

Thames Valley District School Board

SUSTAINABILITY FRAMEWORK



Introduction

As global climate changes, more extreme weather events occur each year, reinforcing the need for future-ready infrastructure, education, and communities.

Thames Valley District School Board (TVDSB) recognizes the importance of preparing our buildings and students for the future. We constantly look for ways to reduce our environmental impact through infrastructure projects, education, and behavioural adjustments.

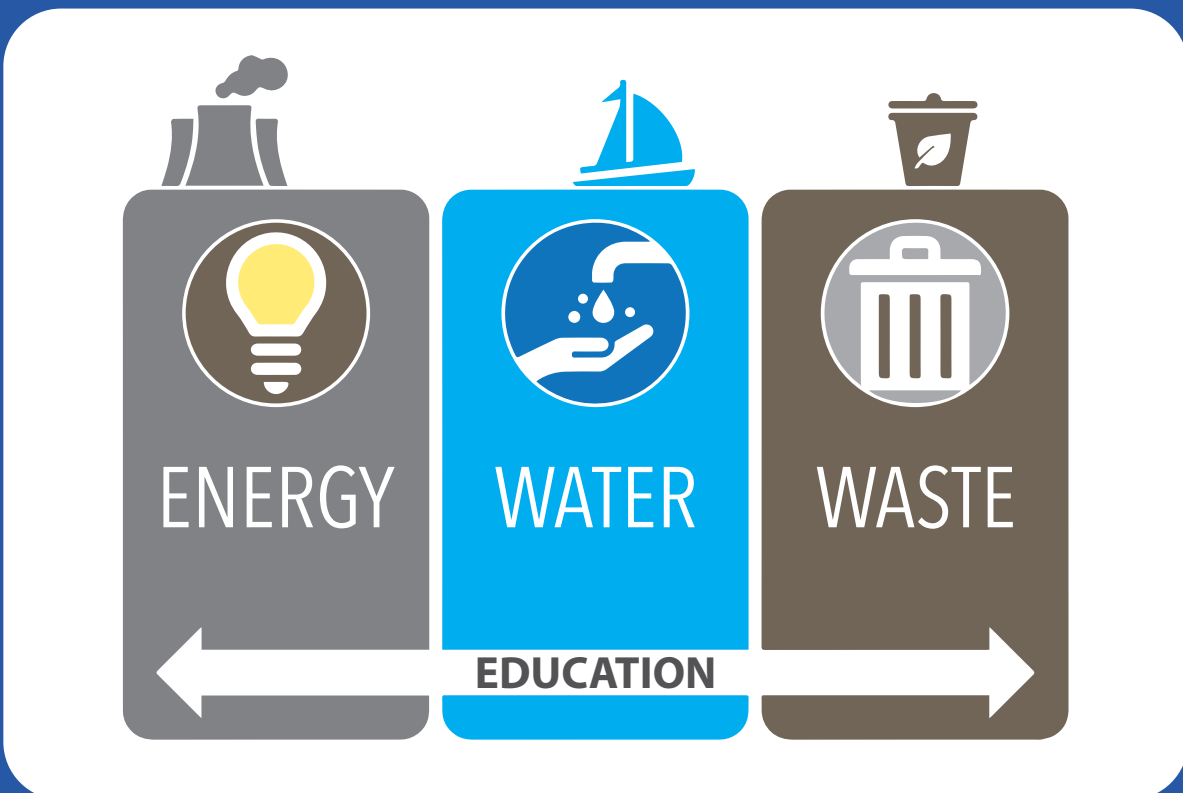
With communities of all sizes and landscapes within TVDSB, we face the impacts of climate change from many different environmental perspectives. We understand a one size fits all sustainability plan is not the solution, so we continuously research best practices to ensure students have a safe and sustainable learning environment.

TVDSB is committed to protecting the environment around our students, staff, and schools. This document includes **three Pillars of Sustainability – Energy, Water and Waste** - that identify how the school board will support that commitment.

Each pillar has **guiding principles**, which will help define and refine the individual plans. In addition, the pillars will identify specific goals and actions to be regularly reviewed and updated.

To reflect our mission statement, **“We build each student’s tomorrow, every day”**, educational tactics will cross all three pillars. Educational tactics will focus on making direct connections to sustainability and encouraging behavioural changes to support the principles set out in the Pillars of Sustainability. TVDSB recognizes that the board is at the beginning of its sustainability journey, and that additional Pillars may need to be added over time.

Pillars of Sustainability



The Journey to Net Zero

Canada and Ontario have committed to being **net zero or Carbon neutral** by 2050. The first checkpoint along this road is 2030, where the Federal government has committed to reducing greenhouse gas emissions by 40-45%. The Provincial government has committed to a 30% reduction in GHG emissions.

TVDSB will also need to meet or exceed the Provincial goals with intentions of meeting the Federal goals. This commitment requires significant long-term planning and will follow the **Roadmap to 2050: A Net Zero Thames Valley District School Board** illustration below. The roadmap broadly defines where our research shows us we must move. As the research and planning continue, the map will become more detailed.

The **Three Pillars of Sustainability** in the next section and their principles will help guide the journey to Net Zero, while allowing for course corrections to accommodate new technologies, funding, and any updates to the Pillars.



Roadmap to 2050: A Net Zero Thames Valley District School Board

2020's
ENERGY
OPTIMIZATION

2030's
DECARBONIZATION

2040's
SUSTAINABLE
ENERGY

2050's
NET ZERO TVDSB

Framework Goals

THE SUSTAINABILITY FRAMEWORK has been developed with three pillars in mind: **Energy, Water, and Waste**. Each pillar has targets that will reduce TVDSB's impact on the environment, increase environmental education, and create an overall safer and more welcoming spaces for students and staff.

To implement projects and learning opportunities, one major element of the plan that needs to operate efficiently is communication. To do this, we have created an overarching target for establishing environmental communications with staff, to ensure all schools and board buildings are represented within the sustainability plan.

Communication with environmental leads will be crucial for the success of our sustainability framework. The framework is supported by our ongoing targets that are used to direct efforts on major improvements in our sustainability journey.

Overall

Goal 1:

Create sustainability onboarding training/documentation for staff to review

One of the most identified gaps in our current **Energy Management Plan** is the lack of information on what we are currently doing and our plans moving forward. This goal is to provide a simple onboarding document on what sustainability means to TVDSB, what we have done, what we are currently working on, and what we are planning to do moving forward. This will allow new staff to understand how they can make improvements in their role or educate our students in a more informed way with regards to sustainability as it pertains to TVDSB.

Tasks

- Identify topics for inclusion in onboarding documents
- Determine how to best communicate this onboarding document (written, video, website, or combination)
- Work with Communications Department to develop onboarding documentation

Key Indicators

- Onboarding Program written
- Onboarding Program reviewed
- Onboarding Training Program implemented

Overall

Goal 2:

Establish an Environmental Lead at every building and school within TVDSB

A key component of a sustainability framework is ongoing, two-way communication. To ensure all schools are aware of different initiatives, information, and projects, we will establish an **Environmental Lead** at every building and school. The Environmental Lead will receive regular updates on our sustainability journey and will be able to direct information to and from staff and students.

Tasks

- Identify pathways that will create an engaged environmental stewardship team within TVDSB
- Identify current staff that engage in environmental programs such as environmental clubs, EcoSchools program and curriculum
- Engage with schools to coordinate Environmental Leads and provide support
- Develop Environmental Lead expectations
- Organize release time for Environmental Leads to meet

Key Indicators

- TVDSB Senior Management support of Environmental Lead initiative
- Support is communicated through multiple channels to obtain buy-in from schools
- Identifying Environmental Leads at schools
- Defining communication plan to Environmental Leads

Overall

Goal 3:

Provide educational opportunities for all pillars of sustainability

TVDSB is responsible for **educating students** of today and tomorrow. We must provide students the tools needed to understand their impacts on the environment, and what they can do to mitigate their effects to create a sustainable future.

Tasks

- Develop curriculum ties
- Develop engagement strategy to increase and maintain connections
- Identify opportunities to use existing data
- Students have more frequent and consistent contact with energy data
- Students have more frequent and consistent contact with waste data
- Identify data requirements for more meaningful engagement
- Plan for increased sustainability data and reporting.

Key Indicators

- Increased data requests
- Requests for improved data
- More hours per year of engagement with Students with respect to the three pillars.
- Yearly curriculum-based ties to the three pillars

Overall

Goal 4:

Establish timelines and objectives for the Road to 2050

TVDSB has always been working towards a more efficient operation to reduce operating costs as well as responsible corporate citizenship.

The Road to 2050 is a plan that leverages this decades long commitment in a more documented and communicated manner within TVDSB as well as externally.

Tasks

- Review the timelines and breakdown objectives into more concrete, measurable steps within each decade
- Gather input from staff, students, and community to ensure support for the plan
- Identify what Net-zero/ Carbon Neutral needs to be within TVDSB (i.e., scope 1-3 emissions)
- Gain support from Senior Management and Board as a whole
- Determine what internal and external supports may be required to achieve a Net Zero TVDSB in 2050

Key Indicators

- TVDSB Senior Management support of Environmental Lead initiative
- Adoption of the Road to 2050
- Engagement of internal and external resources where required to meet or exceed goals
- Meeting the initial goals set out in Roadmap for the upcoming decade (2023-2030)

TVDSB continues to **manage energy consumption** to ensure reduced costs and GHG emissions while planning to transition to lower carbon-emitting sources. The energy consumption for the school board will vary based on many factors such as weather, occupancy, square footage, and many others. Optimizing our energy consumption is imperative to ensure we are working towards minimizing our environmental impact related to energy. Students will have the ability to explore sustainability locally with the help of our growing energy data repository. Through the sustainability framework, students will interact with the goals to understand the different energy consumption values from a local and board-wide context.

Core Principles

1. **REDUCE** energy consumption through building systems, partnerships, and education opportunities
2. **RENEW** schools with high efficiency equipment
3. **INVEST** in schools and education to create better environments for students
4. **RESEARCH** innovative sustainable technologies and initiatives

Pillars of Sustainability: Energy



Electricity is an essential utility TVDSB uses to properly educate students. It powers students' learning tools and provides welcoming learning environments. Along with associated cost savings that come from reduced electricity use, the greenhouse gas emission factors for electricity are on the rise in Ontario, making it increasingly important to reduce consumption. Considering the extensive portfolio of buildings that TVDSB has, we will work to reduce the amount of energy we consume through building upgrades, educational initiatives, and much more.

Tasks

- Continue upgrade buildings to LED Lighting
- Continue to improve efficiency of HVAC systems as they are renewed
- Utilize Building Automation Systems (BAS) to optimize equipment schedules, setpoints and operational characteristics
- Engage in student initiatives:
 - "Lights Out" campaign
 - Reduce air conditioning demand by raising room thermostat setpoints
 - Meet with students to help them define and develop their own student-lead initiatives

Key Indicators

Electricity consumption reduction reviewed via the following methods:

- Total consumption
- Weather Normalized consumption
- Electrical Energy Intensity (kilowatt-hour per square metre)
- Electrical Energy Intensity (kilowatt hour per student)

Energy

Goal 1:

Reduce electricity consumption by 7.7%



Thermal energy (natural gas and propane) is used to heat our buildings, water, and more.

Because thermal energy is created through the combustion of gases, thermal energy has much higher Greenhouse Gas (GHG) emission factors. These emissions can be reduced through maintenance of equipment, upgrading buildings, and building automation systems.

Tasks

- Upgrade HVAC systems to more efficient equipment
- Investigate systems that use alternative heat sources such as heat pumps - Install where feasible
- Utilize Building Automation Systems (BAS) to optimize equipment schedules, setpoints and operational characteristics
- Meet with students to help them define and develop their own student-lead initiatives

Key Indicators

Thermal Energy consumption reduction reviewed via the following methods:

- Weather/GFA/Student normalized consumption
- Weather Normalized Energy intensity (cubic metres per square metres)
- Weather Normalized Energy intensity (cubic metres per student)
- Total consumption

Energy

Goal 2:

Reduce Thermal Energy consumption by 1.5%



Greenhouse Gas (GHG) emissions have heavy impacts on the environment. As a critical consideration of sustainable development, we will work to reduce TVDSB's emissions through the reduction of electricity and thermal energy consumption.

Low/zero emission energy sources supplying Ontario's electricity grid are currently producing less green energy due to planned and unplanned maintenance. Our GHG reduction target reflects these changes in generation.

Tasks

- Install and evaluate pilot projects that remove fuel burning emissions
- Partner with municipalities and transportation providers to advocate for better walking communities and alternative fuel transportation pilot projects
- Review Fleet Management for right-sized vehicles
- Continue with low emission natural gas vehicle fleet while piloting alternative fuel fleet vehicles
- Complete a GHG inventory for TVDSB
- Identify no cost/low-cost pathways to reduce emissions directly created by TVDSB facilities
- Evaluate viability of electric vehicle charging stations at TVDSB facilities. Develop plan if feasible. Parking lot limitations MUST be considered.

Key Indicators

- Energy consumption reduction
- GHG emissions from electricity and thermal energy
- Reduced fleet operation costs

Energy

Goal 3:

Reduce Greenhouse Gas Emissions by 2.2%



While this goal directly ties to **electricity and thermal energy consumption** reduction targets, it is important to set separate targets to highlight some of the incredible initiatives taken to improve the learning environments for students.

Tasks

- Identify how school communities can actively participate in reducing energy consumption
- Create contests to increase school community engagement and participation
- Communicate benefits of projects as they are occurring at each facility
- Collect examples of best practices and success stories from projects implemented at schools

Key Indicators

- Increased inquiries coming from schools with respect to energy and saving energy
- Increased participation in initiatives/contests etc.
- Increased volume of suggested actions and contests

Energy

Goal 4:

Promote and implement energy conservation initiatives and technologies



TVDSB has a history of **measuring energy** with the goal of using this data to manage our resources. The next step in our sustainability journey is to share energy measurements with school communities, so they can help with energy management.

Tasks

- Continue to distribute quarterly Energy report
 - Obtain feedback from staff to make it more tangible to them
- Communicate Energy consumption to a larger audience more frequently
- Determine pathways to create a “live” data stream for Energy at TVDSB
- Expand Energy Dashboard usage at school level
- Obtain feedback from staff to make data more tangible

Key Indicators

- Increase in requests for more background energy data
- Higher participation in energy events (Sweater Day, Lights Out campaigns, etc.)

Energy

Goal 5:

Develop and share energy reporting



With a large portfolio of buildings within TVDSB, there are often many opportunities for improvements. To understand these opportunities, **energy audits** can be utilized. These audits will help identify areas of improvement or efficiency to ensure we are getting the most out of our equipment and buildings.

Tasks

- Develop plan to regularly audit schools
- Identify audit triggers for out of schedule audits
- Streamline audit process and report writing
- Create reports for staff that can act upon audit findings
- Identify opportunities that can be repeated across the school board

Key Indicators

- Continuous progress made on audits
- Post audit energy consumption reductions
- Facility Services staff request audits at schools

Energy

Goal 6:

Conduct energy audits across the school board



Pillars of Sustainability: Water



The two main areas that TVDSB focuses on concerning water are **water consumption and stormwater management**.

Minimizing water consumption can reduce costs. However, the most significant benefit is preserving a natural resource by drawing less from the source and reducing the volume of waste water created.

Stormwater Management is essential to TVDSB as we are located within the Lake Huron and Lake Erie drainage basins, one of North America's largest fresh water supplies. Therefore, we will research and implement responsible stormwater management practices to mitigate the potential environmental impacts of runoff.

Students have numerous opportunities to understand their water consumption and environmental impacts better. Through programs with multiple Conservation Authorities, students learn about the ecological effects of water consumption and what they can do to reduce their impacts on delicate ecosystems.

Core Principles

1. **REDUCE** our water consumption through education and action
2. **PROTECT** our water sources through effective stormwater management and collaboration



Water

Goal 1:

Reduce Water consumption by 5%

Water consumption is essential for the health and well-being of all students and staff. While we ensure that everyone has equal access to clean drinking water, we also look for ways to reduce our water consumption across the board. Different equipment, irrigation systems, and washroom fixtures consume water, so TVDSB constantly seeks solutions for reducing our water consumption.

With climate variability in the future, we need to ensure our school grounds are resilient to drought and flooding, which will also reduce the need for excess irrigation.

Tasks

- Install efficient fixtures in washrooms
- Install and maintain efficient HVAC systems to reduce water consumption
- Investigate and optimize irrigation systems at schools and facilities
- Drought and flood resistant landscaping
- Increase community partnerships with Conservation Authorities (Kettle Creek, Catfish Creek, UTRCA, etc.)
- Develop water leak detection program
- Provide educational opportunities for students and staff to understand water waste

Key Indicators

- Water consumption reduction by:
 - Total consumption
 - Cubic metres per square metre
 - Cubic metres per student



Water

Goal 2:

Implement stormwater management projects at schools

Low Impact Developments (LIDs) are systems and practices that mimic natural processes to increase infiltration which naturally filter stormwater and minimize impermeable surfaces. These developments reduce the number of contaminants entering surface and ground water and increase the quality of the environment surrounding schools and neighbourhoods.

Through community partnerships, student-lead initiatives, and school greening projects, we have been able to improve our stormwater management, and will continue to explore unique initiatives to handle rainwater in the Lake Erie drainage basin.

Tasks

- Continue with depave programs to reduce area of impermeable surfaces, replacing them with gardens and green spaces for students
- Improve school grounds through greening projects such as:
 - Outdoor classrooms
 - Native species gardens
 - Pollinator gardens
 - Drought/flood resistant planting

Key Indicators

- Number of outdoor classes increase
- Development of templates for gardens and drought/flood resistant plantings
- Development of Stormwater Management toolkit on methods for fixing drainage issues in environmentally friendly ways



TVDSB follows the **Three R's Hierarchy** (Reduce, Reuse and Recycle) as the core strategy for our waste reduction plan.

With these core values in place, we aim to eliminate waste before it is created and take action to deal with waste in the most environmentally responsible way possible.

With the Three R's in mind, students interact directly with their waste, so there are many opportunities for students to learn more about types of waste, where it is going, and how they can reduce it. Through the curriculum, students will learn about the life cycle of materials, waste minimization, and the environmental impacts of waste on different ecosystems.

Core Principles

1. **REDUCE** our waste created by educating students and staff
2. **REUSE** waste produced through other creative applications
3. **RECYCLE** sorted and accepted waste to reduce landfill contributions
4. **EDUCATE** students and staff on different waste management practices/programs and accepted waste

Pillars of Sustainability: Waste



Recycling is a critical component for waste management. Contamination can lead to issues that cause the recycling system to fail and create more problems than solutions. We need to ensure that recycling programs are well maintained for all recycling streams at all schools across the school board.

Tasks

- Communicate with staff to ensure recycling programs are properly implemented for all waste streams
- Track areas of improvement and aid in enhancing recycling programs

Key Indicators

- Communications with staff on effectiveness of waste services

Waste

Goal 1:

Ensure recycling programs are properly maintained at all schools and board offices



Contamination in recycling is a major issue that causes stress on the waste management system. When a dirty piece of recycling or waste is placed in the blue bin, all recycling in the bin with it is contaminated, and then considered waste.

Educating students and staff and providing proper signage are great initiatives to approach contamination issues, but many innovative projects can be taken to create change and ensure more items are properly recycled.

Tasks

- Analyze waste contamination data for trends in disposal behaviour
- Conduct waste audits to determine major sources of waste
- Promote and implement waste free lunches
- Create and share educational posters for proper waste sorting

Key Indicators

- Total annual contamination (Tonnes)

Waste

Goal 2:

15% reduction in recycling stream contamination



As a large organization with schools located within several municipalities, there is a wide and differing understanding of **waste management** practices, as municipalities will accept different items in recycle and waste. This creates challenges in schools for proper waste handling and can lead to increased waste levels.

Waste management is a complex system, and to provide a safe and clean environment for students and staff, it is important that we take steps to decrease our waste produced. This can be done by understanding our waste composition with waste audits, educational initiatives, and much more.

Tasks

- Adjust our procurement strategies to reduce packaging waste
- Conduct waste audits to determine major sources of waste
- Promote and implement waste free lunches
- Collaborate with community partners for pilot waste programs
- Understand current waste collection strategies and areas needing improvement
- Promote EcoSchool certification benefits to Environmental Leads
- Continue including curriculum connections for waste
- Create and share educational posters for proper waste sorting
- Identify specific goals for administrative facilities (i.e. lead by example) for all waste related goals.

Key Indicators

Total annual waste (Tonnes)

Waste

Goal 3:

*Reduce Waste
produced by 10%*



Waste reduction and diversion rates are directly connected, as decreasing our waste amounts should increase our diversion to recycling.

Education is extremely important to increasing our diversion rates. TVDSB's waste management practices can differ slightly from municipalities, so educating students and staff is an easy way to increase our diversion.

Tasks

- Adjust our procurement strategies to reduce packaging waste (i.e. sustainable packaging, reduced packaging, reusable packaging)
- Conduct waste audits to determine major sources of waste
- Promote and implement waste free lunches
- Community partnerships for pilot programs (Wormery, UTRCA Green Leaders, London Environment Network)
- Promote EcoSchool certification benefits to Environmental Leads
- Continue including curriculum connections for waste
- Create and share educational posters for proper waste sorting

Key Indicators

- Number of contamination events from waste services
- Total annual recycling (Tonnes)

Waste

Goal 4:

Increase diversion rates to 20%



Sustainable development, technologies, and initiatives are constantly evolving as conversations on the topic continue to grow. To continue reducing our waste levels we constantly look for new initiatives that community partners, schools, and organizations are undertaking.

Tasks

- Continue to work with Upper Thames Conservation Authority (UTRCA) through Green Leaders classes for waste reduction programs
- Establish community partners that specialize in innovative waste management solutions
- Share best practices among schools
- Track success and shortcomings from waste data to determine success rates of initiatives and technologies

Key Indicators

- Waste services data trends indicating reduced waste, increased recycling, or decreased contamination
- Waste audits to determine if waste streams have improved after initiatives or technologies

Waste

Goal 5:

Pilot waste management technologies and initiatives at different schools



To enhance our **waste management practices** we must understand the amount of waste, recycling, and contamination created on a regular basis. This knowledge will help students and staff understand how much waste is created at their schools, leading to actions taken to reduce our environmental impacts.

Tasks

- Coordinate with waste services to obtain monthly data on waste, recycling, and contamination for each individual school
- Work with data to produce meaningful metrics for students and staff to understand
- Share data with students and staff on a regular schedule

Key Indicators

- Monthly contamination and overloaded waste data reviewed from waste services
- Monthly waste and recycling data received from waste services

Waste

Goal 6:

Enhance waste reporting for all TVDSB properties



Glossary of Terms

Sustainability

Sustainability is the ability to meet the needs of the present without compromising the ability of future generations to meet their own needs.

It encompasses social, economic, and environmental aspects and requires action to promote long-term well-being for future generations.

Sustainability aims to reduce negative impacts on the planet and its resources, promote economic growth and social inclusion and create resilient communities.

Sustainability within TVDSB will involve integrating core environment and sustainability concepts into the curriculum, extracurriculars, school design, and much more.

Energy Optimization

Energy Optimization aims to reduce electricity, propane and natural gas consumption through efficient operation of buildings, as well as completing building and equipment renewal with more efficient solutions.

Decarbonization

Decarbonization involves moving away from carbon emitting fuels, like natural gas and propane, to electric or alternative zero carbon energy sources.

Sustainable Energy

Sustainable Energy involves the investigation of different renewable energy sources and emerging technologies. These sources will reduce environmental impacts.

Net Zero TVDSB

Net Zero TVDSB is the end goal is to completely eliminate the impact of Green House Gas (GHG) emissions from TVDSB, aligning with Canada and over 120 other countries.



For more information, contact us at:

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