CAPITAL BUDGET – SUPPORT SERVICES

1.0 PURPOSE

This evidence provides an overview of the capital expenditures by OPG's Support Services groups for the historical years, bridge year, and the IR term. It also sets out period-over-period changes in these expenditures.

2.0 OVERVIEW OF SUPPORT SERVICES CAPITAL EXPENDITURES

Exhibit D3-1-1, Table 1 sets out capital expenditures by OPG's Support Services groups that impact rate base or the asset service fee. Capital expenditures average $144.4M per year over the IR term beginning at $213.7M in 2022 and decreasing to $114.6M by 2026. Explanations for the changes are provided in Section 3.0. A listing of capital projects is provided in Ex. D3-1-2.

The Support Services capital expenditures for the regulated facilities are by the Information Technology ("IT") and Real Estate groups within the Chief Administrative Office business unit. The Chief Administrative Office projects follow OPG governance and processes set out below and in Ex. A2-2-1, Attachment 3.

The capital budget available for each year is established through the business planning process. It is based on an assessment of the needs of the business units in order to sustain the reliability, availability, and performance of existing assets and services, as well as to meet changing regulatory requirements, and to improve overall business value.

Business units may request the addition of higher priority out-of-plan projects driven by changing priorities. For IT projects, the IT group's capacity to deliver projects and the business unit's ability to absorb the business process changes associated with the capital project are also considered.

Once capital projects are completed, the resulting assets are placed in-service. Details on in-service additions are provided in Ex. D3-1-2, Tables 1 through 5. Where the assets can be

directly assigned, they are declared as in-service additions to the rate base for the respective business units. If the assets cannot be directly assigned because they are utilized by multiple groups, they are held centrally, and the regulated businesses are charged an asset service fee for their use (Ex. F3-2-1).

Since EB-2016-0152, OPG has initiated corporate strategies for IT and Real Estate that will enable the company to meet its post-Pickering cost structure and cost commitments. An overview of each strategy is provided below. More information on projects that support each strategy are discussed in Ex. D3-1-2.

2.1 IT

Technology plays a critical role in enabling change as OPG enters a period of transformative cost structure realignment leading up to the planned shutdown of Pickering. The IT investments in the IR term will enable business units across the company to take advantage of process automation, artificial intelligence and new technological tools to drive efficiencies, redesign work programs to improve productivity, and ultimately, reduce costs across the organization.

OPG's IT investments are primarily divided into two categories: (1) a projects portfolio driven by OPG's Digital Strategy, and (2) an ongoing investment in OPG's Microsoft enterprise platform.

2.1.1 OPG's Digital Strategy and Projects Portfolio

The nature of technology investments has changed drastically in the last decade. While IT investments used to be based on purchasing software and tools that would not change for a number of years, the IT industry as a whole has moved to more cloud-based subscription software that allows for continuous updates in exchange for regular payments. New tools are also becoming available to optimize and drive efficiency through the implementation of

automation and artificial intelligence.[1] Coincident with this, IT security has also become ever more important as more data is generated, aggregated, and utilized. Managing both current and future cybersecurity threats is critical to protecting digital and physical infrastructure and assets. In particular, cyber threats to Canada's electricity sector are increasing, as are regulatory requirements. For example, OPG is required to comply with the North American Electric Reliability Corporation Critical Infrastructure Protection for Renewable Generation and CSA N290.7-14 for Nuclear cybersecurity to ensure the protection of our critical process control systems. As a result, cybersecurity investments in technology, people and processes are being prioritized to meet regulatory requirements as well as to securely support the delivery of OPG's business plans. Altogether, this creates the need for a larger, more consistent IT project portfolio.

In 2017, OPG began a digital transformation in order to align OPG's IT project portfolio with OPG's strategic objectives and business priorities, focusing on streamlining enterprise resources and assets. The CIO digital strategy is comprised of four core elements:

1. Build an efficient, responsive and scalable IT operational environment that can support future growth.
2. Improve workforce capabilities by providing employees the right tools, information and services to be productive and collaborative.
3. Improve core operational business processes and systems to more effectively meet business mandates and enable OPG to be more agile in meeting future state business needs.
4. Gain insights from data to better leverage and manage information across the enterprise.

The first step in executing the digital strategy was to invest in OPG's dated IT infrastructure to upgrade system capabilities and make the system compatible with newer technologies and products. This effort began in 2017 with the upgrading of technology tools such as

[1] See, for example, Ex. F2-1-1, Section 3.4.2.1 on how technology, artificial intelligence and automation are contributing to the implementation of new solutions and redesign of internal processes.

implementing the full suite of cloud-based Microsoft applications (discussed below in Section 2.1.1).

Once OPG had the right tools in place, OPG began planning and undertaking projects to leverage these tools to optimize the way OPG does work. This effort will continue over the IR Term. To do this, OPG implemented an IT portfolio management process that uses disciplined project management practices to select, prioritize, and optimize project requests within the constraints of implementation resources and budget. For technology investments, this has meant focusing on product delivery, which has resulted in smaller projects that can deliver business value quickly. Focusing on delivery has also allowed the organization to be agile and flexible in a constantly changing technology environment and include upgrades as part of the annual project prioritization process.

From a portfolio creation perspective, OPG has established guidelines that dedicate approximately half of the capital budget to sustaining and cybersecurity projects. The remainder of the portfolio will be used to invest in innovation, mobility and automation solutions that will assist in driving down other enterprise costs. The portfolio approach allows OPG to be agile to respond to changes in IT developments and needs. Currently, OPG is tracking more than 250 IT projects to be completed over the IR term. As discussed above, OPG will review the project portfolio on an annual basis to prioritize projects for advancing to execution each year. As new IT tools, innovations, and cybersecurity needs are identified, new projects will also be added to the assessment each year, reducing the unallocated portfolio to zero.

The process for managing and prioritizing IT investments over the IR term is the same project gate-phase process and governance described for Nuclear projects in Ex. D2-1-1. OPG maintains a dedicated CIO Asset Management Oversight Committee ("AMOC") focused on planning and prioritizing new investments and a CIO Project Management Oversight Committee ("PMOC"), focused on project execution and portfolio management. The CIO AMOC identifies and prioritizes projects based on the need to support the Digital Strategy and OPG strategic objectives. In addition to the seven risk areas used in the

Nuclear investment options assessment,[2] the CIO Value Framework includes three additional IT-specific risks:

- IT Technical Risk;
- Employee Productivity; and
- Privacy Risk.

Investing in OPG's IT and productivity tools, along with protecting OPG's assets and information through cybersecurity, will ultimately enable OPG to meet its target cost structure post-Pickering shutdown.

2.1.1. Microsoft Enterprise Agreement

The Microsoft software platform is critical to OPG's operations. Historically, OPG completed small, individual projects to procure Microsoft software such as SharePoint, Exchange, and the Office desktop client. Once the software was purchased, OPG would run these tools until end of security patching before OPG would execute a new project to replace them.

In 2016, consistent with the change in IT approach described above, Microsoft announced that it had developed Secure Productive Enterprise E5 ("Microsoft E5"). Microsoft E5 encompasses new enterprise products and services including security, productivity, intelligence and the cloud to empower IT and drive digital transformation in organizations. Microsoft E5 includes tools OPG historically purchased through individual projects, such as:

- Office 365 Enterprise E5, which includes common software applications such as Microsoft Word, Outlook, Excel and PowerPoint;
- Windows 10 Enterprise E5, the operating system platform; and
- SharePoint Online, for collaboration and business process automation.

[2] As set out in Ex. D2-1-1, the "Value Framework" provides a quantitative means to evaluate each asset investment option's benefits and costs with reference to the option's ability to mitigate key risks. Nuclear's seven risk areas have been identified within the Value Framework as: Safety Risks; Regulatory Risks; Lost Generation Risks; Social License and Reputation Impact; Environmental Risks; Security Risks; and Financial Risk.

In addition, Microsoft E5 also offered new security features, analytic tools and voice capabilities that OPG did not historically purchase such as:

- Enterprise Mobility and Security E5, a security solution to enable identity and access management across users, mobile productivity and information protection;
- Advanced Threat Protection and Threat Intelligence, which makes use of global machine learning threat detection and prevention to protect data from threats like phishing and zero-day malware found in email attachments and links.
- Access to Analytics Tools as MyAnalytics and PowerBI Pro for data analysis and visualization.
- Extension of Skype/Microsoft Teams for teleconferencing capability
- Additional products such as Lync Online, Advanced Compliance, access controls and control encryption key, Office 365 Cloud App Security, Advanced Data Governance and Customer Lockbox.

Microsoft E5 also entitled OPG to version upgrades, technical support and related benefits such as training credits for OPG staff that maintain OPG's IT environment across the province.

Together, these tools provide OPG with many benefits, including security protection, cost savings opportunities, as well as productivity improvements through increased mobility and ability to collaborate on work using the Cloud platform.

In 2017, OPG entered into an Enterprise Agreement with Microsoft ("Microsoft Enterprise Agreement"), which allows OPG to obtain per-user software licences for Microsoft E5. The new model shifts away from the purchase and implementation of individual software as it became obsolete to entering into term agreements with Microsoft. As such, OPG will no longer require individual, small projects for each product licence and will, instead, renegotiate and renew its agreement with Microsoft every three years. In accordance with US GAAP, these Microsoft Enterprise Agreement renewals form part of OPG's capital expenditure and in-service amounts with associated renewal costs in 2023 and 2026 during the IR term (Ex. D3-1-1, Table 1; Ex. D3-1-2, Table 4).

2.2 Real Estate

OPG has generating stations and facilities spread across the province. OPG's Real Estate Project Review Committee is a management group that oversees all OPG real estate investments throughout their lifecycle, including needs identification, planning, execution, and post-implementation review. The committee assesses planning, performance and business rationale of real estate projects, using a phase-gated, risk-based process.

To streamline the organizational cost structure and help mitigate the post-Pickering reallocation of support costs to OPG's remaining operations, OPG's Real Estate strategy is to reduce its overall real estate footprint by optimizing the layout of its offices through workplace transformation and by investing in a new, sustainable corporate campus to consolidate non-plant employees at a principal location in Clarington, Ontario.

By the end of the IR term, OPG is planning to reduce the overall real estate footprint of its office space from 383 Square feet per FTE to approximately 180 Square feet per FTE. This will be accomplished by:

- Vacating leases at 11 buildings by the end of 2026;
- Exiting the Kipling campus by the end of 2024; and
- Creating agile workspaces that leverage a "free address"[3] approach, which increases the number of staff accommodated per building and minimizes office move costs going forward.

To accomplish this, OPG plans to build the Clarington Corporate Campus that will be designed to accommodate at least 2,400 employees (all non-plant staff), which will include:

- The existing Darlington Energy Complex ("DEC") which will house the Darlington Refurbishment Program staff until project completion, and afterwards will accommodate 440 workspaces.

[3] A "Free Address" workplace does not have assigned seating. Instead individual work stations are utilized on a first come first served basis.

- A new corporate head office which will be constructed within this IR term and is scheduled to be completed in 2025. The office will be designed to accommodate 1,250 employee workspaces and will be located across from the DEC.

In order to build toward the end state of a Clarington Corporate Campus, OPG will undertake Workplace Transformation projects at OPG's core offices. OPG is deliberately completing Workforce Transformation in stages in order to allow user experience to inform the final creation of the Clarington Corporate Campus:

- **700 University**: Completed in 2019, the Workplace Transformation initiative at 700 University was OPG's pilot project for an open and agile work environment. The 700 University Workplace Transformation project reduced OPG's footprint at 700 University from five floors to two floors, largely enabled by transitioning to a free address workspace. The result has been greater collaboration in the workplace, as well as reduced leasing and utilities costs. This project enabled OPG to establish the standard and develop the expertise needed to implement future workplace transformation projects that will provide a collaborative, agile and cost effective working environment for employees.
- **Engineering Support Services Building ("ESSB") (2nd and 3rd floors)**: Following the experience at 700 University, OPG will convert the 2nd and 3rd floors of the ESSB building at Darlington into an open and agile work environment. The transformation has been separated into two phases: the 3rd floor will be completed between 2020-2021, then the 2nd floor will be completed subsequently between 2021-2022. Approaching each floor as independent projects allows for the overall design to accommodate the specific needs of the residents of each floor as well as allow for operational experience for the 3rd floor to be captured into plans and construction of the 2nd floor.
- **Darlington Energy Complex (2nd and 3rd floors)**: Following the experience at 700 University and the ESSB, OPG will convert the 2nd and 3rd floors at the DEC into an open and agile work environment. The transformation has been separated into two phases: the 2nd floor will be completed between 2021-2025 (with planning taking place over the period of 2021-2022 and construction occurring during 2023-2025),

while the 3rd floor will be completed between 2024-2025. Breaking the project into two allows operational experience from employees for the 2nd floor to be captured into plans and construction of the 3rd floor, and to align with the space needs of the Darlington Refurbishment Program team. OPG is also strategically leaving this workplace transformation project last to allow for the lessons learned and operational experience from the workforce at 700 University and the ESSB to be reflected in the DEC, as it will form part of OPG's Clarington Corporate Campus.

- **Clarington Corporate Campus Head Office**: OPG will be constructing a new corporate head office, designed to accommodate 1,250 workspaces, to be located in Clarington. The new Clarington head office, in combination with the DEC will allow OPG to have a corporate head office campus, located next to its largest generating station. This will result in a more collaborative and integrated workplace.

OPG's Workplace Transformation projects are focused on optimizing OPG's real estate assets and reducing OPG's overall real estate footprint, shifting to a more agile and adaptable workplace by leveraging technology and allowing staff to work efficiently from any location, creating a more collaborative work environment, and minimizing OPG's real estate costs. The phased approach to Workplace Transformation allows Clarington Corporate Campus, which is a new construction project, to factor in and account for all the lessons learned and feedback from user experience, ultimately optimizing the office space.

OPG's Real Estate Strategy will be an important tool to enable OPG to meet its business plan targets for cost realignment following the planned shutdown of Pickering. By moving away from a lease strategy, OPG estimates a reduction of approximately $65M over the next 40 years. Additionally, the creation of a corporate campus will facilitate increased collaboration while creating a safe and modern long-term office space to help attract and retain talent.

3.0 PERIOD-OVER-PERIOD VARIANCES

Period-over-period comparisons of capital expenditures by OPG's Support Services groups are presented in Ex. D3-1-1, Table 2.

3.1 PERIOD-OVER-PERIOD CHANGES – IR TERM

2022 Plan versus 2021 Budget

The increase in capital expenditures of +$69.4M in the 2022 Plan compared to the 2021 budget is mainly due to increased real estate expenditures associated with the commencement of Clarington Corporate Campus project, partially offset by a reduction in IT project expenditures in 2022.

2023 Plan versus 2022 Plan

The decrease in capital expenditures of -$28.0M in the 2023 Plan compared to the 2022 Plan is mainly due to decreased real estate expenditures associated with the Clarington Corporate Campus, the completion of work on the Darlington Engineering Support Services Building Floor 2, completing the Upgrade of the Pickering Administration Building Workplace Transformation, and completion of Darlington Heating, Ventilation and Air Conditioning ("HVAC") Systems R22 Replacement in 2022 (projects described in Ex. D3-1-2). This reduction in real estate expenditures is partially offset by an increase in IT expenditures for the renewal of the Microsoft Enterprise Agreement in 2023.

2024 Plan versus 2023 Plan

The decrease in capital expenditures of -$74.2M in the 2024 Plan compared to the 2023 Plan is primarily the result of lower real estate expenditures on the Clarington Corporate Campus in 2024, which is partially offset by Overhaul of the Darlington Energy Complex 2nd and 3rd floor described in Ex. D3-1-2, and a decrease in IT costs associated with the renewal of the Microsoft Enterprise Agreement in 2023.

2025 Plan versus 2024 Plan

The decrease in capital expenditures of -$14.7M in the 2025 Plan compared to the 2024 Plan is primarily attributable to lower real estate expenditures as the Clarington Corporate Campus is completed in 2025.

2026 Plan versus 2025 Plan

The increase in capital expenditures of +17.8M in the 2026 Plan compared to the 2025 Plan is mainly due to the renewal of the Microsoft Enterprise Agreement in 2026, which is partially offset by lower spend across the Real Estate project portfolio after the completion of the Clarington Corporate Campus and the Workplace Transformation Projects.

3.2 PERIOD-OVER-PERIOD CHANGES – BRIDGE YEAR

2021 Budget versus 2021 OEB Approved

The increase in capital expenditures of +$128.8M in 2021 Budget compared to 2021 OEB Approved amount is mainly the result of increased expenditures for the advancement of the CIO Digital Strategy and the Real Estate strategy, which were not included in EB-2016-0152. The CIO portfolio in the 2021 Budget includes several projects that are described in Ex. D3-1-2, including Asset Suite 9 Upgrade, Re-imagine 2.0, Energy Market Application Refresh Program, and the Cyber Security CSA N290.7 Program. The Real Estate budget includes the execution of the Clarington Corporate Campus, Update Darlington Engineering Support Services Building Floor, and Upgrade of the Pickering Administration Building Workplace Transformation.

2021 Budget versus 2020 Budget

The increase in capital expenditures in 2021 Budget of +$10.0M compared to 2020 Budget is primarily due to increased real estate expenditures associated with Workforce Transformation projects for the ESSB 2nd and 3rd Floors and Pickering Administration Building described in Ex. D3-1-2, which is partially offset by a decrease in IT expenditures associated with the renewal of the Microsoft Enterprise Agreement in 2020.

2020 Budget versus 2020 OEB Approved

The increase in capital expenditures in 2020 Budget of +$120.0M compared to 2020 OEB approved is mainly due to the advancement of the CIO Digital Strategy and the Real Estate strategy that was not planned in EB-2016-0152. The CIO budget in 2020 includes the Microsoft Enterprise Agreement renewal, Tempus Lifecycle Upgrade, Pickering Wi-Fi, and

the Re-Imagine Program. The Real Estate budget in 2020 includes the commencement of the Clarington Corporate Campus, and Update of Darlington Engineering Support Services Building.

2020 Budget versus 2019 Actual

The increase in capital expenditure of +$46.0M in 2020 Budget compared to 2019 Actual is mainly due to the advancement of the CIO Digital Strategy and the Real Estate strategy. The CIO budget in 2020 includes the Microsoft Enterprise Agreement renewal and Pickering Wi-Fi, partially offset by completion of the 700 University Workplace Transformation, and the Ground Maintenance Complex project in 2019.

3.3 PERIOD-OVER-PERIOD CHANGES – HISTORICAL YEARS

2019 Actual versus 2019 OEB Approved

The increase in capital expenditures of +$70.1M in 2019 compared to 2019 OEB Approved is mainly attributable to the advancement of the CIO Digital Strategy and the Real Estate strategy that were not included in EB-2016-0152. In 2019, CIO initiated and executed a number of projects (described in Ex. D3-1-2) including the Re-Imagine Program Project, the Cyber Security – CSA N290.7 Compliance Program, Pickering WiFi Project and Tempus Lifecycle Upgrade. The increase in Real Estate project expenditures is largely due to the completion of the 700 University Workplace Transformation project and building of the Ground Maintenance Complex at Darlington.

2019 Actual versus 2018 Actual

Actual capital expenditures in 2019 were in-line with 2018 actual, decreasing slightly by -$0.3M.

2018 Actual versus 2018 OEB Approved

The increase in capital expenditures of +$62.1M in 2018 compared to 2018 OEB approved is primarily due to the advancement of the CIO Digital Strategy and the Real Estate strategy that were not included in EB-2016-0152. In 2018, CIO initiated and executed the Windows 10

Project, OPG Telephone Upgrade, Network Segmentation, Documentum Implementation, and the Wireless Improvement Program. Real Estate project expenditures included the 700 University Workplace Transformation project.

2018 Actual versus 2017 Actual

The decrease in capital expenditures of -$4.4M in 2018 actuals compared to 2017 actuals is primarily due to IT expenditures, where 2017 included the execution of the Microsoft Enterprise Agreement. This decrease was partially offset by Windows 10 Project, and increased expenditure in the Real Estate portfolio projects including the 700 University Workplace Transformation project.

2017 Actual versus 2017 OEB Approved

The increase in actual capital expenditures of +$73.4M in 2017 compared to 2017 OEB Approved is mainly due to the advancement of the CIO Digital Strategy and the Real Estate strategy that were not included in EB-2016-0152. The first Microsoft Enterprise Agreement was executed in 2017. Other CIO portfolio projects that contributed to the increase include: the Network Segmentation project, the Microsoft SharePoint Upgrade, the Security and Emergency Services ("SES") P25 Interoperability Radio System, Documentum Implementation, and the Nuclear Integrated Digital Enhanced Network ("IDEN") project. Real Estate portfolio projects included Darlington Park Road and Holt Road Bridge, Heating, Ventilation and Air Conditioning ("HVAC") and Electrical modifications at Pickering facilities, and the 700 University Workplace Transformation project.

2017 Actual versus 2016 Actual

The increase in actual capital expenditures of +$42.6M in 2017 compared to 2016 actual is mainly due to the advancement of the CIO Digital Strategy. The first Microsoft Enterprise Agreement was executed in 2017. Other CIO portfolio projects that contributed to the increase included the Network Segmentation project, Microsoft SharePoint Upgrade, SES P25 Interoperability Radio System, Documentum Implementation, and the Nuclear iDEN project.

2016 Actual versus 2016 Budget

The increase in actual 2016 capital expenditures of +$17.4M compared to 2016 Budget is attributable to an increase in IT expenditures for the Nuclear iDEN project, the SAP ECC 6.0 Upgrade, MS Windows Server Upgrade, and the Mainframe Purchase project.