Subject: **Update on the Electrification of Public Works Small Equipment**

File Number: ACS2024-PWD-PMF-0001

Report to Environment and Climate Change Committee on 21 May 2024

and Council 29 May 2024

Submitted on May 9, 2024 by Alain Gonthier, General Manager, Public Works Department

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Ward: Citywide

Objet : **Compte rendu sur l'électrification du matériel léger de la Direction générale des travaux publics**

Numéro de dossier : ACS2024-PWD-PMF-0001

Rapport présenté au Comité de l'environnement du changement climatique

Rapport soumis le 21 mai 2024

et au Conseil le 29 mai 2024

Soumis le 2024-04-05 par Alain Gonthier, Directeur général, travaux publics

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Quartier : À l'échelle de la ville

REPORT RECOMMENDATION(S)

That the Environment and Climate Change Committee recommend that Council receive this report for information.

RECOMMANDATION(S) DU RAPPORT

Que le Comité de l'environnement et du changement climatique recommande au Conseil municipal de prendre connaissance de ce rapport pour information.

EXECUTIVE SUMMARY

This report provides Council with an overview of the Public Works Department's (PWD) plan to transition small gas-powered equipment to electric.

At the City Council meeting on April 13, 2022, Councillor King moved Motion no. 2021-20-04 directing PWD to phase out gas-powered lawn and yard equipment and replace with an electric alternative when operationally feasible. PWD took a broad view to the gas-to-electric transition by looking at all gas-powered equipment and developing a green equipment plan, which included:

- Establishing a small equipment Inventory
- Conducting a municipal scan
- Testing several pieces of electric equipment to determine operational suitability
- Reviewing infrastructure requirements to support the gas to electric transition (ex: electrical capacity at facilities)
- Assessing market availability and supply of electric equipment suitable for commercial use
- Assessing the financial and environmental implications of electric equipment
- Sharing Information with other departments

Electric equipment testing resulted in PWD introducing 5 types of electric equipment to our inventory for regular maintenance work where operationally feasible: line trimmers, hedge trimmers, pole saws, pruning chainsaws and push mowers. The complicating factor is the requirement for multiple batteries per piece of equipment to complete a day's work. Three types of electric equipment tested did not have the battery power to be sufficient for PWD's maintenance work, including road saws, hand-held blowers and breakers. As of the end of 2023, PWD has 234 electric equipment units, about 21 per cent of total inventory, that will be used for maintenance work across the city.

A key aspect of the green equipment plan and expanding PWD's use of electric equipment is addressing interdependencies that are critical supports to a further gas to electric transition. Those interdependencies are:

- Battery Disposal
- Charging Capacity at Public Works Yards
- Electric Equipment Lifecycle
- Evolution of Battery Technology and Equipment Types
- Facilities Electrical Capacity Review
- Financial Considerations
- Fire Safety

Going forward, monitoring and reconciling these interdependencies and collaborating with other departments on corporate initiatives will support the continued gas to electric transition in PWD, while ensuring operational maintenance standards can continue to be met with this new equipment.

The usage of electric equipment will be communicated to Council via the Spring and Summer Operations memo that PWD issues annually, prior to the spring/summer season.

SYNTHÈSE ADMINISTRATIVE

Dans ce rapport, nous donnons au Conseil municipal une vue d'ensemble du plan adopté par la Direction générale des travaux publics (DGTP) pour électrifier son matériel léger à essence.

À la séance du Conseil municipal le 13 avril 2022, Rawlson King, conseiller municipal, a déposé la motion nº 2021-20-04, dans laquelle on invite la DGTP à mettre au rancart l'équipement d'entretien des terrains et des pelouses alimenté à l'essence et à le remplacer par du matériel électrique dans les cas où il est opérationnellement viable de le faire. La DGTP a envisagé dans son ensemble la transition dans laquelle l'équipement alimenté à l'essence sera remplacé par du matériel électrique, en se penchant sur l'ensemble des biens d'équipement alimentés à l'essence et en mettant au point un plan relatif à l'équipement vert, ce qui a consisté à :

- dresser l'inventaire du matériel léger;
- mener un tour d'horizon municipal;
- mettre à l'essai plusieurs pièces d'équipement électriques afin d'en déterminer l'adéquation opérationnelle;
- examiner les besoins en infrastructures pour assurer la transition entre l'équipement alimenté à l'essence et le matériel électrique (soit la capacité électrique des installations);

- évaluer la disponibilité sur le marché et l'offre du matériel électrique adapté à une vocation commerciale;
- évaluer les incidences financières et environnementales du matériel électrique;
- échanger de l'information avec d'autres directions générales.

Dans la foulée des essais qui ont porté sur le matériel électrique, la DGTP a adopté cinq types de matériel électrique dans son inventaire pour les travaux d'entretien réguliers dans la mesure où il était opérationnellement viable de le faire : il s'agit des taille-bordures, des taille-haies, des scies à long manche, des tronçonneuses d'élagage et des tondeuses poussées. L'obligation de faire appel à plusieurs batteries par pièce d'équipement pour faire le travail d'une journée est le facteur qui complique la situation. Dans trois types de matériel électrique soumis à des essais, la puissance des batteries n'était pas suffisante pour permettre à la DGTP d'effectuer ses travaux d'entretien; il s'agit entre autres des scies routières, des souffleurs à feuilles portatifs et des marteaux brise-béton. À la fin de 2023, la DGTP avait dans son inventaire 234 biens d'équipement électriques, soit environ 21 % de l'inventaire total, qui sont utilisés dans les travaux d'entretien sur tout le territoire de la ville.

Un aspect essentiel du Plan relatif à l'équipement vert et du recours plus massif au matériel électrique de la DGTP consiste à tenir compte des liens de dépendance qui permettent d'assurer la transition essentielle entre l'équipement à essence et le matériel électrique. Voici ces liens de dépendance :

- l'élimination des batteries;
- la capacité de recharge dans les cours de remisage de la Direction générale des travaux publics;
- le cycle de la durée utile du matériel électrique;
- l'évolution de la technologie des batteries et des types d'équipement;
- l'examen de la capacité électrique des installations;
- les considérations financières;
- la sécurité incendie.

À terme, la surveillance et le contrôle de concordance de ces liens de dépendance et la collaboration avec d'autres directions générales dans le cadre d'initiatives municipales viendront étayer la transition continue de l'équipement à essence avec le matériel électrique à la DGTP, en veillant à ce qu'elle puisse continuer de respecter, grâce à ce nouveau matériel, les normes d'entretien opérationnel.

Nous rendrons compte au Conseil municipal de l'utilisation du matériel électrique dans la note de service sur les Opérations printanières et estivales que la DGTP fait suivre chaque année, avant la saison printanière et estivale.

BACKGROUND

At the City Council meeting on April 13, 2022, Councillor King moved Motion no. 2021-20-04 directing the Public Works Department (PWD) to phase out gas-powered lawn and yard equipment and replace with an electric alternative when operationally feasible. With the approval of the above noted motion, PWD committed to evaluating if electric equipment could replace the various types of gas-powered equipment currently used for maintenance activities.

PWD was well positioned to take this direction from Council and decided to take a broad view to the gas-to-electric transition by looking at all gas-powered equipment, In 2020, staff began testing select pieces of electric equipment, including blowers, chain saws and pole saws for maintenance work. Ongoing improvements in battery power and market diversification of electric equipment allowed for this opportunity. With that testing process established, staff were ready to conduct further testing of electric equipment to determine if a larger scale transition could be made.

Public Works' Inventory of Gas-Powered Equipment

Based on 2022 data, PWD has approximately 1,000 pieces of small gas-powered equipment used for maintenance work across the city. There is a wide range of gas-powered small equipment used in PWD, including chain saws, hedge trimmers, pole and road saws, leaf blowers, and push lawn mowers.

Most of this gas-powered equipment does not come with a prescribed lifecycle and staff are generally able to fix issues as they arise by replacing component parts. Due to that in-house repair capability, the current inventory of gas-powered small equipment often lasts for many years.

Prior to the 2022 motion, Traffic Services began transitioning their inventory of gas-powered small equipment to electric. To date, Traffic Services has transitioned all gas-powered equipment to electric for a total of 117 units, detailed below in Table 1 which shows PWD's current inventory of electric equipment. Similarly, Solid Waste Services has a limited inventory of one backpack blower and one line trimmer that could be replaced with battery alternatives once the current equipment is eligible for replacement.

Table 1 - Summary of Public Works' Electric Equipment Inventory

Item	Roads	Forestry	Parks	Solid Waste	Traffic	Total
Blower	4	2	6		5	**17**
Chain Saw	2	3	4		1	**10**
Line Trimmer	4		22		3	**29**
Breaker	1					**1**
Road saw	1					**1**
Push mower			1			**1**
Hedge Trimmer			4			**4**
Pole Saw	2	10	1			**13**
Cement mixer	2					**2**
Compressor	4				2	**6**
Drill					20	**20**
Drill Press	1					**1**
Grease Gun	1				2	**3**
Grinder	8				11	**19**
Hammer Drill	4				27	**31**
Impact Wrench	7				37	**44**
Laser Level	1		1			**2**
Magnetic Locator	2					**2**
Mig Welder			1			**1**
Saw (Mitre, skill, Chop)	7					**7**
Sawzall	6				9	**15**
Stapler	1					**1**
Vacuum	2					**2**
Welder			1			**1**
Wet Saw on Stand	1					**1**
Total	**61**	**15**	**41**	**0**	**117**	**234**

As of the end of 2023, PWD has 234 electric equipment units in our inventory, representing approximately 21% of total small equipment inventory. A majority of PWD's gas-powered equipment is used in Parks Maintenance and Forestry and Roads and Parking Services, which were the focus areas of the equipment testing process.

PWD's total tools and equipment budget was approximately $2 million in 2023. That figure includes many types of tools and equipment, ranging from things like traffic monitoring technology to playground equipment like park swings to maintenance tools like leaf blowers. The budget for small equipment comes from this annual budget figure.

Advancing Motion no.2021-20-04

A transition of small equipment at the scale described in Motion no. 2021-20-04 is unprecedented in PWD's recent history. Given that, a comprehensive green equipment plan was required to evaluate the requirements for a gas to electric equipment transition. The development of the green equipment plan included:

- Establishing of a small equipment Inventory
- Conducting a municipal scan
- Testing several pieces of electric equipment to determine operational suitability
- Reviewing infrastructure requirements to support the gas to electric transition (ex: electrical capacity at facilities)
- Assessing market availability and supply of electric equipment suitable for commercial use
- Assessing the financial and environmental implications (GHG emissions) of electric equipment
- Sharing information with other departments

With two full seasons of equipment testing complete, as well as a comprehensive green equipment plan that contemplates what it will take to successfully transition to electric equipment, staff have determined an approach to this transition, as detailed in the discussion section below.

DISCUSSION

Municipal Scan

In 2022, PWD conducted a municipal scan to understand other municipalities' experiences with electric small equipment. Staff provided a survey to over 40 municipalities of diverse sizes across North America to determine if their operations made any transition from gas-powered to electric small equipment. Nineteen municipalities responded.

Of the 19 responses, 50 per cent of municipalities shared they had tested electric equipment for their maintenance activities. Of the 50 per cent who had tested the equipment, no municipality had transitioned their inventory from gas-powered to electric.

While many municipalities noted they were interested in transitioning their equipment, they indicated that the need for costly infrastructure upgrades to address electrical capacity, issues with battery power and hesitance about the industry's readiness for wide scale commercial use prevented them from doing so.

Given the results of the municipal scan, PWD staff will continue to connect with other municipalities to share knowledge and experiences with hopes of leveraging other municipalities experiences, and sharing our experiences, with electric equipment in the future.

The City is aware that in late 2021, the National Capital Commission (NCC) announced it would ban the use of gas-powered small equipment on NCC lands starting April 1, 2023, becoming the first jurisdiction in Canada to do so.

PWD has periodically connected with the NCC since beginning the electric equipment pilot. Through those conversations, the difference in the business model, service delivery model, and geographical area serviced became apparent. In addition, third party contractors conduct most of the NCC's maintenance work, while PWD conducts the majority of work internally. Staff will continue to monitor the implementation of the NCC ban and learn from their environmental leadership in this initiative.

Testing Electric Equipment

Electric equipment was mainly tested in two service areas: Parks Maintenance and Forestry Services (PMFS) and Roads and Parking Services (RPS). These service areas have most of PWD's small gas-powered equipment.

To prepare for testing electric equipment, staff identified some preliminary electrical upgrades that were required. To support the limited needs of the pilot, electrical upgrades at 9 facilities were required that ranged in costs between $1,000 to $5,000,

plus approximately $2,000 for charging cabinets per yard. To date, approximately $33,000 has been spent on electrical upgrades at PW yards to support testing electric equipment.

During the 2022 and 2023 spring/summer seasons, PMFS and RPS crews tested the following types of electric equipment for maintenance work in parks, forested areas, roadsides, right of way and medians:

- Line trimmers
- Hand-held leaf blowers
- Pole saws
- Push lawn mowers
- Hedge trimmers
- Pruning chain saws
- Breakers (also known as jack hammers)
- Road saws
- Split Shaft-Power brooms

For each type of equipment, multiple brands were used to ensure a variety of products were tested. Equipment was tested in different neighbourhoods across the City, and in differing weather conditions. Crews also used the equipment to complete a wide range of daily tasks including trimming grass in parks, around City trees, fence lines and ditches, pruning branches, and blowing grass clippings and debris.

Equipment Testing Results

PWD found 5 types of electric equipment that performed sufficiently for routine maintenance work and met our maintenance standards. Those items are line trimmers, hedge trimmers, pole saws, pruning chainsaws and push mowers. The challenging factor is the requirement for multiple batteries per piece of equipment to complete a day’s work .
Staff also found that 3 types of electric equipment, namely road saws, hand-held blowers and breakers (also known as jack hammers) lack sufficient battery power to be effective for PWD’s operations at this point. The 5 types of electric equipment that performed well will continue to be used throughout the city and staff will seek ongoing opportunities to expand our inventory of these units.

In general, the electric equipment that was tested was slightly quieter compared to gas-powered equipment. However, according to best practice, noise levels over 85dB are potentially harmful to human ears and no electric equipment tested had an operating noise level below 85db. Therefore, although much of the battery powered equipment tested is lower than their gas-powered counter parts, the levels are beyond what is safe for a human ear and will require the use of ear protection.

The equipment testing process gave staff insights into key interdependencies that are necessary to support the gas to electric transition. The interdependencies described later are key components of the green equipment plan that staff will be collaborating on with City partners to allow PWD to continue increasing our inventory of electric equipment.

Green House Gas (GHG) Emissions

As part of the process for testing electric equipment, staff worked with the Climate Change and Resiliency team to estimate GHG emissions savings from transitioning to electric equipment. PWD staff gathered detailed inventories and fuel usage estimates of all small gas-powered equipment used in PWD that has an electric alternative, which accounts for approximately 80% of PWD's total inventory. Using fuel tank volumes, average run time and average working hours, staff estimated the GHG emissions from that gas-powered equipment. Staff found that the emissions generated by this equipment accounts for a small portion of the City's emissions (approximately .01 per cent of corporate output). However, as the transition from gas to electric equipment continues, the GHG emissions reduction potential grows as well.

Table 2 - Estimated GHG emissions from gas-powered equipment that has an electric alternative (over one year)

Business Unit	**Fuel Usage (L/Year)**	**GHG Emissions Production (kg)**
Roads and Parking Services	2,904	6,700
Forestry Services	24,881	57,400
Parks Services	69,280	159,830
Solid Waste Services	71	163
Total	**97,136**	**224,092**

***Note:** Traffic Services is not represented here because they no longer have any gas-powered equipment. Traffic has replaced what few pieces they had with electric equipment already.

Key Interdependencies

Charging Capacity at Public Works Yards

The use of electric equipment for maintenance work requires daily battery charging. It is currently unknown if PWD yards have the electrical capacity to support battery charging at the scale needed for a full transition.

PWD has 28 main and multiple hub yards across the city and it is currently unknown how many would require electrical upgrades to support a full or even partial transition to electric equipment. Staff will be working with our colleagues in Recreation, Facilities and Culture to evaluate charging demands at PWD yards as part of the upcoming Facilities Electrical Capacity Review.

Facilities Electrical Capacity Review

The electrical demand for battery charging at PWD yards would require the installation of new panels and running new power supply to facilities. The electrical capacity to support charging demands at PWD yards is currently unknown. Recreation, Cultural and Facility Services is working on an electrical capacity table that will outline the present electric capacity at approximately 118 City facilities and how it can be improved to accommodate more electrical equipment and vehicles. Results are expected later in 2024 and will provide a better understanding of cost requirements to make electrical infrastructure upgrades at City facilities to support the long-term transition to electric equipment.

Electric Equipment Lifecycle

A key challenge with regards to budgeting for this equipment is that the lifecycle of electric equipment is currently unknown. It is also unknown if staff can repair it, as is possible with gas-powered equipment. In addition, staff have encountered issues getting component parts to repair battery powered equipment from some vendors. Without this key information, staff cannot appropriately budget for electric equipment. Going forward, staff will continue to gather information related to lifecycle/durability, repair capabilities and procurement of parts to better understand the financial implications of transitioning to electric equipment.

Evolution of Battery Technology and Equipment Types

There are constraints to broad adoption of electric equipment due to the evolving nature of battery technology. Batteries are typically proprietary to specific brands, so there is a risk that what is purchased today may be obsolete in a few years. This limits competitive procurements because once we commit to a brand, we have invested in their battery technology. In addition, staff noted during equipment testing that battery powered equipment tended to have less power potential compared to gas-powered equipment.

However, based on our municipal scan, it appears there is a growing desire for commercial and institutional use of electric equipment. It is expected the market will respond to this demand and battery technology will be improved, and new products that do not currently have an electric alternative will be available in the near future. PWD will be monitoring the market going forward and seek opportunities to test new battery technology and new electric products.

Financial Considerations

PWD is planning to gradually phase in electric equipment as it makes sense operationally. That approach also allows staff to incorporate those purchases into current operating budgets. Replacing all equipment at the same time is not recommended since a one-time cost would be significant and could result in all equipment lifecycle replacements occurring at the same time. If current budgets are insufficient to continue the gas to electric transition, staff would submit a pressure through the annual budget process.

Battery Disposal

Transitioning to electric equipment requires PWD to secure appropriate battery disposal processes when a battery has reached its end of life. Solid Waste staff have secured a

private registered battery processor that has agreed to take our used batteries at the current scale of the pilot, at no charge to the City. The processor is authorized under the *Resource Productivity & Recovery Authority (RPRA) Ontario Regulation 30/20.*

However going forward, a long-term sustainable strategy for battery disposal will be required before a larger scale implementation of battery powered equipment can occur. At this point in time, no batteries used in PWD's equipment testing required disposal, so staff will be learning about and monitoring this process going forward.

Fire Safety

Increasing the amount of battery charging at PWD yards increases concerns related to heat generation, off-gassing and explosion/fire prevention/containment for lithium-ion batteries. PWD has and will continue to share our pilot results with Ottawa Fire Services (OFS) regarding the specific equipment and battery charging set ups used at our test locations. Staff will consult with subject matter experts from OFS to develop guidelines and risk mitigation strategies for charging Li-Ion batteries safely to ensure future charging set-ups follow their recommendations as well as current By-laws.

Collaboration with City Departments

Moving forward, it is critical that all departments continue working collaboratively as the City enhances the environmental sustainability of its operations. A major component of PWD's green equipment plan development was working closely with other departments on several ongoing initiatives, detailed below.

Emergency and Protective Services

The Emergency and Protective Services Department will be undertaking a review of potential regulations on leaf blowers and small two-stroke engines. This review is scheduled to begin in Q3 of 2024 and results/findings are expected to be reported to Committee and Council in Q3 of 2025.

Green Fleet Strategy

Fleet Services is developing a Green Fleet Strategy, which is scheduled to be presented to Council in 2024. Part of this strategy will propose a transition to electric vehicles which will impact charging demands at City facilities. PWD will be monitoring this initiative and seek opportunities to determine and share estimated charging needs to ensure infrastructure upgrades can be made in tandem.

Procurement

In the past, the use of electric equipment by contractors was rare and therefore not considered in the procurement process. In addition, the operational feasibility of electric equipment was unknown. With Council's direction to lower greenhouse gas emissions through the Climate Change Master Plan, the use of emissions free equipment is becoming more desirable and a higher priority. The City's current procurement practice is to encourage contractors to use electric tools. A provision in the current Standing Offer for Maintenance Crew Services gives vendors the option to bid on contracts using specific types of battery-powered equipment.

Going forward, when a contract is up for renewal or tender, PWD staff will evaluate where it is appropriate to include specifications for an electric alternative.

Next Steps

PWD's experience with electric equipment over the past two years has shown there are instances where electric equipment can serve as a substitute for gas-powered small equipment. In these instances, PWD will continue using electric equipment where charging capacity exists, and as implementation of the green equipment plan continues, use new electric items as they are introduced into the inventory.

Staff will continue to document the durability and serviceability of equipment, test equipment from a range of manufacturers, and monitor the progress of technology by conducting annual market scans. Staff will continue to gather data on the lifecycle of battery-operated equipment currently in use.

On an ongoing basis, PWD will implement an electric equipment testing process where any promising new equipment types or brands not yet tested can be explored with free trials to avoid purchasing any potentially inferior equipment. The additional data collected will help with the transition and budgeting for equipment and battery replacement.

In anticipation of more electric small equipment options for commercial use, PWD will continue to participate in conversations as part of RCFS's Facilities Electrical Capacity Review. The review will allow staff to understand the opportunities and limitations of the electrical capacity available on site. Having this information will allow PWD to assess the type of retrofits needed to facilitate additional electric small equipment.

PWD will monitor the interdependencies identified in this report, and staff will continue to transition to electric equipment when it is operationally feasible. Staff will

communicate the usage of electric equipment to Council via the Spring and Summer Operations memo that PWD issues annually, prior to the spring/summer season.

FINANCIAL IMPLICATIONS

There are no financial implications resulting from the recommendations of this report.

LEGAL IMPLICATIONS

There are no legal implications resulting from the recommendations of this report.

COMMENTS BY THE WARD COUNCILLOR(S)

This is a City-wide report.

ADVISORY COMMITTEE(S) COMMENTS

There are no advisory committee comments for this report.

CONSULTATION

There was no public consultation associated with the scope of this report.

ACCESSIBILITY IMPACTS

There are no accessibility impacts associated with this report. However, as the green equipment plan will be an ongoing initiative, accessibility impacts will be considered throughout implementation of that plan.

ASSET MANAGEMENT IMPLICATIONS

The recommendations documented in this report are consistent with the City's Comprehensive Asset Management (CAM) Program objectives. The implementation of the Comprehensive Asset Management program enables the City to effectively manage existing and new infrastructure to maximize benefits, reduce risk, and provide safe and reliable levels of service to community users. This is done in a socially, culturally, environmentally, and economically conscious manner.

The information gathered through the green equipment plan as described in the report informs with respect to both the cost and emissions impact of both the acquisition of new equipment, but also the costs and unknowns for the operation, maintenance, renewal and disposal of the equipment, providing important information for Council

decision making. Consideration for the supporting infrastructure also aligns with the CAM principles and consideration of lifecycle costs.

When the City commits to the acquisition of new assets, consideration must also be given to the City's commitment to fund future operations, maintenance and renewal costs. It must also account for future depreciation when reviewing long term financial sustainability. When reviewing the long-term impacts of asset acquisition, it is useful to consider the cumulative value and lifecycle costing of the acquired assets being taken on by the City.

CLIMATE IMPLICATIONS

As part of the process for testing electric equipment, staff worked with the Climate Change and Resiliency team to estimate GHG emissions savings from transitioning to electric equipment. PWD staff gathered detailed inventories and fuel usage estimates of all small gas-powered equipment used in PWD that has an electric alternative, which represents approximately 80% of PWD‘s small equipment inventory. Using fuel tank volumes, average run time and average working hours, staff estimated the GHG emissions from that gas-powered equipment. Staff found that the emissions generated by this equipment accounts for a small portion of the City's emissions (approximately .01 per cent of corporate output).

ENVIRONMENTAL IMPLICATIONS

Transitioning from gas-powered to electric (exhaust-free) small equipment for maintenance work in public spaces will reduce air pollution. Environmental stewardship is a priority for PWD, and the green equipment plan will seek to continue the implementation of exhaust-free electric equipment to continue reducing air pollution in public spaces.

INDIGENOUS, GENDER AND EQUITY IMPLICATIONS

There are no indigenous, gender and equity implications associated with this report.

RISK MANAGEMENT IMPLICATIONS

This report outlines all risks and mitigation measures.

RURAL IMPLICATIONS

Throughout development of the green equipment plan, staff considered the different regions of Ottawa (urban, suburban and rural) and how those different geographical areas may impact our ability to charge batteries and deploy electric equipment for maintenance work.

In rural areas, PWD yards are a further distance from maintenance sites however the current plan is to have staff carry the requiste number of charged batteries with them.Staff will be monitoring battery longevity and electric equipment will only be deployed if staff can confidently meet maintenance quality standards.

TERM OF COUNCIL PRIORITIES

The testing and efforts to transition gas-powered small equipment to battery operated equipment aligns with the proposed 2022-2026 Term of Council priority: a city that is green and resilient. Outcomes that support this priority include:

- Reducing emissions associated with the City's operations and facilities.

DELEGATION OF AUTHORITY IMPLICATIONS

There are no implications to delegation of authority in this report.

DISPOSITION

The Public Works Department will continue using electric equipment where charging capacity exists. As implementation of the green equipment plan continues, new electric items will be used as they are introduced into the inventory. In addition, PWD will collaborate with other departments on key interdependencies identified in this report.