7. The gain around driving positive feedback loops.<br>6. The structure of information flows (who has access to information).<br>2. The mindset or paradigm out of which the system — its goals, structure, rules, delays, parameters — arises. |

[73] In the unlikely event that District staff or a School Board Director speaks against such a resolution, that person could then become a symbol against which to organize in opposition.

## Communications Recommendation

*Recommendation #11: Tell the Story of Climate and Sustainability Action in SPS*

Anyone who knows and cares about climate and sustainability action in SPS should use every medium and venue to tell the story of what SPS has done and what it has yet to do. The Clean Energy Resolution is an especially good focus because it is a new and ambitious initiative that can energize the SPS community about climate and sustainability action. An embedded communications professional should be included in the task force in order to accurately tell the story and keep the volume high on climate and sustainability action.

Several recommendations made here have value in part because they will facilitate communication: establishing a network of Green Teams, professional development, City-District partnerships, and a day/week of action. But even more must be done by fixing the SPS website so that it contains accessible, useful information about SPS's sustainability efforts, submitting press releases to publicize SPS's strong performance on green design and construction, and using the School Beat newsletter to keep staff and families informed about ongoing progress in SPS, as well as unfulfilled opportunities for progress. Social media should also be used to keep climate and sustainability action in SPS top-of-mind for the Superintendent, School Board, district staff, school staff, and families.

Ideally, there would be a person on staff either in the Resource Conservation department or the Communications department who would be charged with telling the story of climate and sustainability action in SPS. The literature review established that group efficacy and political pressure are both important for achieving behavior change. Communication and storytelling yield both group efficacy -- t*his is what we do; it makes a difference, and I can help!* -- and political

pressure -- *this is what the people want; it's how I keep my job as a public servant*.

Communications resources should be considered a key resource to any action undertaken by SPS and should be allocated accordingly. In the absence of that strategic investment, staff and community should take up the charge to tell the story of climate and sustainability action in SPS.

*Figure 28: Summary of Recommendation 11*

| **Recommendation 11: Tell the Story of Climate and Sustainability Action in SPS** | |
|---|---|
| What | Use every medium and venue to inform about what has been done and what is yet to be done for climate and sustainability action in SPS |
| Who | All |
| When | Ongoing, starting now |
| Inputs needed | Knowledge of current climate and sustainability action |
| Systems levers<br>(1 is most powerful,<br>12 is least powerful) | 7. The gain around driving positive feedback loops.<br>6. The structure of information flows (who does and does not have access to information).<br>2. The mindset or paradigm out of which the system — its goals, structure, rules, delays, parameters — arises. |

## CONCLUSION

Seattle Public Schools is doing a good job designing and building sustainable new campuses, modernizing old buildings, and setting goals to fully decarbonize buildings and transportation. There are many leaders, educators and district staff who are committed to climate and sustainability action. A narrow perspective on teaching and learning as an input of standardized curriculum and an output of test scores plays a major role in limiting the transformational capacity of climate and sustainability action, by keeping curriculum & instruction separate and away.

The cases of racial equity action in SPS and climate and sustainability action in SFUSD suggest many pathways for advancing climate and sustainability action in SPS. All of the options presented here are low- or no-regrets, not requiring SPS to make any investments that cannot be adjusted or discontinued later as we gain more information.

The recommended actions are also ready to be implemented right away. We must undo this perception, shared by a Resource Conservation Specialist, “In environment and sustainability, change is very slow in our world. I've gotten used to hearing no more than yes. There's this culture in the district of kicking the can down the road, not just on this topic but on a lot of things.” The road has been discovered to be a loop, and cans once kicked are now coming back to hit us in the face. The time is now for Seattle Public Schools, an institution the size of a small city with the power to shape people’s decisions for decades to come, to let go of “cultural values, often specific to the West, focused on unlimited growth and unchecked consumerism,” (Vedwan, 2021, 137) and sincerely undertake transformational climate and sustainability action. As an SPS educator stated, “We need to teach students how to make the change.”

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Appendix A: Questions prepared for semi-structured interviews, by subject role

**Self-Help Department Questions**

| |
|---|
| Can you tell me what the Self-Help department is and what you do? |
| How are you connected to Green Schoolyards? |
| In the SB Operations Committee minutes, there were several times when the Board approved Playground Development or Renovation in conjunction with Self-Help -- do those always indicate green schoolyard projects? |
| Tell me about the green schoolyard asset mapping project. |
| What equity issues do you see in your work? |

**Questions for School Board Member**

| |
|---|
| What is the story of sustainability in SPS as of today? *What role does the school board play? The superintendent? The union?* |
| What steps would you like to see SPS take to address the climate crisis and integrate sustainability into all departments? |
| Is commitment to climate and sustainability action a priority in the search for the new superintendent? |
| Many SPS staff and educators would like to see a Director of Sustainability position created to coordinate, deepen, and expand sustainability efforts. Does that seem like a realistic goal to you? What role does the school board play in making that happen? |
| Can you compare and contrast the conversation around racial justice in SPS versus climate justice? *How did racial justice become embedded in the culture?* |
| How can the story be told? |
| No racial justice without climate justice? |
| What else should I know? |
| Since talking with you, I have talked with many other people who are interested in sustainability in SPS and it keeps coming back to the power of the superintendent to set the agenda. So, I would like to work to get sustainability top-of-mind in the superintendent search process. Would that be useful to your work? |

| |
|---|
| What is the status of the implementation task force for the clean energy resolution |
| What happened to 2006/2007-18 Climate Change Resolution? |
| What kind of training do School Board Directors get, for example regarding green school construction or management of capital projects? What measures are taken to ensure everyone is speaking the same language? |
| How about for curriculum & instruction, for example is there an orientation to Policy 0100 Instructional Philosophy? |
| Are you aware of a plan for educating school staff about the clean energy resolution during the School Leadership Institute and/or TRI days? |

**Questions for Educators**

- Tell me about your work on sustainability in SPS.
- How did the District support you in that work?
- How did the District hinder your work?

**Questions for resource conservation specialists in Seattle Public Schools**

- What is your role at ___ and how long have you been there?
- What is your vision for sustainability @ ___? What needs to happen to make that vision a reality?
- For SPS: SPS has focused a lot on racial equity, including targeted universalism, board policy, and use of racial equity analysis tool. Do you believe racial equity is part of the culture in your department?
- Something you mentioned and that I have seen come up multiple times in my document review is the idea of a communication plan. Were communications department resources ever earmarked for the resource conservation team, or where are you at with that?
- From your perspective, what happened to the 2006/7 Climate Change resolution?
- What changes would you make to that PD process?
- Who do you have close working relationships with at the city level, and what are the structures (e.g. regular meetings, etc.) that support those relationships?
- Is it stated procedure for paper towels to be composted?
- I saw that there had been a Conservation Champion incentive award program, which got discontinued due to lack of funding. Was that the only reason? Had that been an effective program?
- What have I left out, what do you want me to know?

**Questions for resource conservation specialists in San Francisco Unified School District**

| |
|---|
| What is your role at ___ and how long have you been there? |
| What are some successes you have had? What have been some frustrations? |
| How does your leadership support your work? How would you like to see them support your work? |
| Is sustainability part of the culture at ___? *How did that come to be? or What would need to happen to make it part of the culture?* |
| What is your vision for sustainability @ ___? What needs to happen to make that vision a reality? |

| |
|---|
| SPS passed a Clean Energy Resolution, similar to SFUSD's 2017 carbon reduction resolution, in 2021. I am very interested in how the promise in the resolution gets fulfilled. Right now we are at the stage of defining the task force that will actually draft the implementation plan over a period of two years. How did SF go from resolution to fully articulated plan? |
| What is the current state of decarbonization? Is there a specific roadmap and how are projects prioritized? |
| What other advice do you have for Seattle as we walk along a similar path? |
| State of Earth Day Every Day? Who were the critical partners to get that off the ground? |

**Questions for staff @ Community-Based Organizations**

| |
|---|
| Tell me about your role and your organization. |
| What is the partnership between your organization and SPS? What are your goals, what specific project or projects do you work on? What have been some of the greatest successes of your partnership? |
| From your perspective, how is SPS doing on sustainability and climate action? *What obstacles or missed opportunities have you seen?* |
| What do you hear from the youth about how they are or are not being prepared to meet the environmental crises of our time? |
| What next steps would you like to see SPS take for climate and sustainability action? |

| |
|---|
| When I read the McLennan report, I was surprised to hear SPS had so many strengths and achievements in sustainability. From talking to other teachers, I am not alone in being unaware of these actions. Do you have insight into what causes these disconnects? |
| Would you be interested in expanding the partnership between your organization and SPS? |
| What are the barriers? |
| From your perspective, how could SPS better prepare youth to face the environmental crises of our time? |

**Questions for Community-Based Orgs that are also certifying organizations**

| |
|---|
| I understand the basics of the [_____] program. Could you tell me about your role in [__], and what you see as the most important part of your work? |
| How do you see [your organization's] role in climate mitigation and adaptation for the region? |
| Thinking of districts that have made significant changes, and others that have been less successful in terms of district-wide changes, are there elements that the most successful districts have in common? |
| Thinking about SPS, what stands out as strengths and limitations of our climate & sustainability work? |

## Appendix B: District Climate and Sustainability Action Assessment (Blank)

A blank version of the assessment form is available here: https://tinyurl.com/DCSAAssessment

## Appendix C: District Climate and Sustainability Action Assessment (Completed for SPS)

The fully completed assessment and index of sources is available to view here: https://tinyurl.com/DCSAAssessmentSPS

## Appendix D: SPS District Climate and Sustainability Action Assessment Items and Scores

**Scoring Rubric:** 0 = not addressed/ no evidence; 1 = considered or recommended; 2 = stated commitment; 3 = articulated plan; 4 = plan implemented; 5 = plan implemented & monitored over time

| Criterion | Score | Domain |
|---|---|---|
| The District has adopted a formal, comprehensive climate adaptation plan. | 0 | Climate Adaptation |
| The District has formally adopted and/or actively supports teachers' use of "off-the-shelf" supplemental curricular resources from organizations? | 0 | Curriculum & Instruction |
| The District teaches using EfS standards or Environmental Literacy Guidelines. | 0 | Curriculum & Instruction -- Standards |
| The District uses School Community Asset Mapping (SCAM) to inventory local resources to meet sustainability goals. | 0 | Group Efficacy |
| The District provides consistent signage in every building to educate the inhabitants on energy efficiency and the sustainable choices they can make. | 0 | Group Efficacy -- Utilities |
| The District's hiring policies and practices, job descriptions, qualifications and choices support education for sustainability. | 0 | Human Resources |
| The District's sustainability goals, policies and practices are included in the new hire orientation process. | 0 | Human Resources |
| District staff includes job descriptions naming sustainability, climate, or conservation, and these are easily identifiable on the website & public facing staff contact pages. | 0 | Human Resources -- Communications |
| The district leadership team that oversees curriculum & instruction supports EfS and implements EfS as part of their strategic goals. | 0 | Leadership -- Curriculum & Instruction |
| A District-level Green Team including members from multiple departments meets regularly to share goals, successes, and collaborate on projects, and reports their work and results to each department. | 0 | Leadership -- Green Team |
| The District has a mission statement that explicitly includes sustainability and makes it possible to align a strategic plan for sustainability with the District's mission. | 0 | Leadership -- stated commitment |
| The Superintendent publicly acknowledges the importance of climate action and education for sustainability in the media. | 0 | Leadership -- Superintendent |
| The District uses 100% certified green cleaning products in areas occupied by students and staff (not including cleaning products related to school transportation facilities or vehicle maintenance). | 0 | Operations -- Custodial |

| | | |
|---|---|---|
| The District uses mechanized green cleaning equipment that meets a nationally recognized green cleaning standard, or provides language from the district's cleaning services contract that mandates the use of green cleaning equipment in the district. | 0 | Operations -- Custodial |
| The District makes training on the use and benefits of green cleaning benefits, techniques, equipment, and supplies readily available to district-level staff, school board members, principals, custodians, teaching staff, nurse, and dining services staff, students, parents, or the school community. | 0 | Operations -- custodial |
| The District facilitates opportunities for educators to build capacity and develop knowledge and competencies in sustainability education through professional development, coaching, reading groups,conferences, etc. | 0 | Professional Development |
| District CTE and workforce development policies & procedures explicitly require & support education for green careers and principles of sustainability. | 0 | Curriculum & Instruction -- CTE |
| The School Board has adopted a policy on sustainability and Education for Sustainability, which is implemented throughout the District. | 0 | Leadership - Policy |
| The Superintendent has adopted procedures on sustainability and Education for Sustainability, which are implemented throughout the District. | 0 | Leadership - Procedures |
| The District website includes easily accessible pages that report district goals for sustainability and progress on those goals. | 1 | Communications |
| Performance assessments, grants, recognition awards and other incentives are used to educate the school community about sustainability, promote a culture of sustainability, and are aligned with district sustainability goals. | 1 | Group Efficacy -- Incentives |
| The District regularly and publicly recognizes and celebrates individual and collective successes, and progress toward green schools and sustainable community goals on an ongoing basis at events and in the media. | 1 | Group Efficacy -- Communications |
| There is a Director for Sustainability or similar cabinet-level position who works across departments to achieve sustainability goals. | 1 | Leadership -- Cabinet |
| The District implements a Green Cleaning policy and plan. | 1 | Operations -- Custodial |
| The District provides significant, on-going professional development on topics related to sustainability and that educate for sustainability to board of education members and to staff from all levels and departments, from superintendents, business administrators, and supervisors to teaching staff, custodians, educational support professionals, nurses, and food service staff. | 1 | Professional Development |
| The District has adopted a comprehensive sustainability plan. | 1 | Leadership -- PLanning |
| Every school in the District has a Green Team, which is supported with District resources (stipends, technical assistance, etc.) | 1 | Green Teams |
| The District monitors and takes steps to reduce its Carbon Footprint. *This requires an accounting-like inventory of all the sources of GHG in your buildings, fleet, and operations.* | 2 | Carbon Footprint |
| At the District Departmental level, EfS (or other similar framework) Enduring Understandings, Standards and Performance Indicators have been aligned with curriculum and other frameworks andstandards (i.e. Common Core Standards, Next Generation Standards,Character Education, 4 Cs, Cultural Competency, etc.) and an"alignment chart/consensus map" guides teachers to embed EfS where appropriate into learning outcomes, assessments,performance criteria and lessons | 2 | Curriculum & Instruction -- Integration |
| District facilities are designed, built, retrofitted, and operated to meet third-party standards for regeneration. | 2 | Facilities |
| The District makes information and data on our energy & utility usage and costs, including changes over time, visible to the community through easily accessible newsletters, web pages, or other consistent, regular communication. | 2 | Group Efficacy -- Communications |
| The district leadership team that oversees facilities supports EfS and implements EfS as part of their strategic goals. | 2 | Leadership -- Facilities |

| | | |
|---|---|---|
| The District works in partnership with local governments (city, county, and/or region) to achieve climate and sustainability goals through a formal, ongoing partnership. | 2 | Leadership -- Local Government |
| The district leadership team that oversees operations supports EfS and implements EfS as part of their strategic goals. | 2 | Leadership -- Operations |
| The School Board has passed resolution(s) addressing the climate crisis and detailing specific actions the District will take to reduce its carbon emissions, and these resolutions are being successfully implemented. | 2 | Leadership -- School Board |
| The School Board has adopted a policy on Education for Sustainability, which is implemented throughout the District. | 2 | Leadership -- Policy |
| The District implements an official environmentally preferable purchasing policy. | 2 | Operations -- Purchasing |
| The District provides significant, on-going professional development opportunities to board members and school staff to enhance awareness of green building design features and on the proper maintenance of green building components. | 2 | Professional Development |
| The district has established no-idling zones and posted signage at all school buildings and loading zones. | 2 | Transportation |
| The District is working to phase out inefficient diesel buses (replacing with fuel efficient vehicles, maintaining a fleet of average age 10 years or younger). | 2 | Transportation |
| The Superintendent has adopted procedures on waste reduction, which are implemented throughout the District. | 2 | |
| The District's policies and procedures promote place-based education for Students | 3 | Curriculum & Instruction -- Place-Based Education |
| The District promotes biking/walking/carpooling to school (bike racks, crossing guards, facilitation of carpools, messaging), including participating in Safe Routes to Schools or other program. | 3 | Transportation |
| The District actively supports the establishment and operation of school/community gardens on schoolgrounds. | 4 | Facilities -- Green space |
| The District maintains green infrastructure such as green roofs, rain gardens, cisterns, tree canopy, etc. on its campuses. | 4 | Facilities -- Green space |
| The District actively pursues outside funding partners and leverages available incentive programs in the private and public sectors to ensure sufficient funding for environmental goals and mandates. | 4 | Funding |
| The District serves locally sourced foods on a daily basis and provides complementary educational activities to students that emphasize food, farming, and nutrition. | 4 | Operations -- Nutrition |
| The District develops and implements projects that showcase approaches to sustainability not otherwise listed on this assessment. *Innovative approaches to civic engagement, student learning, healthy schools, leadership, resource conservation, development, landscaping, waste management, cleaning policies, etc.,* | 4 | Other |
| The District is implementing a plan to increase its use of renewable energy. | 4 | Utilities |
| District facilities are designed, built, retrofitted, and operated to meet third-party standards for sustainability. | 5 | Facilities |
| The District upgrades the efficiency of its aged school buildings on an ongoing basis, according to an intentional plan. | 5 | Facilities -- Efficiency |
| The Superintendent has adopted procedures on energy conservation, which are implemented throughout the District. | 5 | Leadership -- Procedures |
| The District monitors its utility use and takes action to conserve resources. | 5 | Utilities |
| The District has a plan for waste reduction, including conducting regular waste audits. | 5 | Utilities |

## Appendix E: Documents reviewed in Climate and Sustainability Action in Seattle Public Schools case

**Webpages**


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Appendix F: Additional documents reviewed in Racial Equity Action in Seattle Public Schools case

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## Appendix G: Documents reviewed in Climate and Sustainability Action in SFUSD case

### Webpages

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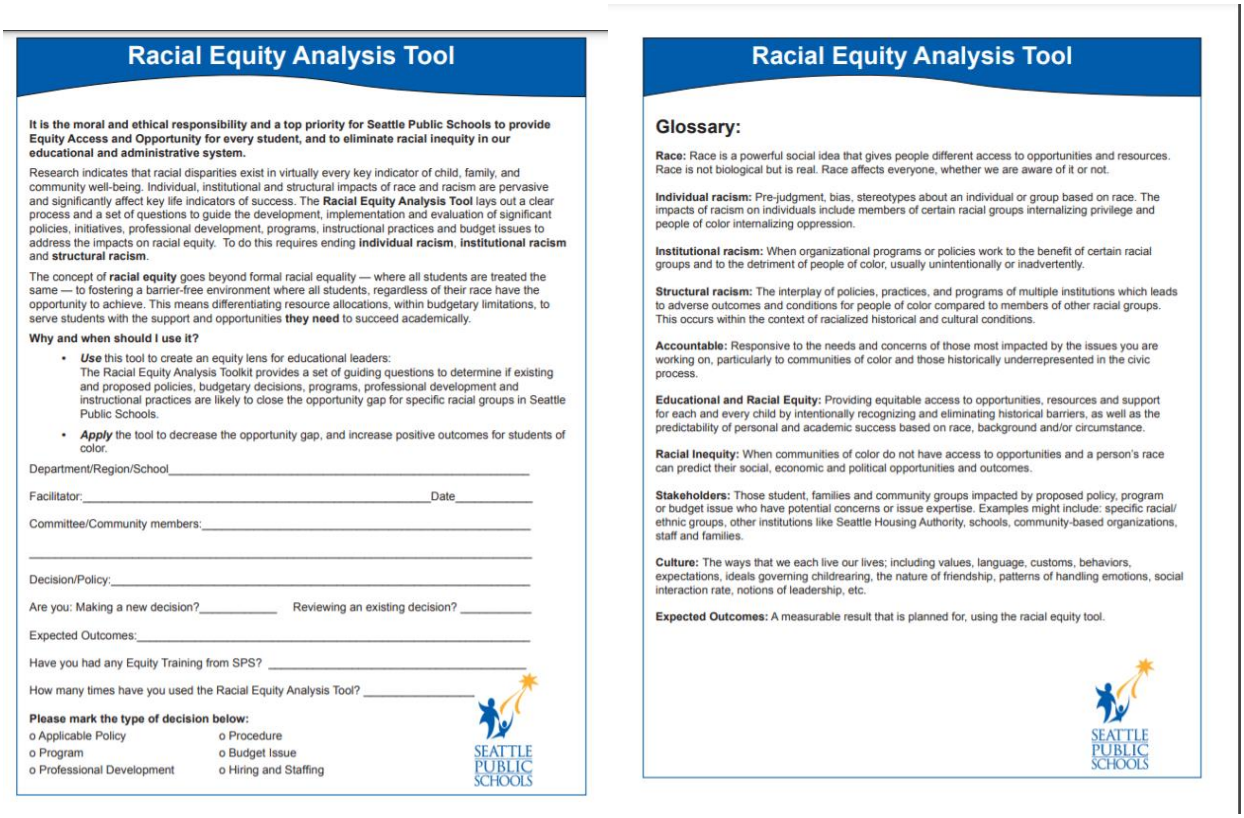
## Appendix H: Seattle Public Schools Racial Equity Analysis Tool



### Racial Equity Analysis Tool

**It is the moral and ethical responsibility and a top priority for Seattle Public Schools to provide Equity Access and Opportunity for every student, and to eliminate racial inequity in our educational and administrative system.**

Research indicates that racial disparities exist in virtually every key indicator of child, family, and community well-being. Individual, institutional and structural impacts of race and racism are pervasive and significantly affect key life indicators of success. The **Racial Equity Analysis Tool** lays out a clear process and a set of questions to guide the development, implementation and evaluation of significant policies, initiatives, professional development, programs, instructional practices and budget issues to address the impacts on racial equity. To do this requires ending **individual racism**, **institutional racism** and **structural racism**.

The concept of **racial equity** goes beyond formal racial equality — where all students are treated the same — to fostering a barrier-free environment where all students, regardless of their race have the opportunity to achieve. This means differentiating resource allocations, within budgetary limitations, to serve students with the support and opportunities **they need** to succeed academically.

**Why and when should I use it?**

- ***Use*** this tool to create an equity lens for educational leaders:
  The Racial Equity Analysis Toolkit provides a set of guiding questions to determine if existing and proposed policies, budgetary decisions, programs, professional development and instructional practices are likely to close the opportunity gap for specific racial groups in Seattle Public Schools.
- ***Apply*** the tool to decrease the opportunity gap, and increase positive outcomes for students of color.

Department/Region/School_____

Facilitator:_____Date_____

Committee/Community members:_____

_____

Decision/Policy:_____

Are you: Making a new decision?_____ Reviewing an existing decision? _____

Expected Outcomes:_____

Have you had any Equity Training from SPS? _____

How many times have you used the Racial Equity Analysis Tool? _____

**Please mark the type of decision below:**

o Applicable Policy o Procedure
o Program o Budget Issue
o Professional Development o Hiring and Staffing

SEATTLE PUBLIC SCHOOLS

### Racial Equity Analysis Tool

**Glossary:**

**Race:** Race is a powerful social idea that gives people different access to opportunities and resources. Race is not biological but is real. Race affects everyone, whether we are aware of it or not.

**Individual racism:** Pre-judgment, bias, stereotypes about an individual or group based on race. The impacts of racism on individuals include members of certain racial groups internalizing privilege and people of color internalizing oppression.

**Institutional racism:** When organizational programs or policies work to the benefit of certain racial groups and to the detriment of people of color, usually unintentionally or inadvertently.

**Structural racism:** The interplay of policies, practices, and programs of multiple institutions which leads to adverse outcomes and conditions for people of color compared to members of other racial groups. This occurs within the context of racialized historical and cultural conditions.

**Accountable:** Responsive to the needs and concerns of those most impacted by the issues you are working on, particularly to communities of color and those historically underrepresented in the civic process.

**Educational and Racial Equity:** Providing equitable access to opportunities, resources and support for each and every child by intentionally recognizing and eliminating historical barriers, as well as the predictability of personal and academic success based on race, background and/or circumstance.

**Racial Inequity:** When communities of color do not have access to opportunities and a person's race can predict their social, economic and political opportunities and outcomes.

**Stakeholders:** Those student, families and community groups impacted by proposed policy, program or budget issue who have potential concerns or issue expertise. Examples might include: specific racial/ethnic groups, other institutions like Seattle Housing Authority, schools, community-based organizations, staff and families.

**Culture:** The ways that we each live our lives; including values, language, customs, behaviors, expectations, ideals governing childrearing, the nature of friendship, patterns of handling emotions, social interaction rate, notions of leadership, etc.

**Expected Outcomes:** A measurable result that is planned for, using the racial equity tool.

SEATTLE PUBLIC SCHOOLS

## Racial Equity Analysis Tool

**STEP 1: Set Outcomes, Identify and Engage Stakeholders**
**Leadership sets key racially equitable outcomes and engages stakeholders (SPS staff and community members.)**

1. What does your department/division/school define as racially equitable outcomes related to this issue?
2. How will leadership communicate key outcomes to stakeholders for racial equity to guide analysis?
3. How will leadership identify and engage stakeholders: racial/ethnic groups potentially impacted by this decision, especially communities of color, including students who are English language learners and students who have special needs?

**STEP 2: Engage Stakeholders in Analyzing Data**
**Stakeholders (SPS staff and community members) gather and review quantitative and qualitative disaggregated data and specific information to determine impacts or consequences.**

1. How will you collect specific information about the school, program and community conditions to help you determine if this decision will create racial inequities that would increase the opportunity gap?
2. Are there negative impacts for specific student demographic groups, including English language learners and students with special needs?

## Racial Equity Analysis Tool

**STEP 3: Ensuring educational and racial equity /Determine Benefit or Burden**
**Stakeholders (SPS staff and community members) collaborate to analyze how this policy/ decision/proposal/initiative/budget issue will increase or decrease educational and racial equity.**

1. What are the potential benefits or unintended consequences?
2. What would it look like if this policy/decision/initiative/proposal ensured educational and racial equity for every student?

**STEP 4: Evaluate Success Indicators and/or Mitigation Plans**
**Stakeholders (SPS staff and community members) identify ongoing measures of success or mitigation plans for negative impacts**

1. How will you evaluate and be accountable for making sure that the proposed solution ensures educational equity for all students, families and staff?
2. What are specific steps you will take to address impacts (including unintended consequences), and how will you continue to partner with stakeholders to ensure educational equity for every student?

## Appendix I: Table of Actions Reported in Annual Reports for Policy 0030: Ensuring Educational and Racial Equity

| Implementation of Policy 0030 Ensuring Educational and Racial Equity[74] | | |
|---|---|---|
| Year | Reported Action | Alignment[75] |
| 2018-19<br>2019-20<br>2020-21 | K-12 Science Adoption | Policy 0030: Equitable access, Racial equity analysis, Workforce equity, Professional development, Welcoming school environments, Partnerships, Multiple pathways to success, Recognizing diversity<br>Strategic Plan: High-quality instruction and learning experiences<br>*Crossover with education for sustainability* |
| 2018-19<br>2019-20 | Ethnic Studies Curriculum Development & Adoption | Policy 0030: Professional development, Recognizing diversity<br>Strategic Plan: High-quality instruction and learning experiences, Culturally responsive workforce, Inclusive and authentic engagement |
| 2018-19 | Training for Building Leadership Teams (BLTs)[76]on use of Equity Analysis Tool | High-quality instruction and learning experiences<br>Predictable and consistent operational systems<br>Inclusive and authentic engagement |
| 2018-19<br>2019-20<br>2020-21 | Academy for Rising Educators (Grow Your Own from 2019 forward) | Culturally responsive workforce |
| 2018-19<br>2020-21 | Foundational Coursework: Seattle Teaching 101, 201, 301 (professional development for culturally responsive teaching) | High-quality instruction and learning experiences<br>Culturally responsive workforce |
| 2018-19 | Racial Equity-focused Professional Learning for Schools Leaders (Leadership Learning Days) | High-quality instruction and learning experiences<br>Culturally responsive workforce<br>Inclusive and authentic engagement |
| 2018-19 | Extended Cabinet Professional Learning - Interrupting Institutional Racism | High-quality instruction and learning experiences<br>Predictable and consistent operational systems<br>Culturally responsive workforce<br>Inclusive and authentic engagement |

[74] Source: Annual Reports 2018-19, 2019-20, 2020-21. *Note: for COnservation of Natural Resources Procedure 6810SP, although annual reports are mandated by the procedure, only one annual report was available on the website. This shows different valuation of the two District codes.*

[75] In 2018-19, the phrases in this column are "Strategic Priorities" from the Strategic Plan. In 2019-20, the format of the Annual Report changed, and initiatives were reported according to the 8 Commitments of Policy 0030 and/or the Strategic Priorities.

[76] Each school has a BLT comprised of school staff and administrators that is charged with overseeing the professional development calendar and making recommendations for the budget. There is wide variation in the composition, power, and procedures of BLTs from school to school.

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| 2018-19 | District-wide Professional Development - Building Learning Partnerships | High-quality instruction and learning experiences<br>Culturally responsive workforce<br>Inclusive and authentic engagement |
| 2018-19 | Partnership with Creative Advantage (arts learning organization) | High-quality instruction and learning experiences<br>Predictable and consistent operational systems<br>Culturally responsive workforce<br>Inclusive and authentic engagement |
| 2018-19 | Engaging Families in High School Success | High-quality instruction and learning experiences<br>Culturally responsive workforce<br>Inclusive and authentic engagement |
| 2018-19 | Community Partnerships Database | High-quality instruction and learning experiences<br>Predictable and consistent operational systems<br>Inclusive and authentic engagement |
| 2018-19 | Advanced Learning Equity-Focused Student Recruitment and Identification | Predictable and consistent operational systems<br>Inclusive and authentic engagement |
| 2018-19 | Tiered Support to 25 Schools of Promise | High-quality instruction and learning experiences<br>Predictable and consistent operational systems<br>Inclusive and authentic engagement |
| 2019-20 | Launched Department of African American Male Achievement | Policy 0030: Equitable access |
| 2019-20[77]<br>2020-21 | Racial Equity Team Program | Policy 0030: Racial equity analysis, Recognizing diversity<br>Strategic plan: High-quality instruction and learning experiences, Culturally responsive workforce, Inclusive and authentic engagement |
| 2019-20<br>2020-21 | Central Office Racial Equity Capacity-Building | Policy 0030: Professional Development<br>Strategic plan: High-quality instruction and learning experiences, Culturally responsive workforce, Inclusive and authentic engagement |
| 2019-20<br>2020-21 | Seattle Intervention Tracking and Community Partner Access | Policy 0030: Equitable access, Partnerships<br>Strategic plan: High-quality instruction and learning experiences, Predictable and consistent operational systems |
| 2019-20<br>2020-21 | Seattle University Local Learning Network | Policy 0030: Equitable access, Professional development, Welcoming school environments, Partnerships, Recognizing diversity |
| 2019-20<br>2020-21 | Families, Education, Preschool, and Promise Levy funding | Policy 0030: All commitments |

[77] The first cohort of Racial Equity Teams began in 2014-15, but Annual reports are publicly available from 2018-19 through 2020-21.

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| 2019-20<br>2020-21 | Academic Parent Teacher Teams | Policy 0030: Welcoming school environments, Partnerships<br>Strategic Plan: Inclusive and authentic engagement |
| 2019-20<br>2020-21 | Human Resources: Revamping school-based hiring and selection, Recruiting & retaining staff of color, Staffing for Black Excellence | Policy 0030: Workforce equity |
| 2019-20<br>2020-21 | Update Capital Practices and Processes with an Equity Lens Focusing on BEX V Levy Projects | Policy 0030: Racial equity analysis, Welcoming school environments<br>Strategic plan: High-quality instruction and learning experiences, Predictable and consistent operational systems |
| 2019-20 | Development & distribution of teacher-generated, supplemental lessons to support students furthest from educational justice during building closures | Policy 0030: Equitable access, Partnerships<br>Strategic plan: High-quality instruction and learning experiences, Culturally responsive workforce |
| 2019-20<br>2020-21 | Discipline Focus Groups/ Student Rights & Responsibilities Focus Groups | Policy 0030: Welcoming school environments |
| 2019-20<br>2020-21 | Student 504 Power School Module[78]/ 504 Student Accommodation Plans | Policy 0030: Equitable access, Racial equity analysis, Welcoming school environments, Partnerships, Multiple pathways to success, Recognizing diversity |
| 2019-20 | Athletics Department Hiring Decisions Representative of Student Population | Policy 0030: Workforce equity<br>Strategic Plan: Culturally responsive workforce |
| 2019-20 | Address Disproportionality in Long-Term Exclusion for African American Students with IEPs | Policy 0030: Equitable access |
| 2019-20 | Increasing Community Engagement in Capacity Management Solutions while Ensuring Racial Equity | Policy 0030: Racial equity analysis, Partnerships<br>Strategic Plan: Inclusive and authentic engagement |
| 2019-20 | Redesign of Advanced Learning Services | Policy 0030: Equitable access |
| 2019-20 | Affinity Group Community Meetings -- Learn in Community and Learn with Community | Policy 0030: Partnerships<br>Strategic Plan: Inclusive and authentic engagement |
| 2019-20 | Analysis of 5th Grade Math Performance at Schools with | Policy 0030: Equitable access<br>Strategic Plan: High quality instruction and |

[78] A strategy for reducing overrepresentation of Black and Brown students in special education by supporting teachers and holding them accountable for providing accommodations as set forth in their 504 plans.

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| | Curriculum Waivers[79] | learning experiences |
| 2019-20 | 3rd Grade Literacy Goal - Targeted Instruction for Students Furthest from Educational Justice | Policy 0030: Equitable access<br>Strategic Plan: High quality instruction and learning experiences |
| 2019-20 | Implementation of enVision Math 2.0 for grades 6,7,and 8 including Professional Development | Policy 0030: Professional development<br>Strategic plan: High quality instruction and learning experiences |
| 2020-21 | Office of African American Male Achievement Let's Talk Landing Page for Two-Way Family Communication | Policy 0030: Welcoming school environments |
| 2020-21 | Kingmakers and Rising Sons of Seattle Extended | Policy 0030: Welcoming school environments |
| 2020-21 | African American Male Student Leadership Council | Policy 0030: Welcoming school environments |
| 2020-21 | Listen and Learn Focus Group Series | Policy 0030: Welcoming school environments |
| 2020-21[80] | Revamping of Hiring Practices for Teacher Leader Cadre | Policy 0030: Workforce equity, Professional development |
| 2020-21 | Social Emotional Learning | Policy 0030: Welcoming school environments |
| 2020-21 | Equity, Diversity, and Inclusion Awareness [in Athletics] | Policy 0030: Partnerships, Recognizing diversity<br>Strategic Plan: Culturally responsive workforce |
| 2020-21 | Prioritize Students Furthest from Educational Justices in Identification Practices, Highly Capable Services | Policy 0030: Equitable access |
| 2020-21 | Enrollment Planning[81] | Policy 0030: Equitable access, Partnerships<br>Strategic Plan: Predictable and consistent operational systems, Inclusive and authentic community engagement |
| 2020-21 | Prioritize Students Furthest from Educational Justice in Identification Practices, Comprehensive Coordinated Early Intervention Services (CCEIS) [An initiative to | Policy 0030: Equitable access, Professional development, Welcoming school environments, Partnerships |

[79] Curriculum waivers are official permission from the District for a school to use an alternative to adopted curriculum as their core curriculum.

[80] According to the Annual Report, the revamping occurred in 2018, but 2020-21 was the first Report in which this initiative was discussed.

[81] Two actions highlighted within this initiative were the elimination of a separate Montessori program within an elementary school, and increasing the number of seats set aside for native speakers in dual-language immersion programs.

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| | reduce long-term suspension a[82] | |
| 2020-21 | The Roots: A Culturally Responsive & Antiracist Arts Framework | Policy 0030: Professional development<br>Strategic Plan: High quality instruction and learning experiences, Culturally responsive workforce |
| 2020-21 | Digital Learning Professional Learning | Policy 0030: Professional development<br>Strategic Plan: High quality instruction and learning experiences, Predictable and consistent operations |
| 2020-21 | Dyslexia Early Literacy Screener Implementation | Policy 0030: Equitable access, Multiple pathways to success, Recognizing diversity<br>Strategic Plan: High quality instruction and learning experiences, |
| 2020-21 | Practitioner Capacity & Belief, Early Literacy | Policy 0030: Equitable access, Professional development |
| 2020-21 | Elementary Progress Reporting | Policy 0030: Equitable access |
| 2020-21 | Diversity Analysis of Library Collections | Policy 0030: Equitable access, Racial equity analysis |
| 2020-21 | Partners and Leaders United with Students (PLUS)[83] | Policy 0030: Equitable access, Professional development, Partnerships, Multiple pathways to success<br>Strategic Plan: High quality instructions and learning experiences, Culturally responsive workforce |
| 2020-21 | Launching of Math 7/8 Compacted Course | Policy 0030: Equitable access, Professional development, Partnerships, Multiple pathways to success |
| 2020-21 | Outdoor Education | Policy 0030: Equitable access, Racial equity analysis, Partnerships, Multiple pathways to success<br>*Crossover with education for sustainability* |
| 2020-21 | "LET'S GO" and "LET'S GO FURTHER" in Elementary and Middle School PE[84] | Policy 0030: Partnerships<br>*Crossover with education for sustainability* |
| 2020-21[85] | Practitioner Capacity and Belief -- Satterburg Literacy Initiative | Policy 0030: Professional development |
| 2020-21 | Graduation Requirements and | Policy 0030: Equitable access, Racial equity |

[82] An initiative to reduce long-term suspension among Black males in special education

[83] Secondary math teachers and BIPOC students come together to create more culturally relevant math instruction

[84] Bike and pedestrian safety program

[85] Satterburg coaches have been working in schools since 2017.

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| | Pathway Completion | analysis, Workforce equity |
| 2020-21 | Native American Racial Equity Tool[86] | Policy 0030: Racial equity analysis, Professional development, Welcoming school environments, Recognizing diversity<br>Strategic Plan: High quality instruction and learning experiences, Culturally responsive workforce, Inclusive and authentic engagement |
| 2020-21 | Equitable Access to Technology[87] | Policy 0030: Equitable access |

[86] online analysis tool to evaluate Native American curriculum materials for harmful bias

[87] This effort included the establishment of a district-level Digital Equity Manager, 1:1 devices for students, and internet access/hotspots