H2000 Inc.

Distribution System Plan

2025 Cost of Service

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1. DISTRIBUTION SYSTEM PLAN

This Distribution System Plan (DSP, “The Plan”) has been prepared by Hydro 2000 Inc. (H2000).

H2000’s DSP supports cost-effective planning that ensures efficiency, dependability, sustainability, and customer value. The DSP documents current practices, policies, and processes. These processes ensure that investment decisions meet H2000's goals cost-effectively and add customer value. H2000 follows its DSP to benefit customers.

H2000 used the template and section headers from the very small utility working group example to organize the information. The OEB categorizes investment projects and operations as System Access, System Renewals, System Service, or General Plant. The DSP covers the historic years , the bridge year, the test year, and the projected years. For the purposes of this DSP, 2020 to 2023 are the historic years, 2024 is the bridge year, 2025 is the test year and 2026-2029 are the forecast years.

H2000 confirms that this plan's information is current and based on actual expenses as of end of 2023 and capital expenditure predictions for 2025 to 2029. Project details have been provided for projects over H2000’s materiality threshold of $50,000 as described in Exhibit 1.

H2000’s integrated approach to planning, prioritizing, and managing assets includes regional planning, local stakeholder consultations, and renewable generation connections. H2000 has completed this DSP with a focus on customer preferences and operational effectiveness while achieving optimal value for capital spending.

The purpose of this DSP is to present H2000’s Asset Management Strategy and to provide justifications for the capital investments required to maintain its core business: supplying reliable electrical services to its customers at a reasonable cost. This requires:

- a thorough understanding of the age, condition and performance of its assets,
- documenting its inspection practices in accordance with the DSC,
- describing its maintenance activities in accordance with good utility practice,
- ensuring that all aspects of employee and public safety are addressed in compliance with all regulatory and legal obligations,
- recognizing and addressing constraints in the current distribution system and anticipating future capacity requirements,
- demonstrating that the asset management process recognizes the above items and prioritizes projects to accommodate customers and system requirements, and
- developing a five-year forward-looking capital expenditure plan that anticipates the future growth, capacity and performance of the distribution system while remaining flexible to accommodate the unknown requirements of its customer base.

1.1.1. Key elements of the DSP

H2000's second DSP largely remains unchanged from the previous 2020 filing, as operational and service requirements are expected to stay consistent through the planning period. The projected expenditures for 2024 and 2025 focus on:

- Routine spending for a mature, stable customer base.
- Targeted capital investments to replace aging infrastructure and ensure reliable supply.
- Minimal general plant upgrades for office and IT needs.

Key areas of investment include replacing end-of-life assets like poles and transformers and maintaining supply capacity.

Several factors guide investment planning, including customer service, asset management outputs (maintenance and replacement), coordination with municipal projects, and regulatory obligations. Notably, there are no expectations for load growth due to developments.

H2000 regularly assesses the condition of its assets, updating information after maintenance and capital projects. Poles undergo periodic third-party testing to ensure reliability. The latest testing was recently done in advance of the utility's cost of service application. Capital investment decisions are prioritized during the budgeting process, evaluating project costs, expected benefits, and risks to determine investment priority.

Following good utility practices, H2000 adheres to OEB's Distribution System Code (DSC), ensuring safe, reliable operations. While it has not implemented newer technologies like SCADA or GIS, H2000 uses consultants such as Stantec and its 3rd party contractor to monitor load and voltage requirements.

The DSP aims to maintain quality and reliability at affordable costs through preventative maintenance, refurbishment, and asset replacements. H2000 prioritizes non-discretionary investments and replacement of end-of-life infrastructure while managing costs to reduce rate impacts on customers.

H2000 remains committed to proactive response during adverse weather, coordinating with local authorities, monitoring forecasts, and engaging third-party contractors to ensure swift power restoration and infrastructure repairs. Efforts like vegetation management are also prioritized to prevent weather-related damage and enhance system resilience.

The DSP does not include any CDM Activities at this time.

1.1.2. Sources of Cost Savings

H2000's planning, prioritization, and investment processes follow good utility practices that are executed through the DSP. These practices not only ensure operational efficiency but also inherently drive cost savings by emphasizing sound decision-making, thoughtful compromises, and carefully timed actions. By aligning investment with the right priorities and maintaining optimum expenditure levels, H2000 minimizes unnecessary costs, ensuring that every dollar spent contributes to long-term value while keeping rates manageable for customers.

1.1.3. Investment by Category

In developing its long-term DSP, H2000's objective is to make timely investments in infrastructure to ensure its distribution system continues to deliver power at the quality and reliability levels required by its customers. Details of the forecast for capital expenses can be seen in Section 7.

H2000 tracks its capital spending in both the traditional system USoA and the RRFE categories (System Access, System Renewal, System Service, and General Plant).

The table below provides the Historical Investments as reported in its last DSP up to projected investments H2000 has made since 2014 up to projected investments for 2024 and 2025.

Table 1 – Investment by Category

Category	2020	2021	2022	2023	2024	2025
System Access	32,254	615	3,982	5,264	15,500	17,500
Capital Contributions	-789				-15,545	-5000
Planned 2020DSP	*37290*	*5000*	*5000*	*5000*	*5000*	
System Renewal	59,681	103,793	176,237	83,114	118,100	76,100
			-7,130	-11,237		
Planned 2020DSP	*106798*	*100000*	*100000*	*100000*	*100000*	
System Service	0	0	0	0	0	
Planned 2020DSP						
General Plant	2,635	31,758	4,726	830	8,560	9,000
Planned 2020DSP	*3500*	*5500*	*5500*	*5500*	*5500*	
Total Capex (includes disposals)	93,781	136,166	177,815	77,971	126,615	97,600

Utility Overview and System Configuration

1.1.4. Utility Overview

H2000 Inc. was incorporated in September 2000. H2000 is the local distribution company in Eastern Ontario that is responsible for the distribution of electricity to the former Corporation of the Village of Alfred and the former Village of Plantagenet. Located in Eastern Ontario, the Township of Alfred and Plantagenet has a population of more than 9,680 including the former municipalities of Alfred, Plantagenet, Curran, Wendover, Treadwell, Lefaivre and Pendleton.

H2000 is incorporated under the Ontario Business Corporations Act and is 100% owned by the Township of Alfred and Plantagenet. H2000 is managed by a Board of Directors appointed by the Township of Alfred and Plantagenet. H2000 has three employees: a Manager, an Administrative Coordinator and a Client Services Representative in the office. H2000 hires Sproule Powerline Construction (SPL) to address the outside plant matters. Consequently, most of the operational and technical input comes from the contractor SPL.

H2000 is the local distribution company that is responsible for the distribution of electricity to the Village of Alfred and the village of Plantagenet. The distribution service territory has an area of nine square kilometers. The distribution service has 21 kilometers of lines comprised of 18 kilometers of overhead lines and three kilometers of underground lines.

H2000’s revenue is earned by delivering electric power to the homes and businesses in the service territory. The rates charged for this, and the performance standards that the energy delivery system must meet, are regulated by the OEB.

As an embedded utility, H2000 is billed monthly by Hydro One.

The weather in Alfred and Plantagenet is characterized by cold winters with snow and cold temperatures. The township has a semi-continental climate, with a warm, humid summer and a very cold winter. Winters in the township are severe. Snow depths of greater than 1 cm are experienced about 120 days each year and freezing rain is not uncommon in the winter. Minimum average temperatures in January are about -15 degrees Celsius and in summer the maximum average temperature is about 26 degrees Celsius.

1.1.5. System Configuration

H2000 is responsible for the distribution of electricity within its nine-square-kilometer service area, which includes the villages of Alfred and Plantagenet. The distribution network consists of 21 kilometers of lines—18 kilometers of overhead and 3 kilometers of underground—operating at a primary distribution voltage of 8.32 kV. Notably, H2000 does not host any other utilities in its territory.

As an embedded utility, H2000 receives its power from Hydro One Networks Inc. (HONI) and distributes it to 725 customers in Alfred and 515 customers in Plantagenet. The distribution system in Alfred is fed by an 8.32 kV feeder and a pole-mounted feeder from HONI's 44 kV Alfred Distribution Station, located on Peat Moss Road. In Plantagenet, power is supplied via an 8.32 kV feeder from HONI's Plantagenet Distribution Station on County Road #9. Both stations are powered by feeder M26, which is connected to the Longueil Transformer Station (TS).

H2000 owns and maintains all distribution assets, including 205 transformers (189 pole-mounted and 16 pad-mounted), as well as the associated protective devices and secondary conductors that supply electricity to its customers.

To date, HONI has not identified any constraints with the feeders serving H2000. Coordination between H2000 and HONI occurs as needed, with HONI managing planned outages, switching plans, and providing a weekly update from the Ontario Grid Control Centre to inform customers of significant events affecting its transmission and distribution systems.

Table 2 - System Equipment Ratings

System Component	***Rating***	***Ampacity @ 8.32kV***
44kV Primary Fuses S&C Electric SMD-1A, 125E Slow Speed, TCC 119-1	Continuous Amps Daily 8 hour peak Emergency 8 hour peak	761.5A (144A) 772.1A (146A) 835.6A (158A)
44,000/8,800V Transformer Delta/Wye (Grnd.), 7.5 MVA (ONAN) Z = 5.56%	Continuous Amps	520A (98.4A)
8.32kV Secondary Switchgear	Continuous Amps	*600A
8.32kV Hydraulic Oil Circuit Reclosers Cooper Type 'L' with 280A Trips	Continuous Amps	280A

It should be noted that the evaluation of loading and capacity at the substation is the responsibility of Hydro One Networks Inc (HONI).

The ratings of most feeder level switches within this system were estimated as 100 or 200 Amps, based on the cable size they were connected to. Most aggregated backbone switches are solid-blade type, and their ratings were estimated at 300 Amps, based on the cable size they were connected to. These conservative values will allow us to ensure that all normal and emergency situations which may be above that level are flagged properly. Typically, winter ratings of these switches are at least 25% higher than summer ratings due to the lower ambient temperature and are rated that way within this study. It would be beneficial to confirm and add all switch and fuse ampacities to the system utility diagram at some point in the future.

1.2. Asset Management Strategy and Objectives

1.2.1. Overview

This document outlines H2000's asset management philosophy and the key elements of the process that guide its capital investment decisions. It explains how the utility's objectives and asset management goals influence the selection and prioritization of H2000's planned capital investments which are essential for repairing or replacing aging infrastructure, including conductors, insulators, lightning arrestors, and wooden poles.

1.2.2. Drivers and Influencers

This section outlines the key factors that drive and influence H2000's strategic decisions related to infrastructure investment and operational priorities. These drivers ensure that the utility remains responsive to evolving customer needs, regulatory requirements, and technological advancements, while maintaining system reliability and meeting future capacity demands. The following factors—customer demand, system reliability, municipal directives, capacity requirements, asset management obligations, infrastructure renewal, and smart metering—shape the direction of H2000's capital expenditures and long-term planning efforts. Each plays a critical role in guiding investment choices and ensuring that the utility continues to deliver reliable, efficient, and cost-effective services.

1.2.3. Strategy

H2000’s DSP is designed to present a fully integrated approach to capital expenditure planning. This includes comprehensive documentation of its asset management process to support its future five-year capital expenditure plan and detailing the history of its past five years’ activities.

H2000’s strategic priorities are defined in its corporate goals and reflect its mission and value statements:

- To form partnerships and alliances with other local distribution companies for economies of scale and cost-sharing opportunities
- To stay current with industry, sector and regulatory changes
- To pursue new business opportunities, partnerships and best management practices in our quest to meet or exceed financial expectations of our community by cost sharing, efficiency gains, cost savings, improve reliability, superior customer service and protecting the environment
- To investigate roles and opportunities that H2000 can pursue in generation.

H2000 recognizes its responsibilities to provide its customers with reliable service that is acknowledged as excellent value for money, by ensuring that its asset management activities maintain alignment with RRFE objectives – customer focus, operational effectiveness, public policy responsiveness and financial performance.

1.2.4. Objective

H2000's asset management objectives form the high-level philosophy framework for its capital program. These objectives help to define the content of the programs and the major projects in the capital expenditure plan necessary to sustain H2000's electrical distribution system. The objectives provide guidance to make effective capital investment decisions, which inherently make the best use of, and maximize the value of the assets. The objectives identify an initial starting point and are developed, enhanced, or adjusted so that they are aligned with H2000's business environment. The qualitative asset management objectives have been integrated into H2000's Capital Investment Process to prioritize investments for five years including the bridge and test years.

Asset management objectives describe the specific and measurable outcomes required of the asset management system and are used to measure the success of the Asset Management Plan.

H2000's multi-level commitment to its stakeholders is reflected in these asset management objectives:

- to construct, maintain and operate all assets in a condition safe to staff, contractors and the public,
- to actively manage distribution assets to optimally balance system investments and reliability,
- to align asset investments with customer expectations of cost, reliability and service performance,
- to continually seek out, develop and deliver sustainable cost efficiencies relating to asset deployment, operations, and maintenance,
- to manage the pace and magnitude of asset investments over the long term, to level customer rate impacts while maintaining corporate financial stability and continuing to deliver economically reliable power to customers,
- to ensure that environmental considerations are taken into account in the design and management of the distribution system,
- to satisfy growth and loading needs by managing capacity and asset utilization, and
- to incorporate and leverage the benefits of new technology as appropriate.

The goals and objectives are used throughout H2000's asset management approach and are embedded within the asset management policy, strategies, and plan. Key tactical initiatives are included to achieve the objectives. The goals and objectives will have targets established to determine the measure of success of the asset management programs and practices. Conceptually, objectives will most likely revolve around, but not be limited to safety, reliability and cost efficiency.

1.3. Asset Management Process

The planning begins with reviewing system performance to ensure it meets management objectives. Key components of the Asset Management Process include:

1) Assessing asset conditions through inspections, life expectancy, fault frequency, maintenance costs, and customer impact.
2) Replacing assets as needed for system reliability (non-discretionary) or when it's more economical to replace than maintain (discretionary).

Data used in asset management comes from inspections, reliability info, asset condition assessments, and outage data. Internal and external factors, such as safety, customer needs, regulatory changes, and system reliability, drive decisions.

When selecting capital projects, H2000 considers safety, system reliability, rate impact, and other factors. Safety and compliance are mandatory, while other criteria are weighed based on system needs.

Capital spending is guided by identified needs, with projects reviewed for rate impacts, customer service value, and shareholder investment. A combination of bottom-up and top-down approaches informs the budget, which is approved by the H2000 Board of Directors. The capital budget is flexible, allowing for adjustments throughout the year based on changing requirements, such as storm damage or unanticipated municipal projects. Over the last four years, this process has effectively managed H2000's assets and capital expenditures.

1.3.1. Non-Discretionary vs. Discretionary Capital Projects

Non-discretionary

Non-discretionary capital projects are automatically included in the capital budget based on their need and include:

- emergency replacement of failed equipment (system renewal),
- safety-related projects (system service),
- new/enhanced customer service connections (system access),
- plant relocation projects necessitate by road construction (system access),
- mandated service obligations—regulatory, legal, or road authority (system access), and
- renewable energy projects (system access).

Discretionary

All other projects not mandated are deemed discretionary. Evaluating the absolute or relative importance of these proposed investments in distribution assets can be an intricate task. There are often competing requirements for available resources in any year. The decision to recommend an individual project in the current year is made by management and the board of directors.

H2000 uses a combined needs and risk-based approach to considering discretionary capital projects. This evaluation generally considers a range of criteria including health and safety concerns, load and customer growth projections, regulatory and environmental requirements, system reliability, life expectancy, operational efficiency, and optimal lifecycle costs.

The following criteria are used to turn subjective factors into objective evaluations for comparing discretionary capital projects:

- **Public safety:** Assesses whether the project reduces the risk of public injury. If the risk is high and unacceptable, it becomes a non-discretionary project.
- **Worker safety:** Similar to public safety, it evaluates if the project lowers the risk of injury to workers.
- **Regulatory compliance:** Considers how the project meets OEB requirements and whether it affects the utility's license or business.
- **Environmental impairment:** Evaluates the project's impact on reducing environmental risks and the costs of deferred remediation.
- **Environmental footprint:** Focuses on whether the project reduces greenhouse gases or aligns with energy efficiency and conservation goals.
- **Reliability:** Assesses how the project improves system reliability or customer service, with measurable or qualitative benefits.
- **Power quality:** Determines if the project maintains or improves power quality standards.
- **Customer satisfaction**: Evaluates how the project impacts service quality and whether it’s necessary to meet regulatory service standards.
- **Customer perception:** Considers how the public views the project, though this isn't the sole deciding factor.
- **Financial:** Looks at whether the project has a positive return on investment.
- **End of Life:** Prioritizes replacing assets nearing obsolescence to avoid safety or service issues, which may become non-discretionary.
- **Maintainability:** Evaluates whether the project will make system maintenance easier or lower costs.
- **Operability:** Assesses whether the project improves system operations and flexibility or lowers operating costs.

2. OVERALL PLANNING PROCESS

In general, the condition of assets is determined to ensure that:

- they are safe for the public and for competent knowledgeable staff to work on using approved procedures,
- they are working within specifications,
- within the device current and voltage capabilities,
- with no deterioration to impair the 'normal' function of the asset, and
- are as secure as it was when initially installed properly.

Assets are generally categorized as "Overhead vs Underground". While fulfilling its asset management responsibilities, H2000 engages in the following type of maintenance programs on each category:

- **Predictive maintenance**
  - Inspections address risk management by actively assessing the condition of the plant visually. Inspections are required to meet regulatory requirements and are performed on a rotation—one-third of the system each year.
  - Testing addresses risk management by actively assessing condition of plant. It is more detailed and more focused than inspection and typically involves the measurement of some aspect of the asset. This is done on an interval basis determined by the rate of deterioration of the asset.
- **Preventative maintenance**
  - Maintenance activities to extend the trouble-free operation of assets, making the activity economical and reliable, are performed on a cyclical basis and usually coincide with the inspection cycle.
- **Condition-based or reactive maintenance**
  - Corrective action and follow-up activities are necessary when a plant malfunctions or is out of specification. Occasionally, replacement is the most cost-effective way to remedy the situation.

H2000 completes inspections as prescribed in the DSC, and in a manner and frequency that addresses public safety and cost efficiency. Predefined geographical areas are designated for inspection based on a three-year cycle.

After the inspections are completed, deficiency reports are returned, processed and converted into a form to document follow-up and ensure completion within a reasonable period.

The information is retained and available for review or verification if needed.

2.1. Overhead Assets - Predictive Maintenance

Assets must meet the requirements of the DSC, Ontario Regulation 22/04 and the relevant environmental standards such as the regulations addressing the use, storage and handling of PCBs.

The Minimum Inspection Requirements (Appendix 'C' of the OEB's DSC) details the inspection standards and cycles required within the Code.

H2000's supply area is served by an urban distribution system supplying the Town of Alfred and Plantagenet. Systematic and routine visual patrols are conducted to comply with the OEB inspection requirements (at a minimum). H2000 inspects the overhead distribution system in each inspection zone, every three year, as per DSC's 'Minimum Inspection Requirements. The visual inspections of the major distribution facilities meet the level of detail for the patrol inspection definition in the DSC.

The overhead area uses a street map since the plant is visible when inspecting. The process identifies what to inspect, how to record deficiencies, document what needs to be corrected, and when the inspection is completed.

There are separate databases containing the information of transformers and switches with pertinent device information such as nameplate data and device characteristics, and location.

The visual patrol inspects and assesses the condition of overhead assets, including wood poles and their supports and attachments and pole-mount distribution transformers. Historically, the line patrol would only produce a Line Inspection Deficiency Report highlighting deficiencies. Today, H2000 uses a line inspection record to document the completion/date of inspection, the name of the inspector; when a defect is identified during the inspection, the equipment, location and condition details are listed. Follow-up maintenance is prioritized and scheduled, and a line advice notice is issued to a crew to correct defects.

In addition to fulfilling the requirements of the DSC, the inspections allow for deficiencies and the general condition of system components and related peripheral equipment and hardware, to be realized and documented with sufficient lead time and for subsequent analysis in support of maintenance and capital planning activities.

During the visual inspections, the conductors are inspected for obvious signs of deterioration. Concerns are noted on the inspection sheets and followed up. The condition of overhead system assets is also inspected during preventative maintenance activities, mainly as a result of vegetation management.

Inspections of pole-mounted transformers, switches and vegetation growth are also completed as part of the cyclical visual patrol of the overhead distribution system. Deficiencies related to the transformers, switches and excess vegetation are noted on the Line Inspection Record and addressed through reactive maintenance programs. Overhead fused switches or cutouts are inspected as per DSC requirements and are also inspected when they are operated manually or after they operate automatically. Damaged cutouts are replaced. Overhead transformers are inspected visually, and problems are corrected. The strategy for this asset class is to replace based on asset condition. Service connections trigger a review of transformer loading and sizing, and units are upgraded and/or replaced.

2.2. Overhead Assets - Preventative Maintenance

2.2.1. Vegetation Management

Vegetation management, or tree trimming, is a preventative maintenance program scheduled annually and completed each year by contractors.

H2000 collaborates with Sproule Power Line (SPL) for its tree trimming and vegetation management efforts. Each year in February, SPL performs an annual inspection to assess the condition of vegetation around power lines and infrastructure. Working within a $5,000 budget, SPL prioritizes the areas that require the most urgent attention to ensure safety and system reliability.

If clients raise concerns about vegetation on their property, H2000 arranges for SPL to provide an estimate for addressing the vegetation, allowing clients to decide if they want to proceed with trimming or removal at their own expense. This approach balances H2000's system maintenance needs with customer preferences and responsibility for personal vegetation management.

2.2.2. Line Patrol (3rd party)

Line patrolling, which is performed by Sproule and the staff on occasion allows H2000 to identify problem areas and turn unplanned outages into shorter planned outages or eliminate the outage completely. This is reflected in both H2000 system reliability statistics and in the customer survey responses and feedback.

The service area's size and the repetitive attention to localized areas in daily activities ensure that minor issues are addressed before they escalate into larger problems. This proactive approach has yielded a multitude of information regarding system conditions that can be utilized in system planning to enable staff to proactively and predictively resolve system issues before they escalate into problems. H2000 observes that third-party contractors are averse to after-hours issue calls and endeavor to prevent unforeseen circumstances whenever possible.

2.3. Overhead Assets - Condition-based Maintenance

2.3.1. Following pole inspections and line inspections

A 3rd party contractor inspects and reports on poles requiring attention. These reports are prioritized based on safety and risk for subsequent repair actions. Repair activities are tracked, documented, and signed off upon completion in accordance with ESA regulations. The tables below present a sample of the testing conducted regularly by a third-party contractor, which is then conveyed to the General Manager of H2000 to facilitate the replacement planning.

2.3.2. Following vegetation management

As part of the regular maintenance plan for the pole line assets, H2000 schedules regular tree-trimming activities, as described below:

Vegetation and Right of Way control is required under the Minimum Inspection Requirements of the Distribution System Code and good utility practice. H2000 has a relatively heavy mature tree cover where overhead hydro lines are in proximity to trees. Tree contact with energized lines can cause the following:

- Interruption of power due to short circuit to ground or between phases.
- Damage to conductors, hardware and poles
- Danger to persons and property within the vicinity due to falling conductors, hardware, poles and trees.
- Danger of electric shock potential from electricity energizing vegetation

Care must be taken to balance the requirements of customers and stakeholders and safe and reliable operation of the distribution system.

Tree Trimming inspections have been incorporated into the other inspection programs included in this plan and additional verification will be performed by work crews in the area in which regular work is performed.

Depending on the size, shape and growth pattern of each tree species, the tree trimmers remove sufficient material from the tree to limit the possibility of contact during high wind situations. This work is carried out by H2000 contractors based on cost and availability of resources.

All debris is removed, and the site is returned to as-found condition. Any pole line damage or anomaly noticed by the tree trimming crew is reported to H2000's General Manager for remedial action.

2.4. Underground Assets - Predictive Maintenance

2.4.1. Underground Inspections

Similar to the general overhead process of inspection and condition assessment, the underground distribution system is also inspected on a cyclical basis to assess the condition of underground assets including pad-mount transformers, transformers, underground switches, transformer vaults and civil structures. The buried assets cannot be totally inspected visually like the overhead assets, but care is taken to inspect all assets that can be seen to assess their condition. The Line Inspection Record documents the inspection completion, date of inspection and the inspector. The equipment, location and condition details of defects identified are documented in the Report the defect(s). Data from inspection activities are compiled and used for reporting.

2.4.2. Underground Distribution Transformers

Inspections of pad-mount transformers occur within the visual patrol of the underground distribution system and are therefore inspected on a cycle. Approximately one-third of the transformers within H2000's distribution system are inspected on an annual basis. Enclosures are opened to allow a visual check of the condition of the plant. The Line Inspection Record is used to document deficiencies such as broken bushings, oil leaks or paint chips, and condition of the concrete base—bases with cracks or deteriorated are identified for replacement.

2.4.3. Underground System Switchgear

Inspections of pad-mounted switches occur as part of the visual patrol of the underground distribution system and on a cycle. Approximately one-third of the switches within H2000's distribution system are inspected on an regular basis. Inspection includes opening the enclosures so a visual check can be made of the condition of the plant. Deficiencies such as broken bushings, oil leaks or paint chips, among others, are noted on the Line Inspection Record.

2.4.4. Underground Cable

The underground primary cable has not failed in H2000's system. Cable terminations are inspected visually in switching units and in transformers. Unless specific issues are identified, they run to failure.

Underground secondary cable terminations are visually inspected at the transformer when the transformer inspection is carried out. Unless specific issues are identified, they run to failure.

2.5. Underground Assets - Condition-based Maintenance

H2000 uses the inspection form for items that are discovered in inspections. The inspection form identified defect is classified as needing attention immediately or in a less time critical manner. Reports are completed and recorded in the database. The work is dispatched to the appropriate crew(s) and the work is completed. Once the work is completed appropriate signoffs are made to ensure the distribution system is safe for the public and staff and that the system is restored to proper working order. The signed off reports are logged in the electronic database and the paper copy signed off is retained by year and report number.

2.6. Asset Lifecycle Optimization and Practices

H2000 owns all the distribution assets within its service area. H2000 is responsible for the management of all its distribution assets.

The asset register for field assets consists of a spreadsheet for each asset type. This allows the capture of data that is adequate for H2000 to manage its assets. Asset data was gathered and input from a multitude of sources including construction as built records and legacy records. As the asset is visited through planned inspections or maintenance, the asset data is verified or corrected. The information in the spreadsheet, such as location, asset ratings or specifics of the asset, and installation date describes the asset.

The asset register is intended to hold asset attribute information as well as historical financial information over each asset's lifecycle. Currently, the spreadsheet holds locational data, attribute data and historical non-financial information (i.e. inspection history, tests, etc.). It is the intent of H2000, over time, to continue to populate the spreadsheets with additional non-financial and historic financial data as appropriate and useful.

H2000 maintains the efficiency and reliability of its distribution system through an active inspection, maintenance and asset management program that focuses on customer service, employee safety and cost-effective maintenance, refurbishment and replacement of assets that can no longer meet acceptable utility standards.

2.7. Asset Life

H2000 has adopted depreciation rates based on the Kinectrics Asset Depreciation Study. The utility is not proposing any changes to the depreciation rates for any assets.

3. ASSETS MANAGED, MAINTENANCE AND PLANNING PROCESS

3.1. Transformers

H2000 has 16 single phase *Utility owned Pad-Mounted Transformers*.

Table 3 - Pad Mounted Transformer Data

Manufactured	1 Phase Pad Mount Quantity of active transformer
2019-2024	
2014-2018	
2009-2013	0
2004-2008	2
1999-2003	
1994-1998	0
1989-1993	9
1984-1988	0

H2000 has 138 single-phase Pole-Mounted Transformers and 51 three-phase Pole-Mounted

Table 4 - Pole Mounted Transformer Data

Manufactured	1 Phase Pole Mount Quantity of active transformer
2019-2024	41
2014-2018	6
2009-2013	2
2004-2008	2
1999-2003	5
1994-1998	3
1989-1993	8
1984-1988	7
1979-1983	23
1974-1978	19
1969-1973	15
1964-1968	6
older	1

3.1.1. Transformers Maintenance:

The inspection of transformers includes:

Pole Mounted:

- Paint condition and corrosion
- Leaking oil
- Flashed or cracked insulators.
- Contamination/discoloration of bushings
- Ground lead attachments
- Damaged disconnect switches or lightning arresters.
- Ground wire on arresters unattached

Pad Mounted:

- Paint condition and corrosion
- Placement on pad or vault
- Leaking oil
- Lid Damage, missing bolts, cabinet damage
- Cable connections
- Ground connections

H2000 performs maintenance on any transformers which are identified by either visual or infra-red inspection as needing work. This work may include replacement of connections if found to be hot, painting or replacement of unit if leaking.

3.1.1. Transformers Maintenance with BCP:

Under PCB Regulations SOR (2008-273) Current transformers, potential transformers, circuit breakers, reclosers and bushings that are located at an electrical generation, transmission or distribution facility containing PCBs in a concentration of 500 mg/kg or more and was in use on September 5, 2008, has end-of-use deadline of December 31, 2025.

H2000 has tested all transformers older than 1984 and identified potential PCB hazard. At this time, H2000 has no more transformer on its territory with PCB greater than 500 mg/kg. H2000 is proceeding to replace all transformers on priority of PCB presence although <500 mg/kg.

3.2. Conductor

Line patrols are conducted annually in accordance with the H2000 Procedures. The line patrols include a visual inspection of the following:

Conductors and Cables

- Broken/frayed conductors or tie wires
- Exposed broken ground conductors
- Broken strands, bird caging, and excessive or inadequate sag

Hardware and Attachments

- missing or damaged hardware
- damaged Insulators
- Conductor unattached from insulators
- Ground wire broken or removed
- Ground wire guards removed or broken

General Conditions, Vegetation and Right of Way

- Leaning or broken
- Growth into line
- Accessibility
- Vines or bush growth interference
- Grade changes that could expose cable.
- Excessive vegetation on right of way

3.3. Poles

H2000 currently has approximately 421 poles across its service area. Poles regularly undergo visual inspection during periodic line patrol inspections. This condition assessment is correlated with risk parameters based on the location and use of the pole to determine which poles require replacement in a year. Also, when the pole is within five years of its financial depreciation it is tested to determine its condition. H2000 has purchased a pole testing device to have more scientific factual data on which to base its replacement decision. If a pole test indicates it is in good condition it is retested in another five years.

The charts below show the result of the date installed and the replacement due date expected.

Table 5 - pole listing

Year Installed	# Poles	Expected Due Date		Year Installed	# Poles	Expected Due Date
1945	2	1990		1978	4	2023
1946	1	1991		1979	6	2024
1948	1	1993		1980	41	2025
1949	1	1994		1981	1	2026
1950	1	1995		1982	12	2027
1951	2	1996		1983	4	2028
1953	2	1998		1984	6	2029
1954	3	1999		1985	30	2030
1957	6	2002		1986	7	2031
1958	1	2003		1987	9	2032
1959	1	2004		1988	10	2033
1960	10	2005		1989	7	2034
1961	3	2006		1990	13	2035
1962	1	2007		1991	1	2036
1963	3	2008		1992	6	2037
1964	2	2009		1993	8	2038
1965	12	2010		1994	1	2039
1966	4	2011		1995	1	2040
1967	8	2012		1996	4	2041
1968	1	2013		1997	2	2042
1969	5	2014		1998	3	2043
1970	14	2015		1999	4	2044
1971	1	2016		2000	6	2045
1972	1	2017		2001	11	2046
1973	2	2018		2002	4	2047
1974	8	2019		2003	1	2048
1975	12	2020		2004	4	2049
1976	20	2021		2005	4	2050
1977	6	2022		2006	3	2051
2007	5	2052		2018	4	2063

2008	8	2053		2019	1	2064
2009	1	2054		2020	2	2065
2011	3	2055		2021	4	2066
2012	3	2057		2022	8	2067
2014	5	2058		2023	3	2068
2015	2	2059		Undefined	25	

3.3.1. Poles Maintenance

Scheduled visual inspections of H2000 poles are conducted on a three-year cycle satisfying the inspection requirements of the DSC. The condition-based assessment allows H2000 to monitor and identify defects such as the integrity of the pole, concerning the condition of the pole, supports and attachments including conductor, cross arms, guys and guy guards, cable dips, etc. Defects and concerns are identified in the Line Inspection Record and detailed further through commentary on the Report.

3.3.2. Poles Planning

Poles are tested every five (5) years. H2000 uses a pole testing machine. When reports are delivered H2000 submits a service order to replace the existing pole. On average, H2000 plans on changing five to seven poles yearly based on the condition report.

3.4. Meters

H2000 owns and maintains approximately 1280 active meters on its customers' premises for the purpose of measuring energy consumption of electricity for billing purposes. Meters vary in type by customer and include meters capable of measuring kWh consumption, kW demand and kVA, as well as hourly interval data. H2000 invoices its customers monthly, on a calendar billing cycle.

Retail Metering

H2000 uses Elster-Honeywell meters across its service territory and has contractual agreements with:

- Utilismart (ODS) which involves the validation, estimation and editing (VEE) of metered data.
- UtiliSmart as the LDC's appointed Advanced Metering Infrastructure (AMI) Operator and.
- UtiliSmart for settlement services and web presentment of Wholesale, Retail, Embedded Generation interval data.

Smart Meters

All Smart metered interval data (Residential and General Service <50kW customers) is provided to the Meter Data Management and Repository (MDM/R) who process, store and manage the data. The MDM/R metered data is shared with the LDC who, with support from Utilismart, validates the interval usage and ensures completeness of data.

In 2019-2020, H2000 sampled a population of Smart Meters for accuracy in accordance with Measurement Canada requirements due to the meters approaching a seal life of 10 years. The results from the sampling were good, meaning the Smart meters were sealed for use for a further 7 years. Every year thereafter, when a meter is 10 years of age, it is test and reseal for another 7 years.

MicroFIT/FIT

MicroFIT/FIT interval metered data follows the same routine process as Smart meters, with the exception that the data is not sent to or stored in the MDM/R.

Over 50kW Meters

General Service 50-999kW (GS50-999kW) interval metered data and meter readings are transmitted by telecommunications each night. Each meter is dialed, and the data is downloaded into MV90 and shared with Utilismart.

MIST Meter

All of H2000's GS 50-4999 Meters are MIST meters as of 2021.

Meter Capital

H2000 has included the following its' 2022-2029 capital investment program:

	2024	2025	2026	2027	2028	2029
Smart Meter	$ 7,635.68	$ 8,810.40	$ 8,810.40	$ 8,810.40	$ 8,810.40	$ 8,810.40
Commercial SM	$ 3,018.01	$ 3,168.01	$ 3,168.01	$ 3,168.01	$ 3,168.01	$ 3,168.01
Gate Keepers	$11,375.00					
	$22,000.00	$ 12,000.00	$12,000.00	$ 12,000.00	$ 12,000.00	$ 12,000.00

3.4.1. Meters Maintenance

All maintenance activities related to meters follow the requirements of Measurement Canada guidelines.

Honeywell is transitioning from A3 to A4 technology, introducing meters equipped with internal antennas. However, H2000 prefers meters with external antennas due to their enhanced communication capabilities, which mitigate communication issues with H2000's Gate Keepers. As a result, H2000 intends to wait until 2025 to procure the new technology featuring external antennas.

Regarding the 600V meters, which are overdue, these are essential for older three-phase services. H2000 understand that Honeywell plans to produce this type of meter by 2028.

4. PERFORMANCE MEASUREMENT FOR CONTINUOUS IMPROVEMENT

This section captures the results of H2000's annual reliability performance, whose purpose is to maintain activities and assist in establishing priorities for capital investments while mindful of its ability to meet all the customer's needs in a sustainable manner.

H2000 has a small service territory and, as such, does not have the workload to sustain a complement of staff to provide all the functions of the utility in-house. It acquires the services it needs on a contract basis. As a result, engineering studies are contracted out, as are the system construction, maintenance, emergency trouble-calls, and responses and billing. The overall management, purchasing, finance functions, and customer service are maintained in-house.

This approach works well for H2000 from a cost management and timing perspective for the physical work and the timely financial billing or project costing. Project work is contracted on a fixed price basis. Maintenance and repair work is based on unit prices negotiated in advance and authorized before the work is started except in the case of emergency work after hours. This approach also means that H2000 does not incur fixed or ongoing costs for engineering work or power system work unless work is done. The work is defined, and the costs are included. In this way, cost efficiency and work performance are kept high.

The cost of electricity is an essential matter for H2000s customers. In their 2023 Customer Survey the response to the question, "To what extent, if any, is the cost of Electrical service a strain on your household budget?" was that 86.37% of those surveyed responded with either "A great deal" or "Relatively." Hence, the cost is of importance to H2000 customers. Most of the general comments were also with respect to the cost of electricity.

This indicates that H2000's efforts in controlling its rates align with its customer's needs.

Table 6 – Service Reliability and Quality Indicators

Service Quality						
Indicator	**OEB Minimum Standard**	**2019**	**2020**	**2021**	**2022**	**2023**
1. Connection of New Services - Low Voltage (LV) *	90.0%	100	100	100	90	100
2. Connection of New Services - High Voltage (HV)	90.0%	0	0	0	0	0
3. Appointment Scheduling	65.0%	100	0	100	100	100
4. Appointments Met *	90.0%	100	0	100	100	100
5. Rescheduling a Missed Appointment	80.0%	0	0	0	0	0
6.Telephone Accessibility *	80.0%	99.74	100	99.88	93.06	97.53
7. Telephone Call Abandon Rate	80.0%	0.26	0	0.12	6.94	2.47
8. Written Responses to Enquiries	10.0%	100	100	100	100	100
9. Emergency Response Urban	90.0%	100	100	0	100	0
10. Emergency Response Rural	100.0%	0	0	0	0	0
11. Reconnection Performance Standard	85.0%	100	100	100	100	100
12. Micro-embedded Generation Facilities	90.0%	0	0	0	0	100

5. RELIABILITY INDICES

Guidance provided by the OEB in the recently published Report of the Board: Electricity Distribution System Reliability Measures and Expectations (EB-2014-0189), indicates that it would like to use the average or arithmetic mean of the previous five years (or historical period) of data to establish performance expectations for the forecast period. Specifically, the OEB referred to SAIDI and SAIFI as the two reliability indicators that would benefit from using targeted goals.

H2000 records and reports annually the following Service Reliability Indices:

$$\text{SAIDI} = \text{System Average Interruption Duration Index} = \frac{\text{Total Customer-Hours of Interruptions}}{\text{Total Customers Served}}$$

$$\text{SAIFI} = \text{System Average Interruption Frequency Index} = = \frac{\text{Total Customer Interruptions}}{\text{Total Customers Served}}$$

H2000 uses the above reliability indexes to gauge the system reliability performance and maintain a tight control over their capital and maintenance spending. The Maintenance Program is primarily condition based. The maintenance component addresses statutory requirements such as inspection per the DSC, as well as prudent “testing” of the plant to help identify end of life conditions for poles.

H2000 collects a variety of statistics and analyzes the data to assess system performance and to act as inputs to its asset management program and capital prioritization processes. The data is also used as a tool to improve restoration time and drive/support policy.

H2000 records the power outage start time as the time the LDC received communication from a customer or dispatch reporting the interruption.

The OEB expects a utility to keep its hours of interruption within the range of its 5-year historical performance average.

Table 7 – Reliability Indicators

System Reliability Indicators	2019	2020	2021	2022	2023	AVG
Total Outages						
SAIDI Avg. outage duration (hours)	**0.02**	**0.04**	**0.02**	**0.07**	**0.03**	**0.04**
SAIFI Avg. outage frequency (interruptions / customer)	**1.69**	**0.09**	**1.63**	**1.23**	**2.59**	**1.45**
Loss of Supply Adjusted						
SAIDI Avg. outage duration (hours)	0.02	**0.04**	**0.02**	**0.01**	**0.01**	**0.02**
SAIFI Avg. outage frequency (interruptions / customer)	**1.1**	**0.09**	**0.02**	**0.09**	**0.23**	**0.31**
Loss of Supply and Major Events Adjusted						
SAIDI Avg. outage duration (hours)	**0.02**	**0.04**	**0.02**	**0.01**	**0.01**	**0.02**
SAIFI Avg. outage frequency (interruptions / customer)	**1.1**	**0.09**	**0.02**	**0.09**	**0.23**	**0.31**

Total Outages

- **SAIDI (Outage Duration)**: The average outage duration is 0.02 hours (1.2 minutes). Each year stays close to this, with 2023 slightly higher at 0.03 hours.

- **SAIFI (Outage Frequency)**: The average is 1.22 interruptions per customer, but 2023 saw a big increase to 2.59 interruptions, which is much higher than previous years and the average.

Loss of Supply Adjusted

- **SAIDI**: The average duration is 0.02 hours, and every year is consistent with this, including 2023.

- **SAIFI**: The average is 0.37 interruptions per customer. In 2023, the frequency dropped to 0.23, which is below average.

Loss of Supply and Major Events Adjusted

- **SAIDI**: The average duration is 0.02 hours**.** Each year is very close to this, showing steady performance.

- **SAIFI**: The average is 1.21 interruptions per customer, but 2023 jumps to 2.59, well above the average.

5.1.1. Cause Codes for Power Interruptions

Outages are categorized by cause codes; the number of customers affected, and the duration of a given outage are collected and reported. As H2000 continues with its capital replacement and infrastructure renewal programs, the number of outages due to equipment and vegetation has been continued to be low. H2000 believes that by continuing its steady improvements to the system, the reduced outages trend will continue.

The table below summarizes all causes of power interruptions non-adjusted experienced by H2000 customers for the period 2019 to 2023:

Table 8 - Interruptions (2019-2023)

	2019	2019	2019	2020	2020	2020
Month	**# Interruption / As a result of the cause interruption**	**# Of Customer Interruption**	**# Customers Hours**	**# Interruption / As a result of the cause interruption**	**# Of Customer Interruption**	**# Customers Hours**
January	3	658	2	1	1	2
February	1	2	3	1	8	1
March	1	6	3	0	0	0
April	5	10	7	1	1	1
May	1	4	6	13	25	34
June	1	725	4	2	4	6
July	1	669	2	1	1	1
August	0	0	0	1	13	1
September	0	0	0	4	59	6
October	0	0	0	0	0	0
November	1	5	3	1	2	1
December	0	0	0	0	0	0

Table 9 - Interruptions (2019-2023) (Cont'd)

	2021	2021	2021	2022	2022	2022	2023	2023	2023
Month	**# Interruption / As a result of the cause interruption**	**# Of Customer Interruption**	**# Customers Hours**	**# Interruption / As a result of the cause interruption**	**# Of Customer Interruption**	**# Customers Hours**	**# Interruption / As a result of the cause interruption**	**# Of Customer Interruption**	**# Customers Hours**
January	2	4	12	2	24	1	1	1247	6
February	0	0	0	0	0	0	0	0	0
March	0	0	0	0	0	0	2	74	8
April	0	0	0	2	35	4	2	1760	12
May	1	1	1	2	1210	96	3	83	5
June	1	1	2	1	24	2	4	74	1
July	3	174	5	0	0	0	3	35	1
August	1	1240	2	1	15	1	0	0	0
September	3	17	13	0	0	0	0	0	0
October	0	0	0	0	0	0	1	23	2
November	0	0	0	0	0	0	1	9	1
December	1	1240	5	2	546	6	0	0	0

Table 10 – Interruptions Cause Code (2019-2023)

		2019	2019	2020	2020	2021	2021	2022	2022	2023	2023
Cause #	Name of Cause	Total Customers Affected	Total Customer Hours	Total Customers Affected	Total Customer Hours	Total Customers Affected	Total Customer Hours	Total Customers Affected	Total Customer Hours	Total Customers Affected	Total Customer Hours
1	Scheduled Outage	38	11.75	85	44.83	21	9.00	70	8.00	169	5.00
2	Loss of Supply	725	4.00	-	-	2,650	9.50	1,716	95.00	3,007	18.00
3	Tree Contacts	5	3.00	-	-	-	-	24	1.00	-	-
4	Lightning	669	2.00	-	-	-	-	-	-	-	-
5	Defective Equipment	1	3.00	27	5.30	6	21.00	44	5.50	128	7.00
6	Adverse Weather	633	0.03	-	-	-	-	-	-	-	-
7	Adverse Environment	2	2.50	-	-	-	-	-	-	-	-
9	Foreign Interference	6	3.00	2	2.00	-	-	-	-	1	6.00
	Major Event	0	0	0	0	0	0	1508	137	0	0
	TOTAL	2,079	29	114	52	2,677	40	1,854	110	3,305	36

Scheduled Outages: The number of customers affected generally increased over the years, with the highest number in 2023 (169 customers affected). However, the total customer hours for scheduled outages have remained relatively low, showing that these outages were well-managed and quickly resolved.

Loss of Supply: This was a significant cause of outages, particularly in 2021, 2022, and 2023. The highest number of affected customers was in 2023 (3,007), and the impact on customer hours has been consistently low (1-3 hours per year). It's important to note that Loss of Supply originates from Hydro One and is out of the control of the utility. The utility makes its best effort to communicate these outages to its customers, even though it cannot prevent or directly manage the root cause.

Tree Contacts: There was a notable instance in 2022 where 24 customers were affected. This was primarily due to the derecho storm that swept through the Ottawa region in 2022, an unusual weather incident that caused significant tree damage and an increase in outages. Other than that, tree contacts seem to have minimal impact in most years.

Lightning: Only 2019 saw a significant lightning-related outage, affecting 669 customers, but the impact has not recurred in the following years.

Defective Equipment: There is a gradual increase in outages caused by defective equipment, with a peak in 2023 where 128 customers were affected. Customer hours have also increased in 2023 to 4 hours.

Adverse Weather: This was only a factor in 2019, affecting 633 customers. It has not reappeared as a major cause since then.

Adverse Environment: This cause only affected a small number of customers in 2019 (2 customers) and has not been a recurring issue.

Foreign Interference: Foreign interference caused minimal outages, with just a couple of instances in 2020 and 2023.

Major Event: In 2022, a significant derecho storm hit the Ottawa region, affecting 1,508 customers and resulting in 137 customer hours lost. This unusual weather event caused a major increase in outages for that year, but it was a one-time incident that did not recur.

5.1.2. Major Events

H2000 reported a major event in 2022 for the Derecho storm which caused higher than usual outages and damage to the distribution system

6. COORDINATED PLANNING WITH THIRD PARTIES

This DSP has been prepared through a coordinated planning process with the following stakeholders:

a) Regionally interconnected Transmitters and Distributors – Hydro One.
b) Regional and municipal governments.
c) Telecommunication Entities.

6.1.1. Commercial Customers

As of the latest discussions, commercial customers within the service area are not planning any immediate, significant or material modifications within the service period.

6.1.2. Residential Customers

H2000 values its customers and regularly seeks feedback to ensure that their needs are met and to receive suggestions on how H2000 can improve their overall customer experience and include

- person to person communication,
- inserts in hydro bills,
- website interaction,
- surveys.

H2000 is one of the few electric utilities that maintains a full-service customer counter, which facilitates daily interactions with consumers. To open new accounts, relocate services, pay bills, or resolve any concerns, customers may visit the office or contact H2000 via telephone, email, or fax. This direct interaction with local representatives guarantees that customer concerns are addressed with respect and urgency.

In 2020, H2000 implemented an improved, user-friendly website that was intended to be more informative and accessible. The website prioritizes strategies for energy cost reduction, conservation, and demand management. It responds to customer inquiries and concerns and offers a comprehensive overview of H2000. Customers have access to their accounts 24/7, which enables them to examine their account balances and payment histories, as well as monitor their energy consumption, which is updated nightly through smart meters. In 2024, H2000 implemented a new portal that incorporates advanced cybersecurity protocols to improve security. Silverblaze was also implemented in 2024.

In 2023, H2000 conducted an Electrical Safety Awareness Survey and a Customer Satisfaction Survey. A response rate of approximately 3% from the community was attained by H2000 in its most recent survey. H2000 acknowledges that consumers prioritize tangible outcomes over communication endeavors. Customer survey fatigue is the reason for the decreasing survey response rates, according to the utility. For that reason, H2000 reduced the number of questions from 30+ to 10 questions. The survey addressed a wide range of topics, such as the financial impact of billing, conservation efforts, service levels, and consumer satisfaction. The survey comprised questionnaires that were distinct for consumers who were either French or English speakers. The findings suggested a satisfaction rate of 94%.

6.1.3. Hydro One

H2000 is an embedded utility in HONI and receives its supply from a distribution station at Peat Moss Road in Alfred and a distribution station at County Road #9 in Plantagenet. Both DS's are fed from the feeder M26 from Longueuil TS.

H2000 distributes electricity to the Township of Alfred and Plantagenet at a primary distribution voltage of 8.32 kV. H2000 does not host any utilities.

To date there have been no constraints identified by HONI regarding any of the feeders that service and supply H2000. H2000 coordinates with the IESO and HONI. There are no new requirements requested by H2000 since their load has decreased in the past year.

H2000 does not have a SCADA system or other smart grid capability currently. They do not expect to install such devices or capability in the foreseeable future.

Operations coordination between H2000 and HONI happens when necessary. HONI identifies planned outages and switching plans. HONI also supplies a weekly Ontario Grid Control Centre update to inform customers of significant events associated with its transmission and distribution systems.

6.1.4. Municipal Government

H2000 maintains a close relationship with the Town of Alfred and Plantagenet. Discussions include planned activities that can affect budgets, and scheduling and coordination on a per project basis and during construction season.
The town is mature and stable with respect to growth and development. Residential and Commercial and Industrial growth is minimal.

6.1.5. Telecommunication Entities.

H2000 has three telecommunications entities that operate in its service territory, Bell Communications, IGS Hawkesbury and Eastlink. Furthermore, Bell has installed fiber across H2000's service territory, and to the best of H2000's knowledge, Rogers is scheduled to install Broadband following the Accelerated High Speed Internet Program
Based on the above information, H2000 has not included any capital investment expenditure for "Broadband Expansion" telecommunications entities and has no specific requests from the two telecommunications entities.

6.1.6. Integrated Regional Resource Planning

H2000 has not been part of any Regional Resource Planning group due to its small size and relation with HONI.

Comment Letter from IESO Regarding REG Investments:

H2000's REG investment plan was forwarded to the IESO. IESO's response is as follows:

"The IESO notes that H2000 is not proposing any capital investments for constraint mitigation, or for capacity upgrades to facilitate the connection of renewable energy generation. In the case where a distributor has no REG investments during the 5-year Distribution System Plan (DSP) period, no letter from the IESO is required, as the requirement is for when there are investments."

H2000 has had no capital costs related to the connection of REG projects. There have been only five micro-FIT projects for a total of 48.39kW of solar generation connected.

7. CAPITAL EXPENDITURE PLAN

7.1. Comparison of Planned Expenditures versus Historical

The charts below illustrate how much H2000 spent (Actuals) on System Access over the historic period of 2020-2024 compared to the LDC's forecasted Capex plan for this investment category:

System Access

Table 11 - System Access – Historic Actuals versus Planned Capex

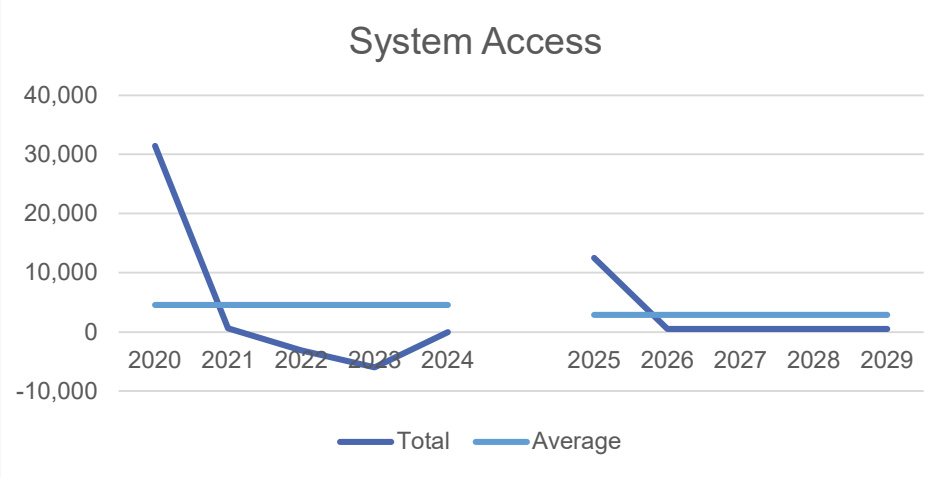


Table 12 - System Access – Historic Actuals versus Planned – Net Capex

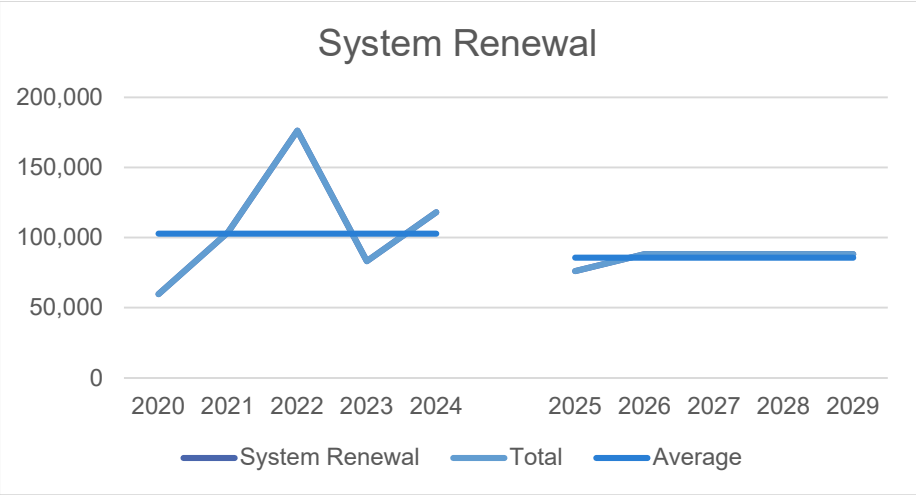
Category	2020	2021	2022	2023	2024
System Access	32,254	615	3,982	5,264	15,500
Capital Contributions	-789				-15,545
Total	31,465	615	3,982	5,264	-45
Average	4,583				

Category	2025	2026	2027	2028	2029
System Access	17,500	5,500	5,500	5,500	5,500
Capital Contributions	-5000	-5,000	-5,000	-5,000	-5,000
Total	12,500	500	500	500	500
Average	2,900				

System Renewal

The chart below illustrates how much H2000 spent (Actuals) on System Renewal over the historic period of 2020-2024 compared to the LDC's forecasted Capex plan for this investment category:

Table 13 - System Renewal – Historic Actuals versus Planned Capex



The table below illustrates H2000's Net Capital Expenditures, both historically and for the proposed planning period. As per previous years,

Table 14 - System Renewal – Historic Actuals versus Planned – Net Capex

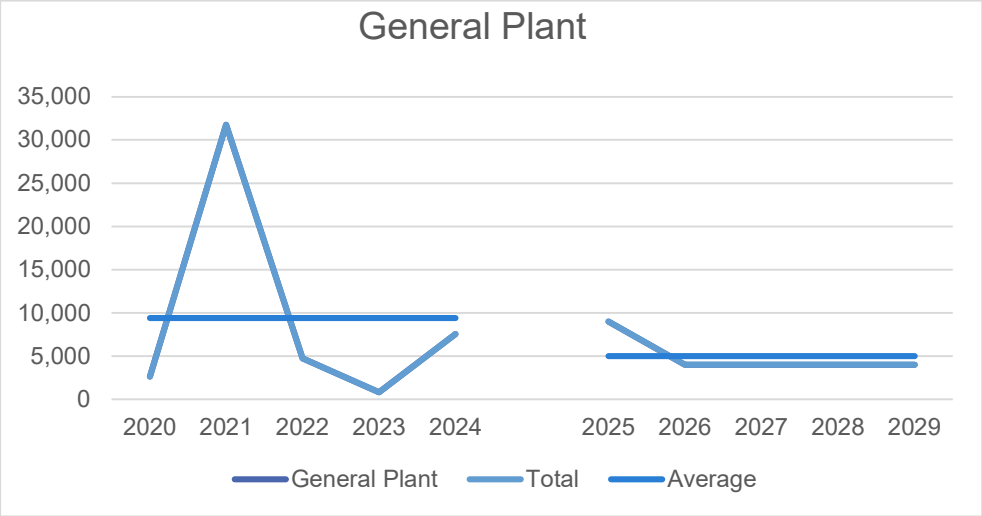
Category	2020	2021	2022	2023	2024
System Renewal	59,681	103,793	176,237	83,114	118,100
Capital Contributions			-7,130	-11,237	
Total	59,681	103,793	169,107	71,877	118,100
Average	102,838				

Category	2025	2026	2027	2028	2029
System Renewal	76,100	88,100	88,100	88,100	88,100
Total	76,100	88,100	88,100	88,100	88,100
Average	85,700				

General Plant

The chart below illustrates how much H2000 spent (Actuals) on General Plant over the historic period of 2020-2024 compared to the LDC's forecasted Capex plan for this investment category:

Table 15 – General Plant – Historic Actuals versus Planned – Gross Capex



Except for 2021 where H2000 invested 35K in the CIS system, The remaining trend for General Plan expenditures indicates a marginal increase compared to the previous average. This upward trend is primarily attributed to the changes in economic conditions and operational requirements that emerged in the aftermath of the COVID-19 pandemic.
The above chart includes capital contributions

Table 16 – General Plant – Historic Actuals versus Planned – Net Capex

Category	2020	2021	2022	2023	2024
General Plant	2,635	31,758	4,726	830	7,560
Total	2,635	31,758	4,726	830	7,560
Average	9,418				

Category	2025	2026	2027	2028	2029
General Plant	9,000	4,000	4,000	4,000	4,000
Total	9,000	4,000	4,000	4,000	4000
Average	5,000				

7.2. Capital Expenditure Summary

The table below illustrates the programs included in H2000's planned 5-year capital investment forecast as programs:

H2000's capital expenditures by OEB investment category are:

Table 17 - OEB Categorization: Capex Plan 2020 to 2025 (App 2-AB)

Category	2020	2021	2022	2023	2024	2025
System Access	32,254	615	3,982	5,264	15,500	17,500
Capital Contributions	-789				-15,545	-5000
Planned 2020DSP	*37290*	*5000*	*5000*	*5000*	*5000*	
System Renewal	59,681	103,793	176,237	83,114	118,100	76,100
			-7,130	-11,237		
Planned 2020DSP	*106798*	*100000*	*100000*	*100000*	*100000*	
System Service	0	0	0	0	0	
Planned 2020DSP						
General Plant	2,635	31,758	4,726	830	8,560	9,000
Planned 2020DSP	*350*	*5500*	*5500*	*5500*	*5500*	
Total Capex	93,781	136,166	177,815	77,971	126,615	97,600

Table 18 - Capex Plan 2020 to 2020 Actuals

Category	Description	Forecast (2020 DSP)	2020 Actuals	Variance
	All amounts are in $			
System Access				
	New O/H and U/G services	$37,290	$32,254	-$5,037
	Capital Contribution	-$27,134	-$789	$26,346
	Category Total	**$10,156**	**$31,465**	**$21,309**
System Renewal				
	Overhead Conductors and devices	$14,500	$4,000	-$10,500
	Underground Conductors and devices	$7,300	$7,750	$450
	Line Transformers	$42,900	$13,532	-$29,368
	Poles & Fixtures	$25,000	$23,966	-$1,034
	U/G conduit		$0	$0
	Meters	$17,098	$10,433	-$6,665
	Category Total	**$106,798**	**$59,681**	**-$47,117**
System Service				
	Close loops on u/g radial feeds	$0	$0	**$0**
	Category Total	**$0**	**$0**	**$0**
General Plant				
	Leasehold Improvement - Alarm System	$500	$0	-$500
	Office Furniture and Equipment	$500	$0	-$500
	Computer Equipment	$2,500	$0	-$2,500
	Software	$0	$2,635	$2,635
	Category Total	**$3,500**	**$2,635**	**-$865**
	Total Capital	**$120,454**	**$93,781**	**-$26,673**

Table 19 - Capex Plan 2021 to 2021 Actuals

Category	Description	Forecast (2020 DSP)	2021 Actuals	Variance
	All amounts are in $			
System Access				
	New O/H and U/G services	$5,000	$615	-$4,385
	Capital Contribution	-$27,134	$0	$27,134
	Category Total	**$5,000**	**$615**	**$22,749**
System Renewal				
	Overhead Conductors and devices	$10,500	$0	-$10,500
	Underground Conductors and devices	$3,300	$3,900	$600
	Line Transformers	$47,900	$79,274	$31,374
	Poles & Fixtures	$25,000	$22,502	-$2,499
	U/G conduit	$0	$0	$0
	Meters	$13,300	-$1,883	-$15,183
	Category Total	**$100,000**	**$103,793**	**$3,793**
System Service				
		$0	$0	$0
	Category Total	**$0**	**$0**	**$0**
General Plant				
	Leasehold Improvement - Alarm System	$500	$0	-$500
	Office Furniture and Equipment	$500	$210	-$290
	Software	$2,500	$31,548	$29,048
	Software	$2,000	$0	-$2,000
	Category Total	**$5,500**	**$31,758**	**$26,258**
	Total Capital	**$110,500**	**$136,166**	**$52,800**

Table 20 - Capex Plan 2022 to 2022 Actuals

Category	Description	Forecast (2020 DSP)	2021 Actuals	Variance
	All amounts are in $			
System Access				
	New O/H and U/G services	$5,000	$3,982	-$1,018
			$0	$0
	Category Total	**$5,000**	**$3,982**	**-$1,018**
System Renewal				
	Overhead Conductors and devices	$10,500	$0	-$10,500
	Underground Conductors and devices	$3,300	$0	-$3,300
	Line Transformers	$47,900	$95,124	$47,224
	Poles & Fixtures	$25,000	$83,780	$58,780
	U/G conduit	$0	$0	$0
	Meters	$13,300	-$2,667	-$15,967
	Capital Contribution	-$27,134	-$7,130	$20,004
	Category Total	**$100,000**	**$169,107**	**$96,241**
System Service				
			$0	$0
	Category Total	**$0**	**$0**	**$0**
General Plant				
	Leasehold Improvement - Alarm System	$500	$2,872	$2,372
	Office Furniture and Equipment	$500	$349	-$151
	Computer Equipment	$2,500	$1,505	-$995
	Software	$2,000	$0	-$2,000
	Category Total	**$5,500**	**$4,726**	**-$774**
	Total Capital	**$110,500**	**$187,613**	**$94,449**
	Capital Contribution		-$7,130	
	Disposal		-$2,667	
	Total		**$177,816**	

Table 21 - Capex Plan 2023 Planned to 2023 Actuals

Category	Description	Forecast (2020 DSP)	2021 Actuals	Variance
	All amounts are in $			
System Access				
	New O/H and U/G services	$5,000	$5,264	$264
	Category Total	**$5,000**	**$5,264**	**$264**
System Renewal				
	Overhead Conductors and devices	$10,500	$0	-$10,500
	Underground Conductors and devices	$3,300	$4,496	$1,196
	Line Transformers	$47,900	$19,090	-$28,811
	Poles & Fixtures	$25,000	$56,203	$31,203
	U/G conduit	$0	$0	$0
	Meters	$13,300	$3,326	-$9,974
	Capital Contribution	-$27,134	-$11,237	$15,897
	Category Total	**$100,000**	**$71,877**	**-$989**
System Service				
			$0	$0
	Category Total	**$0**	**$0**	**$0**
General Plant				
	Leasehold Improvement - Alarm System	$500	$0	-$500
	Office Furniture and Equipment	$500	$830	$330
	Computer Equipment	$2,500	$0	-$2,500
	Software	$2,000	$0	-$2,000
	Category Total	**$5,500**	**$830**	**-$4,670**
	Total Capital	**$110,500**	**$90,544**	**-$5,395**
	Capital Contribution		-$11,237	
	Dispoal		-$1,336	
	Total		**$77,971**	

Table 22 - Capex 2024 Projections

Category	Description	2024 Planned
	All amounts are in $	
System Access		
	New O/H and U/G services	$5,500
	Meters	$10,000
	Capital Contribution	-$15,545
	Category Total	**-$45**
System Renewal		
	Overhead Conductors and devices	$10,500
	Underground Conductors and devices	$4,600
	Line Transformers	$36,000
	Poles & Fixtures	$55,000
	U/G conduit	$0
	Communicator	$12,000
	Category Total	**$118,100**
System Service		
		$0
	Category Total	**$0**
General Plant		
	Leasehold Improvement - Alarm System	$500
	Office Furniture and Equipment	$500
	Computer Equipment	$2,500
	Software	$5,060
	Category Total	**$8,560**
	Total Capital	**$142,160**
	Capital Contribution	-$15,545
	Total	**$126,615**

System Access

The estimated total cost for connecting a new customer is approximately $5,500.00. The cost of connecting a new customer includes labor involved for linemen, the price of the initial 30 meters of wire, and the cost of essential electrical accessories.

The cost of meters for new residential accounts and replacements has risen to approximately $8,600.00, largely due to price increases and delivery issues. Most of the bulk of these meters were originally purchased in 2009, but recent challenges have made procurement more costly.

Similarly, meters for new commercial accounts, especially the 3-phase meters that are due for replacement, have also seen a price increase. These commercial meters now cost around $1,400.00, with delivery delays adding further complications to the process. Both residential and commercial meter upgrades are affected by these rising costs and supply chain disruptions.

System Renewal

Pole Replacement: As part of its asset management program, poles are tested when they are within five years of their forecasted depreciation end of life. This proactive testing helps identify which poles need to be replaced, ensuring the reliability and safety of the infrastructure. For this project, $30,000 was allocated specifically to pole testing in advance of the 2025 cost of service and Distribution System Plan (DSP), while the remaining $25,000 is allocated to cover the actual pole replacement work. The total estimated cost for this initiative is $55,000.00, reflecting the utility's commitment to maintaining and upgrading its assets in line with future service and planning requirements.

Porcelain line insulators are prone to developing cracks over time due to repeated stress, and H2000 has identified small cracks in some of its post insulators, although no failures have occurred to date. To ensure continued system reliability, H2000 has initiated a project to gradually replace these porcelain units. This proactive replacement strategy aims to prevent future outages that could become inevitable if no action is taken. A previous incident highlighted the risks when a crew was called out on a winter night, and an insulator broke upon contact by the lineman, creating a hazardous situation for the workers. The annual cost of this project is estimated at $10,500.00, covering the phased replacement of the porcelain insulators to enhance system safety and reliability.

Transformers: H2000 is committed to maintaining and overhauling its pad-mounted transformers to prevent the costly replacement of these essential units. The utility targets three pad-mounted transformers for maintenance each year, allowing it to service all 16 transformers on a rotating schedule, ensuring each unit is maintained every five years. This proactive approach helps extend the lifespan of the transformers and prevent unexpected failures. However, the cost of manpower has increased considerably, contributing to the overall project cost, which is estimated at $4,600.00 annually. This effort is crucial for ensuring the reliability of the underground electrical infrastructure.

Line Transformers: The price of line transformers has risen significantly, and lead times for delivery now extend to 48 months in most cases. As a result, H2000 has decided to scale back its transformer replacement program, focusing only on changing the minimal number of units necessary. This decision is based on the age of the transformers and the potential for PCB accumulation nearing the permissible threshold. By prioritizing the most critical replacements,

H2000 aims to manage costs and avoid further delays. The estimated cost for this program is $36,000.00, reflecting the increased prices and longer delivery times while ensuring compliance and system reliability.

As meter communicators approach the end of their life, it’s essential to upgrade them to ensure they meet current operational needs. H2000’s existing meter communicators have been in service for 15 years and now require replacement to continue functioning efficiently. Upgrading these communicators will address the current technological demands and enhance the overall metering system. The estimated cost for replacing both communicators is $12,000.00, which includes the purchase and installation of new, up-to-date equipment.

General Plant

H2000 has allocated a provision of $500.00 for minor capital repairs to its building, ensuring that any necessary upkeep or small repairs can be addressed promptly. Additionally, a provision of $2,500.00 has been set aside for the replacement of computer hardware to maintain efficient operations and a provision of $500 for office furniture & equipment. On the software front, every time the Ontario Energy Board introduces innovations, there are associated costs to amend the Harris system to meet new requirements. This includes adapting to changes such as Customers' Choice options or enhancements to the Ontario Electricity Support Program. The estimated cost for these software adjustments is $5,060.00 per upgrade.

Table 23 - 2025 Projections

Category	Description	2025 Planned
	All amounts are in $	
System Access		
	New O/H and U/G services	$5,500
	Capital Contribution	-5000
	Category Total	**$500**
System Renewal		
	Overhead Conductors and devices	$10,500
	Underground Conductors and devices	$4,600
	Line Transformers	$36,000
	Poles & Fixtures	$25,000
	U/G conduit	$0
	Meters	$12,000
	Capital Contribution	$0
	Category Total	**$88,100**
System Service		
		$0
	Category Total	**$0**
General Plant		
	Leasehold Improvement - Alarm System	$500
	Office Furniture and Equipment	$500
	Computer Equipment	$2,500
	Computer software	$5,500
	Category Total	**$9,000**
	Total Capital	**$102,600**
	Capital Contribution	-5000
		$97,600

System Access

The estimated total cost for connecting a new customer is approximately $5,500.00. The cost of connecting a new customer includes labor involved for linemen, the price of the initial 30 meters of wire, and the cost of essential electrical accessories.

The cost of meters for new residential accounts and replacements has risen to approximately $10,000, largely due to price increases and delivery issues. Most of the bulk of these meters were originally purchased in 2009, but recent challenges have made procurement more costly.

Similarly, meters for new commercial accounts, especially the 3-phase meters that are due for replacement, have also seen a price increase. These commercial meters now cost around $2,000.00, with delivery delays adding further complications to the process. Both residential and commercial meter upgrades are affected by these rising costs and supply chain disruptions.

System Renewal

Pole Replacement: As part of H2000's asset management program, poles are tested within five years of reaching their expected end of life based on depreciation forecasts. This testing helps identify which poles require replacement due to their condition. This project covers the cost of replacing the identified poles, with an estimated budget of $25,000.

Porcelain Line Insulators: Porcelain insulators tend to develop cracks over time due to repeated stress. H2000 has discovered small cracks in some of its post insulators, although no failures have occurred yet. To ensure system reliability and prevent future outages, the utility is starting a gradual replacement of these insulators. Failure to act could lead to outages and safety hazards. There was an instance where a crew responded to a winter night call, and when the lineman touched the insulator, it broke, creating a safety risk. This project has an annual budget of $10,500.

Underground Conductors: H2000 regularly maintains and overhauls its padmount transformers to avoid the high costs associated with replacing them. The utility targets the maintenance of three padmount transformers per year. With a total of 16 transformers in the system, each unit receives maintenance every five years. Due to rising labor costs, the estimated budget for this work is $4,600.

Line Transformers: The cost of line transformers has increased significantly, and delivery lead times have now stretched to as long as 48 months in many cases. As a result, H2000 is reducing its transformer replacement program to the bare minimum, focusing on older units and those at risk of accumulating polychlorinated biphenyls (PCBs) near permissible limits. The budget for this project is $36,000.

General Plant

Building and office equipment: This is a budget provision set aside for minor capital repairs to the building and upgrading office furniture, with an allocation of $1000.

Computer Hardware: This is a provision for replacing computer hardware, when necessary, with a budget of $2,500.

Software: When the Ontario Energy Board introduces new innovations or requirements, there are associated costs for updating the Harris system to ensure compliance. This may include updates for features like the Customers' Choice option or enhancements to the Ontario Electricity Support Program. The budget allocated for these software updates is $5,500.