

ANN ARBOR PUBLIC SCHOOLS  
LEAD. CARE. INSPIRE.



# Ann Arbor Public Schools Environmental Sustainability Framework

December 14, 2022





**Ann Arbor Public Schools**  
**Environmental Sustainability Framework**  
**Executive Summary**  
***December 2022***

**Mission:** The Ann Arbor Public Schools is committed to care for the environment, to model and achieve an environmentally sustainable existence. We demonstrate this commitment, both through our critical mission of educating generations of students as strong stewards of the environment, and also in living an environmental commitment with every decision across every area of the organization.

**Vision:** In all decisions, we embody and live the deeply held value of caring for the earth and our environment. Individual, team and district decisions are consistent with care for the earth.

**Introduction:**

The Ann Arbor Public Schools (AAPS) serves a central role in the education of generations of students in our community. As the Ann Arbor community faces the opportunities and challenges of the climate crisis, AAPS fully embraces its responsibility in the community and joins our many partners in working towards shared environmental sustainability goals.

In considering our commitment for sustainability minded change, and recognizing the unparalleled potential within our critical mission of educating generations of students who are climate literate and action oriented, we also recognize the key importance of modeling authentic climate and educational practice by demonstrating sound environmental sustainability solutions through innovative and informed organizational behavior.

Our most important contribution to addressing the climate crisis will be in leveraging our central role in education. We will empower our next generation to act as good stewards of the environment, to become active in climate mitigation and adaptation in their professional and personal lives, and impart in them the confidence, wisdom, hope and inspiration to be resilient in facing the many challenges of the climate crisis.

Keeping students at the center, the work of AAPS will have a collective impact on broader systems in our neighborhoods, city, region, and world. It is the next generation - in our schools today - that will face the increasing impacts of climate change. By empowering them with a climate informed education, AAPS will help create the foundation for their success, and ultimately the success of our community, in rising to meet an uncertain climate change future.

## **Background:**

AAPS has a long history of leadership in environmental education. For over 60 years, the district has educated students to serve as good stewards of the environment, to conserve resources, and to understand inclusive history that recognizes historic inequities that result in negative environmental and human consequences.

AAPS has also made great strides in improving the indoor and outdoor environmental quality of our school campuses while conserving resources in our operations, maintenance and construction projects.

While AAPS is already engaged in environmental sustainability efforts, this is a critical time to renew, deepen and align those efforts. The current and looming climate crisis requires continued efforts to organize and institutionalize systemic changes.

Recognizing the urgency of the climate crisis, in December 2018, AAPS adopted Policy 8000: Environmental Sustainability (Appendix A), taking a critical step to institutionalize a commitment to environmental sustainability as a fundamental value in the AAPS. This policy directly supports many of the initiatives included in this framework document.

Subsequently, in November 2021, the AAPS Board of Education formed the Environmental Sustainability (ES) Taskforce (Appendix B) composed of local environmental leaders, AAPS staff, students and others. The ES Taskforce was charged with advising the district administration in developing the ES Framework presented in this document.

The Environmental Sustainability (ES) Framework is further informed by the work of school districts around the country that have made environmental sustainability commitments and the plans of our local institutional partners, including the University of Michigan, City of Ann Arbor and Washtenaw County (Appendix C).

## **Core Values:**

The AAPS Environmental Sustainability Framework is presented as a living document to be revised over time. It is based on the following Core Values developed by the Board of Education, district administration, and the ES Taskforce:

- 1. The climate change emergency is real, increasing and caused by human activity***
- 2. AAPS has a responsibility to act urgently as a district, on school campuses and as individuals, in response to the complex challenges of climate change through the mitigation of harmful human activities and the promotion of human activities that restore the environment***
- 3. The critical mission of AAPS is teaching and learning. The district has a responsibility to lead and educate in our community in the development of environmental and climate literacy in our students with core academic offerings and enrichment learning opportunities to ensure our community is prepared for an uncertain climate change future***
- 4. AAPS will continue to enhance and support healthy and sustainable school campuses by improving air quality, water quality, sustainable food systems, sustainable sites and grounds, waste management and building renovation and construction projects***



5. *AAPS recognizes that the negative impacts of environmental degradation and climate change disproportionately impact marginalized and vulnerable populations and will continue to implement strategies to address these historic inequities*

### **Shared Commitments:**

AAPS schools offer a unique opportunity in our community to help create an environmental and climate literate population, to lead by example, model responsible behavior and cast a line deep into the next generation of environmentally conscious and active leaders and citizens.

Based on these values and our unique position in our community, AAPS affirms support for the following individual and shared commitments:

- *reduce the use of disposable plastics, recycle at school and compost whenever possible*
- *be conscious of food waste*
- *never litter*
- *be mindful of energy waste including turning off lights and other devices when not in use*
- *walk, bike and take public transportation when possible*
- *conserve water*
- *be respectful of the outdoor environment*

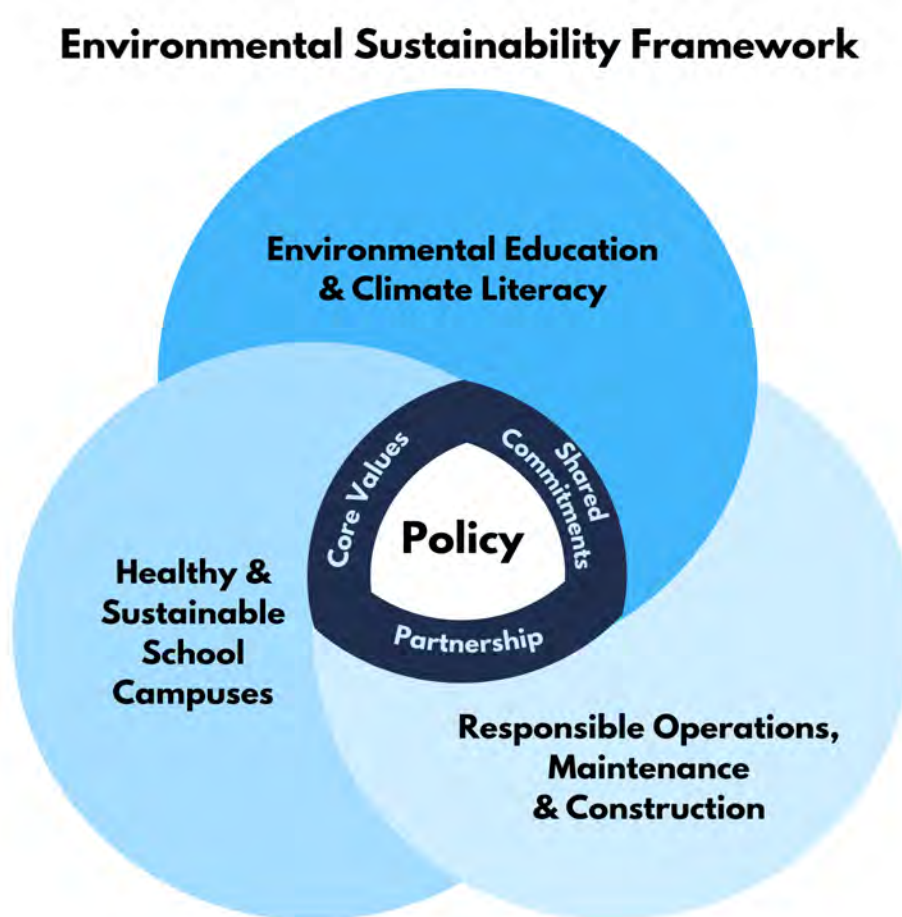


## The Framework: A Roadmap

The AAPS Environmental Sustainability Framework is organized in three sections:

- 1) **Responsible Operations, Maintenance and Construction ;**
- 2) **Environmental Education and Climate Literacy; and**
- 3) **Healthy and Sustainable School Campuses**

Guided by overarching policy, these three sections are connected by foundational understandings in the AAPS: Core Values, Shared Commitments and Community Partnerships.



## Areas for Action

The three Sections are further subdivided into 11 Areas of Action, including:

- 1) **Responsible Operations, Maintenance and Construction**
  - Energy (four subsections)
  - Water (three subsections)
  - Waste
  - Transportation
  - Scope 3 Indirect Emissions
  - Construction and Renovation
  
- 2) **Environmental Education and Climate Literacy**
  - Core Academics (three subsections)
  - Enrichment Learning (two sub-sections)
  
- 3) **Healthy & Sustainable School Campuses**
  - Indoor Environments
  - Outdoor Environments
  - Food Systems

Each Area for Action is further detailed in the following categories: Progress; Opportunities and Challenges; Next Steps; Reporting and Metrics; Responsible Department(s); and Collaborators.

<p><b><i>Progress:</i></b></p> <p>What work has been completed or is ongoing in this area?</p>	<p><b><i>Opportunities and Challenges:</i></b></p> <p>What are the opportunities for additional progress, and what are the constraints?</p>	<p><b><i>Next Steps:</i></b></p> <p>What will we do next, including baseline assessments, planning, target setting and action?</p>
<p><b><i>Reporting and Metrics:</i></b></p> <p>How do we know we are making progress and how do we update our community?</p>	<p><b><i>Responsible Department(s):</i></b></p> <p>Which department(s) at AAPS are responsible for this area, and which departments will need to support the work?</p>	<p><b><i>Collaborators:</i></b></p> <p>Who else can help, such as students, staff, local institutions, non-profits, community groups, etc.?</p>

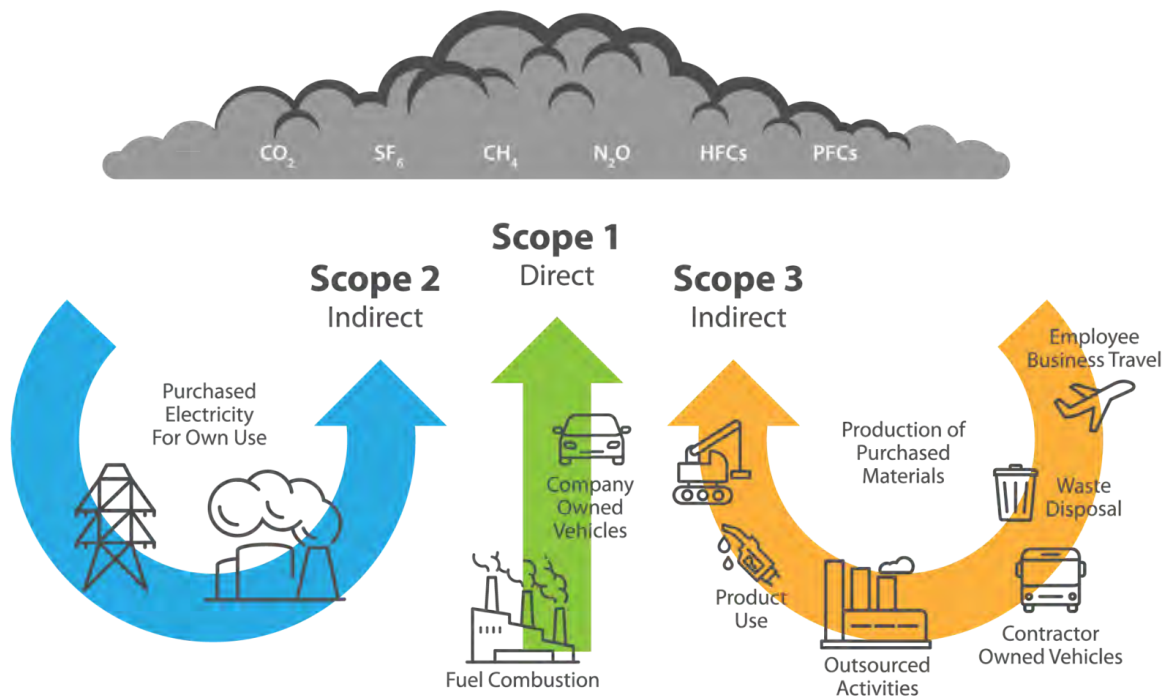
## Reduction of Greenhouse Gas Emissions

AAPS accounts for less than 1% of our community's greenhouse gas (GHG) emissions. Though this is a small amount of the total emissions in Washtenaw County, the district is committed to doing what it can to be part of a carbon-neutral future.

AAPS Environmental Sustainability Framework includes important steps to reduce the district's GHG footprint. These actions are organized based on the three scopes of emissions utilized by the [Intergovernmental Panel on Climate Change](#) (IPCC) of the United Nations, major corporations, countries, and municipalities worldwide, including in the United States.

[The IPCC defines](#) Scope 1, 2 and 3 emissions as:

'Scope 1' indicates direct greenhouse gas (GHG) emissions that are from sources owned or controlled by the reporting entity. 'Scope 2' indicates indirect GHG emissions associated with the production of electricity, heat, or steam purchased by the reporting entity. 'Scope 3' indicates all other indirect emissions, i.e., emissions associated with the extraction and production of purchased materials, fuels, and services, including transport in vehicles not owned or controlled by the reporting entity, outsourced activities, waste disposal, etc. (WBCSD and WRI, 2004).



## Scope 1 - Direct Emissions

Scope 1 emissions are atmospheric GHG emissions directly generated by AAPS. The majority of these emissions at AAPS come from the burning of natural gas for space and water heating, as well as diesel and unleaded gasoline for buses and fleet vehicles.

A plan to outline, detail and confirm interim targets will be developed. Electrification of buildings and vehicles will be central elements of the plan.

**GOAL:**

**The AAPS will eliminate Scope 1 emissions by 2035.**



## Scope 2 - Indirect Energy Emissions

Scope 2 emissions are atmospheric GHG emissions attributed to purchased utilities. At AAPS, these are the emissions associated with purchased grid electricity. Currently AAPS uses approximately 30,000 megawatt hours of electricity annually. By combining on-site solar production, the Michigan Renewable Portfolio Standard, and utility-scale renewable energy from DTE Energy, AAPS will eliminate Scope 2 emissions by 2024.

In the last three years, AAPS has been installing 8 large rooftop solar arrays that when fully operational in 2023, will generate approximately 6% of the District's electricity, or 1800 megawatt hours annually.

In addition, the State of Michigan's Renewable Portfolio Standard (RPS) required all utilities to provide 15% of their electricity from renewable sources by 2021. This accounts for 4500 megawatt hours annually at AAPS.

To quickly secure an additional 80% Scope 2 emissions reduction, AAPS entered a 20-year contract with DTE Energy and the MIGreen Power program to supply 24,000 megawatt hours annually to AAPS from newly constructed utility-scale wind and solar projects built in Michigan by 2024.

**GOAL:**

**The AAPS will eliminate Scope 2 emissions by 2024.**





## Scope 3 - Other Indirect Emissions

Scope 3 emissions are atmospheric GHG emissions attributed to a wide range of other activities, including purchased goods and services, construction materials, waste, commuting and financial investments. For many institutions and businesses, Scope 3 emissions are the largest of the three scopes of GHG emissions.

At AAPS, many of the Scope 3 emissions are associated with purchased items such as laptops and other technology, books, paper, construction materials and other supplies - as well as contracted services such as lawn maintenance and snow removal, custodial and food services and other services.

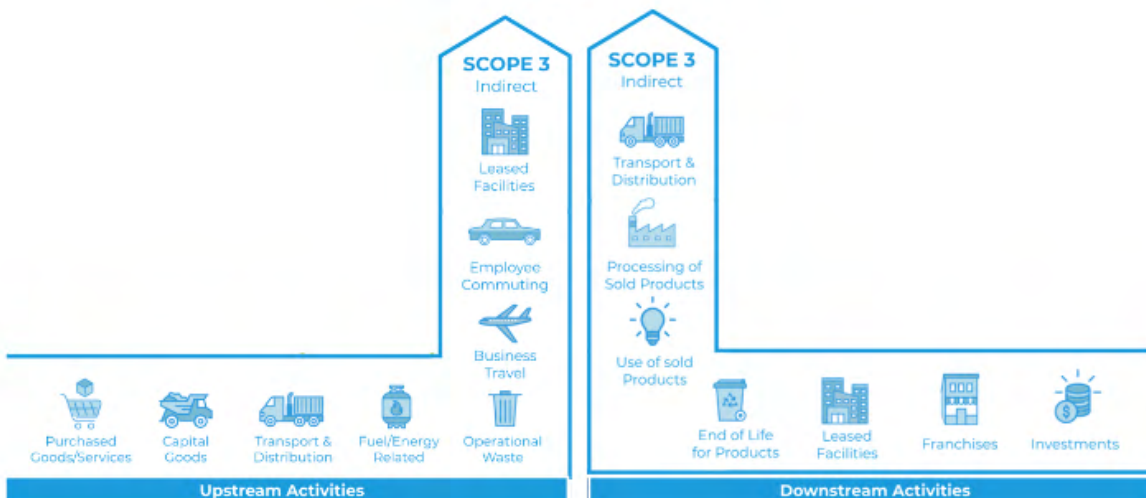
Measuring Scope 3 emissions is challenging and requires an accounting of both Upstream carbon emissions (mining, logging, manufacturing, packaging, transportation, etc.) and Downstream carbon emissions (product use, disposal, etc.). While the global community is developing methods for calculating and reporting Scope 3 emissions, it is impossible at this time to accurately calculate the district's Scope 3 emissions for all areas.

Community partnerships will be critical in reducing Scope 3 emissions as many of the solutions are beyond the district's control and will require transforming the marketplace for goods and services to carbon neutrality. This effort will require creative strategies working at scale across our city, county, region, nation and world.

AAPS will continue to collaborate with local partner institutions to better measure, track and reduce Scope 3 emissions.



**GOAL:** In the 2023-2024 school year, develop purchasing and construction guidelines that reflect the district's commitments to reducing Scope 3 emissions and begin piloting the new guidelines in 2024.

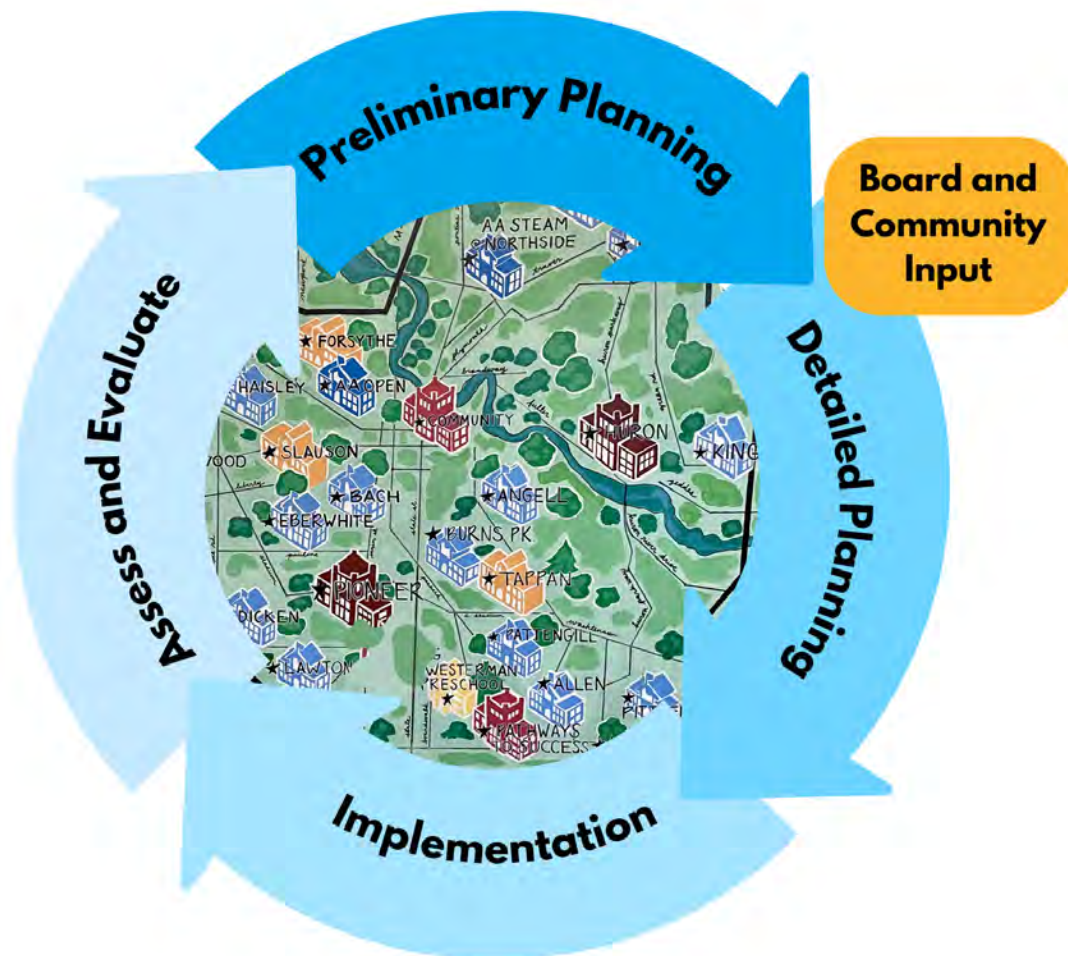


## Next Steps Process

AAPS celebrates progress already made in each of the 11 Areas of Action so that future actions extend from and are built upon the strengths of prior successes. This will enhance our organizational commitment and deepen a culture of belonging for meeting the challenges of the climate emergency.

It is also important to identify near-term actions, Early Actions, that have the majority of the necessary resources already in place and that will provide significant immediate impact.

AAPS will use an iterative process in the implementation of initiatives in each of the 11 Areas for Action. It is important to start the work now, but also plan for adjustments over time, informed by input from the Board of Education, students, staff, and community.



## Immediate Actions with Environmental Sustainability in the AAPS

- **Styrofoam**

### **Eliminate the use of Styrofoam in cafeterias**

Beginning in January 2023, the AAPS will eliminate the use of Styrofoam lunch trays at all elementary schools; and complete the elimination of all Styrofoam materials in cafeteria/food and nutrition services across all locations in the AAPS by the start of the 2023/24 school year.

- **Composting**

### **Implement Composting beginning with a Composting Pilot**

AAPS will pilot full cafeteria composting at three elementary schools during the 2023-2024 school year. The pilot will allow for the gathering of information regarding the educational, staff, and financial resources needed to expand the program across the district. During spring 2024, a plan will be brought forward to continue the implementation of composting district-wide.

- **School Gardens**

### **Ensure active neighborhood school gardens at all elementary/P8 campuses**

AAPS will conduct an evaluation of existing school gardens at AAPS elementary/P8 campuses to better understand existing conditions including garden locations, access to water, appropriate tool storage locations, teacher and volunteer support, curriculum connection, and other features. A plan will be developed to ensure all AAPS elementary/P8 have active school gardens with needed supports to ensure long-term viability and the enhancement of a culture of belonging at the AAPS through hands-on active learning.

- **Outdoor Learning**

### **Outdoor Learning Evaluation and Plan for Continued Enhancements**

In the spring of 2023 and fall of 2024, the AAPS will conduct an inventory and evaluation of all outdoor learning environments at AAPS campuses to inform enhancements to formal and informal outdoor learning opportunities and sustainable land management practices. The evaluation process will include natural areas and trails, opportunities for tree plantings, expansion of no-mow practices, quantifying carbon sequestration, and others.

- **Environmental Sustainability Teacher Champions**

AAPS will invite Teacher Champions to serve as leaders in their schools to ensure the building of organizational capacity for environmental sustainability work across the district at every school campus. Teacher Champions will lead and mobilize support for school-based sustainability efforts and enable the work of student Green Teams at each AAPS campus.

- **School Sustainability Mini-Grants**

In partnership with the City of Ann Arbor, Office of Sustainability and Innovations, applications will be available in January 2023 for mini-grants to implement sustainability projects at schools during spring 2023 and the 2023-2024 school year.

- **Aligned Curriculum**

**Enhance an Aligned Learning Experience and Environmental Sustainability Curricula P-12 in the AAPS**

Beginning with the 2023-2024 school year, a comprehensive curriculum mapping process will be initiated, including an analysis of existing environmental sustainability lessons and curricula across all disciplines. The information gathered will inform a strategic planning process to map current environmental sustainability curricula and to clarify, align and strengthen environmental education and climate literacy in the AAPS.

- **Executive Director, Environmental Sustainability**

In summer 2022, AAPS implemented an executive-level staff position reporting directly to the Superintendent of Schools with overall responsibility and oversight of implementation of environmental sustainability initiatives. The full job description for this position is attached as Appendix D.

- **Environmental Sustainability (ES) Advisory Committee**

As the Environmental Sustainability Framework moves from planning to implementation, an Environmental Sustainability Advisory Committee will be formed in keeping with Board Policy 2420: Parent, Students and Community Advisory Committees.

*From Policy 2420: The Board recognizes that the district benefits from parent, student and community participation on advisory committees to help build strong relationships, shape understanding and provide an additional avenue for input and feedback on the operations and improvement of the district.*

Individuals representing local institutions, nonprofits and the business community will be encouraged to apply. Meetings are expected to occur quarterly and serve to strengthen the implementation of the Environmental Sustainability Framework, deepening connections and action through community partnerships.



**Ann Arbor Public Schools**  
**Environmental Sustainability Framework**  
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# 1) Responsible Operations, Maintenance and Construction

## 1.1 Energy

**ENERGY GOALS: AAPS will reduce the use of energy by utilizing more efficient technology and reduce the overall need for energy through conservation, increase the generation of renewable electric energy, reduce then eliminate Scope 1 emissions by 2035 and eliminate Scope 2 emissions from purchased electricity by 2024.**

### 1.11 Energy Efficiency and Conservation

**GOAL: Reduce the use of energy by utilizing more efficient technology and reduce the overall need for energy through conservation**

<p><b>Progress</b></p>	<p><b>Lighting</b> - In the early 2000s, AAPS converted all T-12 lighting to more energy-efficient T-8 fluorescent lighting (~20% reduction in lighting electricity use). Currently, lighting is again being upgraded to more energy-efficient LED lighting (~25% additional reduction in lighting electricity use)</p> <p><b>Building Controls</b> - Extensive work has been completed modernizing building control systems, including replacing old pneumatic controls and upgrading controls software, allowing for finer control of building systems and increased energy efficiency</p> <p><b>Equipment Replacement</b> - As equipment is replaced, such as boilers and air handling units, more efficient equipment is being installed. AAPS has received over \$420,000 in energy efficiency cash incentives from DTE Energy in recognition of this work</p> <p><b>IT Projectors</b> - The district is 40% completed with converting classroom and other projectors to laser projectors that consume less power, do not contain any mercury and have a longer equipment lifespan compared to the bulb-based units.</p> <p><b>IT Network Operations Center</b> - The district is currently migrating to a significantly smaller hybrid server/storage footprint in the Network Operations Center (NOC). The new data center is designed to maximize server utilization which results in less energy consumption</p>
<p><b>Opportunities and Challenges</b></p>	<p><b>Opportunities:</b></p> <ul style="list-style-type: none"> <li>● Inflation Reduction Act contains financial incentives, including 179D direct payments, that are potentially available to support this work</li> <li>● DTE energy efficiency financial incentives continue to be available</li> </ul> <p><b>Challenges:</b></p> <ul style="list-style-type: none"> <li>● The average AAPS building is 66 years old. Many buildings have limited insulation and are challenged in meeting energy efficiency goals</li> <li>● Equipment life-cycle needs to be considered in lighting and equipment replacements so that capital funding is maximized by not replacing equipment that has significant useful life remaining</li> <li>● COVID enhance ventilation strategies increase energy use</li> </ul>
<p><b>Next Steps</b></p>	<ul style="list-style-type: none"> <li>● Continue LED lighting conversions</li> <li>● Continue equipment replacement with higher efficiency equipment</li> <li>● Transition to new energy efficiency technologies such as geothermal heating and cooling as major improvements are made under the Capital Improvement Program (CIP)</li> </ul>

	<ul style="list-style-type: none"> <li>• Develop messaging and education for staff and students on personal behavior and energy efficiency and conservation at school</li> <li>• Complete the conversion of all district projectors to laser equipment in the 2022-2023 school year</li> <li>• Continue migration of NOC to smaller more energy efficient footprint</li> </ul>
<b>Reporting and Metrics</b>	Report to district leadership and the community annually the District's usage of electricity and natural gas including analysis of historical trends on a net, per student, and per square footage basis
<b>Responsible Department(s)</b>	Responsible: Physical Properties and Capital Programs Supporting: Teaching and Learning, Environmental Sustainability
<b>Collaborators</b>	DTE Energy, Constellation, City of Ann Arbor, Washtenaw County

## 1.12 On-Site Renewable Electricity Generation

**GOAL: Increase the generation of renewable electric energy at AAPS campuses**

<b>Progress</b>	<p><b>Solar Installations</b> - AAPS is the largest producer of solar electricity in Washtenaw County working to install 8 large-scale rooftop solar systems totaling over 1.1 Megawatts of generation capacity, which will provide approximately 6% of the district's annual electricity consumption by 2023. The systems are being installed at A2 STEAM @ Northside, Bryant, Haisley Pattengill, Forsythe, Huron, Pioneer and Westerman. Systems are monitored online and data is publicly available for educational purposes and quality control at the links below:</p> <p><a href="#">A2 STEAM @ Northside</a>  Bryant Elementary (coming soon)  <a href="#">Haisley Elementary</a>  <a href="#">Pattengill Elementary</a>  <a href="#">Forsythe Middle School</a>  <a href="#">Huron High School</a>  Pioneer High School (coming soon)  Westerman Preschool (coming soon)</p>
<b>Opportunities and Challenges</b>	<p><b>Opportunities:</b></p> <ul style="list-style-type: none"> <li>• Inflation Reduction Act contains financial incentives, including the Investment Tax Credit, that are potentially available to support this work</li> <li>• Decreasing costs and increasing reliability of on-site energy storage offers an opportunity to expand on-site solar production and utilization</li> <li>• Develop curriculum tied to the solar systems on AAPS schools</li> </ul> <p><b>Challenges:</b></p> <ul style="list-style-type: none"> <li>• Solar installations on roofs are most economical when a new roof is being installed</li> <li>• Some APPS buildings have limited roof space or land available for solar installations</li> <li>• Current regulations limit net metering at AAPS sites to 150kW AC output and do not provide full retail value for electricity fed back to the grid</li> </ul>

<b>Next Steps</b>	<ul style="list-style-type: none"> <li>• In 2023, conduct a financial analysis based on new federal funding opportunities to understand potential general fund savings from additional rooftop solar arrays</li> <li>• Continue to consider solar when roof replacements are scheduled</li> <li>• Enhance curriculum integration using solar at AAPS buildings in lessons</li> <li>• Advocate, as feasible, to the Michigan Public Service Commission for more favorable net metering regulations</li> </ul>
<b>Reporting and Metrics</b>	Report annually to the community the District's generation of solar electricity including analysis of historical trends, impacts of weather, actual vs projected production and cost savings
<b>Responsible Department(s)</b>	Responsible: Physical Properties and Capital Programs Supporting: Teaching and Learning, Legal, Environmental Sustainability
<b>Collaborators</b>	Federal Government, Michigan Public Service Commission, DTE Energy, solar engineers, solar contractors

**1.13 On-Site Natural Gas Combustion**  
**GOAL: Reduce then eliminate the burning of natural gas at AAPS sites by 2035**

<b>Progress</b>	<p><b>Geothermal</b> - AAPS is currently installing electric geothermal heating and cooling systems at Forsythe Middle School and Clague Middle School. These systems will greatly reduce the amount of natural gas combustion at these two locations. When operational, these will be the largest geothermal systems in Washtenaw County and will reduce on-site natural gas consumption by approximately 80% by eliminating the burning of 145,000 CCF of natural gas annually that would have produced 900 tons of CO2 emissions each year</p> <p><b>New Construction</b> - All Electric replacement buildings are being designed for Pathways and Mitchell with no natural gas combustion on site</p>
<b>Opportunities and Challenges</b>	<p><b>Opportunities:</b></p> <ul style="list-style-type: none"> <li>• Inflation Reduction Act contains financial incentives that are potentially available to support this work</li> </ul> <p><b>Challenges:</b></p> <ul style="list-style-type: none"> <li>• Currently, per unit of energy, electricity is more expensive than natural gas for heating and cooling, and careful planning will be needed to manage cost increases</li> <li>• COVID enhance ventilation strategies increase natural gas use</li> <li>• The capacity of the DTE electric grid may be an issue as buildings convert to all-electric operations</li> </ul>
<b>Next Steps</b>	<ul style="list-style-type: none"> <li>• Develop a phased plan with interim targets to eliminate on-site Scope 1 emissions from natural gas combustion by 2035.</li> <li>• Develop standards for the end-of-useful life equipment replacement to minimize or eliminate the use of natural gas.</li> </ul>



<b>Reporting and Metrics</b>	Report annually to the community regarding the district's development of a plan to eliminate on-site natural gas combustion, immediate near-term projects and projects under development
<b>Responsible Department(s)</b>	Responsible: Physical Properties and Capital Programs Supporting: Environmental Sustainability, Finance and Operations
<b>Collaborators</b>	Engineers, architects, contractors, DTE Energy, Constellation

**1.14 Purchased Electricity**  
**GOAL: Purchase all electricity from renewable sources by 2024**

<b>Progress</b>	<b>Renewable Energy Contract</b> - By 2024, AAPS will eliminate all Scope 2 emissions. AAPS currently receives 6% of its electricity from district-owned solar, 15% renewable from DTE under the Renewable Portfolio Standard and has entered a contract with DTE Energy to provide 80% of the district's purchased electricity from renewable sources by 2025. AAPS would be the first major institution in Washtenaw County to eliminate Scope 2 emissions.
<b>Next Steps</b>	Communicate regularly with DTE Energy regarding updates on construction of new renewable energy assets for the district's allocation in the program and updates on estimated cost structure per the contract.  <b>Timeline: Eliminate Scope 2 Purchased Electricity emissions by 2024</b>
<b>Opportunities and Challenges</b>	<b>Opportunities:</b> <ul style="list-style-type: none"> <li>Partnership with DTE allows the district to rapidly offset Scope 2 emissions with much more financially cost-effective utility-scale renewable energy generation assets</li> </ul> <b>Challenges:</b> <ul style="list-style-type: none"> <li>Lack of understanding in the community regarding Renewable Energy Credits (RECs) and their function in leveraging affordable utility scale renewable energy projects</li> </ul>
<b>Reporting and Metrics</b>	Report annually to the community the district's progress regarding the implementation of the Renewable Energy Contract with DTE, including the construction of generation assets to supply the district beginning in 2024
<b>Responsible Department(s)</b>	Responsible: Physical Properties and Capital Programs, Legal Supporting: Environmental Sustainability
<b>Collaborators</b>	Michigan Public Service Commission, DTE Energy

## 1.2 Water

**WATER GOALS: AAPS will ensure drinking water is safe and readily available; reduce the use of water; and reduce and slow the flow of water from AAPS campuses to area waterways during major rain events and increase the filtration of stormwater**

1.21 Water Quality	
GOAL: Ensure drinking water is safe and readily available	
<b>Progress</b>	<p><b>AAPS is a leader in drinking water quality and has presented our program to national audiences. The district’s current program includes:</b></p> <p><b>Water Testing and Remediation</b> - AAPS has tested all drinking water sources and remediated issues found. Moving forward, the district now tests 1/3 of the drinking water sources annually for quality control.</p> <p><b>Filtered Water Bottle Filling Stations</b> - AAPS has installed 300 filtered water bottle filling stations at schools at a level of no less than 1 per 100 building occupants. The filters are replaced twice annually.</p> <p><b>Labeling of Non-Drinking Water Sources</b> - Clearly label all non-drinking water sources as “Do Not Drink” locations</p> <p><b>Data Management</b> - With over 1,000 drinking water locations, AAPS maintains a database and inventory of all drinking water sources and testing results</p> <p><b>Reporting</b> - All water testing results are posted publicly on the district’s website.</p>
<b>Opportunities and Challenges</b>	<p><b>Opportunities:</b></p> <ul style="list-style-type: none"> <li>● Continue sharing our successes, challenges and best practices with other school districts</li> <li>● Continue to advocate for legislation to ensure high water quality standards and appropriate funding to support all school districts in protecting the health of their students and staff</li> </ul> <p><b>Challenges:</b> Annual testing and water filter replacement are a General Fund expenditure and cannot be paid with bond or sinking funds</p> <ul style="list-style-type: none"> <li>● Dedicated financial and staff resources are required for filter replacement, testing, mitigation and reporting</li> </ul>
<b>Next Steps</b>	Continue filter replacements, testing, mitigation and public reporting
<b>Reporting and Metrics</b>	Report annually to the community regarding water quality testing
<b>Responsible Department(s)</b>	Responsible: Physical Properties and Capital Programs
<b>Collaborators</b>	State of Michigan, City of Ann Arbor, plumbing contractors and environmental engineers

## 1.22 Water Conservation

**GOAL: Reduce the use of water**

<b>Progress</b>	<p><b>Water Conserving Fixtures</b> - AAPS has installed water conserving touchless water fixtures across the district</p> <p><b>Irrigation</b> - All landscaped areas and lawns are not irrigated with the exception of high school athletic fields</p> <p><b>Water Usage Monitoring</b> - AAPS is working with the City of Ann Arbor to monitor water usage using smart water meters and the online monitoring and alert platform Aqua Hawk.</p>
<b>Opportunities and Challenges</b>	<p><b>Challenges:</b></p> <ul style="list-style-type: none"> <li>• Aqua Hawk setup is cumbersome and requires significant staff time to complete.</li> <li>• New landscaping that is not irrigated can be challenging to establish and can be alleviated by proper species selection and watering protocols during the first year after planting.</li> </ul>
<b>Next Steps</b>	<ul style="list-style-type: none"> <li>• Develop messaging and education for staff and students regarding personal behavior and water conservation at school</li> <li>• Continue to develop the water monitoring tools</li> </ul>
<b>Reporting and Metrics</b>	<p>Report annually to the community the District's use of water including analysis of historical trends on a net, per student, and per square footage basis</p>
<b>Responsible Department(s)</b>	<p>Responsible: Physical Properties and Capital Programs, Teaching and Learning Supporting: Environmental Sustainability</p>
<b>Collaborators</b>	<p>City of Ann Arbor, plumbing and landscaping contractors, engineers</p>

## 1.23 Stormwater Management

**GOAL: Reduce and slow the flow of water from AAPS campuses to area waterways during major rain events and increase the filtration of stormwater**

<b>Progress</b>	<p><b>State of Michigan Permits</b> - AAPS maintains a State of Michigan Municipal Separate Storm Sewer System (MS4) permit and a National Pollutant Discharge Elimination System (NPDES) permit with contracted support from the Huron River Watershed Council and Arch Environmental. These permits regulate the management of stormwater on district campuses.</p> <p><b>Parking Lot and Site Construction Projects</b> - As part of major parking lot improvements, enhanced stormwater filtration and retention infrastructure has been installed in the last several years at Mitchell Elementary School, Scarlett Middle Schools and Pioneer High School.</p> <p><b>Environmental Education</b> - Stormwater management practices have been historically included in environmental education offerings</p>
<b>Opportunities and Challenges</b>	<p><b>Opportunities:</b></p> <ul style="list-style-type: none"> <li>• The AAPS community has a long history of attention to stormwater management best practices</li> </ul>

	<ul style="list-style-type: none"> <li>Many stormwater management features enhance local ecosystems and offer educational opportunities</li> </ul> <p><b>Challenges:</b></p> <ul style="list-style-type: none"> <li>Rain gardens and other stormwater infrastructure require specialized annual maintenance</li> </ul>
<b>Next Steps</b>	<ul style="list-style-type: none"> <li>Continue to make stormwater improvements when major paving projects are scheduled</li> <li>Make stormwater improvements during new construction projects</li> <li>Develop a method to track progress</li> </ul>
<b>Reporting and Metrics</b>	Report annually to the community on improvements to stormwater infrastructure with the goal of higher rates of stormwater filtration and lower rates of stormwater discharge to area waterways
<b>Responsible Department(s)</b>	Responsible: Physical Properties and Capital Programs Supporting: Teaching and Learning, Environmental Sustainability
<b>Collaborators</b>	State of Michigan, City of Ann Arbor, Huron River Watershed Council, civil engineers, landscape architects, contractors

## 1.3 Waste

### 1.3 Waste Reduction, Reuse, Recycling, and Composting

**GOAL: Increase the practice of reducing, reusing, recycling and composting**

<b>Progress</b>	<p><b>Recycling</b> - AAPS has been recycling for decades and has dedicated recycling containers and dumpsters at all locations. The current landfill diversion rate is estimated to be 28%.</p> <p><b>Recycling Education</b> - The district has a longstanding partnership with the Ecology Center, which has provided zero-waste education programming since the 1970s and has been funded by the City of Ann Arbor since 1984. The current recycling education partnership with the Ecology Center is funded by the City of Ann Arbor. It includes two zero-waste field trips with educational activities for second and seventh-grade students.</p> <p><b>Recycling Infrastructure</b> - In 2019, AAPS received a grant for the State of Michigan to purchase ~2,000 new classroom and hallway recycling containers and associated signage.</p> <p><b>Composting</b> - Composting pilots are active at several schools</p>
<b>Opportunities and Challenges</b>	<p><b>Opportunities:</b></p> <ul style="list-style-type: none"> <li>Waste reduction, recycling and composting are very tangible activities for student and teacher participation and empowerment</li> <li>Waste reduction, recycling and composting are strong values in the Ann Arbor Community.</li> <li>The University of Michigan is a regional leader in cafeteria food waste reduction, recycling and composting</li> </ul>



	<ul style="list-style-type: none"> <li>Composting could provide a very tangible and teachable example of the circular economy by providing soil from the compost facility for AAPS school gardens</li> </ul> <p><b>Challenges:</b></p> <ul style="list-style-type: none"> <li>Composting services provided by the City of Ann Arbor only provide weekly pick-ups in the fall and spring and are only provided monthly for four months of the winter.</li> <li>Daily or every other day composting service is needed for health and safety reasons if all food waste is to be composted, including meat products and milk</li> <li>Depending on the compost collection vendor, separation of meat products and milk may require significant floor area and likely additional staff</li> <li>Measurement of waste generation, recycling and composting is challenging. No system for weight or volume measurement is available with current waste, recycling and composting vendors other than the number of container service tips.</li> <li>Compostable trays and flatware are more expensive than current cafeteria products</li> <li>Additional staff will likely be required for full cafeteria composting implementation</li> </ul>
<b>Next Steps</b>	<ul style="list-style-type: none"> <li>Develop a waste management plan in 2023-2024 that includes: <ul style="list-style-type: none"> <li>Increasing the district's diversion rate from the current 28%</li> <li>A plan to eliminate single-use plastics at the district, including cafeteria trays and flatware, plastic bottles and other disposable plastic items</li> <li>A plan for the phased implementation of composting at all AASP schools</li> </ul> </li> <li>Pilot new initiatives in 2024-2025</li> <li>Develop enhanced messaging and education for staff and students regarding personal behavior and waste management at school</li> <li>Develop and implement annual training for custodial and food service employees regarding waste management systems at the district</li> </ul>
<b>Reporting and Metrics</b>	Report annually to the community regarding the District's landfill diversion rate and composting initiatives
<b>Responsible Department(s)</b>	Responsible: Physical Properties and Capital Programs, Finance and Operations Supporting: Teaching and Learning, Environmental Sustainability
<b>Collaborators</b>	Custodial services contractor, food service contractor, City of Ann Arbor, University of Michigan, Ecology Center, other local non-profits

## 1.4 Transportation

### 1.4 Transportation

***GOAL: Decarbonize buses and fleet vehicles by 2035, increase the use of non-motorized transportation, and support the use of public transportation***

#### Progress

**Fuel Use** – Not including the dramatic reduction of fuel usage during the COVID pandemic, since 2006, AAPS has reduced the amount of bus diesel used annually per student by 63% and the total annual purchase of diesel by 66%.

	<p><b>Electric Buses</b> - AAPS has four electric buses in operation, subsidized by a grant from the State of Michigan and supported by DTE Energy. The pilot program has had some issues with bus performance, charging infrastructure and a delay in the implementation of Vehicle to Grid (VtG) technology.</p> <p><b>Non-Motorized Transportation</b> - AAPS has for many years participated in the Safe Routes to Schools (SRTS) program at most of the AAPS schools. Over ten SRTS mini-grants have been awarded to AAPS schools to help organize and promote walkers and bikers to and from school and funded roadway and sidewalk improvements. The City of Ann Arbor Traffic Engineers and local law enforcement are members of the SRTS teams.</p> <p><b>Public Transportation</b> - Many high school students are provided free passes for public transportation</p>
<p><b>Opportunities and Challenges</b></p>	<p><b>Opportunities:</b></p> <ul style="list-style-type: none"> <li>● Federal, state and/or utility incentive funding may be available to help subsidize the increased first cost of bus and fleet vehicle electrification</li> <li>● Federal and/or state funding may be available to help subsidize the increased first cost of non-motorized transportation improvements</li> <li>● The City, County and University are electrifying buses, and there are opportunities for collaboration to ensure adequate charging capacities and electrical upgrades</li> </ul> <p><b>Challenges:</b></p> <ul style="list-style-type: none"> <li>● Electric buses are a new technology, and AAPS has had issues with the four-bus pilot program</li> <li>● Electric buses and the associated charging infrastructure have a first cost of approximately 4x more than conventional diesel buses.</li> <li>● Electrical infrastructure will need significant upgrades to accommodate heavy fleet electric vehicles</li> </ul>
<p><b>Next Steps</b></p>	<ul style="list-style-type: none"> <li>● Develop a written plan with intermediate targets to: <ul style="list-style-type: none"> <li>○ Develop a plan to encourage busing and reduce personal car driving to and from school in coordination with AAPS's Safe Routes to School program</li> <li>○ Transition to electric buses and fleet vehicles, with the goal of eliminating Scope 1 emissions from the district's buses and fleet vehicles.</li> <li>○ Study and report on existing non-motorized transportation systems at AAPS campuses and develop a multi-year improvement plan</li> </ul> </li> <li>● Continue to work with electric bus and charging infrastructure vendors to resolve issues with the district's 4 electric buses</li> <li>● Continue evaluating and improving non-motorized transportation options when major parking lot construction and new construction is planned and implemented</li> </ul>
<p><b>Reporting and Metrics</b></p>	<p>Report annually to the community regarding transportation associated carbon emissions and improvements in the use of non-motorized transportation alternatives at AAPS campuses</p>
<p><b>Responsible Department(s)</b></p>	<p>Responsible: Finance and Operations Supporting: Physical Properties and Capital Programs, Legal, Environmental Sustainability</p>

<b>Collaborators</b>	Federal government, State of Michigan, Washtenaw County, City of Ann Arbor, Townships, DTE Energy, bus manufacturers, changing manufacturers, electrical engineers, electrical contractors
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## 1.5 Scope 3 Emissions

<b>1.5 Scope 3 Emissions</b> <i>GOAL: Reduce indirect emissions associated with purchased goods and services, employee commuting, disposition of unwanted items, investments and other areas</i>	
<b>Progress</b>	<p><b>Low Embodied Carbon Materials</b> - In collaboration with the Low Embodied Carbon Taskforce, AAPS has piloted low carbon concrete at several locations. AAPS has also updated paving specifications to increase the amount of recycled asphalt used in district paving projects</p> <p><b>Construction Waste</b> - AAPS regularly recycles metals and concrete from construction demolition is piloting recycling ceiling tiles</p> <p><b>New Construction</b> - For the construction of the new Pathways and Mitchell schools, AAPS has directed the design teams to investigate lower embodied carbon building systems</p>
<b>Opportunities and Challenges</b>	<p><b>Opportunities:</b></p> <ul style="list-style-type: none"> <li>● Local institutions have committed to working to reduce Scope 3 emissions including the City of Ann Arbor and the University of Michigan</li> </ul> <p><b>Challenges:</b></p> <ul style="list-style-type: none"> <li>● Tracking of Scope 3 emissions is challenging, and a phased approach will be required.</li> <li>● New disposition practices will require storage space and staff time. Revenue generated from disposition may offset some costs</li> <li>● Elimination of emissions associated with employee and student commuting will require a market transformation to electric vehicles or the purchase of carbon offsets</li> </ul>
<b>Next Steps</b>	<ul style="list-style-type: none"> <li>● In 2023, develop purchasing guidelines that reflect the district’s commitments to environmental sustainability. Pilot the new guidelines in 2024.</li> <li>● Develop a plan so that the district can eliminate indirect Scope 3 emissions associated with purchased goods and services, lawn maintenance and snow removal activities, employee and student commuting, financial investments, construction activities, disposition and other areas.</li> <li>● Develop a plan to enhance systems for the re-use and/or recycling of unwanted items in the district, such as furniture, construction demolition materials, books, lumber, etc.</li> <li>● Develop and implement a plan to increase demolition and construction waste reduction and recycling</li> <li>● Develop and implement a method for estimating emissions associated with employee commuting</li> <li>● Evaluate current financial investment and opportunities for divestiture from fossil fuels and carbon-intensive industries</li> </ul>

<b>Reporting and Metrics</b>	Report annually to the community regarding the development of initiatives to reduce the District's Scope 3 carbon emissions
<b>Responsible Department(s)</b>	Responsible: Finance and Operations, Physical Properties and Capital Programs Supporting: Environmental Sustainability, Legal
<b>Collaborators</b>	Design and construction professionals, purchasing cooperatives, financial advisors, local institutions

## 1.6 New Construction and Renovation

### 1.6 New Construction and Renovation

**GOAL: AAPS new construction and renovation projects will be informed by the AAPS commitment to environmental responsibility. Develop guidance for design and construction projects to establish, track and verify progress toward environmental sustainability goals**

<b>Progress</b>	<p><b>Existing Design Guidelines</b> - AAPS has developed detailed design guidelines for recent Air Conditioning and Lighting (ACL) projects.</p> <p><b>Performance Criteria</b> - AAPS has developed performance criteria for several areas, including:</p> <ul style="list-style-type: none"> <li>● energy efficiency measures consistent with available incentives/rebates from local utilities</li> <li>● onsite renewable energy generation (solar) projects</li> <li>● enhanced ventilation programs</li> <li>● drinking water quality, hydration stations and hands-free water fixture technology.</li> </ul> <p><b>Consultants</b> – AAPS has selected design consultants with experience delivering environmentally responsible, high-performance projects</p>
<b>Opportunities and Challenges</b>	<p><b>Opportunities:</b></p> <ul style="list-style-type: none"> <li>● AAPS has assembled experienced consultants for the design of new schools and major renovation projects who can assist the district in further developing environmentally responsible design guidelines for each project, including: <ul style="list-style-type: none"> <li>○ Establishing high-level goals</li> <li>○ Creating a framework for an integrative design process</li> <li>○ Aligning strategies and processes to support a coherent district vision for school buildings across the AAPS</li> <li>○ Ensuring access to applicable incentives</li> <li>○ Outlining quality assurance requirements</li> <li>○ Maximizing the health, well-being and performance of students, educators and staff</li> <li>○ Conserving energy, water and other resources to minimize greenhouse gas emissions and reduce operating costs</li> <li>○ Practicing good stewardship within schools to achieve community environmental and social goals</li> </ul> </li> </ul> <p><b>Challenges:</b></p>

	<ul style="list-style-type: none"> <li>● Staff oversight will be required for design and construction professionals to ensure compliance with district expectations</li> </ul>
<b>Next Steps</b>	<p>Further develop existing design guideline documents for each project that outlines best-practice environmental sustainability expectations in the AAPS and includes:</p> <ul style="list-style-type: none"> <li>● Embodied and operational carbon strategies and targets</li> <li>● Climate resiliency requirements</li> <li>● Indoor environmental requirements regarding: <ul style="list-style-type: none"> <li>○ Thermal comfort</li> <li>○ Luminous environment</li> <li>○ Acoustical environment</li> <li>○ Air quality</li> <li>○ Water quality</li> <li>○ Access to daylight and views</li> <li>○ Biophilia</li> </ul> </li> <li>● Sustainable sites including: <ul style="list-style-type: none"> <li>○ Structured and unstructured play, recreation and sports</li> <li>○ Outdoor learning environments, including natural areas and school gardens</li> <li>○ Land management practices for natural areas, ecological restoration, stormwater management, and carbon sequestration</li> <li>○ Non-motorized transportation, including walking and biking to school</li> </ul> </li> </ul>
<b>Reporting and Metrics</b>	Report annually to the community regarding the development, implementation, and ongoing improvements to AAPS design guidelines
<b>Responsible Department(s)</b>	Responsible: Physical Properties and Capital Programs Supporting: Environmental Sustainability
<b>Collaborators</b>	Architects, engineers, construction managers, green building consultants



## 2.0 Environmental Education and Climate Literacy

### 2.1 Core Academics

#### 2.11 Environmental Sustainability Curriculum

**GOAL:** Build upon existing environmental curriculum to implement sustainability learning opportunities across all grade levels and disciplines. Provide relevant professional development to staff to inform and enrich instruction.

<p><b>Progress</b></p>	<p><b>Environmental Education</b> - For 60+ years AAPS has been a leader in <a href="#">Environmental Education</a></p> <p><b>Freeman Environmental Education Center</b> - Freeman Environmental Education Center was established in 2019 and is guided by the <a href="#">recommendations</a> on an advisory committee. Many short-term and some medium-term recommendations have already been accomplished</p> <p><b>Existing Curriculum</b> - Some existing courses, units of study and lessons address climate and environmental sustainability topics</p>
<p><b>Opportunities and Challenges</b></p>	<p><b>Opportunities:</b></p> <ul style="list-style-type: none"> <li>Align environmental sustainability curriculum planning implementation to the District Improvement Plan and Strategic Equity Plan</li> <li>Create space in grade level curricula by developing new learning opportunities that adapt or substitute existing lessons</li> <li>There are many interdisciplinary opportunities for environmental sustainability curriculum integration</li> </ul> <p><b>Challenges:</b></p> <ul style="list-style-type: none"> <li>Additional financial and staff resources will be necessary in order to support sustainability curriculum development and related professional development</li> <li>Resources and supplies may be needed for new lessons</li> <li>Professional development will need to be designed and time dedicated for implementation</li> </ul>
<p><b>Next Steps</b></p>	<ul style="list-style-type: none"> <li>Beginning with the 2023-2024 school year, a comprehensive curriculum mapping process will be initiated, including an analysis of existing environmental sustainability lessons and curricula across all disciplines. The information gathered will inform a strategic planning process to map current environmental sustainability curricula and to clarify, align and strengthen environmental education and climate change literacy in the AAPS.</li> <li>Integrate enhanced ES education into the baseline curriculum offerings provided to all AAPS students and additional specialized courses and other offerings to provide a diverse menu of differentiated learning opportunities so that by 2030, AAPS graduates will be prepared with the understanding and skills necessary to respond to complex and dynamic sustainability and climate issues.</li> </ul>
<p><b>Reporting and Metrics</b></p>	<p>Report annually to the community regarding ES curriculum in the district.</p>
<p><b>Responsible Department(s)</b></p>	<p>Responsible: Teaching and Learning Supporting: Environmental Sustainability</p>

<b>Collaborators</b>	Teacher Learning Networks, district curriculum coordinators, employee unions, local and national non-profits, Ann Arbor community
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**2.12 Social and Environmental Justice**  
**GOAL: Integrate diversity, equity, and inclusion (DEI) principles and environmental justice concepts into sustainability curriculum, Green Team projects, and all environmental sustainability initiatives.**

<b>Progress</b>	<p><b>Equitable Instruction</b> - AAPS has developed: <a href="#">The Framework for Equitable Instruction 3.0</a></p> <p><b>Environmental Education</b> - District-wide environmental learning opportunities are provided every year to every school</p> <p><b>Advocacy</b> - Some environmental advocacy and action in existing curriculum and student groups</p> <p><b>First Nations peoples</b> - Indigenous Land Acknowledgements and inclusion of indigenous knowledge in some classroom curriculum, interpretive signage at the Freeman Environmental Education Center</p>
<b>Opportunities and Challenges</b>	<p><b>Opportunities:</b></p> <ul style="list-style-type: none"> <li>• Through intentional integration of DEI and Environmental Justice into the ES curriculum, we can ensure that these essential elements of sustainability and climate change education are appropriately elevated.</li> <li>• District resources and best practices can be allocated to place-based stewardship activities on school campuses</li> </ul> <p><b>Challenges:</b></p> <ul style="list-style-type: none"> <li>• Whenever possible, there should not be additional expenses paid by students or families for ES participation. If expenses cannot be avoided, then need-based scholarships should be made available.</li> </ul>
<b>Next Steps</b>	<ul style="list-style-type: none"> <li>• Develop an equitable and inclusive definition of environmental sustainability.</li> <li>• Obtain and develop instructional resources to integrate diversity, equity and inclusion (DEI) principles and environmental justice concepts into sustainability curriculum, Green Team projects, and all environmental sustainability initiatives</li> <li>• Ensure that all schools have the necessary resources to implement ES lessons</li> <li>• Honor indigenous knowledge and history related to our local ecosystem</li> </ul>
<b>Reporting and Metrics</b>	<ul style="list-style-type: none"> <li>• Beginning in the 2023/24 school year, as part of the ES curriculum mapping, AAPS will develop a baseline understanding of Environmental Justice and DEI in the existing AAPS curriculum offerings.</li> <li>• As new curricula are developed, Environmental Justice and aspects of diversity, equity and/or inclusion will be intentionally included</li> <li>• By 2030, ES curricula will include specific reference to and consideration of Environmental Justice and aspects of diversity, equity and/or inclusion.</li> </ul>
<b>Responsible Department(s)</b>	Responsible: Teaching and Learning Supporting: Environmental Sustainability
<b>Collaborators</b>	Teacher Learning Networks, district curriculum coordinators, employee unions, local and national non-profits, Ann Arbor community

## 2.13 Career Technical Education

**GOAL: Offer a Natural Resources and Conservation Career and Technical Education (CTE) pathway at the Freeman Environmental Education Center to prepare students for post-secondary environmental careers.**

<b>Progress</b>	<b>Site Visits and Internal Discussions</b> - Preliminary discussions have been held, and the CTE/PLTW Director, Director of Capital Programs and Environmental Education instructors have toured Lenawee Center for a Sustainable Future to learn about comparable local program
<b>Opportunities and Challenges</b>	<p><b>Opportunities:</b></p> <ul style="list-style-type: none"> <li>• The district can consider creating a consortium course with nearby districts in order to pool resources</li> <li>• There is sufficient student interest to fill at least one section of the course each year</li> <li>• Explore the alignment of the course through the IB Career and/or Diploma program</li> <li>• Students in the course can be positioned as leaders within the district by taking on responsibility for guiding some Green Team activities and other campus projects</li> <li>• The district has available space at the Freeman Environmental Education Center to potentially house the course offering</li> </ul> <p><b>Challenges:</b></p> <ul style="list-style-type: none"> <li>• It may be difficult to find an occupationally certified teacher for the course, which is required in order to access state funding</li> <li>• It will take significant staff and financial resources to develop the offering, including physical improvements to the Freeman Environmental Education Center</li> </ul>
<b>Next Steps</b>	<ul style="list-style-type: none"> <li>• Visit additional existing programs that utilize the same state-approved funding sources during the 2023-2024 school year</li> <li>• Work with the CTE Department to design a one- or two-year curriculum, likely based on the State of MI 03.0000 'Natural Resources and Conservation' approved program within the 'Agriculture, Food and Natural Resources' <a href="#">career cluster</a></li> <li>• Explore connections to existing HS International Baccalaureate (IB) Career and/or Diploma program</li> </ul>
<b>Reporting and Metrics</b>	<ul style="list-style-type: none"> <li>• Track the development of the new course offering</li> <li>• Once available, annually track the number of students enrolling in and successfully completing the course.</li> <li>• Qualitative feedback collected through student surveys administered at the end of the course.</li> </ul>
<b>Responsible Department(s)</b>	Responsible: Career Technical Education, Teaching and Learning Supporting: Environmental Sustainability
<b>Collaborators</b>	Other school districts, State of Michigan, local non-profits

## 2.2 Enrichment Learning

### 2.21 Green Teams

**GOAL: Develop and maintain centrally supported Green Teams at all AAPS schools to provide ongoing opportunities for students to develop environmental and climate literacy, leadership, advocacy, and stewardship skills.**

<b>Progress</b>	<p><b>Existing Green Teams</b> - AAPS has active Green Teams and Environmental Clubs at many schools and are sometimes supported by school-based partnerships</p> <p><b>Youth Council</b> - <a href="#">Freeman Environmental Youth Council</a> provides opportunities for high school students</p>
<b>Opportunities and Challenges</b>	<p><b>Opportunities:</b></p> <ul style="list-style-type: none"> <li>● Green Teams can empower schools and stakeholders to feel a part of the sustainability plan at the district and build a culture of belonging for students, staff, and community members</li> <li>● Freeman Environmental Youth Council members can help champion district sustainability efforts and coordinate with the Green Team at their home schools.</li> </ul> <p><b>Challenges:</b></p> <ul style="list-style-type: none"> <li>● Additional staff and/or contractor resources are needed for implementation at the district level</li> <li>● Stipends may be needed for champion teachers leading Green Teams</li> <li>● Mini-grants for Green Team activities may be needed to enhance efficacy</li> </ul>
<b>Next Steps</b>	<ul style="list-style-type: none"> <li>● In 2023/24, assess existing Green Teams and other environmental clubs across the district</li> <li>● Develop a plan so that by 2025, Green Teams will be active at all AAPS locations and are supported by central district infrastructure and resources to enhance their environmental sustainability work in providing ongoing school-based opportunities for students to develop environmental and climate literacy, leadership, advocacy and stewardship skills.</li> <li>● Host an annual celebration to share Green Team achievements and best practices.</li> <li>● Consider developing a method for high school students to be recognized for volunteer service and possibly receive academic credit</li> <li>● Explore opportunities for service projects to integrate with IB programming</li> </ul>
<b>Reporting and Metrics</b>	Report annually to the community regarding the number of active Green Teams and their membership in the district, their active initiatives and their impact and effectiveness
<b>Responsible Department(s)</b>	Responsible: Community Division, Teaching and Learning Supporting: Environmental Sustainability
<b>Collaborators</b>	Teacher Learning Networks, AAEA, local non-profits, parent and community volunteers, A2 Zero Ambassadors

## 2.22 School Gardens and Grounds

**GOAL: Develop systems for well supported school gardens and grounds that integrate curriculum, have a summer support system, occasionally provide produce for cafeterias and support a culture of belonging for students, staff and volunteers.**

<p><b>Progress</b></p>	<p><b>Existing Gardens</b> - AAPS has school gardens at many school campuses. Gardens are typically run by parent volunteers and volunteer teachers</p> <p><b>Existing Outdoor Learning Environments</b> - Many outdoor learning environments already exist at AAPS campuses, including some dedicated by the Board of Education. Many of these natural areas have community groups and PTOs that contribute to their management</p> <p><b>Tree Planting</b> - AAPS has planted over 500 native hardwood trees in the last several years</p>
<p><b>Opportunities and Challenges</b></p>	<p><b>Opportunities:</b></p> <ul style="list-style-type: none"> <li>● Gardening is a very tangible way for students, staff and volunteers to feel a connection and belonging at AAPS and learn firsthand science concepts</li> <li>● The Ann Arbor community is highly engaged in local food production and enhancing and developing community partnerships could provide resources, including funding and access to volunteers</li> <li>● City of Ann Arbor A2 Zero Ambassadors program offers opportunities to support Green Teams</li> <li>● Demonstration gardens and ecological restoration efforts at the Freeman EE Center can provide hands-on learning opportunities for district-wide professional development and student and community learning</li> </ul> <p><b>Challenges:</b></p> <ul style="list-style-type: none"> <li>● School gardens that rely solely on volunteers have challenges including lack of organization, lack of volunteers, and long-term viability issues</li> <li>● A dedicated full-time district staff position is needed to develop and organize the program</li> <li>● A system will need to be developed to maintain gardens over the summer</li> <li>● Curriculum will need to be selected/developed and supported with annual professional development</li> <li>● Funding will be needed for supplies and other expenses</li> </ul>
<p><b>Next Steps</b></p>	<ul style="list-style-type: none"> <li>● In 2023, conduct a baseline assessment of existing school gardens and other outdoor learning infrastructure and develop pilot programs for implementation in the 2023-2024 school year.</li> <li>● By 2025, develop and enhance gardens at all schools and all levels that are supported by central district resources, have paid on-site staff, offer curriculum integration with appropriate professional development, and occasionally supply produce to the cafeterias</li> <li>● Support a culture of belonging by creating opportunities for staff students and volunteers to feel a part of the school garden and participate in campus improvement projects.</li> <li>● Annually host a celebratory event to share success and learn from others</li> </ul>
<p><b>Reporting and Metrics</b></p>	<p>Report annually to the community regarding the quality and quantity of school gardens, active initiatives, and celebrations of their success</p>



<b>Responsible Department(s)</b>	Responsible: Community Division, Teaching and Learning Supporting: Environmental Sustainability
<b>Collaborators</b>	Teacher Learning Networks, district curriculum coordinators, local non-profits, parent and community volunteers

## 3.0 Healthy and Sustainable School Campuses

### 3.1 Indoor Environments

**GOAL: Maintain high quality indoor environments with appropriate lighting, thermal, acoustical and visual environments conducive for health, well-being, teaching and learning**

<p><b>Progress</b></p>	<p><b>Ventilation</b> - In response to the COVID pandemic, AAPS has improved Indoor Air Quality (IAQ) by increasing air filter density for most ventilation systems to MERV-13 and replacing the filters 3 times per year. Major renovation and construction projects at AAPS include enhancing dedicated outdoor air ventilation systems and MERV-13 filters</p> <p><b>Water Quality</b> - Significant work has been done regarding water quality – see Section 1.21 Water Quality</p> <p><b>Thermal Environment</b> - AAPS has committed to providing significant thermal comfort enhancements by installing air-conditioning in all schools by 2025</p> <p><b>Luminous Environment</b> - Lighting is being upgraded to LED and includes dimming capabilities for enhanced user control and experience. New window blinds are being installed as part of the capital improvement program. New construction and renovation projects emphasize the importance of daylight and views to the outside</p>
<p><b>Opportunities and Challenges</b></p>	<p><b>Opportunities:</b></p> <ul style="list-style-type: none"> <li>• Healthy indoor environments have been shown to increase cognitive function, reduce off-task behavior and enhance student and staff well-being</li> <li>• The bond and sinking fund provide financial resources to continue to improve indoor environments</li> </ul> <p><b>Challenges:</b></p> <ul style="list-style-type: none"> <li>• The average AAPS school is 66 years old. Older buildings can be challenging to improve due to poor insulation, structural limitations, aged mechanical systems and other constraints</li> </ul>
<p><b>Next Steps</b></p>	<ul style="list-style-type: none"> <li>• Ensure healthy indoor environments are included in major construction projects – see Sections 2.1 Owner’s Project Requirements and 2.2 Green Building Rating Systems</li> <li>• Continue air conditioning and lighting upgrades to improve indoor environments</li> <li>• Work with schools to install and maintain indoor and outdoor biophilic (natural) elements.</li> </ul>
<p><b>Reporting and Metrics</b></p>	<p>Report annually to the community regarding periodic indoor environmental assessments and specifications in the Owner's Project Requirements (OPR) for thermal, acoustical and luminous and other indoor environmental requirements.</p>
<p><b>Responsible Department(s)</b></p>	<p>Responsible: Physical Properties and Capital Programs Supporting: Environmental Sustainability</p>
<p><b>Collaborators</b></p>	<p>Architects, engineers, construction managers</p>

### 3.2 Outdoor Environments

**GOAL: Maintain and enhance outdoor environments on AAPS campuses to provide for outdoor formal and informal learning opportunities, including: structured and unstructured play, sports and recreation, leveraging natural areas for education, school gardens, stormwater management, carbon sequestration and ecological restoration. Utilize sustainable landscape management practices to minimize harm to the environment and increase resilience and ecological diversity.**

<p><b>Progress</b></p>	<p><b>Natural Areas</b> - AAPS maintains numerous natural areas throughout the district that offer walking trails, connections to nature, educational opportunities, support local biodiversity and sequester carbon</p> <p><b>Carbon Sequestration</b> - Current annual carbon sequestration from AAPS greenspace is estimated to be approximately 2,200 tons of CO2 annually</p> <p><b>Natural Playgrounds</b> - Two natural playgrounds have been installed at Ann Arbor Open and Westerman Preschool</p> <p><b>Lawn Chemicals</b> - AAPS does not use lawn pesticides and has prohibited the use of RoundUp and similar toxic lawn care products for routine maintenance. Weeds are controlled at the district with a non-toxic mixture of salt and vinegar</p> <p><b>Irrigation</b> - Irrigation is only used for high school athletics. No other areas are irrigated at AAPS – see Section 1.23 Stormwater Management</p> <p><b>Tree Planting</b> - AAPS has recently planted over 500 native hardwood trees across the district</p> <p><b>No Mow</b> - AAPS has piloted a No Mow strategy at the Freeman Environmental Education Center, allowing approximately 15 acres of previously mowed areas to grow and be mowed only once every 2 years</p> <p><b>Artificial Turf Fields</b> – AAPS installed an organic infill in the replacement of the artificial turf fields at the three comprehensive high schools, eliminating the toxic chemicals and pollution associated with thousands of pounds of crumb rubber</p>
<p><b>Opportunities and Challenges</b></p>	<p><b>Opportunities:</b></p> <ul style="list-style-type: none"> <li>● Local non-profits, institutions and the AAPS community are deeply committed to healthy and sustainable outdoor environments</li> <li>● Many natural areas at AAPS are maintained by school-based stewardship groups</li> <li>● AAPS has many wooded areas with dead and dying trees that could be harvested for lumber to use in new construction and renovation projects</li> </ul> <p><b>Challenges:</b></p> <ul style="list-style-type: none"> <li>● Weed control using non-toxic products requires additional time and funding</li> <li>● Establishing new plants can be challenging without irrigation</li> <li>● Strong partnerships need to be maintained with stewardship groups that maintain AAPS natural areas. AAPS general fund resources need to be allocated for gaps in maintenance</li> </ul>
<p><b>Next Steps</b></p>	<ul style="list-style-type: none"> <li>● In the spring of 2023 and fall of 2024, the AAPS will conduct an inventory and evaluation of all outdoor learning environments at AAPS campuses to inform enhancements to formal and informal outdoor learning opportunities and sustainable land management practices. The evaluation process will include natural areas and trails, opportunities for tree plantings, expansion of no-mow practices, quantifying carbon sequestration, and others.</li> <li>● Ensure construction and maintenance projects enhance sustainable outdoor environments, including:</li> </ul>

	<ul style="list-style-type: none"> <li>○ amenities for structured and unstructured natural play</li> <li>○ sports and recreational opportunities</li> <li>○ natural areas and ecological restoration</li> <li>○ stormwater management</li> <li>○ carbon sequestration</li> <li>○ support for community resilience</li> </ul>
<b>Reporting and Metrics</b>	Report annually to the community regarding the quantity and quality of: amenities for structured and unstructured natural play, sports and recreational opportunities, natural areas and ecological restoration, stormwater management, carbon sequestration, support for community resilience, and the number of active school-based land stewardship groups
<b>Responsible Department(s)</b>	Responsible: Physical Properties and Capital Programs, Teaching and Learning Supporting: Environmental Sustainability
<b>Collaborators</b>	Lawn maintenance and landscaping contractors, landscape architects, local institutions and non-profits and school-based natural area stewardship groups

### 3.3 Food Systems

***GOAL: Contribute to local sustainable food systems that provide high nutritional value, source locally, promote healthy farm practices and reduce food waste.***

<b>Progress</b>	<p><b>Local Food</b> - AAPS receives grant funding from the State of Michigan to increase local food content in school meals and had reached approximately 10% local content</p> <p><b>Low Carbon Food Options</b> - Vegetarian and vegan options are available for all students</p> <p><b>Farm to School Month</b> - AAPS has historically celebrated Farm to School month each year with school-based activities including local food tasting, healthy food lessons and vegan meals</p> <p><b>Fruits and Vegetables</b> -In recent years, AAPS has expanded the availability and diversity of salad bar options</p> <p><b>Scratch Cooking</b> - Scratch cooking is increasing at Middle and High schools</p>
<b>Opportunities and Challenges</b>	<p><b>Opportunities:</b></p> <ul style="list-style-type: none"> <li>● The Ann Arbor community has a number of local food production enterprises that could supply AAPS cafeterias</li> <li>● The University of Michigan and St Joseph's Hospital are regional leaders in sustainable food systems</li> <li>● AAPS's current food services contractor has experience in helping school districts enhance their sustainable food systems</li> </ul> <p><b>Challenges:</b></p> <ul style="list-style-type: none"> <li>● School lunch funding is highly regulated and funding is limited</li> <li>● School lunch food content and recipes are highly regulated</li> <li>● Many school kitchens and cafeterias do not have the required physical space available for on-site cooking, composting facilities, share tables, and other food systems improvements</li> <li>● Local farms have limited production and can be challenged in providing the quantities of produce the district requires</li> </ul>

	<ul style="list-style-type: none"> <li>● Weather can negatively impact locally contracted food supplies</li> <li>● Increasing composting will require additional square footage, staff, training and funding</li> </ul>
<b>Next Steps</b>	<p>In the 2023/24 school year, conduct a baseline assessment to evaluate:</p> <ul style="list-style-type: none"> <li>● local/regional food content</li> <li>● organic food content</li> <li>● amount of scratch cooking</li> <li>● cafeteria and kitchen waste management practices</li> </ul> <p>Using information gathered in the baseline assessment, develop a plan for phased improvements in these and other areas:</p> <ul style="list-style-type: none"> <li>● supporting local sustainable food systems that provide high nutritional value, source locally, promote healthy farm practices and reduce food waste.</li> <li>● setting targets for local/regional and organic purchasing and considering strategies such as pre-purchase agreements with local farmers, AAPS food production, leveraging supplier contracts to increase local food content and others</li> <li>● providing appropriate allocation of physical space for on-site food preparation in school kitchens and appropriate space in cafeterias for recycling, composting and food share areas.</li> </ul>
<b>Reporting and Metrics</b>	Report annually to the community regarding the quality of food services, including the availability of on-site food preparation, composting, recycling, local food purchasing and organic food purchasing.
<b>Responsible Department(s)</b>	Responsible: Finance and Operations, Physical Properties and Capital Programs Supporting: Teaching and Learning, Environmental Sustainability
<b>Collaborators</b>	Food services contractor, local institutions, local farmers, non-profits



## Community Partnerships

AAPS recognizes that to meet the many challenges of the climate crisis will require collaboration in our community with other institutions, nonprofits and the business community. AAPS has existing partnerships and collaborations in local environmental sustainability, including A2Zero, the Ann Arbor 2030 District, Huron River Watershed Council, the Ecology Center and others.

[AAPS Community Partnerships Office](#) maintains a list that includes many district-level and school-based partnerships. The AAPS Community Partnerships office offers a great resource for understanding and refining the process for enhancing existing partnerships, developing new partnerships, and creating a framework to assess partnerships, celebrate success and share best practices

The district will continue to engage and collaborate with local institutions, nonprofits and business partners to enhance and create county-wide carbon neutrality and environmental sustainability solutions.

## Metrics and Reporting

### Metrics

AAPS recognizes the importance of establishing and maintaining metrics to track progress in meeting the goals outlined in the AAPS Environmental Sustainability Framework.

AAPS has been tracking electricity and natural gas using Energy Star Portfolio Manager since 2001. Bus fuel usage and mileage is reported to the State of Michigan annually. Additionally, metrics for renewable energy generation, carbon sequestration, water quality, and landfill diversion have been established. Next steps include:

**Enhance current metrics and develop new metrics regarding all environmental sustainability initiatives, including:**

- Energy (Section 1.1)
- Water (Section 1.2)
- Waste Reduction, Reuse, Recycling, and Composting (Section 1.3)
- Transportation (Section 1.4)
- Scope 3 Emissions (Section 1.5)
- New Construction and Renovation (Section 1.6)
- Core Academics (Section 2.1)
- Enrichment Learning (Section 2.2)
- Indoor Environmental Quality (Section 3.1)
- Outdoor Environmental Quality (Section 3.2)
- Food Systems (Section 3.3)

## Reporting

**Develop systems to report the district's carbon footprint in a Greenhouse Gas Inventory, including:**

- Scope 1 Emissions:
  - Natural gas consumption, district-wide and by school
  - Bus fuel consumption
  - Fleet vehicle fuel consumption
  - Carbon sequestration from the district's greenspaces
  
- Scope 2 Emissions:
  - Purchased electricity, district-wide and by school
  - On-site renewable energy generation, district-wide and by school
  - Municipal water usage, district-wide and by school
  
- Scope 3 Emissions:
  - Waste, re-use, recycling and composting
  - Contracted services, including: food service, custodial services, lawn care, snow removal and others
  - Purchasing
  - Employee commuting
  - Business travel
  - Investments
  - Other areas

Since 2018, AAPS has provided an annual report to the Board of Education and community regarding environmental sustainability which are available online at these links: [2018](#), [2019](#), [2020](#), [2021](#), [2022](#).

The district will continue to provide an annual environmental sustainability update and include reporting on as many metrics as possible, while also celebrating the achievements of the district, staff and students in supporting environmental sustainability at the Ann Arbor Public Schools.

## Appendix A

### Board of Education Policy 8000: Environmental Sustainability

#### **AAPS Board Policy 8000: Environmental Sustainability – Adopted 12/12/2018**

The Ann Arbor Public Schools recognizes that:

- Climate change is real, increasing and caused by human activity; and
- the Ann Arbor community is committed to practices that support a healthy environment for present and future generations; and
- The district has a responsibility to help prepare current and future generations to respond to climate change through the reduction of harmful human activities, the promotion of human activities that restore the environment and the development of strategies to adapt to climate change.
- The district will support the prioritization of:
  - Environmental sustainability education that prepares present and future generations to become thoughtful stewards of the environment; and
  - developing student leaders prepared to succeed in an uncertain climate change future; and
  - maintaining and operating district buildings and grounds that reduce the environmental impact of human activities, promote the restoration of the environment and adapt to climate change; and
  - building and enhancing partnerships that support the Ann Arbor community's environmental principles.
- The Superintendent and/or designee(s) will report annually to the Board of Education on activities related to this policy.

## Appendix B

### Summary of the Work of the Environmental Sustainability Taskforce

#### **CHARGE**

The AAPS Environmental Sustainability (ES) Taskforce was authorized by the Board of Education in 2021 to meet for 1 year with the following charge:

***The focus of the AAPS Environmental Sustainability Task Force is to advise the AAPS Board of Education on a formal sustainability plan that will support achieving the goal of environmental sustainability, guide adjustments in operations and advise on AAPS capital improvement planning and other district endeavors related to sustainability.***

#### **AUTHORIZING POLICY**

The ES Taskforce is authorized and guided by the following district policies:

[8000 - Environmental Sustainability](#)

[1460 - Auxiliary Committees/Task Force](#)

[2420 - Parent, Student and Community Advisory Committees](#)

#### **MEMBERSHIP**

Members of the Taskforce were selected from an open call for applicants that received 73 applications.

MEMBERS	
Coert Ambrosino	AAPS Environmental Education Teacher
Emily Canosa	University of Michigan; College for Creative Studies
Jan Culbertson	Ann Arbor 2030 District - Scio Township Planning Commission
Dan Ezekiel	Retired AAPS Teacher
Steven Giardini	University of Michigan - Michigan Dining
Virginia He	AAPS HS Student
Kimberly Hill-Edwards	Washtenaw Community College
Courtney Kiley	AAPS HS Science Teacher
Khaled Mahmood	Tetra Tech - Environmental Consulting Company
Kate McCabe	Self-employed small business owner
Derrick Miller	Community Action Network
Michael Mychaliska	AAPS HS Student
David Szczygiel	AAPS Environmental Education Teacher
Jenni Wilkening	AAPS Teacher - Pioneer HS
Fang Wu	City of Ann Arbor - OSI
Ha Young Kwon	Psychiatrist and Social Worker

SCHOOL BOARD REPRESENTATIVES	
<b>Bryan Johnson</b>	Trustee, Performance Committee Chair
<b>Ernesto Querijero</b>	Trustee, Finance Committee Chair
ADMINISTRATIVE LIAISONS	
<b>Jason Bing</b>	Director, Capital Programs
<b>Emile Lauzzana</b>	Executive Director, Environmental Sustainability
<b>Jill Minnick</b>	Assistant Superintendent, Finance and Operations
<b>Jeanice Swift</b>	Superintendent

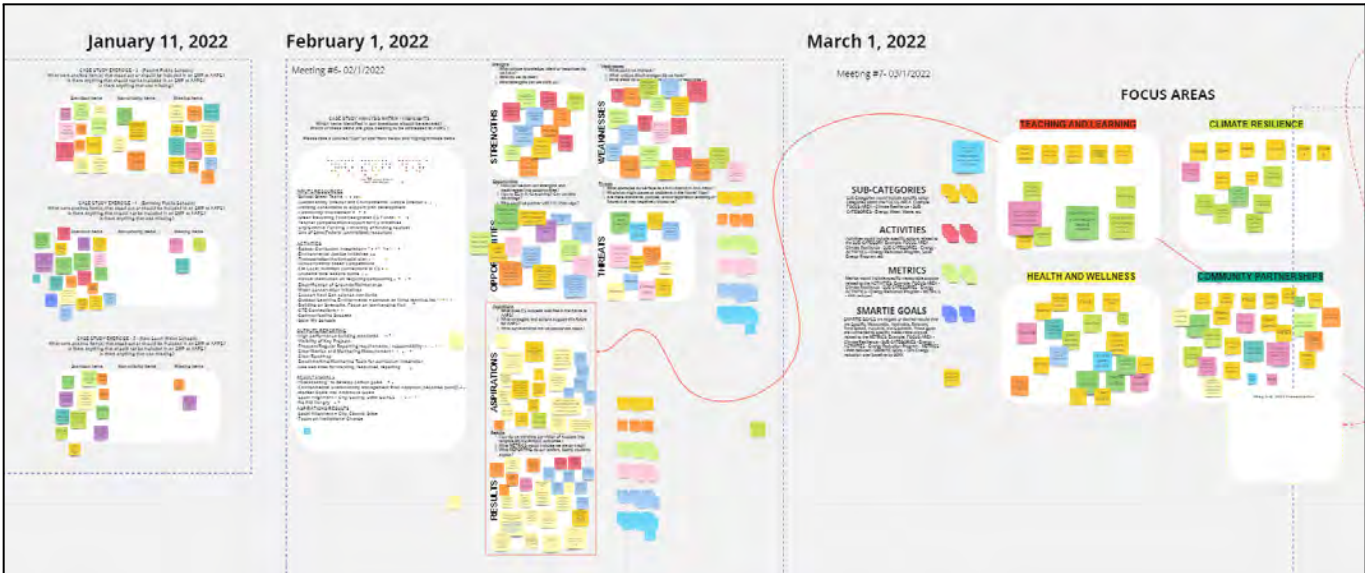
**ACTIVITIES**

A summary of the work of the ES Taskforce up to April 2022 was presented to the Board of Education on April 27, 2022, and is available at this link and begins at minute 43:

<https://www.youtube.com/watch?v=RRoNDIyJwF8>

The Taskforce subsequently met monthly in May, June, September, October and November of 2022. In June, July and August, Working Group meetings were held on specific subject areas.

The Working Groups developed SMARTIE Goals for many areas that informed the development of the ES Framework. SMARTIE Goals are Specific, Measurable, Attainable, Relevant, Time-Based, Inclusive and Equitable.



- Taskforce meeting notes



## Appendix C

### Survey of Other School Districts' and Local Institutions' Sustainability Plans

<i>School District / Organization</i>	<i>Carbon and Energy Goals</i>	<i>Waste Goals</i>	<i>Water Goals</i>	<i>Trans. + Busing Goals</i>	<i>Curriculum and Education Goals</i>	<i>Enviro. Justice Included?</i>	<i>Garden Program?</i>	<i>Sustainable Design Guidelines?</i>
<b>Baltimore</b>	NA – in development	NA – focus on implementing recycling	NA - Focus on Water Quality (Lead)	NA	Integrate sustainability in core curriculum across disciplines	Yes	Yes	Yes
<b>Boston</b>	Carbon Neutral by 2050	80% Diversion by 2030	NA - Focus on Water Quality (Lead)	Focus on propane buses	Some curriculum supported by the district	Yes	Yes	NA
<b>Berkeley</b>	NA – track and report w/ Portfolio Manager, but no goals	NA – active program but no goals	NA - Focus on Water Quality (Lead)	~25% electric (8 buses)	Teacher Leader Stipends – climate literacy goal	No	Yes	NA
<b>Chicago</b>	45% GHG reduction by 2030 and Carbon Neutral by 2050	80% Diversion by 2030	Strategies, but no targets	Strategies, but no targets	Curriculum Networks	No	Yes	Yes
<b>New York</b>	80% GHG emissions reduction by 2050	100% Diversion by 2030	5% reduction (timeframe unclear)	100% electric by 2035 (state mandate)	School mini grants available – no mention of curriculum	Yes	Yes – goals 50% of schools	Yes
<b>Los Angeles</b>	50% GHG reduction by 2030	70% diversion by 2020 (2005 goal) – actual 2022 25% diversion	20% reduction by 2030	Going electric – no published targets	Climate literacy board resolution and Taskforce (2022)	Yes	Yes	Yes
<b>San Francisco</b>	Reduce energy use by 50% and eliminate NG by 2040 and generate 100% of the district's power by 2050	85% diversion by 2025 - <a href="#">LINK</a> to metrics (city supported collection of compost)	50% water use reduction and 25% stormwater reduction by 2030	Zero emission fleet by 2030 plus solo car trip reduction goals	Climate literacy and social/environmental justice focus in science	Yes	Yes	Yes
<b>St. Paul</b>	45% GHG reduction by 2030	60% diversion rate by 2020 (2015 goal – no updates available)	NA - Focus on Water Quality (Lead)	Looking to pilot electric with new federal funds	Yes, with partner orgs at some schools – environmental literacy focus	No	Yes	NA

<b>Seattle</b>	Carbon Positive by 2040 – 100% clean electricity by 2027	Zero waste by 2030	50% for new buildings and 30% for existing by 2040	100% electric by 2040	Integrate sustainability in core curriculum across disciplines	Yes	Yes	Yes
<b>City of Ann Arbor</b>	Carbon Neutral by 2030 w/ purchased offsets as needed (projected at 13%). By 2030 100% of city buildings, 30% of single family homes and 25% of rentals will be all electric.	6,000 ton reduction (goal to move towards circular economy and update Scope 3 emissions calculations)	10% business sector reduction by 2025. No other reduction targets	By 2030, 100% of buses and 50% of all vehicles miles traveled are in electric vehicles and promote walking, biking, and transit.	Programs such as A2ZERO Ambassadors, home decarbonization, and green business challenge, among others	Low-income weatherization program and each of the 44 actions includes an equity evaluation	Support for stormwater retention and local food generation	Building Codes and regulations
<b>Washtenaw County</b>	Carbon neutral County operations by 2030, county-wide by 2035	45% diversion of waste by 2030 and 60% by 2050	No reduction targets	Electrify Light-duty Vehicles by 2030. Explore Opportunities to Electrify Heavy-Duty Vehicles by 2035	NA	Low-income weatherization programs	NA	Building Codes and regulations
<b>University of Michigan</b>	By 2025 — eliminate emissions from purchased power <b>(Scope 2)</b> . By 2040 — eliminate direct emissions <b>(Scope 1)</b> . By 2025, establish goals for indirect emission. <b>(Scope 3)</b> .	Current diversion rate: 42%. Goal - reduce waste to landfill by 40% by 2025, currently at 13% reduction from 2006 baseline.	No Stated reduction goals, included in the construction program.	Goal - 30% reduction in vehicle emissions by 2025	Significant, too detailed to summarize here	Significant, too detailed to summarize here	20% local food purchasing by 2025. Currently at 19%.	Yes
<b>Ann Arbor Public Schools</b>	By 2024 — eliminate emissions from purchased power <b>(Scope 2)</b> . By 2035 — eliminate direct emissions <b>(Scope 1)</b> . In the 2023-2024 school year, develop purchasing and construction guidelines that reflect the district's commitments to reducing Scope 3 emissions and begin piloting the new guidelines in 2024. <b>(Scope 3)</b>	Current diversion rate: 29%. Increase practice of reducing, reusing, recycling, and composting through recycling, education, infrastructure, and composting programs.	AAPS will ensure drinking water is safe and readily available; reduce the use of water; and reduce and slow the flow of water from AAPS campuses to area waterways and increase the filtration of stormwater	Decarbonize buses and fleet vehicles by 2035, increase use of non-motorized transportation, and support the use of public transportation	Build upon existing environmental curriculum to implement sustainability learning opportunities across all grade levels and disciplines. Provide relevant professional development to staff to inform and enrich instruction.	Integrate diversity, equity, and inclusion (DEI) principles and environmental justice concepts into sustainability curriculum, Green Team projects, and all environmental sustainability initiatives.	Develop systems for well supported school gardens and grounds that integrate curriculum; have summer support systems; provide produce for cafeterias and support a culture of belonging for all.	Yes
<b>School District / Organization</b>	<b>Carbon and Energy Goals</b>	<b>Waste Goals</b>	<b>Water Goals</b>	<b>Trans. + Busing Goals</b>	<b>Curriculum and Education Goals</b>	<b>Enviro. Justice Included?</b>	<b>Garden Program?</b>	<b>Sustainable Design Guidelines?</b>

NA = Specific goal or initiative Not Available or published, but strategies may be included

**Baltimore City Public Schools, MD:**

<https://www.baltimorecityschools.org/sites/default/files/2019-05/sustainability-sustainabilityplan-2019.pdf>

[https://go.boarddocs.com/mabe/bcpss/Board.nsf/files/CFR2VC03FFB8/\\$file/Board%20Policy%20ADG%20%20\(revised%205-24-2022\).pdf](https://go.boarddocs.com/mabe/bcpss/Board.nsf/files/CFR2VC03FFB8/$file/Board%20Policy%20ADG%20%20(revised%205-24-2022).pdf)

**Boston Public Schools, MA:**

<https://bostongreenschools.org/>

**Berkeley Unified School District, CA:**

<https://www.berkeleyschools.net/sustainability/>

**Chicago Public Schools, IL:**

<https://www.cps.edu/globalassets/cps-pages/initiatives/energy-and-sustainability/cps-climate-action-plan-english-.pdf>

**New York City Department of Education, NY:**

<https://www.schools.nyc.gov/school-life/space-and-facilities/sustainability>

**Poudre Public Schools, CO:**

[https://www.psdschools.org/sites/default/files/PSD/facility\\_services/Sustainability/SustainabilityManagementPlan2017Final.pdf](https://www.psdschools.org/sites/default/files/PSD/facility_services/Sustainability/SustainabilityManagementPlan2017Final.pdf)

**Los Angeles Unified School District, CA:**

<https://learninggreen.laschools.org/>

**San Francisco Unified School District, CA:**

<https://www.sfusd.edu/departments/sustainability#:~:text=We%20are%20working%20to%20eliminate.connect%20with%20nature%20every%20day>

**St. Paul Public Schools, MN:**

<https://www.spps.org/sustainability>

**Seattle Public Schools, WA:**

<https://www.seattleschools.org/wp-content/uploads/2021/07/sustainability-vision-goals-ADA.pdf>

**City of Ann Arbor**

[https://www.a2gov.org/departments/sustainability/Documents/A2Zero%20Climate%20Action%20Plan%20\\_4.0.pdf](https://www.a2gov.org/departments/sustainability/Documents/A2Zero%20Climate%20Action%20Plan%20_4.0.pdf)

**Washtenaw County (draft)**

[https://res.cloudinary.com/courbanize-production/image/upload/v1/information\\_plans/usthmg3w/wemxznliub8a](https://res.cloudinary.com/courbanize-production/image/upload/v1/information_plans/usthmg3w/wemxznliub8a)

**University of Michigan**

<https://planetblue.umich.edu/campus/goals/carbonneutrality/>

## Appendix D

### Job Description - Executive Director, Environmental Sustainability

**POSITION TITLE:** Executive Director - Environmental Sustainability

**FTE:** 1.00

**REPORTING RELATIONSHIP:** Superintendent of Schools

#### POSITION SUMMARY:

Under the direction of Superintendent, directs the development and implementation of a new Ann Arbor Public Schools Environmental Sustainability Management Plan (ESMP) in coordination with the district's Environmental Sustainability Taskforce and in alignment with Board of Education Policy 8000: Environmental Sustainability. Achieves fulfillment and ongoing compliance of the ESMP with aligned implementation and evaluation of sustainability initiatives, education, programs, operations and capital improvements.

#### Responsibilities include:

- conduct a baseline assessment study of current district-level and school-level sustainability initiatives in all areas of academic program delivery and operations;
- develop initial development of and annual updates to a district greenhouse gas inventory, including energy, water, waste, food, transportation, purchased materials, and other areas;
- conduct whole building life cycle assessments and/or applicable sustainability benchmarking reviews of AAPS facilities to understand energy use and environmental impact;
- develop recommendations for phased improvements in all areas; develop and present recommendations to the Board of Education for an Environmental Sustainability Management Plan (ESMP), or roadmap that includes potential investments required, timelines, benefits, and challenges of potential options to reach a goal of carbon neutrality in the AAPS;
- assist in developing connections between district-level operational environmental sustainability initiatives and the core teaching and learning mission of the district; promote environmental justice and equity within the AAPS;
- facilitate and support the work of the Environmental Sustainability Taskforce and serve as a district representative in the community on issues of environmental sustainability;
- manages the collection and reporting of sustainability metrics to AAPS staff and students, the Board of Education, Superintendent, as well as the community at large;
- direct the implementation of the ESMP and reports periodically and no less than annually to the Superintendent and Board of Education on progress.

#### MINIMUM QUALIFICATIONS:

The following is a list of qualifications for the position, any one of which may be waived by the Board of Education in exercising its prerogative to determine qualifications:

1. Bachelor's Degree in a field related to environmental sustainability and organizational change management, or a minimum of two years of college with additional and equivalent certification in the field. Master's Degree preferred.
2. Minimum of 5 (five) years management level experience implementing environmental sustainability initiatives for institutions and/or business organizations.

3. Demonstration of progressively more responsibility and expansive experience.
4. Excellent interpersonal skills including verbal and written communication skills.
5. Experience with K-12 schools, municipalities, and/or state agencies is strongly desired.
6. Experience with budgets, financial tracking and reporting.
7. Demonstration of a professional network in environmental sustainability and a track record of continuous professional development in the field.
8. Self-motivated and self-directed.

### **DESIRED QUALIFICATIONS:**

Knowledge of:

- greenhouse gas inventories, life cycle assessments, sustainability frameworks and benchmarking, environmental product declarations, and other sustainability related analysis tools;
- climate and carbon research and other key environmental sustainability issues with an emphasis on how they can be integrated into public school environments to create measurable value;
- experience with delivery and development of K-12 curriculum;
- principles of management, organization and administrative analysis;
- organizational change management;
- taskforce and/or committee facilitation and associated deliverables;
- general terms, procedures, and practices used in public school/institutional transportation systems, food systems, purchasing, solid waste systems, energy and water use;
- recordkeeping, budgeting, financial projection tools including simple payback return on investment, net present value, and other financial analysis tools;
- general terms, procedures, and practices used in planning, design, construction, operations and maintenance of school district facilities and grounds;
- effective public relations and communications techniques.

Ability to:

- perform a wide range of professional, administrative, advocacy, and liaison duties involved in the organizational change management and environmental sustainability;
- work effectively with district staff and representatives of a variety of public agencies, community groups, and private industry;
- encourage a team and staff; able to mentor and lead;
- able to multitask, prioritize, and manage time efficiently;
- communicate effectively with a wide range of individuals both orally and in writing;
- prepare written analysis and recommendations for tracking, measuring and maintaining sustainability goals.

### **JOB RESPONSIBILITIES:**

1. Assist and/or lead the implementation of environmental sustainability initiatives at the district and school levels.
2. Establish project schedules and plans, including milestones, identification of critical path items, and contingency plans.
3. Routinely meets with school and central office staff to ensure project success.
4. Develop, monitor, and report project budgets and ESMP implementation.
5. Assist with the requisition of materials, supplies, and equipment for projects and to meet the goals established through the ESMP.
6. Assists in the budget planning and workload management activities involving staff and district needs.
7. Evaluate the performance of assigned staff.
8. Prepare oral and written reports.

9. Make recommendations on short and long-term strategies for the implementation of the ESMP.
10. Work directly with Assistant Superintendent, Finance and Operations and Superintendent of Schools on projects, reports, and long-range planning.
11. Able to manage a Budget, to set and reach short and long-term financial goals.
12. Work cooperatively with a wide variety of individuals including departmental staff, community members, building administrators and site-based committees.
13. Other related duties and responsibilities as assigned.

**LANGUAGE SKILLS:**

Ability to read and interpret documents such as financial reports, safety rules, sustainability reports, grant documents and others job related documents. Ability to write routine reports and correspondence. Ability to speak effectively before groups of people.

**MATHEMATICAL SKILLS:**

Ability to add, subtract, multiply, and divide in all units of measure, using whole numbers, common fractions, and decimals. Ability to compute rate, ratio, and percent and to draw and interpret bar graphs.

**REASONING ABILITY:**

Ability to apply common sense understanding to carry out instructions furnished in written, oral, or diagram form. Ability to deal with problems involving several concrete variables in standardized situations.

**PHYSICAL DEMANDS:**

The physical demands described here are representative of those that must be met by an employee to successfully perform the essential functions of this job. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions. While performing the duties of this job, the employee is frequently required to stand, stoop, walk, climb, twist, kneel and crawl for extended periods of time. While performing the duties of this job, the employee may occasionally push or lift up to 60 lbs. The employee is directly responsible for safety, wellbeing, or work output of other people. Specific vision abilities required by this job include close vision such as to read handwritten or typed material, and the ability to adjust focus. The position requires the individual to meet multiple demands from several people and interact with the public and other staff.

**WORK ENVIRONMENT:**

The work environment characteristics described here are representative of those an employee encounters while performing the essential functions of this job. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions. The noise level in the work environment is quiet to loud depending upon the activity in the particular part of the day and location. Work is done both in an indoor office and outdoor site environments.