

**The R's in Waste Education at Kawartha Pine Ridge District School Board, in Comparison to  
Other School Boards**

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## **1. Introduction**

As Ontarians continue to improve waste management practices, greenhouse gas emissions are expected to decrease accordingly throughout the province (Government of Ontario, 2017). In order to achieve fewer greenhouse gas emissions, the three R's need to be implemented within communities. The three R's stand for reducing, reusing and recycling and they create a waste management hierarchy to sustain life. (Conserve Energy Future, 2020). The process of reducing is to make less waste from a particular item (Conserve Energy Future, 2020). For example, contacting people by email is better for the environment because there is no waste, whereas mailing people letters has waste. (Conserve Energy Future, 2020). The process of reusing is fixing items that are broken or finding another use for that item rather than replacing them (Conserve Energy Future, 2020). For example, another form of reusing is when old furniture is refinished or an item that was broken is repaired (Conserve Energy Future, 2020). Repair Cafes are used today to fix items that have been broken. The third process is recycling where an item is transformed again into a raw material that can be shaped into a new item (Conserve Energy Future, 2020). For example, recycled steel/tin cans can be recycled and made into bike parts (Maine Department of Environmental Protection, 2020). The 3's Rs are important to implement at the school level so all students can be made aware and educated for responsible waste management practices. In 2014, the waste sector for Ontario was responsible for 9.4 megatonnes of greenhouse gas emissions. (Government of Ontario, 2017). The solid waste disposal in landfills comes mostly from organic waste which contributes to 90 percent of greenhouse gas emissions (Government of Ontario, 2017). As organic materials in landfills break

down, they emit methane, which is a greenhouse gas 25 times more noxious than carbon dioxide (Government of Ontario, 2017).

The Kawartha Pine Ridge District School Board (KPRDSB) jurisdiction spans four counties: Peterborough, Northumberland, Quinte West, and Clarington. All of these counties provide accessible climate action plans ranging from brief outlines to more in-depth plans. Although many of the climate action plans include various implications to greenhouse gas emissions derived from schools within their jurisdiction, none of them include waste management plans or targets within the school board itself. In researching the climate goals within the communities associated with the KPRDSB, it is important to consider the effect that these large institutions have on the accumulation of waste in landfills, and the implications of this should not be overlooked.

This research will highlight various issues with the public availability of information as it relates to the waste management practices in particular with this school board. Furthermore, we will compare the answers to questions that are sectioned out in the report with the practices of other school boards in Ontario. This will form an understanding if waste information is accessible to the public, which will ultimately draw conclusions as to why there maybe differences.

## **2. Research Rationale and Context**

In the Toronto climate action plan, the effect that waste has on the city's total emissions is recorded at 10 percent (City of Toronto Environment and Energy Division, 2018). Their action plan provides a framework by which school boards can divert or eliminate waste within their communities. Considering this, the project aimed to determine how schools within the KPRDSB

can implement similar practices and further assist their surrounding communities in reducing waste and ultimately reducing their total greenhouse gas emissions.

It is important to determine whether schools in the area have completed a waste audit, as it is the law as shown under provincial legislation. Legislation for the Environmental Protection Act under the Ontario Regulation 102/94 for waste audits and waste reduction work plans came into effect for educational institutions in 1994 (Government of Ontario, 2020). Part 1 of the regulation explains waste, waste audits and what a waste reduction work plan is (Government of Ontario, 2020). Waste refers to municipal waste as defined in Regulation 347 of the Revised Regulations of Ontario, 1990 (Government of Ontario, 2020). A waste audit consists of a study related to waste and a waste reduction work plan refers to a plan to reduce, reuse and recycle waste (Government of Ontario, 2020). One of the objectives of this project is to understand whether the schools in the KPRDSB and other regions have completed a waste audit, a waste reduction work plan, or any separation programs (Government of Ontario, 2020). The waste audit data from the schools will form the understanding of how often the schools are conducting waste audits and how competently the schools are diverting waste from landfills.

### **3. Research Questions**

Our research is focused on answering six questions regarding the waste management practices within the KPRDSB.

#### **3.1. Greenhouse Gas Emissions and the Regional Climate Action Plan**

Among all four of the counties within the KPRDSB jurisdiction, none of them include the schools' greenhouse gas emissions, nor do they include any information on the production of

waste from the schools (Kawartha Pine Ridge District School Board, 2013). Sustainable Peterborough mentions that schools do contribute to greenhouse gas emissions, but the mention of schools is grouped in with other institutions and their contribution to emissions is not explicitly outlined. In all the climate action plans, the emissions from schools- even generally- are not specifically stated, let alone the contribution their waste has on the overall figures. A common trend among these action plans is that if schools are even mentioned as a contributor to emissions, they are grouped in with other contributors such as residential and workplace contribution, again without distinguishing between them.

### **3.2. Collection of Waste in the Kawartha Pine Ridge District School Board**

Jeff Stewart the Principal of the Facilities Services and Operation's Department at the KPRDSB has stated that waste is collected from each of the school's municipal collection trucks in the form of garbage for landfill and mixed recyclables (Stewart, 2020). The students do their best with sorting the garbage and the mixed recyclables into two separate streams to avoid contamination between the two. When students can help with sorting mixed recyclables properly, they become more engaged in the action of being sustainable, and they help to divert or reduce waste from landfills. The principal suggested contacting the 92 schools individually to collect waste audit information/waste reduction reports and the associated costs for the schools to have their waste picked up (Kawartha Pine Ridge District School Board, 2013). However, there was no waste information present on their website. Policy plans about energy conservation and water reports were the only accessible public documents present on their website (Kawartha Pine Ridge District School Board, 2013). The water reports came from completed tests that the schools had done for testing their pipes for lead (Kawartha Pine Ridge District School Board,

2013). Under Ontario's Regulation 243/07 and under the Safe Drinking Water Act, it is mandatory for schools to have the lead testing completed. The energy conservation reports stated how much electricity each school uses to calculate their school's greenhouse gas emissions (Kawartha Pine Ridge District School Board, 2013).

### **3.3. Analysis of Waste Products, Results, and Associated GHG Emissions**

The KPRDSB consists of four separate counties; all of which have currently published climate action plans. Each of the four counties have provided outlines on how they plan to reduce greenhouse gas emissions; although, they vary significantly. Clarington County discusses various actions that are underway that will assist the municipality in reducing their overall emissions, but none of these actions includes waste management whatsoever, let alone in relation to the schools (Municipality of Clarington, 2018). Northumberland County includes the implication of schools and other institutions in their plan, but only in terms of developing more sustainable transportation, and fails to determine the effect that waste produced in schools has on county-wide emissions (Northumberland County Council, 2020). Quinte West expresses a need to develop plans to reduce waste in their climate action plan, but does not mention anything regarding the waste being produced within the school board (Quinte West Council, 2020). Lastly, Sustainable Peterborough provides a more in-depth action plan for Peterborough County, which does highlight the issue of waste as well as the implication of schools within their jurisdiction. However, they do not correlate the two together and there is no mention of any type of analysis of waste produced specifically from schools (Sustainable Peterborough, 2016). Based on the climate action plans available from these four counties, it appears that the waste being produced by schools is not being taken into consideration as it relates to greenhouse gas emissions at this time.



### **3.4. Kawartha Pine Ridge District School Board Waste Auditing**

Under Ontario's Regulation 102/94 in the Environmental Protection Act Subsection 51(1), a waste audit needs to be conducted by the school board's superintendent for any educational institution that has more than 350 students to calculate the waste generated within their school (Government of Ontario, 2020). The school board's superintendent needs to write a report based on the waste audit to see where the school can implement changes for the three R's. The report will advise the school board's superintendent on which stream either garbage, recycling or organics needs to be reduced. The school board's superintendent needs to communicate to everyone in the building on where changes or education needs to be implemented for students and teachers. If school board's superintendent does not know how to effectively produce a waste audit report, they need to speak with a waste audit company or the Ministry of the Environment official to understand how to produce one.

As regulation 102/94 states, each school from the KPRDSB should complete a waste audit as each school has a student body population greater than 350 students. The Principal of Facilities Services and Operations has stated that schools do complete waste audits because the Principal had recently come from a school that completed one around the time of February 26, 2020 (Stewart, 2020). The only possible way to collect this data firsthand would be to individually contact each school to inquire if they conduct waste audits from either the principal or the custodian. However, for the purpose of the report, such accurate data could not be collected due to time and ethics restrictions for not having ethics approval to speak with personal directly from the school. Rather, a research coordinator for data communication for schools was questioned about the project, and they recommended a school board website search on waste

(Townser, 2020). However, as there was no waste information present on the website, another attempt was made to talk with the trustees for each of the four separate counties to see if they had waste audits or waste management strategies/plans. Each of the trustees collect all reports for energy conservation, policy plans and water reports for Peterborough, Northumberland, Quinte West, and Clarington. An email was sent out to the four separate counties to see if they had waste audits or waste management strategies/plans. Northumberland County has completed waste audits in the past, but it is unknown by staff if the documents have been made public and an online search yielded no results. The other County trustees were unsure what a waste audit or a waste reduction report was and suggested to contact the facility and services personnel for that county at KPRDSB to find out if waste audits were completed. The facility and services personnel and the trustee for the county of Northumberland are the only people who possibly know which schools complete a waste audit. It is also difficult to understand whether the facility services personnel and trustee for the county of Northumberland gained enough knowledge, to guide other people regarding waste audits in other departments of the KPRDSB. Each member of the facility services personnel and each trustee for the county of Northumberland should be contacted with a conducted survey to collect their waste management knowledge on waste audits and waste reports. Another survey should be conducted for other counties to navigate the next steps for education within the departments so everyone is on the same page for their knowledge on waste management. Another resource was used to collect information or knowledge on KPRDSB, and it was speaking with Mass Environmental services, a waste audit consulting company. The waste audit company stated that they have never seen a waste audit tender for the KPRDSB (Brown, 2020). As the facility and services principal mentioned they are completing waste audits, so it is hard to determine whether the schools are completing the waste audit

themselves or if they have another company other than Mass Environmental completing the waste audit (Stewart, 2020). In some counties of the KPRDSB there might not be awareness for completing a waste audit and this might lead into a question of has the Ministry of the Environment enforced the legalization because other sectors, like office buildings should be conducting waste audits along with schools (Government of Ontario, 2020). Awareness and education are important because schools can be informed on waste diversion and then knowledge can be passed from schools to other sectors of waste industries. They mentioned schools do not complete a waste audit because the schools do not have the resources like the Ministry has at their disposal to enforce the legislation (Brown, 2020). They did mention that if any school from KPRDSB has completed a waste audit by analyzing their waste, recycling and organics stream, then they would have a good understanding of what they need to do to improve their waste diversion (Brown, 2020). The schools could build reduction programs themselves from their waste audit, and help provide more awareness to students about how to lessen contamination in each of the streams. KPRDSB should hire a company such as Mass Environmental to complete waste audits across a sample of schools, and then Mass Environmental would put together a consolidated report identifying the main opportunities that are available to improve waste diversion. The KPRDSB would need to create uniform rather than individualized, recommendations for hiring a company to complete a waste audit in order to manage school budgets, and collect relevant data. As data is currently not available, the company can make decisions based on estimations. It is important that after the waste audits are completed, and decisions are made to improve recycling and organics programs, then bins, signage, and further education would be a necessity.

### **3.5. Waste Management Strategy Case Examples**

Various waste management strategies are used within school boards across Ontario in order to comply with provincial emissions targets. Two other district school board jurisdictions and their waste management plans have been researched to understand the progress of KPRDSB: the *Toronto Catholic District School Board (TCDSB)*, and the *Durham District School Board (DDSB)*. According to Environmental Support Services at the TCDSB, the board practices waste management closely following the City of Toronto waste and recycling guidelines: blue bin for single-stream recycling, black bin for waste, and green bin for food and organics (City of Toronto Environment and Energy Division, 2018). In addition to this, the TCDSB also participates in various programs that aim at diverting waste from landfills. These consist of:

- Ink and Toner Recycling
- Electronics Recycling
- Hazardous Waste Disposal
- Construction Debris Recycling

The Durham District School Board takes an educational approach within their school communities in order to promote waste management strategies. In 2017 Durham Region schools participated in educational programs geared towards students and improving environmental practices (Regional Municipality of Durham, 2017). Of the 23 schools and (1,905 students) who participated in these programs, nine schools and (772 of the 1,905 students) were from the DDSB, respectively (Regional Municipality of Durham, 2017). According to the Regional

Municipality of Durham in their 2017 report, these numbers are expected to increase within these participating programs for the coming years, as the importance of waste management within school communities is more widely understood.

Mass Environmental had mentioned that private schools have more control over starting and conducting waste audits because they have the funding available to ask waste audit companies to assist and conduct a waste audit (Brown, 2020). The company's main function is to manage, consult, and broker waste and recycling contracts (Brown, 2020). The company tries to support their clients by helping them ensure compliance with the Ministry of the Environment regulations, which includes completing waste audits and waste reduction plans based on the Regulation 102/94 (Brown, 2020). Most private schools usually have the budget and the ability to pay for a waste audit company in order to ensure the school is in compliance (Brown, 2020). The private schools do not need to go through school boards like KPRDSB, TCDSB and DDSB, to ask for the funds to implement the waste audit; instead, can directly hire a waste audit company (Brown, 2020). The private schools then use the waste audit data and the report completed by the consulting company as a monitoring tool, because the data can drive improvement in their waste diversion practices (Brown, 2020).

There is a barrier for public schools because it depends on the funding received to determine if whether or not they can conduct a waste audit. A waste audit is important because the schools that conduct annual waste audits regularly hit 80 percent diversion as they have inclusive recycling and organics programs in place and the audits help them track it (Brown, 2020). Private schools can hire Mass Environmental to conduct the school's waste audit and then create a waste reduction report, that also includes the Ministry compliance paperwork. Mass Environmental will submit the paperwork to the school to help them understand the changes that

can occur to improve waste diversion. The waste audit team entails four full time and two part time staff to complete a waste audit for the schools, and students might occasionally help with the audit. Mass Environmental helps schools in many ways such as;

- 1) Providing data on their current practices because no one can manage something that they cannot measure;
- 2) Helping the school to understand what is going into their landfill stream that could be diverted to the recyclables or organic stream and;
- 3) Helping the school to understand what contaminated items are currently in their recycling stream.

Most private schools also have 30-40 students on a team called an eco-team to help conduct waste audits around their school (Brown, 2020). The students from the eco-team can help assist the consulting company with the waste audit or work with staff to implement the recommendations for the changes around the school from the analyzed waste audit results. The private schools that Mass environmental work with are from all over Ontario. Cobourg Collegiate Institute was used as an example by the company as a local public school where they have completed talks with their eco-team about waste diversion strategies and the waste audit process. The company has only spoken with them and has not completed a waste audit for the school. Consulting with Mass Environmental had a significant effect because Cobourg Collegiate Institute entered into EcoSchools certification in 2018, where they involved environmental review, and identified different levels of environmental friendliness (Cobourg Collegiate Institute, 2018). Some environmental upgrades included a recycling program, waste minimization, school-ground greening and environmental leadership (Cobourg Collegiate

Institute, 2018). There could be waste management practices being done in the KPRDSB, but a survey would need to be conducted for each county or the facility services to understand the type of programs that are being offered to schools.

### **3.6. Best Practices**

WasteWatchers and Ecosource are currently working with Mississauga middle and secondary schools to conduct waste audits and to practice waste reduction in these schools. Ecosource and WasteWatchers has been working together because Ecosource has 10 years of experience, for working with schools to provide education for environmental changes in schools (Ecosource). The partnership is working because they have engaged with over 21,000 students and 1,700 school staff for waste reduction sustainable practices (Ecosource, 2020).

Raw Material Company Inc began the Ontario School Board Recycling Challenge for all elementary and secondary schools in the province of Ontario in 2013 in order to improve how students understand battery recycling (Raw Materials Company Inc, 2020). With the fact that Canadian households accumulate 1.36 kilograms of batteries per year, the program offers a way to teach families the importance of proper handling and storage of batteries at home and school (Raw Materials Company Inc, 2020). There is no cost for the school to participate and there are free resources to educate the staff and students on how the program works, and schools are simply asked to take a pledge to continue to recycle batteries at school and at home (Raw Materials Company Inc, 2020). By using a badge system, schools are able to keep track of how close they are in meeting their goal of recycling an average of 1.36 kilograms of batteries per student and staff member in their school community (Raw Materials Company Inc, 2020).

Schools are then displayed on a leaderboard based on their population, indicating their progress as well as how they rank in relation to other Ontario schools (Raw Materials Company Inc, 2020). These leaderboards can be viewed at [rawmaterials.com](http://rawmaterials.com). Furthermore, a cash prize is available as an incentive for the top five schools on each leaderboard by the end of the school year (Raw Materials Company Inc, 2020). So far, 19 schools in Ontario have reached their individual goals and recycled their share (Raw Materials Company Inc, 2020).

The 2030 Agenda for Sustainable Development is scheduled by a 15-year United Nations directed plan wherein 17 overarching goals with 169 targets have been developed to work towards sustainable development globally (United Nations Sustainable Development Goals, 2020). These goals are known as the sustainable development goals and include ending poverty, strategizing to build a better economy, education, providing health care and social protection, supplying more job opportunities, tackling climate change and ensuring environmental protection (United Nations Sustainable Development Goals, 2020). The sustainable development goals are for all countries to help protect the planet. In 2020, the next ten years are crucial to try to achieve the sustainable development goals by enforcing more financial assistance, enhancing national implementation and strengthening institutions to achieve the goals (United Nations Sustainable Development Goals, 2020). The United Nations Sustainable Development Goal number 11 states targets for 2030 in Appendix A. Clearly waste management includes waste diversion and is a concern globally. The United Nations Sustainable Development Goal number 13 states targets for 2030 in Appendix B. The next step is educating the school boards on the importance of reducing the impact on climate change. Reducing the school's waste will help to reduce greenhouse gas emissions. Minimizing climate change will eventually occur after many years of sustainable practices programs within schools for waste diversion.



EcoSchools Canada is a well-established organization aimed at empowering all members of school communities with the knowledge, skills and desire to act as environmentally responsible citizens (EcoSchools Canada, 2020). Using the framework outlined by the verification for EcoSchools Ontario within the KPRDSB, examples can be drawn as to what needs to be done in schools in order to obtain the necessary levels of change within the individual school communities. By determining which schools achieve EcoSchools Ontario certification as an example; targets can be set for various schools, and plans can be implemented in order to hit improved targets, and develop better waste management practices within school communities, ultimately assisting in provincial greenhouse gas emission reduction targets. By making these changes, KPRDSB schools can become EcoSchools certified in the future as well. These small victories can accumulate over time within the school communities, and foster a more profound understanding of the importance of waste management, among other environmental stewardship behaviors. Some of the EcoSchools programs are

- Teamwork and Leadership
- Energy Conservation
- Waste Minimization
- School-Ground Greening
- Curriculum
- Environmental Stewardship

The schools that want to become EcoSchools certified must apply to EcoSchools Canada online in a two-stage process; one in January and one in April of the school year. The online application needs to include a complete yearly planner and an EcoTeam Pledge in January and in April they

must complete the EcoTeam project as directed by EcoSchools Canada (EcoSchools Canada, 2020). If the school is eligible, they will become EcoSchools certified in these categories: bronze, silver, gold and with an opportunity to upscale to platinum, (EcoSchools Canada, 2020). The schools can register online (<http://certapp.ecoschools.ca>) to check their certification eligibility (EcoSchools Canada, 2020). One of the programs for EcoSchools is Waste Minimization, as it teaches the schools how to minimize their food waste and how to recycle. There is resource content available for their schools to educate students on why food waste should be more of an awareness, how to prevent food waste and create a circular food system in conjunction with mandated provincial curricula (EcoSchools Canada, 2020). One activity includes celebrating ugly food from grocery stores because less-than perfect produce is usually wasted (EcoSchools Canada, 2020). As much as 20 percent of a harvest of fruits and vegetables can be wasted in this way because of our desire for perfect produce (EcoSchools Canada, 2020). Food waste from food consumption seems to be unavoidable. It is necessary to implement ways of reducing our waste diversion for organics because in developed countries about 40% ends up as waste when not eaten (Verghese, et al. 2015). Food ‘loss’ occurs during the production stages of agricultural food and post-harvest handling and processing, whereas food ‘waste’ occurs at the end of the food cycle when food is brought into stores for distribution, sold and then finally consumed (Verghese, et al. 2015). It seems to be working for EcoSchools to minimize waste because Platinum EcoSchool students on average produce 57% less combined landfill waste than Non-EcoSchool students (Ontario Ecoschools, 2017). EcoSchools are excelling in their targets for waste minimization because Platinum is the highest certification. So, if more schools become EcoSchool certified, this results in more waste being diverted from a landfill because the school is working on redirecting their waste programs for recycling and the organic stream. When

schools are EcoSchool certified, there is more enforcement to boost sustainability because young people develop early habits for waste diversion from landfills.

#### **4. Discussion**

Through researching this topic, it is apparent that there exists a substantial difference in waste management practices among school boards, as well as a significant difference in publicly available information between different boards. According to the information covered in the research questions, the KPRDSB is lacking in many areas in comparison with the TCDSB and the DDSB. KPRDSB lacks education in schools regarding waste management practices, funding opportunities to create waste programs, and the ability for people to access waste reports. The TCDSB and the DDSB contain more schools than the KPRDSB, and the funding provided for waste management practices would reflect this (Kawartha Pine Ridge District School Board, 2013). Private schools have better opportunities for waste diversion practices in their schools because they do not need to go through school boards to budget; instead, they can go to the consulting firms to have a waste audits completed. Mass Environmental Services, from their years of experience, believes the best opportunity is for the Ministry of the Environment and the Ministry of Education to work together to properly fund waste audits (Brown, 2020). Both Ministries would be able to enforce the legislation, instead of having schools completing waste audits themselves. If schools complete waste audits, themselves, there are more stakeholders and differing opinions involved on how to properly proceed. The schools should ask a third party such as a consulting firm, to complete a waste audit for them, or have a discussion over the phone or get a report to highlight what needs to be done.

The Province of Ontario funds 90 percent of spending for municipalities and school boards (Government of Ontario, 2019). The government of Ontario is asking municipalities and school boards to undergo financial reviews to see where they can save for future programs and services that Ontarians use every day (Government of Ontario, 2019). The government created an audit and accountability fund of \$8.15 million to fund municipalities and district school boards to conduct the financial review and try to save four percent. (Government of Ontario, 2019). The \$8.15 million fund only supports ten out of 72 district school boards to go through the financial review (Government of Ontario, 2019). As the funds do not support all 72 district school boards only three out of the ten district school boards decided to go through the financial review to see how the boards could save money (Government of Ontario, 2019). A problem arises on why school boards are not going through the financial review because the savings of four percent could help with the deficit that Ontario has for \$10 billion for the year of 2019 (Lilley, 2019). The Municipalities were in support of new guidelines set by the province because 34 out of all 39 municipalities in Ontario decided to go through for their funding for the financial audit (Government of Ontario, 2019). Savings for the province would mean taxpayers could have a break and the boards might not have to cut important education supports like reading or math (Rushowy, 2019). School boards do not want to budge because the board's budget of 80 percent pays for the salary of staff, so the staff think it will be hard to find four percent in savings (Rushowy, 2019). The school boards should move forward with financial review audits to see which programs and services they could save in because saving means more opportunity to grow in implementing practices with education for waste management in schools. In 2016/2017, the Ministry of Education and municipalities provide school boards with operating funding for the Grant for Student's needs at \$22.9 billion. (Ministry of Education, 2016). The Education

Property Tax pays for about 30 percent of the Grants for Student Needs and the other 70 percent of the money comes from the Ministry of Education (Ministry of Education, 2016). The Ministry of Education and the Ministry of the Environment can help with financial assistance for funding with the costs of waste management practices, which means more schools would have more opportunity to be EcoSchool certified. If schools were able to become EcoSchool certified they can apply for grants available for schools to support environmental projects on the funding for schools webpage of their website (EcoSchools Canada, 2020).

Table 1: Comparison between the three boards as it relates to EcoSchool certification.

<b>School Board</b>	<b>EcoSchool Certification</b>	<b>Percentage</b>
Toronto Catholic District School Board	67 out of 168	39.9%
Durham District School Board	45 out of 133	33.8%
Kawartha Pine Ridge District School Board	1 out of 92	1.0%

It is clear that there is a wide gap between how many schools are able to achieve EcoSchool certification between these three Ontario school boards. Within a smaller school board, it is understandable that there simply is not enough funding available to be set aside to improve waste management practices, and not enough staff to facilitate these tasks. For example, the TCDSB has positions directly responsible for these issues and has teams of people actively working to make sure waste management practices improve within the school community with the implementation of departments directly responsible for the issue such as Environmental Support Services as well as an Officer of Waste Management. This was not observed in the KPRDSB. In order to achieve this, a school board would certainly require substantially more

funding. Much of the responsibility for improving waste management practices falls upon the individual schools and the staff's ability to facilitate these changes. Furthermore, the jurisdiction of the KPRDSB spans a diverse area, with less understanding of what a neighbouring county might be incorporating in terms of waste management practices. It is for this reason that the school board as a whole has a lack of publicly available information - because it might be difficult for the larger area of small communities to come to a consensus, and publish information as to what needs to be done within the schools. This highlights the need to increase education board-wide on responsible waste management practices within the school communities and amongst students and staff. When information on the raw impact that individual communities have on overall greenhouse gas emissions is not readily available for the public to analyze, it is difficult to demonstrate how contributing individuals can make a difference. The next step is to conduct surveys within the schools individually from the KPRDSB to see whether they could complete the waste audit themselves or if another consulting company should complete it for them.

## **5. Conclusion**

In order to make the changes within the KPRDSB waste diversion practices, education on this matter needs to be increased. Education will be able to foster a community that prioritizes waste diversion which in turn will reduce greenhouse gas emissions within their communities. This will help to reach Federal and Global targets that the International Panel on Climate Change has stated along with the United Nations is necessary for the survival of our planet. Financial review audits of school boards should be a next step to understand why spending money could be potentially wasted and not saved into funds for waste management practices. It is important to

conduct surveys for all the departments for KPRDSB to see what knowledge needs to be added to implement more practices for waste management. By taking steps towards educating the members of the local communities at the school level about what can be done individually to reduce waste as well as the importance of making these changes; communities can develop a stronger sense of responsibility as it relates to their own generation of waste and the impact that they might have on the issue as a whole. The lack of understanding of this issue is largely to blame for the lack of policy and programs dedicated to reducing waste in the KPRDSB communities.

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## 7. Appendices


### Appendix A: The United Nations Sustainable Development Goal for number 11

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Home » #Envision2030 Goal 11: Sustainable Cities and Communities

### #Envision2030 Goal 11: Sustainable Cities and Communities

Imagine the world in 2030, fully inclusive of persons with disabilities

**Goal 11: Make cities and human settlements inclusive, safe, resilient and sustainable**

#### Policy Briefs and Infographics

- ▶ [Making cities and communities inclusive and sustainable for persons with disabilities \(Goal 11\) | Infographic](#)


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#### Targets

- ▶ By 2030, ensure access for all to adequate, safe and affordable housing and basic services and upgrade slums
- ▶ By 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons
- ▶ By 2030, enhance inclusive and sustainable urbanization and capacity for participatory, integrated and sustainable human settlement planning and management in all countries
- ▶ Strengthen efforts to protect and safeguard the world's cultural and natural heritage
- ▶ By 2030, significantly reduce the number of deaths and the number of people affected and substantially decrease the direct economic losses relative to global gross domestic product caused by disasters, including water-related disasters, with a focus on protecting the poor and people in vulnerable situations
- ▶ By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management
- ▶ By 2030, provide universal access to safe, inclusive and accessible, green and public spaces, in particular for women and children, older persons and persons with disabilities
- ▶ Support positive economic, social and environmental links between urban, peri-urban and rural areas by strengthening national and regional development planning
- ▶ By 2020, substantially increase the number of cities and human settlements adopting and implementing integrated policies and plans towards inclusion, resource efficiency, mitigation and adaptation to climate change, resilience to disasters, and development and implement, in line with the Sendai Framework for Disaster Risk Reduction 2015-2030, holistic disaster risk management at all levels
- ▶ Support least developed countries, including through financial and technical assistance, in building sustainable and resilient buildings utilizing local materials

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#### Conversations



Forward your comments, suggestions, references and/or new information of the SDGs and persons with disabilities to [enable@un.org](mailto:enable@un.org) or follow @UNEnable on [Facebook](#) and [Twitter](#) and use hashtag #Envision2030 to join the global conversation and help create a world that is fully inclusive of persons with disabilities by 2030.

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#### Resources

*(Further suggestions for resources related to the above Goal are welcome – Email [enable@un.org](mailto:enable@un.org))*

- ▶ [Disability, Accessibility and Sustainable Urban Development, UN DESA](#)
- ▶ [The Right to Adequate Housing for Persons with Disabilities Living in Cities, UN Habitat, 2015](#)
- ▶ [United Nations Report following a Forum on Disability Inclusion and Accessible Urban Development, 2015](#)
- ▶ [Accessibility and Disability Inclusion in Urban Development, United Nations Department of Economics and Social Affairs, 2015](#)
- ▶ [Third World Conference on Housing and Sustainable Urban Development \(Habitat III\)](#)
- ▶ [UNISDR Toolkits](#)
- ▶ [World Habitat Day \(observed each year on the first Monday of October\).](#)
- ▶ [World Cities Day \(celebrated on 31 October 2014\).](#)

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#### Resources

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[Commission for Social Development](#)

[Inter-Agency Support Group for the CRPD](#)

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[International Day of Persons with Disabilities](#)

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#### Quick links

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## Appendix B: The United Nations Sustainable Development Goals stated for number 13

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### #Envision2030 Goal 13: Climate Action

Imagine the world in 2030, fully inclusive of persons with disabilities



Goal 13: Take urgent action to combat climate change and its impacts

#### Targets

- ▶ Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries
- ▶ Integrate climate change measures into national policies, strategies and planning
- ▶ Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning
- ▶ Implement the commitment undertaken by developed-country parties to the United Nations Framework Convention on Climate Change to a goal of mobilizing jointly \$100 billion annually by 2020 from all sources to address the needs of developing countries in the context of meaningful mitigation actions and transparency on implementation and fully operationalize the Green Climate Fund through its capitalization as soon as possible
- ▶ Promote mechanisms for raising capacity for effective climate change-related planning and management in least developed countries and small island developing States, including focusing on women, youth and local and marginalized communities

#### Conversations

Forward your comments, suggestions, references and/or new information of the SDGs and persons with disabilities to [enable@un.org](mailto:enable@un.org) or follow @UNEnable on [Facebook](#) and [Twitter](#) and use hashtag#Envision2030 to join the global conversation and help create a world that is fully inclusive of persons with disabilities by 2030.

*(Forthcoming)*

#### Resources

*(Further suggestions for resources related to the above Goal are welcome – Email [enable@un.org](mailto:enable@un.org))*

- ▶ [The Impact of Climate Change on People with Disabilities](#), The Global Partnership for Disability & Development and World Bank, 2009
- ▶ [Disability and Climate Change](#), CBM
- ▶ [ADD International: Disability and climate change \(2014\)](#). Submission to the Environmental Audit Committee for the Sustainable Development Goals (SDGs)

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