London Hydro

Exhibit 4 Interrogatories

Response to Interrogatories

EB-2016-0091

Rates Effective: May 1, 2017

Date Filed: January 17, 2017

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Tab 1 of 5

Exh 4 Board Staff Interrogatories

4-Staff-43

Ref: Exhibit 4, p. 5

Ref: Exhibit 4, p. 10-12

At **Reference 1**, London Hydro states that price increases are only implicitly considered for non-labour expenditures in the Bridge and Test Years.

At **Reference 2**, London Hydro explains that budgets for materials, supplies, vehicles, etc. are developed by analyzing historical activity and considering future objectives and obligations.

Please explain how London Hydro estimates the future cost of materials, supplies, vehicles, etc. without explicitly using an inflation factor. Please include an example in the response.

LH Response:

Templates provided to Managers include the last full year actual results, the prior year budget amounts and blank columns for entering current year projections and the proposed budget for the following year. Percentage calculations are provided throughout budget templates for each line item, as well as at other summarized levels such as expenditure category, business unit, department and Program.

Those involved in developing budgets pay close attention to these percentages since these staff are fully entrenched with the concept that percentage changes above inflationary thresholds raise a 'red flag' since the represent increased spending.

For example, if the Overhead Line department found that in drafting their budget "Contractor Services" expenditures were indicating a percentage increase of 3%, they would revisit this area to either make appropriate reductions or determine the reason for the cost increase. If a cost increase was actually required to meet obligations and achieve future objectives, the Manager would ensure that there was sufficient information available justifying the increase and in order to provide explanations to the

department Vice-President, the Executive Committee and ultimately the Board of Directors.

4-Staff-44

Ref: Exhibit 4, p. 18, Table 4-5

Ref: Exhibit 4, p. 21, Table 4-8

Ref: Exhibit 4, p. 28, Table 4-13

Ref: EB-2012-0146, Application Volume 1 updated September 28, 2012, Exhibit 2, p. 102

At **Reference 1**, London Hydro explains that starting in 2013 there was a shift away from depreciation expense to O&M costs associated with the increased use of Cloud services.

At **Reference 2,** Table 4-8 shows that there has been a $217,580 savings in the depreciation expense for computer hardware and software between 2013 and 2017 due to the use of Cloud services.

Reference 3 shows that there has been $1,307,236 increase (an increase of 121%) in O&M costs for computer hardware and software between 2013 and 2017 factoring in a 2% inflation rate on the 2013 amount.

Reference 4 states, "To achieve success with its corporate strategy, London Hydro is continuing to drive toward an agile, scalable, utility infrastructure or "Internal Cloud", in order to efficiently and cost effectively support mission critical business processes."

a) What portion of the increase in hardware and software O&M costs is attributable to London Hydro's adoption of Cloud services?
b) What factors contributed to the portion of the increase in hardware and software O&M costs not attributable to the adoption of Cloud services?
c) Did London Hydro develop a business case for adopting Cloud services? If so, please file a copy of that business case.
d) What alternatives did London Hydro consider to achieve the same goals?
e) How many vendors and systems did London Hydro consider to develop Cloud services? What was the range of the quotes London Hydro received?
f) Why did London Hydro choose to develop an internal set of Cloud services?
g) Are there savings other than the reduced depreciation expense that can be attributed to the adoption of Cloud services? If so, please list them, provide an estimate of the magnitude of the savings and an explanation of the basis for determining those savings.

LH Response:

(a)

The following table describes the major factors associated with Cloud services contributing to the increase in computer hardware and software OM&A expenditures of $1,307,236 as depicted in Table 4-13 in the original filing:

TECHNOLOGY AND COMMUNICATION O&M COSTS ATTRIBUTABLE TO CLOUD SERVICES		
Program	**2013 Actual to 2017 Test**	**Description**
Information Technology	265,000	Acquired 7/24 Security Incident Event Management and Data Analytics cloud services, New RunMyJob scheduler
Bandwidth	80,000	Increase in bandwidth to support increasing use of Cloud services
Human Resources, Health & Safety	127,500	Replaced legacy HR and Time Entry system with feature rich cloud solution
Metering	168,737	Transitioned meter data from an in-house data repository to the cloud to avoid the high cost of the on-site technology refresh
Customer Services	153,000	Replaced legacy bill print system with enriched cloud based system
Corporate Services	305,613	Replaced the legacy on premise Finance system (JDE) with a feature rich cloud solution
	$ 1,099,850	

Please note that the table above includes increased bandwidth charges, in addition to changes in computer hardware and software increases as a result of Cloud services, due to their interdependency. Bandwidth charges are included in the line item for Phone, Internet and Radio Systems in Table 4-13.

(b)

The factors contributing to increased computer hardware and software OM&A expenditures that are not attributable to the adoption of Cloud services is $207,386 and includes:

- on-premise systems vendor maintenance renewals
- licenses for new non cloud systems (e.g. Mobile Workforce, enhanced CIS batch job scheduler)
- AMI refresh
- Growing data storage / servers demands

- Requirement for increased network performance
- Enhanced cyber security of on premise systems / networks.

(c)

London Hydro evaluates platform / deployment options (i.e cloud vs non-cloud) as part of the systems life cycle process associated with replacing legacy systems and to provide new capability for customers and staff.

Examples:

- Mail and Calendar (Business Productivity Tool): Original cost benefit analysis completed in March 2013 determined the all in cost of the existing on-premise mail (Microsoft Exchange) at $147 per person annually. Comparable costs for Google were $50 per user per year while Office 365 cost $72 per user per year. London Hydro went live with Google business apps in late 2013. Moving to the Google Cloud solution avoided the requirement for capital spending on hardware and software upgrades to the legacy mail, calendar and Office docs applications.
- "MyLondonHydro" Corporate Website and Customer Engagement Portal: New Cloud based portal gives customers a powerful rich suite of self service options including access to their personal information, outage alerts, Green Button applications, billing support etc. all securely delivered 24 X 7. Cloud platform enables delivering near real time data to our customers to assist in empowering them to manage their energy consumption. London Hydro is well positioned to satisfy the "Report of the Board - Supplemental Report on Smart Grid" EB-2011-0004 of February 11, 2013 that indicates the importance of data access and need for real time data to the achievement of customer control objectives in Ontario. London Hydro has also submitted OEB RPP pilot project under critical peak pricing and provisioning of real time data to encourage behavioural changes for conservation (potential start date May 1, 2017) that will leverage MyLondonHydro and other Cloud services.
- Green Button Platform (GB): London Hydro was one of the first utilities in Ontario to build a GB infrastructure in support of the Provincial government's initiative. Realizing the potential for GB and the need for scalability and performance on demand, London Hydro leveraged existing Cloud offerings thereby avoiding the need for building,

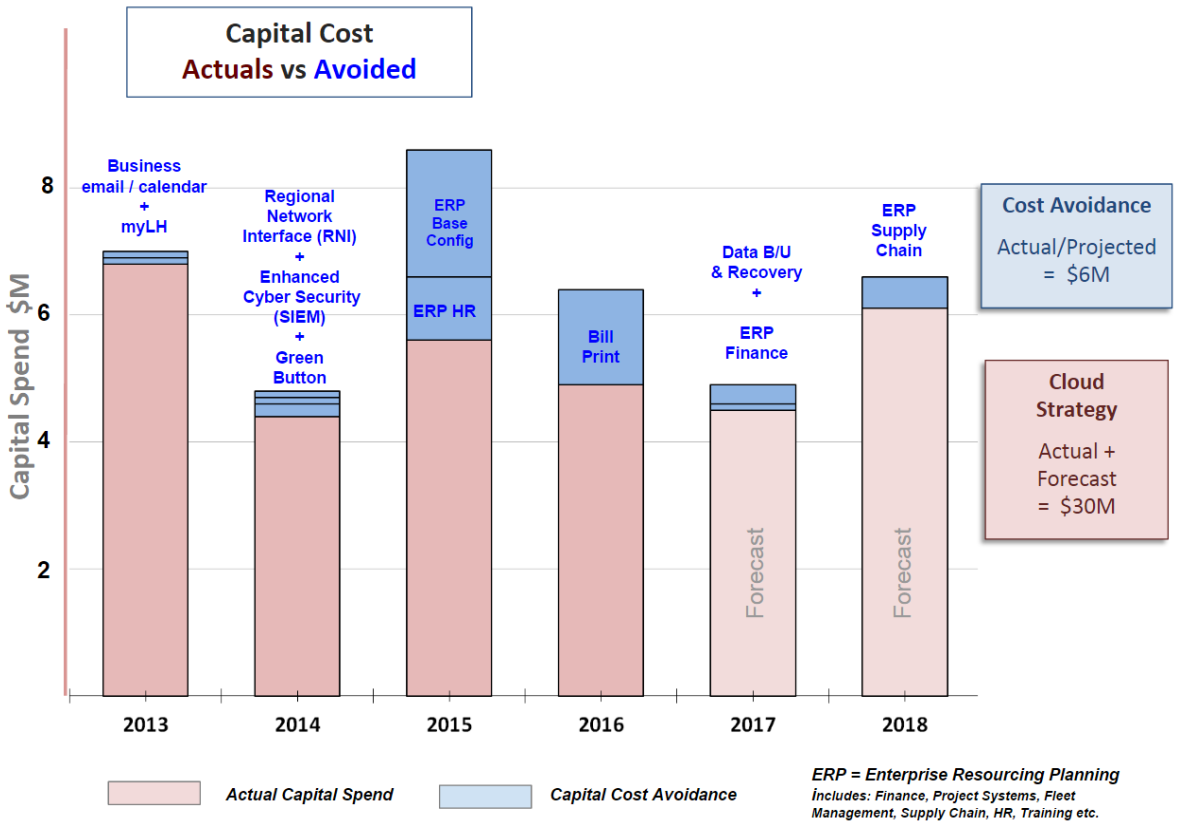
refreshing and supporting an on premise solution (including hardware, disaster recovery and cyber security framework).

- HR & Time Entry Legacy Replacement: In 2014 Ernst and Young (E&Y) were engaged through a competitive procurement process to conduct an "ERP Needs Assessment and Scoping Strategy" - the objective being to recommend the appropriate ERP strategy for London Hydro. The E&Y assessment [reference in E4/T1/S5 p 221] identified strategic HR capabilities as a gap in London Hydro's needs and also evaluated several approaches to overall ERP capabilities, including extending usage of London Hydro's existing SAP solution to address gap areas. The overall outcome of the E&Y study identified that the most cost effective approach for London Hydro would be to upgrade the existing Finance system and address additional needs through point solution implementation, specifically with consideration to SaaS solutions. In 2014, London Hydro issued an RFP to select HR & Time Entry System using the E&Y recommendation for SaaS solutions. London Hydro went live with the new systems in late 2015.
- J.D. Edwards Finance System Upgrade: London Hydro conducted an assessment for the evaluation of JD Edwards deployment options with Ernst & Young in mid-2016. Under this assessment, E&Y looked into 3 options for the upcoming JDE upgrade initiative and performed detailed cost benefit analysis between on-premise vs Software as a Service (Saas) vs Cloud options. Through this assessment, E&Y recommended London Hydro to go with the "Platform as a Service" Cloud option due to lower total cost of ownership as opposed to the on-premise/SaaS solution but higher service levels (e.g. for security and 24x7 support) without the need for additional support personnel.
- Bill Print Refresh: In 2015, London Hydro evaluated different options for enriching and refreshing the outdated, unsupported custom built Bill print application system. Through a competitive RFP process, London Hydro evaluated different solutions including upgrading its current on premise system and selected the Cloud based RR Donnelley system based on total cost of ownership, vendor capability and features and functionality (e.g. targeting marketing). The new system went into production late 2016.

Utilizing Cloud services has many benefits including, but not limited to, reduced costs for:

- Computing, networking and storage computer hardware capital spending
- Computer software and applications development capital spending
- Capital and operating expenditures for cyber security
- Capital and operating expenditures for disaster recovery and backup systems
- Cost of capital revenue requirement (interest and return on equity)
- In-house support staff

London Hydro will avoid an estimated $6 million in capital spending from 2013 to 2018 as a result of the Cloud strategy being implemented, in comparison to utilizing traditional on premise systems. The chart below illustrates the major components of the capital spending avoided.



Reduced capital spending results in lower depreciation expenses which have been estimated at $1.2 million per year. After removing costs charged to OM&A expenditures for Cloud services

($1.1 million as listed in the table above under 4-Staff 44 a)), this results in an estimate annual savings of $0.1 million annually, before consideration of reduced in-house support and other efficiencies.

Depreciation savings	$1.2M
Cloud OM&A expenditures	1.1M
Annual savings	**$0.1M**

The savings in depreciation expenses from Cloud solutions is not visible in the 2017 Cost of Service since these savings are being absorbed by the replacement of legacy systems that were fully amortized and had no impact on revenue requirement in the 2013 Rate Application (For example, Bill Print, Human Resources, Time Entry). In addition, savings are being offset by capital spending requirements associated with enhancements to systems such as the Outage Management System and London Hydro's new website that empowers customers with self-sufficiency 24/7, tools for analysing consumption data and many other features increasing value.

Cloud services are able to provide economic benefit over on premise solutions due to many factors including

- Economies of scale realized by large service providers (ie; Google and Amazon)
- Efficient use of resources (avoiding in-house costs of redundancies and excess capacity to handle peaks and potential growth)
- Increased collaboration (inside and outside of London Hydro)
- Superior internet connectivity and mobility
- Allowing technologies to move faster when necessary (solving business problems quickly)

Applications hosted on Cloud platforms automatically scale up to handle increased workloads and scale down when traffic subsides. In other words, as soon as resources are no longer consumed no charges are incurred. Additionally, as Cloud providers are effectively commoditizing IT infrastructure, the market competition between providers is resulting in a downward trend to service costs, as opposed to traditional hosted options which have typically increased over time.

Typically the setup costs with Cloud-based solution are minimal – from our experience this is between 2 - 5% of total costs in comparison to equivalent on premise costs of 10 - 20% and amortization over 5 years.

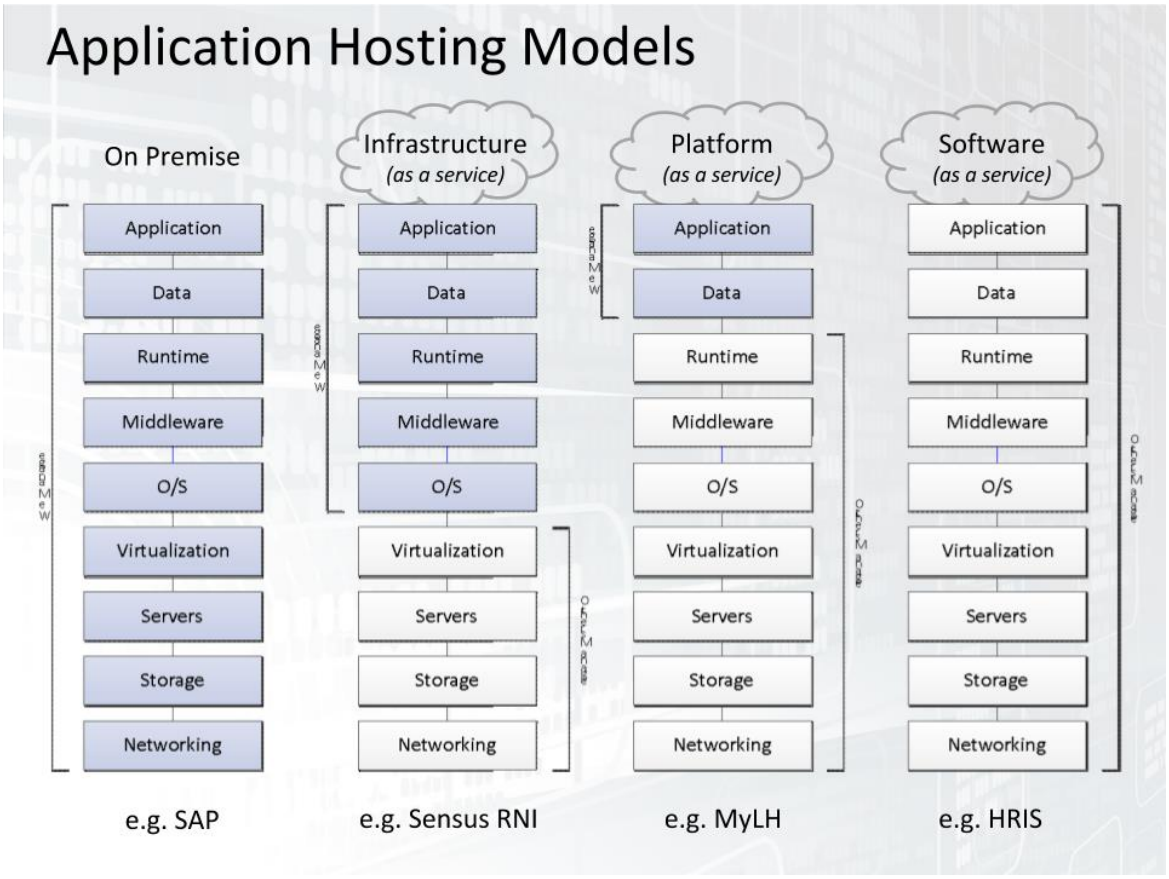
As mentioned above, since Cloud capacity on demand enables the support of Real Time data at much lower cost than on premise, London Hydro is well positioned to satisfy the "Report of the Board - Supplemental Report on Smart Grid" EB-2011-0004 issued February 11, 2013 that indicates the importance of data access and need for Real Time data to the achievement of customer control objectives in Ontario. London Hydro has also submitted OEB RPP pilot project under critical peak pricing and provisioning of real time data to encourage behavioural changes for conservation (potential start date May 1, 2017).

Being able to cope with change provides a significant cost savings through efficiencies. The electricity industry is evolving rapidly and London Hydro has positioned itself to keep agile through the utilization of Cloud solutions.

(d)

When London Hydro's IT systems need to be upgraded or replaced, different service models available are evaluated on a case by case basis to determine the most cost effective solution. For example, whether to implement an on premise solution, a Cloud solution (Software as a Service (SaaS), Infrastructure as a Service (IaaS) or Platform as a Service (PaaS)). As such, London Hydro continues to deploy technology solutions that provide the most economic benefit, including on premise where appropriate.

The following diagram illustrates some of the different application hosting models that London Hydro has leveraged for SAP Billing System, Meter Data, MyLondonHydro, and the Human Resources systems:



Note: Shadowed boxes indicate on premise components (hardware and software) and white boxes indicate Cloud components.

(e)

London Hydro evaluates and selects vendors for Cloud services through a competitive process. For example, RFPs were issued for the HR system replacement, JD Edwards upgrade and Bill Print refresh. Vendors were selected based on price, functionality and vendor capability.

With regard to other Cloud services, London Hydro evaluated the main market players such as Google, Microsoft and Amazon AWS. London Hydro has selected various Cloud providers depending on the competitive quotes and features (e.g Google for Mail & Calendar and MyLondonHydro, Amazon for meter data). Due to the rapidly evolving Cloud offerings, London Hydro typically does not commit to more than 1 year so it can continually evaluate and transition to the most cost effective solutions as they become available.

(f)

London Hydro's approach to Cloud services is to leverage public Cloud providers to the greatest extent possible. We have internally developed applications for our customers leveraging external Cloud hosting to maximize the value of our customer facing technology, e.g. MyLondonHydro, IDC, Event Assist.

(g)

London Hydro's Cloud solutions deliver both quantitative and qualitative value to its internal operations and customers including:

- decrease in depreciation expense
- decrease in capital spending
- less customization of systems (e.g. utilize systems that acceptable to other utilities)
- less support costs than on-premise systems since Cloud provider takes care of application release updates, patches, security and help desk support
- 7 / 24 access for customers on any device (e.g. on premise is best effort after hours)
- enhanced cyber security and disaster recovery (e.g. avoided costs to enhance on premise to same level as the cloud providers)
- scalability on demand (e.g. avoided buying extra servers to satisfy peak demands)

Please refer to 4-Staff-44 c) above for an explanation of the cost avoidance opportunities realized through Cloud solutions.

4-Staff-45

Ref: Exhibit 4, p. 29, Table 4-14

The referenced table shows a significant increase in Technology and Communication costs for Customer Service and Collections (+1538%), Human Resources, Health and Safety (+880%) and Corporate Services (+302%) between 2013 and 2017 after taking into account a 2% inflation rate.

Please explain the significant increase in Technology and Communication costs for each of these three areas.

LH Response:

Customer Services and Collections (+1538%) the increase from $9K to $159K from 2013 to 2017 is required to replace an obsolete billing print system with following new features

- Ability to modifying invoice document layouts
- Targeted marketing
- Higher system availability and reliability

Human Resources, Health & Safety (+880%) the increase from $13K to $142K from 2013 to 2017 is required for replace the obsolete HR and time entry system with following new features:

- Eliminated paper time sheets
- Better time allocation including vehicle time to work programs
- Online performance and goals including succession planning tool

Corporate Services (+302%) increase $92K to $401K is required mainly for the JD Edwards ERP reimplementation, which includes the following:

- Replacement of legacy JDE system with the implementation of JDE Enterprise One version 9.2 which enables London Hydro to take advantage of advances in capabilities introduced by the latest version of JD Edwards as well as to move off of aging and unsupported infrastructure technology
- Migrating inventory reporting functionality from custom legacy application to JD Edwards

- Inclusion of the Time & Labour module which will move labour detail that supports consolidated general ledger entries from a custom table to JDE. This will provide drill down access to transactions and allow users to query and report with Insight rather than Microsoft Access.

4-Staff-46

Ref: Exhibit 4, p. 41, Table 4-41

Advertising and promotional expenditures have increased by almost 70% between 2013 and 2017. London Hydro states that this is to keep customers informed about London Hydro's activities and new initiatives.

a) Please explain why initiatives such as the Aeroplan program receive widespread advertisement and promotion but the specific projects included in this rate application did not.

b) Please estimate the approximate cost to send a bill insert to London Hydro's customers and the number of customers that would receive a bill insert.

LH Response:

(a)

All customer engagement initiatives are promoted through widespread advertisement via radio, print ads, brochures and web pages to educate and inform customers London Hydro activities and new initiatives. For example, communication activities have increased to keep customers abreast of new initiatives including:

- Energy literacy including Time-of-Use electricity pricing
- New corporate website and features (e.g. payment arrangements)
- Outage management and other notifications
- Property management self service tool
- Increased environmental awareness
- Paperless billing
- Green Button (e.g. access to third party conservation apps)
- Commercial & Industrial Energy solution : Interval Data Centre
- Aeroplan program
- Customer Outreach (e.g. Home Shows)

London Hydro continues to focus on energy literacy and on providing customers with understandable information to make it easier for consumers to participate. New initiatives

involve proactive consultation with customers so that they have a voice in London Hydro's decision making and in order to optimize and align London Hydro's strategy with customer preferences and expectations.

Outreach activities tell us that customers feel ill-equipped to comment on the nature of specific infrastructure upgrades, recognizing that, as stewards electricity distribution of electricity, London Hydro takes on the responsibility for maintaining its distribution system so it can ensure a secure and stable supply of power. Accordingly, to inform customers about proposed capital projects, London Hydro uses outreach activities that involve personal interaction and with it, the opportunity to explain projects in more detail and to answer questions. Examples of these include the Annual General Meeting (open to the public), at which a presentation is made outlining proposed capital projects. Other examples include kiosks set up at home shows, in malls and at community events, where management personnel, including senior management, meet with members of the public to discuss proposed capital projects.

(b)

The cost to send a billing insert to London Hydro's customers is approximately $0.0098 per billing insert. In 2016, approximately 109,000 customers receive monthly billing inserts. This excludes paperless customers who have access to billing insert material online.

4-Staff-47

Ref: Exhibit 4, p. 65, Table 4-17

Contractor services costs for asset management have increased at a high rate (41% annual rate) between 2013 and 2017.

What is the growth rate in the number of hours worked by contractors on asset management between 2013 and 2017?

LH Response:

In most cases, consultants and contractors engaged by the Asset Management Program are not hired on an hourly basis but on a task or project basis specific to a given study. These external services are required to ensure the Engineering, Planning and Standards groups arrive at the "root cause" when equipment failure occurs, which is becoming more of an issue as the distribution system ages.

Costs in this area relate to studies such as those addressing porcelain insulator failures, maintenance hole explosions/fires, PILC, (lead cable), replacement alternatives and the associated report writing required. Regulatory audits and reporting such as the Electrical Safety Authority (ESA) and Construction Verification Program (CVP) are also captured in this section. While the details or magnitude of these studies or projects are somewhat unpredictable, a pattern of infrastructure failure has emerged that requires engineering cause analysis.

Using these external experts, London Hydro has been able minimize the cost of improving safety and reliability by addressing specifically identified risk items, rather than make assumptions. Dealing with an aging infrastructure means increased levels of replacements and refurbishments for capital assets. Future distribution system investments must be carefully managed to ensure that London Hydro sustains service quality, accommodates growth and changing electricity requirements. Options available for restoring infrastructure must be thoroughly analyzed before decisions are made. Studies and forensic analysis augment strategic decision making ensuring investments provide optimum value for customers.

4-Staff-48

Ref: E4/T1/S5, p. 351-354 and Appendix 4-8 Buyout Listing

Ref: E9/T1/S10, p. 1-2

London Hydro is requesting for the establishment of a Retiree Life Insurance deferral account where the account will record all premiums and potential buyout paid regarding life insurance benefits, offset by the annual amount recovered through rates.

a) Please confirm that the request is actually for a variance account
b) London Hydro had asked for this account in EB-2014-0196:
    i. In the EB-2014-0196, it was indicated that the term of the program with LH's current insurance provider ends December 31, 2014. Please explain the details of the re-negotiated program.
    ii. As the OEB denied London Hydro's request for the account, please explain why London Hydro is requesting for the account again.
    iii. Please also explain what has transpired or changed since the EB-2014-0196 application.
c) Please explain what the "refund accounting underwriting arrangement" is as indicated in Exhibit 4 and how that would result in cost savings.
d) From Appendix 4-8, the buyout amount has increased from $3.5M in 2014 to $3.9M in 2017. Please explain when London Hydro will decide and implement a course of action and whether there has been any consideration with regards to the timing of this as a result of the increasing cost of the payout.
e) In Exhibit 4, London Hydro indicated that without the requested account, it would under-recover by $486k from 2017 to 2021. This is an average of $97k per year. The number of retirees who will accept a potential buyout is unknown. London Hydro's materiality for this 2017 test year is $365k. Please explain how the request for the account would meet the materiality criteria.

LH Response:

a)

Yes, the request is in fact for a variance account, our apologies for the confusion.

b)

i. London Hydro utilizes the services of a benefits consulting firm in managing the costs, marketing and ongoing administration of the benefits portfolio. Our consultant ensures that matters such as quoted premium rates from carriers, manual rates, renewal methodology and rate guarantees are reviewed not only when the business is marketed but every year upon renewal.

London Hydro has not marketed its plans since the last exercise in 2011. With respect to Life and Disability, the focus has been redirected towards strategies to reduce the liability and cost of the closed retiree life group (as evidenced in this application). Our options are presently very limited in terms of insuring the Life and Disability benefits, due to the risk associated with the closed retiree life group specifically; a marketing effort would not derive any benefit or savings. The marketing elements for Health and Dental benefits are restricted to ASO expenses, pooling charges and out-of- country travel rates, and would necessitate ensuring any bidder's ability to match the current plan provisions (particularly for union plans). Each year, with the assistance of the benefits consultant, we review the expenses and ensure that they remain competitive. To date, we have concluded that remaining with our current insurer is a reasonable and prudent decision.

London Hydro believes that the most important aspects of managing benefit costs include a long term commitment to wellness and employee education, partnering with carriers that have adopted stringent cost management practices and an ongoing commitment to managing overall plan design.

ii.

In the Decision and Order of EB-2014-0196, dated August 21, 2014, it states (page 6): "The Board will not approve the establishment of the accounts. LH will have an opportunity to update its costs relating to retiree life insurance benefits in its next cost of service rate application".

Much of the discussion in EB-2014-0196 was regarding the timing of the request for the DVA's - suggestions of absorbing the cost within the allowed OM&A envelope,

utilization of a z-factor, etc. Now that LH is in a rebasing year, with updated (and significantly increased) costs relating to retiree benefits, LH would like to re-visit the topic, in this COS Rate Application, as suggested the by Board.

iii.

Since EB-2014-0196, a number of events regarding this topic have transpired:

- The annual premiums have increased substantially again. The increase from 2013 Actuals to 2017 Test is 73%.

Change in Retiree Benefits 2013 - 2017				
	2013 Actual	2017 Test	2013 Actuals to 2017 Test	Percentage Increase
Life insurance premiums	235,377	407,530	172,153	73%

- The future estimated annual premiums are expected to increased substantially (again). The increase from 2017 Test to 2021 Estimate is 48%.

Change in Retiree Benefits 2017 - 2021				
	2017 Test	2021 Estimate	2017 Test to 2021 Estimate	Percentage Increase
Life insurance premiums	407,530	601,998	194,468	48%

- The total buyout amount in EB-2014-0196, for 121 people was $3,790,381. The updated buyout amount, included in this COS, is $3,869,167, but is for 112 people. This demonstrates that in just over one year (dates between reports), with 9 people being removed from the list, the total buyout still increased.
- In March 2016, LH enabled Mercer to survey their insurers regarding interest in "underwriting a public sector retiree life benefit on a standalone basis, with refund accounting". The results were not favourable; only one insurer responded with interest, and it was not an insurer familiar to LH's Mercer Associate. 7 other insurers

declined, and 1 did not respond. Based on this, the possibility of using a third party plan administrator, as mentioned on page 354 of Exhibit 4, is no longer plausible.

c)

The "refund accounting underwriting arrangement" indicated in Exhibit 4 is an arrangement in which London Hydro would "self-insure" the payouts to estates upon death, but the program would be facilitated (for an administrative fee) through a third party to enable the estate's proceeds to be non-taxable. As indicated in Section (b)(iii) above, this alternative that LH was investigating at the time of COS submission is no longer plausible.

d)

London Hydro will decide a course of action regarding this topic after the completion of this COS. The Board's decision to allow or deny a variance account for this purpose is a large determining factor in this decision. At this time, London Hydro is not comfortable initializing any type of buyouts, or changes to its current program, without reasonable assurance that the costs will qualify for future recovery.

e)

The $486k over the 2017-2021 period, for which LH's new rates will be in effect, is greater than the $365,000 materiality. While LH realizes that the annual amount is lower than materiality, LH seeks this as an opportunity to pro-actively address the escalating premium costs, and ultimately benefit ratepayers.

The primary reason for the variance account is to capture the cost of the buyouts. As buyouts occur, the premiums should decrease. It is hopeful that due to a significant number of buyouts, the premiums would actually be lower than the approved 2017 amount. In this case, the variance account would ensure that ratepayers are not overpaying for the costs of the insurance premiums, but are only paying the actual cost of the program.

4-Staff-49

Ref: E4/T5/S5, p. 348-354, Tables 4-70 and 4-71, and Appendix 4-7 Actuarial Report, Chapter 2 Appendix 2-KA

a) Please confirm that amounts in Appendix 2-KA and the 2015 actuarial report include retiree benefits (i.e. the components listed in Table 4-71).
b) Please explain why the "Paid benefit amounts" row in Appendix 2-KA is equal to the "Retiree benefits" in Table 4-70. Please explain whether any payments were made for other post-employment benefits.
c) Please explain how the "Paid benefit amounts" row of $823k for 2015 in Appendix 2-KA reconciles to the "Benefit payments from employer" of $668k on page 12 of the 2015 actuarial report.
d) Please explain how the "OM&A included in rates" row in Appendix 2-KA reconciles to the Retirees section of Table 4-70. Please confirm the OPEB amounts requested to be recovered in rates and confirm that this is on an accrual basis.
e) Please explain how the "Employee future benefits cost" row for 2015 and 2016 in Table 4-70 is derived from the actuarial report.

LH Response:

(a)

Yes, the amounts in Appendix 2-KA (OEB Table Employee Costs) and the 2015 actuarial report (Exhibit 5, Appendix 4-7) do contain retiree benefits (those components listed in Table 4-71)

(b)

The "Paid benefit amounts" row in Appendix 2-KA, and the "Retiree benefits" line in Table 4-70 represents the cash payments made my London Hydro, in each respective year, towards the following items: health benefits for retirees (up until age 65), paid-up life insurance policies and premiums on life insurance policies for a specific group of retirees.

Post-employment benefits ("Employee future benefit costs" line in Table 4-70) represent expenses incurred via accrual accounting (non-cash), as a result of the actuarial report. No payments are recorded here.

(c)

The reason the $823k in Appendix 2-KA cannot reconcile to the $668k on page 12 of the 2015 actuarial report is three-fold:

i. The $823k is the 2017 amount. The remaining response to this question will assume that the question was about the 2015 “Paid benefit amounts” in the amount of $710k. ($710k confirmed as correct by Harold Theissen, Dec. 19, 2016)

ii. The actuarial report does not include an account LH calls “Retiree benefits – Recoverable”. London Hydro collects 85% of retiree health premiums, and absorbs the costs of the remaining 15%. This cost ($54k for 2015) is included in Appendix 2-KA, but was inadvertently omitted from the actuarial report.

iii. There were 2 adjustments that went through LH’s GL after the input data had been provided to Mercer, reducing the expense by $11k, the impact of which has been included in Appendix 2-KA.

Please see summary reconciliation below.

Reconciliation for 4-Staff-49

Per 12/31/15 Actuarial Report "Benefit payments from employer"		$ 667,600
Adjustment for late transactions	$ (10,775)	
Inclusion of 15% health premium for retirees	$ 54,082	$ 43,307
Adjusted Actuarial Amount		$ 710,907
Per Appendix 2-KA (2015 Column) "Paid benefit amounts"		$ 710,907
Unreconciled Difference		$ (0)

(d)

The totals “Retirees” amounts in Table 4-70 are as follows:

Gross Employee Benefit Costs							
	2013 Actual	2014 Actual	2015 Actual	2016 Bridge	2017 Test	2013 Actuals to 2017 Test	CAGR
RETIREES							
Retiree benefits	518,832	601,486	710,907	760,700	822,900	304,068	*12%*
Employee future benefit costs	431,758	288,500	274,300	300,000	309,000	(122,758)	*-8%*
	950,590	889,986	985,207	1,060,700	1,131,900	181,310	*4%*

These amounts are based on actual expenses from 2013-2015, and projected/budgeted amounts for 2016-2017.

The total OPEB's amount, per Appendix 2-KA are as follows:

OPEBS	First Year of recovery to 2011	2012	2013	2014	2015	2016	2017	Total
Amounts included in Rates								
OM&A	$5,120,655.67	$697,998.70	$794,292.84	$784,930.37	$802,275.39	$777,974.19	$782,250.01	$ 9,760,377.17
Capital	$1,713,263.52	$240,427.26	$277,307.16	$303,279.43	$301,713.45	$347,542.43	$349,649.99	$ 3,533,183.24
Total	$ 6,833,919.19	$ 938,425.96	$ 1,071,600.00	$ 1,088,209.80	$ 1,103,988.84	$ 1,125,516.62	$ 1,131,900.00	$ 13,293,560.41

The total OPEB's amount requested to be included in rates is $1,131,900, which is accounted for / budgeted based on the accrual method.

(e)

The 2015 and 2016 "employee future benefits costs" lines are calculated as the amount required to adjust the post-retirement liability per the actuarial report to the appropriate value.

Please refer to Exhibit 4, Tab 1, Schedule 5, "OPEB and pension amounts". (While this section is used to explain PIL's, it effectively shows the continuity of the post-retirement liability and the related income/expenses. The expense lines here tie to those in Table 4-70, and the liability amount ties to the actuarial reports.)

Exhibit 4, Tab 1, Schedule 5, "OPEB and pension amounts":

OPEB and pension amounts

OPEB (non deductible company pension plans)	2013 Actual	2014 Actual	2015 Actual	2016 Bridge Year	2017 Test Year
OPEB liability, beginning of year	(11,301,342)	(12,989,000)	(13,748,900)	(13,844,500)	(14,144,500)
OPEB liability, end of year	12,989,000	13,748,900	13,844,500	14,144,500	14,453,500
	1,687,658	759,900	~~95,600~~	300,000	309,000
Actuarial gain / (loss) through retained earnings	(1,162,200)	-			
Past service awards through retained earnings	(93,700)	-			
Actuarial gain / loss through OCI		(471,400)	178,700		
	~~431,758~~	~~288,500~~	~~274,300~~	~~300,000~~	~~309,000~~
Non deductible pensions per Schedule 1	431,758	288,500	274,300	300,000	309,000
	-	-	-	-	-

1

2 Table 4-70:

Gross Employee Benefit Costs	2013 Actual	2014 Actual	2015 Actual	2016 Bridge	2017 Test	2013 Actuals to 2017 Test	CAGR
RETIREES							
Retiree benefits	518,832	601,486	710,907	760,700	822,900	304,068	*12%*
Employee future benefit costs	431,758	288,500	274,300	300,000	309,000	(122,758)	*-8%*
	950,590	889,986	985,207	1,060,700	1,131,900	181,310	*4%*

3

4 Actuarial Valuation (page 2):

Summary of Results

Below are highlights of the results as at 31 December 2015 compared to the corresponding figures as at 31 December 2014.

	31 December 2015				
	Post Retirement	Retirement Allowance	Medical/Dental on LTD	Service Award	Total
P&L charge/(credit)	$899,900	$400	$41,600	$0	$941,900
Other comprehensive (income)/loss	($178,700)	$0	$0	$0	($178,700)
Defined benefit cost	$721,200	$400	$41,600	$0	~~$763,200~~
Benefit obligation	$13,558,400	$63,800	$125,400	$96,900	$13,844,500

5

4-Staff-50

Ref: E4/T1/S5, p. 391

London Hydro amortizes spare transformers and electric meters from the date of acquisition. Please explain the specific facts and circumstances that led London Hydro to conclude that amortization for these spare assets should commence from the date of acquisition.

LH Response:

London Hydro considers transformers and electric meters critical items and keeps these units on hand and available at all times to help ensure that customers' services are not interrupted. These units are readily available on site to replace identical items in the field that have (for example) broken down, become defective, been damaged in a storm or are identified as needing immediate replacement.

In order to recognize the cost associated with keeping these critical spares on hand and available for use, London Hydro begins to depreciate these assets from the date of acquisition.

Paragraph 55 of IAS 16 states that "depreciation of an asset begins when it is available for use, ie when it is in the location and condition necessary for it to be capable of operating in the manner intended by management."

The example provided in paragraph 55 of IAS 16 of "when it is in the location and condition necessary", might lead one to interrupt this to mean that the unit should be in service before it is depreciation. However, as addressed in the IFRS Interpretations Committee Meeting Staff Paper of May 2015 listed below, it appears that this terminology is associated more with clarifying that there is no "middle ground" with respect to cost accumulating and depreciation, rather than to provide guidance regarding when depreciation should start.

> *In drafting the provisions of paragraph 55, the IASB staff intended to use the same criteria ('…when it is in the location and condition…') to trigger the start of depreciation as is used to signal the end of cost accumulation (measurement of the cost of an item) pursuant to paragraph 15. The underlying idea was that there would not be a 'middle ground' phase during which an item of property, plant and equipment is neither accumulating its cost nor is subject to IAS 16's depreciation provisions.*

It is London Hydro's interpretation that these assets are available for use as intended by management at the time of acquisition, since these units are maintained at all times as insurance spaces.

4-Staff-51

Ref: E4/T2/S5, p. 406 and Appendix 4-5 CCA Schedules

London Hydro has removed labour and contractor services from CCA additions used in the calculation of the SR&ED claim and has deducted these as an expense for income tax purposes only. This adjustment has been forecasted to be $1.3M for both 2016 and 2017.

a) Please explain whether or not London Hydro has a choice to include the amount as CCA additions or an expense for income tax purposes.
b) Please confirm that there is no impact to PILS whether this amount is included as a CCA addition, deductible at a rate of 100% or as an expense.
    i. If not, please quantify the impact to PILS if the $1.3M is included as a CCA addition in 2017.
    ii. Please explain the nature of the $1.3M and why it was originally classified under Class 12 and not another Class.
c) Has the balance of capital additions pertaining to the SR&ED amounts been included in rate base?

LH Response:

a)

London Hydro`s auditors have confirmed that the Company has no choice with regards to any SR&ED labour or contract costs that are capitalized for accounting purposes. These amounts must be removed from the CCA as they are expensed for tax purposes as an eligible SR&ED cost. London Hydro engages a third-party in the preparation of the SR&ED claim each year.

b)

There would be an impact on PILS since CCA Class 12 (even though at 100%) is subject to the 50% limitation in the year of acquisition.

i. If London Hydro had a choice and included the SR&ED adjustment in CCA, this would increase PILS by $172,000 since 50% of the CCA deduction would be deferred to the next year ($1,300,000 x 50% x 26.5%)

ii. The labour and contractor services claimed in the SR&ED tax credit typically relate to IT staff and contractors that are capitalized as applications development software for accounting purposes.

c)

Yes.

File Number: EB-2016-0091

Date Filed: January 17, 2017

Tab 2 of 5

Exh 4 CCC Interrogatories

4-CCC-25

Ex. 4/T1/S5/pp. 10-11

Does the London Hydro Finance Department issue written budget directions to Managers and Directors at the outset of the budgeting process? If so, please provide the directives issued for the test year budgeting process.

LH Response:

Budgeting directives provided as a tab in Excel workbook templates for cost centers by department are provided below:

2017 BUDGET GUIDELINES

Timeline:
--> The operating budget template is issued on April 27, 2015
--> The completed budget package is to be returned to the Finance department on the due date June 29th, 2015

Finance Contacts:

>	Primary:	xxxxxx	Ext. 5626
>	Secondary:	xxxxxx	Ext. 4575

Wage Escalations:
--> The wage escalation for union employees has been set at 2.25% as an estimate
--> The wage escalation for management employees has been set for 2.25% as an estimate

Base Labour Detail tab:

2017 BASE LABOUR DETAILS

> The base labour detail tab has been prepared based on 2015 current headcount. **Please ensure** that **adjustments** are made for **any scheduled additions or deletions.**
> All information in the Base Labour Detail tab is **automatically updated** to the applicable **business unit tabs** (BU & Alloc)

BUDGETED AMOUNTS FOR 2017

> Budgeted pay rates **include** adjustments for **pay rate step increases** scheduled for the forthcoming year

> Most **budgeted hours** have been set based on the **assumption** that the employee will be **working a full year**. **Please ensure** that **adjustments** are made where an employee will **not be working a full year**

INDIRECT HOURS

> Please update this area with the estimated hours that employees will be incur for training, inclement weather and other indirect labour

BU# tabs:

--> For each BU # tab, complete the area provided for the "2017 Budget" for each non-labour object of expenditure

--> Areas **highlighted in blue** are formula driven and **should not be overridden**

-->Notes and comments within the budget package are of great assistance to all. They assist in keeping readers informed, refreshing memories and explaining significant changes. **Please use the commentary often!**

Presentation 8 tab:

--> The "Presentation 8" tab represents a summary schedule of all projections and budgets of individual business units tabs. This presentation **reflects** the same information as Presentation 15, but from more of an **"internal" view**

Presentation 15 tab:

--> The "Presentation 15" tab represents a summary schedule of all projections and budgets of individual business units tabs. This presentation **is the format** used to prepare the **Summary Financial Report** each month. **Please review** this schedule **before returning** the budget package to the Finance Department, **to ensure** that it **reflects** the **overall plan** of the department for the forthcoming year.

Presentation 19 tab:

--> The "Presentation 19" tab represents a summary schedule of all projections and budgets of individual OEB Programs. This presentation **reflects** the same information as Presentation 8 or 15, but from more of an **"OEB Program" view**

Object Recap:

--> This is a view only tab and provides a **consolidated** look with **object detail**

Object Data tab:

--> This tab is a recap of all information recorded in the BU# tabs

--> This recap feeds the Presentation 8 tab and Presentation 15 tab discussed above. Therefore, if you are looking for details supporting lines items in the Presentation 8 or 15 tab, you can simply reference the Object Data tab and filter out your enquiry. For example, if you want to see what is included in the line item for Professional Services on the Presentation 15 tab, simply filter on "PSV - Professional Services" on "Object Category Code 15" (P5) of the Object Data tab.

If you have any questions or require assistance, **please do not hesitate to call**

NOTICE:
--> Formulas in this workbook are dependent upon row and column structure and consistency through ALL business units. Therefore, please do not change the structure of any BU or BU-Alloc worksheets. If changes are required, please make arrangements with Finance.

BU# Alloc tabs:
--> These tabs facilitate the **allocation** of labour to **O&M, capital, billable and/or other business units**
--> **Any labour** amounts which have **not** been **allocated** will remain as the "Net G&A labour" **expense of the business unit**
--> To allocate labour **out to other Departments/Divisions, select 99** from the drop down list as discussed below

4-CCC-26

Ex. 4/T1/S5/p. 18

London Hydro has indicated that it has achieved cost savings related to the increased use of Cloud services. Please provide evidence to demonstrate that the increased use of these services has not compromised the privacy of personal customer information.

LH Response:

London Hydro ensures the privacy and security of personal customer information is maintained for both on premise and Cloud services based systems. Our move to Cloud services is intended not only to optimize the ongoing cost and agility of our technology solutions, but also to *increase* privacy and security around customer data. For example:

- London Hydro practices the 7 Foundational Principles as defined in Privacy by Design developed by the Information and Privacy Commissioner of Ontario
- London Hydro engages third party expertise to conduct vulnerability assessment testing before deploying any new externally connected system or functionality
- 7/24 security monitoring via Security Information and Event Management (SIEM)
- Cloud providers security certificates (e.g. Information Security Management: ISO/IEC 27001:2005)
- Membership to the Cloud Security Alliance for best practises and standards for assurance of Cloud services
- London Hydro's full time Cyber Security Specialist is actively involved in all system changes including the migration to Cloud services.

4-CCC-27

Ex. 4/T1/S5

Please recast Table 4-13 – Technology and Communication Cost Components to include each year 2014-2016. Please provide any cost-benefit analyses to support the increase in the Computer Hardware and Software expenditures.

LH Response:

Table 4-13 Technology and Communication Cost Components has been revised to include amounts for 2014, 2015 and the 2016 Bridge year below:

Technology and Communication Cost Components								
							Cost Increase	
Nature of expenditure	2013 Actual	2013 Actual Inflated (CAGR 2%)	2014 Actual	2015 Actual	2016 Bridge	2017 Test	2013 Inflated to 2017 Test	
	$		$	$	$	$	$	%
IT support operating costs	3,230,758	3,521,526	3,507,560	3,355,261	3,534,900	3,638,200	116,674	3%
Computer software and hardware	1,005,259	1,082,664	1,239,798	1,516,363	1,847,600	2,389,900	1,307,236	121%
Technology and radio licensing	169,550	182,605	179,671	205,044	189,100	300,000	117,395	64%
Phone, internet and radio systems	398,578	429,268	445,821	434,205	510,400	560,300	131,032	31%
OM&A expenditures	4,804,144	5,216,063	5,372,850	5,510,873	6,082,000	6,888,400	1,672,337	32%
Software and hardware depreciation	5,602,780	6,034,194	6,193,599	5,936,149	6,407,500	5,385,200	(648,994)	-11%
Total $	**10,406,923**	**11,250,256**	**11,566,449**	**11,447,021**	**12,489,500**	**12,273,600**	**1,023,344**	9%

Please see the answer to question 4-Staff-44 for the cost benefit analysis to support the increase in Computer Hardware and Software expenditures.

4-CCC-28

Ex. 4/T1/S5/p. 49 – Table 4-16

Please describe London Hydro's policy with respect to contractor services. The costs associated with contractor services have increased significantly since 2013. Has London Hydro undertaken a cost-benefit analysis to support the increased use of contractor services? If so, please provide that analysis. If not, why not?

LH Response:

London Hydro utilizes contractor services to augment internal staff. External resourcing is dependent on costs, expertise, seasonal work, volume fluctuations and the availability of internal resources. Using external resources keeps the Company nimble and is of great value when it does not make economic sense to keep a certain level of expertise on staff (ie; legal services, civil engineering). The requirement for outside contractors is often dependent upon factors such as adverse weather (storms, lighting, and hot weather) and new systems and initiatives being introduced (SAP Customer Information System, TOU Pricing, Smart Meters, MIST meters).

Contractor and Professional Services								
			Annual Change				Total Change	
Nature of expenditure	2013 Actual	2017 Test	2013 Actual to 2014 Actual	2014 Actual to 2015 Actual	2015 Actual to 2016 Bridge	2016 Bridge to 2017 Test	2013 Actual to 2017 Test	
	$	$	$	$	$	$	$	CAGR
Customer Focus, Public and Regulatory Responsiveness								
IT contracting and consulting	906,757	816,000	(128,220)	(32,219)	69,683	-	(90,757)	-3%
Metering reading services	601,319	550,000	(51,213)	(48,174)	48,068	-	(51,319)	-2%
Metering and data management services	30,277	120,200	(9,316)	99,723	13,616	(14,100)	89,923	41%
Wholesale metering	51,084	51,000	(1,700)	(5,236)	5,852	1,000	(84)	0%
Customer call overflow services	-	400,000	231,901	67,430	100,669	-	400,000	
Printing and mailing services	151,819	142,000	(7,198)	(5,480)	7,860	(5,000)	(9,819)	-2%
Pmt. processsing, credit agency, EBT	18,346	19,200	1,821	(1,809)	3,243	(2,400)	854	1%
Collection services and fees	287,789	330,000	11,259	2,976	27,975	-	42,211	3%
Advertising	180,301	294,500	44,967	48,504	15,528	5,200	114,199	13%
Corporate communications consulting	19,442	55,000	2,576	24,681	8,301	-	35,558	30%
Locate services	484,768	853,000	218,457	128,565	19,710	1,500	368,232	15%
Asset management services	91,548	357,000	205,961	(44,465)	46,956	57,000	265,452	41%
	2,823,449	**3,987,900**	**519,294**	**234,496**	**367,461**	**43,200**	**1,164,451**	**9%**
Operational Effectiveness								
Underground cable services	84,854	211,400	21,801	90,496	10,549	3,700	126,546	26%
Tree trimming services	66,102	83,000	(45,870)	79,077	(18,309)	2,000	16,898	6%
Operations and maintenance services	54,277	74,700	(6,151)	23,170	1,904	1,500	20,423	8%
Substation services	47,015	72,500	26,043	(24,292)	23,734	-	25,485	11%
Overhead Line services	98,014	101,000	18,358	16,640	(33,012)	1,000	2,986	1%
Security services	295,525	315,000	(27,159)	27,233	15,401	4,000	19,475	2%
Janitorial services	181,300	230,000	4,856	(2,053)	42,897	3,000	48,700	6%
Landscaping and snow removal	138,593	173,500	24,554	3,342	911	6,100	34,907	6%
Finance services and consulting	148,666	182,000	82,088	(54,976)	5,222	1,000	33,334	5%
Board of Director services	147,544	160,000	(6,190)	(6,717)	20,363	5,000	12,456	2%
HR services and consulting	101,920	138,700	14,748	(9,364)	31,396	-	36,780	8%
Health and Safety services and consulting	17,989	47,000	(714)	14,080	9,645	6,000	29,011	27%
Legal services	107,212	120,000	51,756	22,802	(41,770)	(20,000)	12,788	3%
Waste, recycling, and facility services	95,105	110,400	23,940	(14,467)	2,022	3,800	15,295	4%
Bank charges and fees	92,494	104,000	2,826	2,512	2,968	3,200	11,506	3%
Corporate services consulting and service:	60,899	40,900	47,617	(94,496)	6,879	20,000	(19,999)	-9%
IESO prudentials	26,336	30,000	-	-	1,664	2,000	3,664	3%
Fleet services	18,626	22,500	3,405	(109)	(6,422)	7,000	3,874	5%
Stores consulting and services	1,772	5,000	2,121	918	189	-	3,228	30%
Towing services	5,282	5,000	2,477	(2,391)	(368)	-	(282)	-1%
	1,789,524	**2,226,600**	**240,509**	**71,404**	**75,864**	**49,300**	**437,076**	**6%**
Total $	**4,612,973**	**6,214,500**	**759,803**	**305,899**	**443,325**	**92,500**	**1,601,527**	**8%**
Annual % change			17%	6%	8%	2%		

The Customer Service and Collections Program commenced utilizing the services of a third party call centre in 2014 which has increased contractor services in this area by $400,000 since 2013 as illustrated above.

In 2003, and again in 2008, London Hydro retained an external call centre for call overflow services. In those trials it was not truly a full service call centre but rather a message taking

service as customer enquiries were then forwarded and addressed by London Hydro Customer Service Representatives. The new services which commenced in 2014 provides for full call centre services managing various types of calls including

- Move In / Move Out
- Payment arrangements
- All types of calls during high volume periods

Inbound calls to the Call Centre fluctuate during peak daily times and periods (e.g., during power outages, student moves in the summer months, or as a result of outside influences, such as Regulatory changes.) Utilizing third party call centre services helps the Company better manage these peak times and meet the OEB's performance index in connection with answering inbound calls. Third party services also increase the availability of Customer Service Representatives when a customer calls regarding more complex or escalated matters.

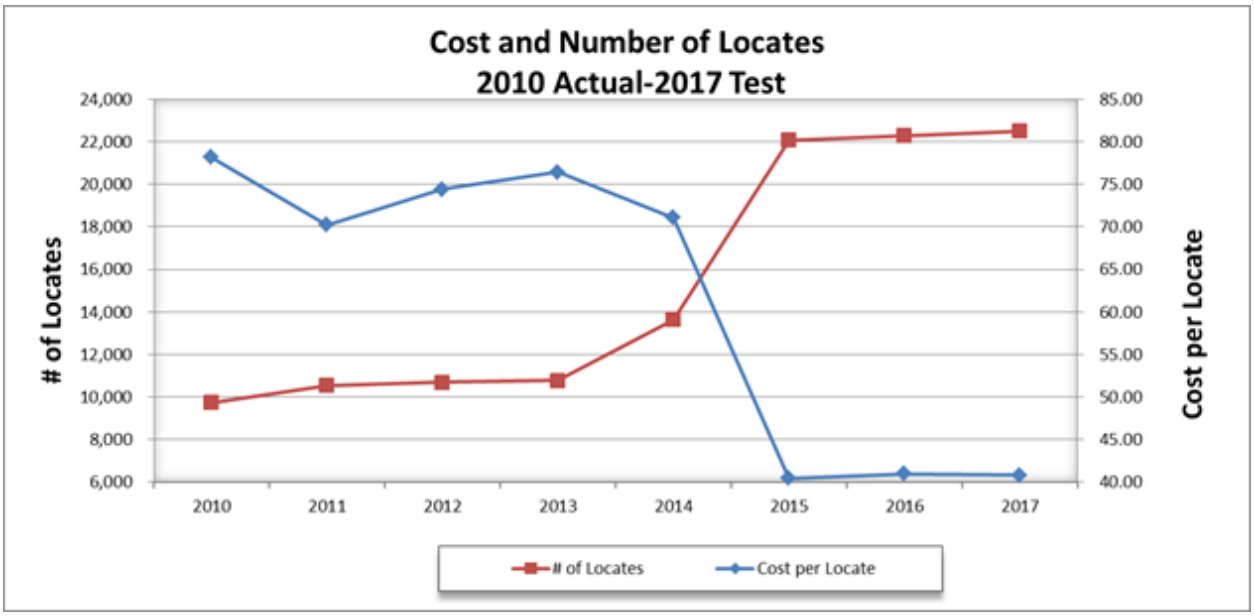
Daily inbound calls coming into the call centre decreased from a daily average of 900 calls in 2011 down to 700 calls in 2013, with average talk time around 6-7 minutes. However, email correspondences have increased significantly, indicating that customers are moving towards more electronic interaction. Outsourcing call overflows helps keep the Customer Service department agile while it gives the Company time to fully evaluate this change in customer direction to ensure that a flexible and cost effective approach is taken for the future.

London Hydro's new website which went live in 2014, includes many Customer Service enhancements and tools that allow the customers to be more self-sufficient, 24/7. The third party call centre service gives London Hydro the opportunity to monitor the uptake of this new functionality and evaluate what impact the website will have on the level of call volumes coming into the Call Centre.

Due to the significant increase in requests for locate services, London Hydro performed a review of the Locate Services department and found it best to move to a 100% contracted services model in order to better accommodate:

- seasonal fluctuations
- necessary expertise
- legislated requirements for 5 days service
- cost controls

In 2013, the unit cost of a locate service was $76. By moving to a 100% contracted service model, the unit cost of a locate services has been reduced to $41. The chart below illustrates the increase in the volume of requests for service since 2013 as well as the reduction in the unit cost as a result of moving to third party services.



The *"Call Before You Dig"* campaign has had a significant impact on the volume of requests for locate services as the public becomes more aware of the safety issues and legal requirements. Contractors and utilities are increasing their requests for service as well. Upon clarification by the TSSA, ESA and the Ontario Regional Common Ground Alliance (ORCGA), it was determined that locates are required for hand digging and vacuum-truck types of excavation

work. Over the course of the last few years, contractors and utilities have recognized the need to enhance the commitment to damage prevention by starting the process of plant protection during preliminary engineering efforts. London Hydro, along with the City of London and other utilities, has subscribed to a process whereby potential conflicts with existing underground plant are identified during the planning phase of the engineering process. In so doing, optimum paths are selected and unplanned construction costs are significantly reduced.

Increased contractor service costs in the Asset Management Program relates to the cost of hiring consultants or contractors for short duration or single studies or projects when the expertise or resources are not available in-house.

An example of this would be hiring Civil Engineering consultants to perform a structural analysis on all the downtown core maintenance holes and vaults. London Hydro does not have Civil Engineering expertise in-house as outsourcing this type of work is more economical. Using contractors also avoids disruption to in-house Engineering staff schedules thus reducing the impact on customer projects.

These external services are required to ensure the Engineering, Planning and Standards groups arrive at the root cause when equipment failure occurs, which is becoming more of an issue as the distribution system ages.

Costs in this area relate to studies such as those addressing porcelain insulator failures, maintenance hole explosions/fires, PILC, (lead cable), replacement alternatives and the associated report writing required. Regulatory audits and reporting such as the Electrical Safety Authority (“ESA”) and Construction Verification Program (“CVP”) are also captured in this section. While the details or magnitude of these studies or projects are somewhat unpredictable, a pattern of infrastructure failure has emerged that requires engineering cause analysis.

Using these external experts, London Hydro has been able minimize the cost of improving safety and reliability by addressing specifically identified risk items, rather than make assumptions. For example, an external consultant identified a specific brand and style of porcelain insulators in 2009 that were prone to premature failure, and only these specific insulators were replaced rather than replacing all porcelain insulators. A lightning protection

study conducted in 2009 identified improvements in overhead line construction standards that have been implemented in specific areas and those areas are showing performance improvements with fewer outages affecting customers.

Dealing with an aging infrastructure means increased levels of replacements and refurbishments for capital assets. Future distribution system investments must be carefully managed to ensure that London Hydro sustains service quality, accommodates growth and changing electricity requirements. Options available for restoring infrastructure must be thoroughly analyzed before decisions are made.

Studies and forensic analysis augment strategic decision making. These studies provide information on the infrastructure, reliability, technology, power quality, customer preferences, utility benchmarking, and safety, among others. Although some studies vary from year to year, on-going funding is required to enable London Hydro to makes sounds decisions regarding costly capital investments. Studies also provide valuable information on historical performance of the system and in developing new ideas on how future improvements for the future.

London Hydro's investment in Root Cause Analyses allows us to improve service to our customers. The following example was implemented over the last year, and its success was verified just recently in the summer of 2016.

In the utility industry, when two or more overhead lines of different primary voltages exist on the same pole line, the higher voltage is positioned above the lower primary voltage. In London Hydro's case, 27.6kV circuits are positioned above 4.16kV circuits. However, this positioning can create a potential hazard if the higher voltage conductor should fall onto the lower voltage conductor, which has happened twice in London Hydro's service territory in the last few years. Although such events are uncommon, when they do happen they can cause not only a significant outage, but also damage to both utility and customer equipment, leading to customer claims and dissatisfaction. From the utility's perspective, not only can repairs and claim settlements become costly, but regaining customer goodwill can also be a challenge. Understanding the inconveniences our customers may face due to a potential overvoltage event, we decided to pursue an innovative solution involving surge arresters, which we discovered during our Root Cause Analysis.

Surge arresters are designed to provide protection against temporary high voltage events, such as a lightning strike. Distribution class arresters are the most common type used on overhead lines. However, due to their design, these arresters are not built to handle the higher energy dissipation levels of a sustained overvoltage so the device fails. During our Root Cause Analysis, our engineers found an existing method that used a station class surge arrester with a higher energy dissipation capability designed to maintain contact to ground in overvoltage conditions. Unlike distribution class surge arresters, which are designed to disconnect from the circuit during a sustained overvoltage to prevent a catastrophic failure of the arrester, the 3kV station class surge arrester procured by London Hydro would mitigate any sustained overvoltage conditions on underbuild lines. London Hydro invested in and installed 207 of these arresters at strategic locations that were identified based on the highest risk and proximity to overbuilt lines.

The success of the implemented solution was evident on July 8, 2016 when a 27.6kV tap failed and fell onto a 4kV circuit causing an outage in a residential area. When the overhead line crew was restoring power, they found that the new arresters operated as intended. The arrester successfully acted as a sacrificial piece to protect the distribution and customer equipment from damage caused by the resultant overvoltage surge. No overvoltage surges were experienced by our customers and, as a result, our customers' devices were unaffected and our customers were not inconvenienced beyond the actual outage.

A 'do nothing' approach involves repairing significant damage and resolving damage claims after the occurrence, all of which result in increased costs to the utility, and, therefore, the customer. In addition, the inconvenience to the customer leads to frustration and dissatisfaction on their part. London Hydro is one of the first, if not the only, Ontario utility that has taken a proactive approach to addressing this potential hazard by investing in a device that will reduce the need for significant repair, resulting in reduced impact to the customer in terms of convenience, cost and satisfaction.

Asset Management contractor services also includes consulting and contractor services required for the development and maintenance of the new Distribution System Plan. Ongoing consulting and contractor services will aid in monitoring, controlling and reporting on DSP

initiatives and considers increased regional planning as well as educating customers, obtaining customer input/feedback and providing customers with progress updates.

Due to the complexities of the downtown core network system and the size of the commercial and residential underground supply systems in London, the Company has a separate functional area for underground systems - the Electric Underground Systems Department ("EUS"). Personnel in this Department are trained in and responsible for all aspects of the unique network electrical supply system, including Paper Insulated Lead Covered ("PILC") conductors, live secondary conductors, the extensive maintenance hole and duct system (which is unique to London and a few other Ontario utilities) as well as all aspects of commercial and resident underground systems. The EUS Department is responsible for the construction and maintenance required to ensure that customers' underground services are connected, repaired, replaced or maintained in a prompt and efficient manner and that system maintenance is completed as scheduled.

Contractor service cost increases in the Electric Underground Systems Department relate to contractors and equipment required as part of maintaining the underground electrical system for commercial and residential customers and in the downtown core. As direct-buried, residential secondary cables age, London Hydro has noticed a dramatic increase in cable faults. When these faults occur in a joint trench, hand digging has been shown to damage adjacent cables. In order to mitigate this problem, any secondary faults in joint cable or utility trenches are now typically excavated with a vacuum truck. This method speeds up the fault repair process, thus restoring the customers' electrical service faster, while avoiding accidental damage to other customers' or utilities' cables.

It should be noted that in 2014, the design standard changed so that residential secondary cables are now housed in ducts; however, over 5,100 km of direct buried secondary service cable remains in the system, which will require this excavation method for repairs when the cable fails. Further, there is approximately 1,200 km of direct buried primary cable in the system, and when faults occur and emergency repairs are required (such as for radial feed customers), the vacuum excavation method is used to speed up the excavation and avoid damage to adjacent cables.

London Hydro's downtown core uses PILC cable to supply customers via a network of maintenance holes and vaults containing cable, switchgear and transformers. A third use of the vacuum truck is to clean the maintenance holes and vaults to remove water and possible contaminants that have drained into the structures and/or after any hot lead work is performed. The City of London will not permit any maintenance hole or vault dewatering into storm sewers if contamination is suspected; therefore, vacuum cleaning is mandated so the effluent is disposed of properly.

In 2008, London Hydro researched and installed an alternative to PILC cable, called Ethylene Propylene Rubber ("EPR") cable, in an attempt to not only eliminate the use of lead covered cable but also the need for hot lead work associated with splicing and terminating of the PILC cables. Engineering studies have shown that switching to an EPR Insulated cable would permit the use of polymer splicing and elbow termination kits without jeopardizing the electrical characteristics required to maintain the reliability London Hydro customers in the core that they have come to expect. Given that it would be very expensive to replace all the PILC cable in the downtown core system, a focused approach was initiated that involves the targeted replacement of PILC with EPR in combination with existing projects.

File Number: EB-2016-0091

Date Filed: January 17, 2017

Tab 3 of 5

Exh 4 LPMA Interrogatories

4-LPMA-33

Ref: Amendment to 2017 Cost of Service Application dated December 2, 2016

a) Please provide an updated live Excel spreadsheet that reflects the increase of $300,000 in billing and collecting expenses as noted in the Amendment.

b) Please provide the basis, assumptions and calculations to support the calculations of the reduction in the value of the service provided by London Hydro of $300,000 (page 2) and the incremental annual expenses and potential losses of $425,000 (page 3).

LH Response:

The $300,000 has not been determined using any particular external analysis rather is an amount which is considered reasonable by London Hydro management in an attempt to provide some recognition of the additional work that is required by management at the City of London as a result of not providing funding on water payments unless all of the hydro payments have first been realized. In short it is an attempt to keep the City of London from moving the service away from London Hydro due to the changes to the payment allocation rules so that the rate payers continue to receive a significant benefit.

Under the previous arrangement, London Hydro allocated partial payments based on the percentage owed between the hydro and water portions. As long as customers were making payments on their account, the City was receiving some sort of compensation and therefore not likely to take any action on those customers.

As far as the City of London is concerned, now that the rules indicate that the hydro portion of the bill is to be paid prior to ANY amounts being paid on the water portion, they have more customers who are not making any payments on the water bills and therefore actions may now be required to ensure they are not left with significantly greater bad debt exposure then they had been under the previous allocation rules.

As indicated in the amended filing, the City of London has informed London Hydro that as a result of these new rules, they will need to consider utilizing a different billing and collection provider as there is significantly more work that is required by the City of London under this scenario while also having a higher bad debt exposure working with London Hydro in comparison to using a third party.

Therefore, London Hydro is looking for one of two potential solutions as to reduce the risk of losing the significant benefit that is realized by the London Hydro ratepayers (The benefit is the reduced revenue requirement of approximately $2.8M as the amount of money generated through the water billing service is $3.9 million (excluding the late payment and interest charges for water) while the estimated incremental cost is approximately $1.1 million).

The two potential solutions are

- Reduce the required payment by the City of London for the service by $300,000 as proposed.
- Be allowed to go back to the old allocation rules where payments were allocated proportionately based on the total amount owing for each service. As the City of London was comfortable with this allocation method, the charge for the service would remain at the contracted level.

(If neither of these options are acceptable, London Hydro may be asking for a revenue requirement in the next rate filing that is $2.8 million dollars higher than it would have otherwise been as a result of losing this service).

As far as the $425,000 incremental costs to the City of London, no specific details outside of the additional bad debt expenses were provided by the City of London to total these costs. To attempt to answer the question, London Hydro management have recorded some of the incremental activities discussed with City of London management.

The philosophy at the City of London was that as long as some amounts were being paid down on the water bills that no action was necessary. The costs are now required (incremental or new costs) as it appears to the City that no payments are being made for these customers and therefore they are required to take action to keep the bad debt exposure to a reasonable level.

Additional manpower is needed for disconnection and reconnection activities for water. Administrative and legal costs are incurred for tax roll applications (if required) and administrative staff at the City of London are needed to handle complaints for disconnections (and/or disconnect notices).

Customers may have indicated how their payment to London Hydro was to be allocated, but based on the DSC, London Hydro was not allowed to allocate any amounts to water (even if requested) until all of the amounts owing on the hydro portion had been fully paid. This provides a significant challenge to customer service of not respecting the wishes of our customers.

c) Please explain how the following paragraph, taken from the conditions of service is compliant with the distribution system code:

> ***"In the event of partial payments, payments shall be allocated to the competitive and non-competitive electricity costs based on the ratio of the amounts billed for each category."***

In particular, please explain the relationship between competitive electricity costs, non-competitive electricity costs and the electricity charges and charges for other goods and services as noted in section 2.2.6 of the distribution system code.

LH Response:

The competitive electricity costs, non-competitive electricity costs and electricity charges and charges for other goods referred to in the conditions of service are all related to the hydro portion of the bill. It is simply an allocation based on the charges relating to electricity. Therefore, the allocation is in compliance with the 2.2.6 of the DSC.

To further clarify, the competitive charges are things such as the Global Adjustment and Spot Rate.

Non-competitive charges are things such as the delivery charge, transmission charges etc.

Other charges are things such as HST and other charges that may apply such as late payment charges, interest, disconnection charges etc.

d) Please break down the $425,000 figure noted on page 3 into the incremental annual expense and the potential losses.

LH Response:

Please see the response in LPMA 33b above.

e) Prior to the change in the distribution system code, who was responsible for the bad debt and collection expenses associated with the non-electric charges?

LH Response:

The City of London has been and continues to be responsible for all bad debts associated with unpaid amounts on water bills. The collection expenses are incurred by London Hydro as per the SLA with the City of London. London Hydro also keeps the interest, late payment charges and collection charges (in addition to the amounts collected from the SLA with the City).

f) Based on the changes in the distribution system code, who is responsible for the bad debt and collection expenses associated with the non-electric charges?

LH Response:

Please see the response in LPMA 33e above.

g) Please break out the collection and bad debt expense associated with the non-electric charges based on the current distribution system code and on the allocation that previously existed.

LH Response:

The costs associated with collection activity are not tracked by whether they relate to Hydro or Water expenses as the majority of the bills are for both expenditures.

The following bad debts have been experienced by the City of London for water bad debts over the past five years.

2012 – $240,000
2013 - $269,000
2014 - $295,000
2015 - $275,000
2016 - $379,500

4-LPMA-34

Ref: Exhibit 4, Tab 1, Schedule 5, page 16

a) Are the number of FTE's and number of customers shown in Table 4-3 calculated in the same manner as the figures provided in the corresponding table (Appendix 2-L) provided in EB-2012-0146? If no, please explain any change in the calculation methodology.

b) Please provide the corresponding 2012 figures for the number of FTE's and number of customers.

LH Response:

a)

The calculation of FTE's has changed in that the 2012 number included Conservation Demand (CDM) employees. FTE numbers presented for 2013 to 2017 do not include these employees. Otherwise, there is no change in the methodology used to calculate FTE numbers.

The presentment of the number of customers has been revised as well. The presentation in 2012 displayed the number of customers at the end of 2012, where numbers presented for 2013 to 2017 are based on averages (number of customers beginning of year + number of customers end of year / 2).

b)

The number of FTE's (excluding CDM) for 2012 is 291 and the number of customers (average) is 149,037.

4-LPMA-35

Ref: Exhibit 4, Tab 1, Schedule 5, page 18

a) Please explain the type of computer hardware that is not required as the result of cloud services.

b) Are there any increases in computer hardware costs as a result of the movement to cloud services?

c) Please split the computer hardware and software depreciation costs shown in Table 4-5 into two components – hardware and software.

d) What is the associated increase in OM&A expenses related to the use of cloud services?

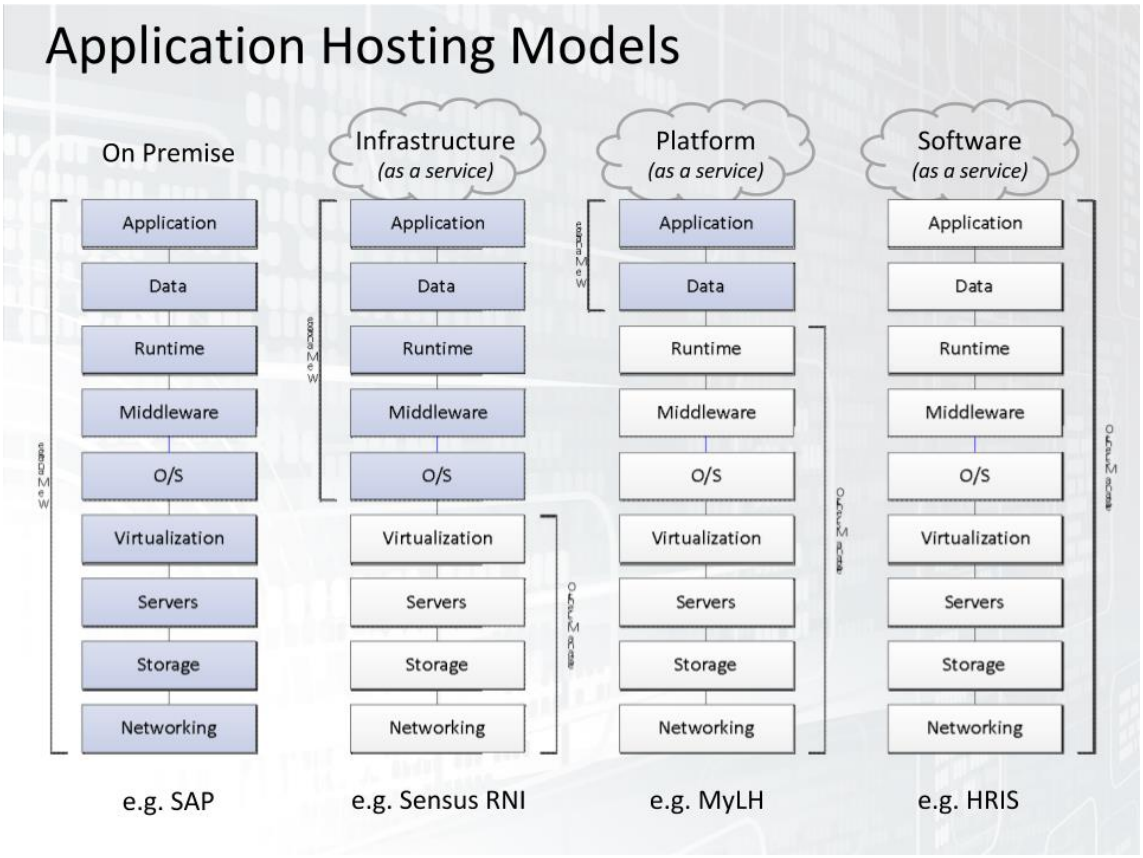
e) What is the associated reduction in capital expenditures related to computer hardware and software as a result of the use of cloud services?

LH Response:

(a)

On premise computer hardware requirements are dependent on the service model deployed. Generally speaking on-premise solutions require more servers and storage than Cloud solutions. The following diagram illustrates some of the different solutions implemented by London Hydro and how the requirements for computer hardware differ between on premise and SaaS (HR system), PaaS (MyLondonHydro customer portal) and IaaS (RNI) Cloud solutions.

Note: Shadowed boxes indicate on premise components (hardware and software) and white boxes indicate Cloud components.



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2 (b)

3 There is no requirement for additional hardware as a result of moving to the Cloud, however an
4 increase in internet bandwidth is necessary in order to access Cloud services.

5 (c)

6 Table 4-5 has been revised to breakdown the decrease in computer software and hardware
7 below:

Total OM&A + Computer Hardware and Software Depreciation				
			Total Change	
Expenditures	2013 Board Approved	2017 Proposed Test Year	2013 Budget to 2017 Test	CAGR
	$	$	$	%
OM&A	32,978,000	38,797,000	5,819,000	4.1%
Computer hardware depreciation	510,935	473,000	(37,935)	-1.9%
Computer software depreciation	5,217,665	4,912,200	(305,465)	-1.5%
Total $	**38,706,600**	**44,182,200**	**5,475,600**	**3.4%**

(d)

Please see answer to question 4-Staff-44 for OM&A expenses related to the use of the Cloud services.

(e)

Please see answer to question 4-Staff-44 for capital cost avoidance explanation.

4-LPMA-36

Ref: Exhibit4, Tab 1, Schedule 5, page 39

a) Please break out the bad debt expense shown into bad debt related to electric services and bad debt related to other goods or services.

b) What is the collection cost included in the revenue requirement associated with the collection of overdue payments related to charges for other goods or services?

LH Response:

a)

Bad debts included in OM&A costs and as presented in Schedule 5 pertain to provisions for doubtful accounts associated in London Hydro`s electricity and sundry accounts. No amounts in connection with City of London water accounts are included in the bad debts expenditures. This is because the City of London is responsible for 100% of water accounts that are written off and is billed annually in this regard.

Virtually all of the costs in OM&A and Schedule 5 pertain to bad debts on electricity accounts. Provisions for sundry accounts would be minimal. For example, sundry accounts written off during the 3 year period 2013 to 2015 were less than $30,000.

b)

London Hydro does track expenditures associated with Revenue Protection within a cost centre in the corporate accounts. This area is responsible for the collection of electric and water accounts, as well as sundry accounts where required. Activities performed within this cost centre include assisting customers with payment arrangements, issuing calls and letters to prompt for payment, monitoring and managing

disconnects, processing service orders for Field Collectors, analysis of outstanding accounts receivable and maintaining deposit requirements.

However, this cost centre does not segregate and track activities associated with the collection of water and sundry accounts as employees work through their day to day activities, especially since electricity and water are invoiced on a single bill in most situations. Consequently, London Hydro is unable to provide collection costs included in revenue requirement for water and sundry accounts.

4-LPMA-37

Ref: Exhibit 4, Tab 1, Schedule 5, page 333

a) Please update Table 4-60 to reflect actual data for 2016. If actual data for 2016 is not yet available, please update the 2016 bridge year forecast to reflect the most recent year-to-date actuals available, along with the current forecast for the remainder of the year.

b) If actual 2016 data is not yet available for the entire year, please provide the most recent year-to-date actuals available in the same level of detail as shown in Table 4-60 for 2016, along with the corresponding period in 2015.

LH Response:

(a)

Consolidated cost elements Table 4-60 has been updated to present the 2016 Bridge Year forecast based on November 2016 year to date actuals, plus the remaining budget for December 2016 below:

Consolidated Cost Elements

Nature of expenditure	2013 Actual	2013 Board Approved	2014 Actual	2015 Actual	2016 Bridge	2017 Proposed Test Year	2013 Actuals to 2017 Test	CAGR
	$	$	$	$	$	$	$	%
Labour and services								
Labour and benefits	22,759,881	22,944,600	23,307,175	24,198,583	25,118,719	25,430,900	2,671,019	3%
Employee expenses and development	951,265	998,500	1,193,244	1,231,533	1,253,139	1,484,900	533,635	12%
Contractor services	4,612,973	4,823,600	5,372,776	5,678,675	6,009,589	6,214,500	1,601,527	8%
	28,324,120	28,766,700	29,873,195	31,108,791	32,381,447	33,130,300	4,806,180	4%
Technology and communications								
Computer software and hardware	1,005,259	1,255,200	1,239,798	1,516,363	1,753,445	2,389,900	1,384,641	24%
Technology and radio licensing	169,550	263,800	179,671	205,044	213,737	300,000	130,450	15%
Phone, internet and radio systems	398,578	352,900	445,821	434,205	480,268	560,300	161,722	9%
	1,573,387	1,871,900	1,865,290	2,155,612	2,447,450	3,250,200	1,676,813	20%
Bad debts and LEAP donation								
Bad debts	400,000	800,000	700,000	650,400	700,000	700,000	300,000	15%
Donations (LEAP)	100,000	100,000	150,000	150,000	200,000	200,000	100,000	19%
	500,000	900,000	850,000	800,400	900,000	900,000	400,000	16%
Other								
Rate application filing and OEB fees	458,817	507,700	461,790	492,165	538,319	775,000	316,183	14%
Fleet depreciation	726,900	726,800	814,974	865,252	973,412	1,077,000	350,100	10%
Facilities repairs and maintenance	870,475	1,011,000	871,934	724,509	737,799	1,035,500	165,025	4%
Pole and property leasing	215,527	226,700	216,666	311,287	337,757	340,000	124,473	12%
Other	5,105,176	5,280,900	5,237,415	5,285,735	5,502,802	5,385,700	280,524	1%
Fleet and materials management allocations	(1,722,056)	(1,869,500)	(1,817,380)	(1,773,405)	(1,993,528)	(2,115,700)	(393,644)	5%
Cost recoveries	(4,701,041)	(4,444,200)	(4,752,417)	(4,871,695)	(4,933,775)	(4,981,000)	(279,959)	1%
	953,800	1,439,400	1,032,982	1,033,848	1,162,786	1,516,500	562,700	12%
	31,351,306	**32,978,000**	**33,621,467**	**35,098,651**	**36,891,683**	**38,797,000**	**7,445,694**	**5%**

(b)

Consolidated cost elements Table 4-60 has been updated to present the 2016 Bridge Year forecast based on November 2016 year to date actuals, plus actual amounts for December 2015 below:

Consolidated Cost Elements

Nature of expenditure	2013 Actual	2013 Board Approved	2014 Actual	2015 Actual	2016 Bridge	2017 Proposed Test Year	2013 Actuals to 2017 Test	CAGR
	$	$	$	$	$	$	$	%
Labour and services								
Labour and benefits	22,759,881	22,944,600	23,307,175	24,198,583	25,135,294	25,430,900	2,671,019	3%
Employee expenses and development	951,265	998,500	1,193,244	1,231,533	1,274,465	1,484,900	533,635	12%
Contractor services	4,612,973	4,823,600	5,372,776	5,678,675	6,140,379	6,214,500	1,601,527	8%
	28,324,120	28,766,700	29,873,195	31,108,791	32,550,138	33,130,300	4,806,180	4%
Technology and communications								
Computer software and hardware	1,005,259	1,255,200	1,239,798	1,516,363	1,736,484	2,389,900	1,384,641	24%
Technology and radio licensing	169,550	263,800	179,671	205,044	216,532	300,000	130,450	15%
Phone, internet and radio systems	398,578	352,900	445,821	434,205	475,424	560,300	161,722	9%
	1,573,387	1,871,900	1,865,290	2,155,612	2,428,440	3,250,200	1,676,813	20%
Bad debts and LEAP donation								
Bad debts	400,000	800,000	700,000	650,400	695,800	700,000	300,000	15%
Donations (LEAP)	100,000	100,000	150,000	150,000	200,000	200,000	100,000	19%
	500,000	900,000	850,000	800,400	895,800	900,000	400,000	16%
Other								
Rate application filing and OEB fees	458,817	507,700	461,790	492,165	535,958	775,000	316,183	14%
Fleet depreciation	726,900	726,800	814,974	865,252	972,923	1,077,000	350,100	10%
Facilities repairs and maintenance	870,475	1,011,000	871,934	724,509	708,842	1,035,500	165,025	4%
Pole and property leasing	215,527	226,700	216,666	311,287	341,546	340,000	124,473	12%
Other	5,105,176	5,280,900	5,237,415	5,285,735	5,512,093	5,385,700	280,524	1%
Fleet and materials management allocations	(1,722,056)	(1,869,500)	(1,817,380)	(1,773,405)	(1,974,234)	(2,115,700)	(393,644)	5%
Cost recoveries	(4,701,041)	(4,444,200)	(4,752,417)	(4,871,695)	(4,916,116)	(4,981,000)	(279,959)	1%
	953,800	1,439,400	1,032,982	1,033,848	1,181,012	1,516,500	562,700	12%
	31,351,306	**32,978,000**	**33,621,467**	**35,098,651**	**37,055,390**	**38,797,000**	**7,445,694**	**5%**

4-LPMA-38

Ref: Exhibit 4, Tab 1, Schedule 5, page 334

a) Please update Table 4-61 to reflect the most recent year-to-date actuals for 2016 along with the current forecast for the remainder of 2016, consistent with the update for the bridge year requested in the previous interrogatory.

b) Are there any one-time expenditures that are included in the 2013 to 2016 cost drivers that are not expected to occur in 2017? If yes, please identify and quantify the one-time expenditure(s) and the years in which those expenditures took place.

c) Are there any one-time expenditures included in the 2017 forecast? If yes, please identify and quantify the one-time expenditure(s).

LH Response:

(a)

OEB Appendix 2-JB Recoverable OM&A Cost Driver Table 4-61 has been updated to present the 2016 Bridge Year forecast based on November 2016 year to date actuals, plus the remaining budget for December 2016 below:

Recoverable OM&A Cost Driver Table (OEB Appendix 2-JB)

Cost Element	2013 Budget to Actual	2014 Actual	2015 Actual	2016 Bridge	2017 Test
	$	$	$	$	$
Opening Balance	32,978,000	31,351,306	33,621,467	35,098,651	36,891,683
OM&A labour					
Wage escalation	(120,512)	592,905	607,728	560,629	573,243
Overtime, standby, shift	40,576	454,151	(65,933)	66,914	(303,241)
FTE's vs contractors, steps, progressions, other	(1,029,246)	356,608	10,293	495,158	1,476,227
Gross labour	(1,109,182)	1,403,664	552,088	1,122,701	1,746,229
Benefits	(241,803)	202,964	434,366	380,982	249,091
	(1,350,985)	1,606,628	986,454	1,503,683	1,995,320
Allocations to capital, billable, other	1,166,266	(1,059,334)	(95,046)	(583,547)	(1,683,139)
Net OM&A labour	(184,719)	547,294	891,409	920,136	312,181
Employee development	(18,270)	119,649	(15,816)	(15,063)	244,550
Employee expenses	(28,965)	122,330	54,105	36,668	(12,788)
Contractor services					
Locates	24,768	218,457	128,565	75,526	(54,316)
Information technology	(32,943)	(128,220)	(32,219)	93,951	(24,268)
Customer call overflow services	-	231,901	67,430	77,180	23,489
Metering and data management	(110,104)	(60,528)	51,549	18,983	28,601
Asset management	(66,352)	205,961	(44,465)	(60,816)	164,772
Underground cable	(33,246)	21,801	90,496	121,371	(107,122)
Wholesale metering services	(62,816)	(1,700)	(5,236)	332	6,520
Substation maintenance	(12,985)	26,043	(24,292)	6,389	17,345
Janitorial services	(10,700)	4,856	(2,053)	12,705	33,192
Advertising	(4,699)	44,967	48,504	(2,700)	23,428
Finance services and consulting	52,266	82,088	(54,976)	32,954	(26,732)
Other contractor services	46,185	114,178	82,596	(44,960)	120,001
Total contractor services	(210,627)	759,803	305,899	330,914	204,911
Computer software and hardware					
Information technology	(173,135)	188,030	117,624	85,221	30,960
Metering and data management	(17,837)	(1,561)	44,585	74,265	105,448
Operations and maintenance	(37,254)	19,283	32,972	20,289	42,009
Customer services and collections	(13,542)	1,859	(26)	29,090	122,019
Human resources, health and safety	(4,290)	22,377	62,355	9,338	36,120
Corporate services	21,162	7,154	10,259	11,131	285,994
Other	(25,044)	(2,604)	8,796	7,747	13,906
Total computer software and hardware	(249,941)	234,538	276,565	237,082	636,455
Technology and radio licensing	(94,250)	10,121	25,373	8,693	86,263
Phone, internet and radio systems	45,678	47,243	(11,616)	46,063	80,032
Bad debts	(400,000)	300,000	(49,600)	49,600	-
LEAP donation	-	50,000	-	50,000	-
OEB cost assessments	(41,352)	2,972	30,375	46,154	254,651
Regulatory application costs	(7,530)	0	-	0	(17,970)
Fleet depreciation	100	88,074	50,278	108,160	103,588
Facilities repairs and maintenance	(140,525)	1,459	(147,425)	13,290	297,701
Pole and property leasing	(11,173)	1,139	94,621	26,470	2,243
Other	(175,724)	132,239	48,319	217,068	(117,102)
Fleet and materials management allocations	147,444	(95,324)	43,975	(220,123)	(122,172)
Cost recoveries	(256,841)	(51,376)	(119,278)	(62,080)	(47,225)
	(1,626,694)	2,270,162	1,477,184	1,793,032	1,905,317
	31,351,306	**33,621,467**	**35,098,651**	**36,891,683**	**38,797,001**

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OEB Appendix 2-JB Recoverable OM&A Cost Driver Table 4-61 has been updated to present the 2016 Bridge Year forecast based on November 2016 year to date actuals, plus actual amounts for December 2015 below:

Recoverable OM&A Cost Driver Table (OEB Appendix 2-JB)

Cost Element	2013 Budget to Actual	2014 Actual	2015 Actual	2016 Bridge	2017 Test
	$	$	$	$	$
Opening Balance	32,978,000	31,351,306	33,621,467	35,098,651	37,055,390
OM&A labour					
Wage escalation	(120,512)	592,905	607,728	560,629	573,243
Overtime, standby, shift	40,576	454,151	(65,933)	88,172	(324,499)
FTE's vs contractors, steps, progressions, other	(1,029,246)	356,608	10,293	359,009	1,612,376
Gross labour	(1,109,182)	1,403,664	552,088	1,007,810	1,861,120
Benefits	(241,803)	202,964	434,366	411,861	218,212
	(1,350,985)	1,606,628	986,454	1,419,671	2,079,332
Allocations to capital, billable, other	1,166,266	(1,059,334)	(95,046)	(482,960)	(1,783,726)
Net OM&A labour	(184,719)	547,294	891,409	936,711	295,606
Employee development	(18,270)	119,649	(15,816)	(33,650)	263,137
Employee expenses	(28,965)	122,330	54,105	76,582	(52,702)
Contractor services					
Locates	24,768	218,457	128,565	75,520	(54,310)
Information technology	(32,943)	(128,220)	(32,219)	151,243	(81,560)
Customer call overflow services	-	231,901	67,430	60,060	40,609
Metering and data management	(110,104)	(60,528)	51,549	23,200	24,384
Asset management	(66,352)	205,961	(44,465)	(53,729)	157,685
Underground cable	(33,246)	21,801	90,496	112,060	(97,811)
Wholesale metering services	(62,816)	(1,700)	(5,236)	(388)	7,240
Substation maintenance	(12,985)	26,043	(24,292)	(511)	24,245
Janitorial services	(10,700)	4,856	(2,053)	9,548	36,349
Advertising	(4,699)	44,967	48,504	2,446	18,282
Finance services and consulting	52,266	82,088	(54,976)	65,248	(59,026)
Other contractor services	46,185	114,178	82,596	17,008	58,033
Total contractor services	(210,627)	759,803	305,899	461,704	74,121
Computer software and hardware					
Information technology	(173,135)	188,030	117,624	54,874	61,307
Metering and data management	(17,837)	(1,561)	44,585	106,177	73,536
Operations and maintenance	(37,254)	19,283	32,972	18,653	43,645
Customer services and collections	(13,542)	1,859	(26)	16,340	134,769
Human resources, health and safety	(4,290)	22,377	62,355	6,445	39,013
Corporate services	21,162	7,154	10,259	10,699	286,426
Other	(25,044)	(2,604)	8,796	6,932	14,721
Total computer software and hardware	(249,941)	234,538	276,565	220,121	653,416
Technology and radio licensing	(94,250)	10,121	25,373	11,488	83,468
Phone, internet and radio systems	45,678	47,243	(11,616)	41,219	84,876
Bad debts	(400,000)	300,000	(49,600)	45,400	4,200
LEAP donation	-	50,000	-	50,000	0
OEB cost assessments	(41,352)	2,972	30,375	43,793	257,012
Regulatory application costs	(7,530)	0	-	0	(17,970)
Fleet depreciation	100	88,074	50,278	107,671	104,077
Facilities repairs and maintenance	(140,525)	1,459	(147,425)	(15,667)	326,658
Pole and property leasing	(11,173)	1,139	94,621	30,259	(1,546)
Other	(175,724)	132,239	48,319	226,358	(126,393)
Fleet and materials management allocations	147,444	(95,324)	43,975	(200,829)	(141,466)
Cost recoveries	(256,841)	(51,376)	(119,278)	(44,421)	(64,884)
	(1,626,694)	2,270,162	1,477,184	1,956,739	1,741,610
	31,351,306	**33,621,467**	**35,098,651**	**37,055,390**	**38,797,000**

(b)

There are no one-time costs included in amounts for 2013 to 2016. One-time costs associated with the Cost of Service Rate Application and development of the Distribution System Plan have been backed out at from the books and records and then brought back in on a prorated basis for rate-making purposes. Costs incurred relating to the 2013 Application and have backed out and brought in on a prorated basis over 4 years ($82,970) from 2013 to 2016. One-time costs associated with the 2017 Application and the Distribution System Plan have been backed out and brought on a prorated basis over 5 years ($65,000 and $35,500, respectively) commencing with the proposed 2017 Test Year.

(c)

One-time costs included in the proposed 2017 Test Year are discussed in the original Cost of Service Rate Application in Exhibit 4, on pages 439 to 441. Please refer to Table 4-119 and 4-120.

4-LPMA-39

Ref: Exhibit 4, Tab 1, Schedule 5, pages 338-339

How does London Hydro account for revenues and costs associated with billable activities? Are the costs recorded in OM&A accounts and the revenues recorded in other revenue accounts; is the revenue recorded in other revenue accounts and the costs recorded in account 4380; or is the revenue received used as an offset to the OM&A costs directly?

LH Response:

Billable activities do not have an impact on OM&A expenditures. Other revenue is only impacted in connection with charges for indirect expenses and for amounts which are uncollectable (ie: hit and run property damage). London Hydro accounts for billable activities by tracking expenditures and associated recoveries through an accounts receivable mechanism.

Specifically, costs incurred in connection with billable activities are tracked through a cost centre used to segregate charges (such as labour, contractor services, materials, vehicles) and offsetting invoicing to third parties. Expenditures that have not been invoiced to third parties (ie: that are work-in-progress) are reclassified to accounts receivable at the end of each accounting period. Where deposits are received in advance for work to be performed, amounts are reclassified to deferred revenue.

4-LPMA-40

Ref: Exhibit 4, Tab 1, Schedule 5, page 341

Please add two lines to Table 4-64 that shows the total compensation (salary, wages, benefits) that are included in OM&A and the amount that is capitalized. If these two figures do not add up to the totals shown in Table 4-64, please add a third throw and explain where these costs are included in the revenue requirement.

LH Response:

Table 4-64 has been revised below to add to new lines segregating total labour between that charged to OM&A activities and that allocated out to capital and billable projects.

OEB Appendix 2-K Employee Costs
Gross Labour Costs and Full-Time Equivalents (FTE's)
Before allocations to Capital, Billable, Other

	2013 Board Approved	2013 Actual	2014 Actual	2015 Actual	2016 Bridge	2017 Test
Number of employees (FTE's including PT)						
Management (including executive)	50.0	46.3	46.8	52.0	55.0	53.0
Non-management (union and non union)	255.8	241.3	242.9	238.3	256.2	258.7
	305.8	**287.6**	**289.8**	**290.3**	**311.2**	**311.7**
Total salary and wages (including OT and incentive pay)						
Management (including executive)	5,980,826	5,568,167	5,983,333	6,374,225	6,683,405	6,608,186
Non-management (union and non union)	18,844,574	18,148,051	19,136,550	19,297,745	21,155,795	21,932,714
	24,825,400	**23,716,218**	**25,119,882**	**25,671,970**	**27,839,200**	**28,540,900**
Total benefits (current and accrued)						
Management (including executive)	1,494,837	1,410,582	1,470,994	1,663,302	1,682,042	1,686,929
Non-management (union and non union)	5,736,663	5,579,115	5,721,666	5,963,725	6,254,158	6,570,171
	7,231,500	**6,989,697**	**7,192,661**	**7,627,027**	**7,936,200**	**8,257,100**
Total compensation (salary, wages and benefits)						
Management (including executive)	7,475,663	6,978,750	7,454,327	8,037,527	8,365,447	8,295,115
Non-management (union and non union)	24,581,237	23,727,166	24,858,216	25,261,469	27,409,953	28,502,885
	32,056,900	**30,705,915**	**32,312,543**	**33,298,997**	**35,775,400**	**36,798,000**
Total Compensation included in OM&A	22,944,600	22,759,881	23,307,175	24,198,583	24,728,500	25,430,900
Total Compensation to Capital / Billable	9,112,300	7,946,034	9,005,368	9,100,414	11,046,900	11,367,100
	32,056,900	**30,705,915**	**32,312,543**	**33,298,997**	**35,775,400**	**36,798,000**

4-LPMA-41

Ref: Exhibit 4, Tab 1, Schedule 5, page 386

Do the cost recoveries shown in Table 4-93 represent the recovery of only OM&A costs, or do they also recover costs such as depreciation, PILs and return on capital associated with the assets used to perform the services, such as water billing? If not, please explain why these capital related costs are not recovered.

LH Response:

As required by Board Decision (EB-2008-0235), London Hydro engaged a third party to complete a full analysis of costs pertaining to City of London water billing services. Navigant Consulting was engaged to perform this service and after review of their Study, it appears that depreciation was taken into consideration, however; PILs and return on capital were not.

Navigant's Study prepared in 2012 estimated service fees of $3,470,000 based on data from 2010. Final negotiations with the City of London for the term January 1, 2013 to December 31, 2015 provided for a fee of $3,865,000. The final negotiated fee resulted in an increase of $395,000 due primarily to adjustments made for inflationary increases since 2010 and those projected for the upcoming years 2013 to 2015.

The most recent Service Level Agreement ("SLA") between the City of London and London Hydro effective January 1, 2016 to December 31, 2016, as included in the 2017 Application is pursuant a Study developed by the City of London in November 2015. The City of London utilized the third-party consulting services of BMA Management Consulting Inc. which estimated that the cost was $3,980,000, providing for an increase of $23,700 as follows:

SLA agreement 2013 to 2015		$	3,865,000
SLA Agreement 2016 to 2019	3,980,000		
Remove new water meter replacement services	(91,300)		3,888,700
Increase		$	23,700

BMA Management's approach to estimating costs is more simplified than Navigant and does not take depreciation expense into account directly. However, London Hydro reviewed their results and felt comfortable avoiding the costs of updating the 2012 Study, especially given efficiency gains that have been achieved in recent years due to new technologies such as drive-by meter reading.

4-LPMA-42

Ref: Exhibit 4, Tab 1, Schedule 5, page 440

Are the figures shown for 2015 and 2016 in Table 4-119 and the costs shown for 2014, 2015 and 2016 in Table 4-120 related to costs that are being amortized over 5 years beginning in 2017 included in the OM&A figures shown in Tables 4-3 or 4-4? For example, is the $38,964 shown in Table 4-119 as consultants' costs for regulatory matters in 2015 included in the 2015 total actual OM&A figure of $35,098,651 in Table 4-3?

LH Response:

These amounts are not included in Table 4-3. One-time costs associated with the Cost of Service Rate Application and development of the Distribution System Plan have been backed out at from the books and records and then brought back in on a prorated basis for rate-making purposes. Costs incurred relating to the 2013 Application and have backed out and brought in on a prorated basis over 4 years ($82,970) from 2013 to 2016. Costs associated with the 2017 Application and the Distribution System Plan have been backed out and brought on a prorated basis over 5 years ($65,000 and $35,500, respectively) commencing with the proposed 2017 Test Year as shown in Table 4-119 and 4-120.

4-LPMA-43

Ref: Exhibit 4, Tab 1, Schedule 5, page 441

Please provide the amounts for the OEB cost assessment fees for the July through September, 2016 period and, if available, the October through December, 2016 period.

LH Response:

OEB cost assessment fees for July through September 2016 and October through December 2016 are $ 172,682 and $172,666, respectively.

4-LPMA-44

Ref: Exhibit 4, Tab 1, Schedule 5, page 403

Please explain the facilities restorations deductions shown in Table 4-104, along with the corresponding reduction in CCA additions of the same amounts shown in the CCA schedules in Appendix 4-4 and Appendix 4-5.

LH Response:

The facilities restorations deductions are costs that have been capitalized for accounting purposes being deducted for income tax purposes pursuant to Canada Revenue Agency IT-128R. These deductions relate to costs capitalized for accounting purposes due to their materiality and life span (more than one year) such as replacements for roofing, windows, HVAC, UPS batteries, flooring and property repaving. For income tax purposes, these expenditures are considered current in nature since they do not materially improve the property beyond its original state. They only restore the property back to its original condition.

4-LPMA-45

Ref: Exhibit 4, Tab 1, Schedule 5, page 406

a) Please explain why London Hydro has used the average of 2012 through 2015 to estimate the SR&ED income tax credit in Table 4-107, rather than the average of 2013 through 2015.

b) The adjusted SR&ED income tax credits have grown each year over the 2012 through 2015 period. Please explain fully why this trend is not expected to continue in 2016 and 2017.

LH Response:

a)

SR&ED credits fluctuate dramatically (as illustrated below) depending on the eligibility of activities in a given year. In addition, the SR&ED credit for 2015 was the largest credit that London Hydro has ever received. In order to help counter this large credit and provide a more normalized average, the estimate brought the SR&ED credit for 2012 into the equation.

SR&ED	
	Credits
2006	114,344
2007	65,351
2008	229,671
2009	70,141
2010	117,225
2011	165,882
2012	235,324
2013	421,357
2014	339,690
2015	487,725

b)

SR&ED credits claimed in the last few years relate to projects in the Metering and Information Technology areas. Projects claimed in 2015 and continuing into 2016 represent:

- Development of Reliable Smart Grid Technologies
- Development of a Flexible Smart Metering System
- Smart Metering and Power Modulation Techniques
- Development of Scalable Real-Time Architecture
- Development of Smart Devices for Grid Management

As mentioned above, the SR&ED credit received for 2015 was the highest ever received by London Hydro. Although there have been a lot of eligible activities in recent years due to innovations, It is not anticipated that projects in 2017 will qualify for SR&ED credits at that same level. It has therefore projected the 2017 credit based on actual results for 2012 to 2015 and estimated $335,000 as follows:

SR&ED Income Tax Credits		
	Actual SRED Credit	Adjusted to new Legislation
2012	235,324	175,539
2013	421,357	336,103
2014	339,690	339,690
2015	487,725	487,725
Average	**371,000**	**335,000**

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Exh 4 SEC Interrogatories

4-SEC-15

[4/1/5, p. 16] Please confirm that the Applicant is proposing an increase in O&M per customer of 12.5% from 2013 to 2017, representing a compound annual growth rate of 3.0% per year, and an increase in Admin per customer of 25.7%, representing a CAGR of 5.9% per year.

LH Response:

London Hydro confirms that the statements above are accurate.

4-SEC-16

[4/1/5, p. 28] Please confirm that the right hand column of tables 4-13 and 4-14 is the four year increase, and not the CAGR.

LH Response:

London Hydro confirms that the statements above are accurate.

4-SEC-17

[4/1/5, p. 33] With respect to the asset management costs:

(a) Please disaggregate the $1.1 million annual increase in asset management costs into increases required for better planning and optimizing of capital programs, and increases required for more documentation and monitoring to provide enhanced levels of information to the Board.

(b) Please estimate the reduction in annual asset management costs in the test year as a result of increased or improved use of technology.

(c) What studies, analyses or other work, if any, has London Hydro done as part of its asset management activities to compare its levels of capital spending with other utilities, or to identify empirical metrics that can be used to calculate the optimum level of capital spending in any given period? Please provide details.

LH Response:

(a)

Please note that the $1.1 million is the total increase and not an annual increase in this area. As addressed in the Asset Management Program discussion on page 53 to 73 of Exhibit 4 in the original Cost of Service Rate Application, cost increases in this area relate primarily to new resource requirements. Internal staff and additional external consultants have been added in System Planning, Project Management, Engineering Standards and Engineering Design and Reliability areas.

Asset Management										
			Annual Change				Change		Total Change	
Nature of expenditure	2013 Actual	2017 Test	2013 Actual to 2014 Actual	2014 Actual to 2015 Actual	2015 Actual to 2016 Bridge	2016 Bridge to 2017 Test	2015 Actual to 2017 Test		2013 Actual to 2017 Test	
	$	$	$	$	$	$	$	CAGR	$	CAGR
Gross labour	4,024,066	5,411,500	212,017	412,560	584,556	178,300	762,856	8%	1,387,434	8%
Allocations to capital, billable	(1,248,061)	(1,914,500)	(59,075)	(52,053)	(500,910)	(54,400)	(555,310)	19%	(666,439)	11%
Net OM&A labour	2,776,005	3,497,000	152,942	360,507	83,647	123,900	207,547	3%	720,995	6%
Employee expenses	79,760	182,000	38,693	41,628	17,019	4,900	21,919	7%	102,240	23%
Contractor services	91,548	357,000	205,961	(44,465)	46,956	57,000	103,956	19%	265,452	41%
Computer software and hardwa	115,009	145,000	(2,078)	8,817	14,952	8,300	23,252	9%	29,991	6%
Corporate membership dues	60,243	67,000	1,543	1,251	1,963	2,000	3,963	3%	6,757	3%
Materials and supplies	16,393	29,400	14,171	828	(2,891)	900	(1,991)	-3%	13,007	16%
Vehicles and major equipment	17,118	29,900	6,948	11,478	(5,645)	-	(5,645)	-8%	12,782	15%
Other	32,498	30,800	(8,775)	6,422	555	100	655	1%	(1,698)	-1%
Cost recoveries	-	-	(10,000)	10,000	-	-	-		-	
Total $	**3,188,573**	**4,338,100**	**399,404**	**396,467**	**156,556**	**197,100**	**353,656**	**4%**	**1,149,527**	**8%**
Annual % change			13%	11%	4%	5%				

Approximately 20% of cost increases relate to enhanced levels of project analysis and reporting. The remaining 80% relates to better planning and optimizing of capital programs.

New Asset Management resources have been added to address the increased volume of projects (including those driven by infrastructure renewal, City of London and customer requirements and system capacity) and the necessity to analyze data properly to determine which capital projects need to be undertaken, which material or equipment to install or if spending can be deferred.

While time spent directly on capital projects will be charged to the asset cost as appropriate, the majority of new resources are OM&A expenditures as new requirements are more high level in nature (e.g.: new reliability analysis, system planning, aging infrastructure research and responding to renewable generation connection enquiries and service implementations). Further, the Asset Management Program has numerous new staff who, when fully trained will charge a large majority of their time to capital projects. However, during 'on boarding' time spent during training sessions is charged to OM&A.

(b)

New technologies are an integral part of London Hydro's operations making this type of information unattainable. However, the estimated savings associated with new technologies is

anticipated to be minimal in the Asset Management Program for the proposed 2017 Test Year as London Hydro is still in the early stages of implementing new Smart Grid technologies such as OMS, MWFM and GIS enhancements.

(c)

Capital activities are scheduled based on work outlined in the Reliability Study and the type of work that can be performed most efficiently in certain seasons, while being cognizant of City activities and customer interruption so as to not over burden any specific customer area. When internal crews schedule become full with work, London Hydro secures third party contractors to fill the resource void to ensure timely completion of capital works.

London Hydro encourages staff to collaborate with industry peers to share best practices and keep current with on-going changes in procedures, Regulations, and trends. Most of this collaboration is informal and does not result in documentation that can be presented. Some collaboration is facilitated by consultants (such as Kinetrics – porcelain insulator failures, lightning mitigation), contractors (wood pole testing procedures and experience, cable injection, line construction) and suppliers (Thomas and Betts) who work with many other LDCs to share information and best practices. Also, staff attend industry gatherings such as IEEE, EDIST, Distributech, ESA/UAC and the EDA to learn about new products, maintenance practices, equipment failures, etc.

These collaborations include lessons learned from ice storms that affected the Toronto area utilities in recent years. Also, DTE Energy was contacted in 2004 to evaluate partial discharge testing of cables (Asset Sustainment Plan page 69) and London Hydro reviewed cable injection cost/benefits with other utilities between 2003 and 2010 at which time cable injection became economically feasible. London Hydro also initiated the sharing of best practices for PILC cable referred to in the original Application (”Get the Lead Out”). These on-going discussions and interactions with other utilities are informal and not documented but arise from the culture of collaboration at London Hydro which encourages staff to reach out to their industry peers to share best practices and new developments with the goal of optimizing spending while providing exceptional customer service.

4-SEC-18

[4/1/5, p. 84] Please provide a list of the major functions of the new Environmental Coordinator, divided into functions that were already being performed prior to the creation of the position, and new functions that were not being performed. For each of the existing functions, please explain how the shift to a new person has changed the workload and costs of others. For each of the new functions, please explain why they were not being done, and what changed to make it appropriate to add this cost now.

LH Response:

This Environmental Coordinator position was developed in late 2013 by integrating the environmental portions of the Director of Operations, Manager of Fleet and Facilities and the Materials Management Supervisor positions and other departmental activities, along with some work responsibilities of the previous Health and Safety Coordinator position. While these duties were assigned to different individuals the amount of detail and complexity covered was at a bare minimum level. Moving these duties to the Environmental Coordinator enabled a more concentrated focus on reducing London Hydro's environmental impact and increasing the environmental sustainability.

London Hydro has adopted a formal "Environmental, Health and Safety Policy," which outlines our commitment to protecting the environment and to pursuing excellence in our environmental performance by "adopting good management practices and setting clear objectives and targets for achieving continual improvement." To this end we are committed to ensuring that environmental "accountabilities and responsibilities are clearly defined and understood, that our employees are competent and adequately trained and that appropriate resources are made available."

In 2014, London Hydro embarked upon the development of an ISO 14001/26000 centered Environment and Sustainability Management System (ESMS). This best practice approach encourages continual improvement of environmental performance while meeting legislative and

regulatory requirements. London Hydro demonstrates its commitment to sustainable development through business practices based on the 'triple bottom line' of environmental, social, and economic sustainability.

The Environmental Coordinator is responsible for the development, implementation and continuous improvement of the Environmental and Sustainability Policies and Programs within London Hydro.

4-SEC-19

[4/1/5, p. 333] Please provide a comprehensive list of all changes to accounting approaches and allocations that had an impact of more than $100,000 on any of the figures in Table 4-60, including the nature and timing of each such change. Please provide sufficient detail that we can compare 2013 Board approved and actual on a consistent basis with 2017 Proposed.

LH Response:

London Hydro confirms that there were no changes to accounting approaches or allocations impacting the consistency of amounts presented in Table 4-60 for 2013 to the proposed 2017 Test Year.

4-SEC-20

[4/1/5, p. 419] In light of recent announcements that London Hydro is seeking to merge with other LDCs, how will that impact the Applicant's succession planning in next five years? What steps has the Applicant taken to assess the impact of electricity distribution industry consolidation on its ability to hire management level employees?

LH Response:

London Hydro has and will continue to pursue MAAD opportunities with other utilities when they are perceived as having the potential to be beneficial to the parties and their stakeholders.

To date, no MAAD opportunities have moved forward. Therefore, there are no additional costs or savings included in the 2017 COS application for any previous or future expenditures / savings association with a potential merger. Adjustments to standalone succession planning activities would be premature until such time as a merger is negotiated and regulatory and transition processes are well underway. Since London Hydro is following a stabilized, "replace as they retire" replenishment model, synergies from mergers would be achieved through attrition in many cases.

London Hydro's demographic forecasts indicate that several of our incumbents in senior and/or critical positions may choose to retire in the next five to ten years, at a time where vacancies in senior positions are occurring in numerous organizations somewhat simultaneously and where there are statistically fewer high potentials available and ready to replace them. London Hydro is not relying on the somewhat risky proposition that we would be able to attract the necessary talent at the appropriate time, given the competitive landscape and the realities of the industry. Internal growth is a key element of our employee development and resource planning strategy.

To date, London Hydro has been successful in filling management vacancies as they have arisen. We have not conducted any assessments with an aim of assessing the root cause of perceived deficits in the talent pool that presented itself for consideration in any specific

recruitment activity, and therefore are not able to comment objectively on the impact of industry consolidation on our ability to hire management level employees. We believe that it is unlikely that industry consolidation will lead to a breadth of talent seeking new opportunities; it is far more likely that today's high potentials finding themselves in a merger scenario will leverage consolidation to find progression pathways / demonstrate their worth during the integration and restructuring activities of the successor company. It is reasonable to conjecture that in the near term, industry consolidation activity and the lack of clarity regarding the long-term of future of almost all Ontario LDCs could be causing reduced willingness on the part of management-level talent to bear the inherent risk associated with exchanging job security for opportunity.

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Exh 4 VECC Interrogatories

4-VECC-32

Reference: E1/T2&T5/S1

Please provide the derivation of the $2.59 million in incremental OM&A that London Hydro believes is required for new services provided to customers.

LH Response:

The $2.59 million in incremental OM&A costs is referring to Table 1-2: Budget Reconciliation in Exhibit 1 on page 7 of 71

4-VECC-33

Reference: E1/T5/S5/pgs. 3-4

Please provide the incremental costs as compared to 2013 for each of the new initiatives listed at the above reference.

LH Response:

A summary of incremental costs from 2013 to the proposed 2017 Test Year is provided in the table below.

INCREMENTAL COSTS SUMMARY 2013 TO 2017

(in thousands of dollars)

Regulatory Requirements	Amount	Total
Distribution System Plan	60	
Locate services	120	
Microfit / Generation	200	
Bill Print	153	
Call Centre (OESP)	70	
OEB Fees	290	
Metering (Mist Meters)	300	1,193
Safety		
Parking	100	100
Customer Focus		
Underground Cable Maintenance	100	
Increased Customer Communications	100	
Environmental	50	
Root Cause Analysis	150	400
Operational Effectiveness		
HR System	115	
J. D. Edwards	300	
Cyber Security and Disaster Recovery	200	
Vehicle Depreciation	100	715
Other		
Insurance Premiums (Retirees)	177	177
		2,585

1

4-VECC-34

Reference: E4/T1/S5/pg.5

Please confirm the OM&A figures shown in Table 4.3 show both the inclusion in 2013 and exclusion in 2014 of the SAP disputed amount of $658,800.

LH Response:

None of the tables or schedules in Exhibit 4, including Table 4-3, are impacted in any way by the SAP adjustment. The SAP disputed amount was removed in its entirety to help provide comparative amounts. The amount accrued in 2013 was removed and the reversed of this accrual in 2014 was eliminated as well.

4-VECC-35

Reference: E4/T1/S5/pg.7

Have any of the overhead policies described at pages 7-8 changed since the last cost of service application? If yes please describe the change and the impact on the test year OM&A as compared to 2013 Board approved.

LH Response:

London Hydro confirms that there have been no changes in its overhead policies since 2013 or in comparison to the 2013 Board approved amounts.

4-VECC-36

Reference: E4/T1/S5/pg.21 &

Please explain the difference between the computer hardware and software depreciation savings of $217,580 shown in Table 4-8 and the similarly described depreciation savings of $684,994 shown in Table 4-13.

LH Response:

The depreciation difference provided in Table 4-8 ($217,580) represents the 2017 Test Year amount compared to actual results for 2013.

The depreciation difference provided in Table 4-13 ($684,994) represents the 2017 Test Year amount compared to actual results for 2013, after adjusting for inflation.

4-VECC-37

Reference: E4/T1/S5

Please recalculate Table 4-11 by including 2013 Canada CPI, using the actual 10 month 2016 CPI (Oct) and eliminating the 2017 forecasted inflation

LH Response:

Table 4-11 has been revised below to include 2013 Ontario CPI and to update the 2016 forecasted CPI to 2.0 as projected in the RBC Provincial Outlooks for Ontario for September 2016.

Consumer Price Index for Ontario

Year	Amount	%
2012	$ 100.00	
2013	$ 101.00	1.00%
2014	$ 103.42	2.40%
2015	$ 104.67	1.20%
2016*(estimate)*	$ 106.76	2.00%
2017*(estimate)*		
CAGR		**1.6%**
Overall change 2012-2016		6.8%

4-VECC-38

Reference: E4/T1/S5/pg.43

a) What is the mandated LEAP amount based on the proposed revenue requirement?
b) What amount has the Salvation Army Centre of Hope disbursed in each of 2013 through 2016?

LH Response:

(a)

Please see the table below as copied from page 443 of Exhibit 4 of the Rate Application.

	2013 Board Approved	2017 Test Year
	($)	($)
Distribution revenue requirement	62,675,500	68,212,200
LEAP commitment @ .12%	75,211	81,855

(b)

London Hydro often receives more than their LEAP contributed amount from the Salvation Army Centre of Hope through The Housing Stability Bank. Salvation Army has submitted the following amounts to London Hydro from 2013 to 2016.

2013	$714,324
2014	$860,727
2015	$483,148
2016	$551,622 (as of November 30)

Amounts received for the 2013 and 2014 years were higher since they included funds from the late penalty settlement funds collected by Order dated July 22, 2010 issued by the Ontario Superior Court of Justice that approved the settlement of two class action lawsuits against all local distribution company's regarding the charging of late payment penalties.

4-VECC-39

Reference: E4/T1/S5/pgs. 49-

Please provide a table showing the amount of consulting and/or contractor services in years 2013 through 2017 in each category (e.g. asset management, operations and maintenance, metering and data management etc.). Specifically explain what services were contracted for in 2013 and what services are forecast to be contracted for in 2017.

LH Response:

Contractor and consulting services broken down by individual Program are provided in the following table:

Contractor and Professional Services by Program

						Annual Change				Total Change	
	2013 Actual	2014 Actual	2015 Actual	2016 Bridge	2017 Test	2013 Actual to 2014 Actual	2014 Actual to 2015 Actual	2015 Actual to 2016 Bridge	2016 Bridge to 2017 Test	2013 Actual to 2017 Test	
	$	$	$	$	$	$	$	$	$	$	CAGR
Operations and Maintenance											
Contractor services	54,277	48,126	71,296	73,200	74,700	(6,151)	23,170	1,904	1,500	20,423	8%
Overhead Lines	98,014	116,372	133,012	100,000	101,000	18,358	16,640	(33,012)	1,000	2,986	1%
Tree trimming	66,102	20,232	99,309	81,000	83,000	(45,870)	79,077	(18,309)	2,000	16,898	6%
Underground cable	84,854	106,655	197,151	207,700	211,400	21,801	90,496	10,549	3,700	126,546	26%
Substations	47,015	73,058	48,766	72,500	72,500	26,043	(24,292)	23,734	-	25,485	11%
Wholesale metering	51,084	49,384	44,148	50,000	51,000	(1,700)	(5,236)	5,852	1,000	(84)	0%
	401,346	413,827	593,682	584,400	593,600	12,481	179,855	(9,282)	9,200	192,254	10%
Asset Management											
Contractor services and consulting	91,548	297,509	253,044	300,000	357,000	205,961	(44,465)	46,956	57,000	265,452	41%
	91,548	297,509	253,044	300,000	357,000	205,961	(44,465)	46,956	57,000	265,452	41%
Metering and Data Management											
Contractor services	30,277	20,961	120,684	134,300	120,200	(9,316)	99,723	13,616	(14,100)	89,923	41%
Meter reading	601,319	550,106	501,932	550,000	550,000	(51,213)	(48,174)	48,068	-	(51,319)	-2%
	631,596	571,067	622,616	684,300	670,200	(60,528)	51,549	61,684	(14,100)	38,604	1%
Information Technology											
Contractor services and consulting	906,757	778,536	746,317	816,000	816,000	(128,220)	(32,219)	69,683	-	(90,757)	-3%
	906,757	778,536	746,317	816,000	816,000	(128,220)	(32,219)	69,683	-	(90,757)	-3%
Customer Services and Collections											
Contractor services	18,346	252,067	317,688	421,600	419,200	233,721	65,621	103,912	(2,400)	400,854	119%
Printing and Mailing	151,819	144,620	139,140	147,000	142,000	(7,198)	(5,480)	7,860	(5,000)	(9,819)	-2%
Collections	287,789	299,049	302,025	330,000	330,000	11,259	2,977	27,975	-	42,211	3%
	457,953	695,736	758,853	898,600	891,200	237,782	63,117	139,747	(7,400)	433,247	18%
Facilities and Environmental Services											
Contractor services	95,105	119,045	104,577	106,600	110,400	23,940	(14,468)	2,023	3,800	15,295	4%
Security	295,525	268,366	295,599	311,000	315,000	(27,159)	27,233	15,401	4,000	19,475	2%
Janitorial	181,300	186,156	184,103	227,000	230,000	4,856	(2,053)	42,897	3,000	48,700	6%
Landscaping and snow removal	138,593	163,147	166,489	167,400	173,500	24,554	3,342	911	6,100	34,907	6%
	710,522	736,714	750,769	812,000	828,900	26,192	14,055	61,231	16,900	118,378	4%
Corporate Services											
Contractor services and consulting	60,899	108,517	14,021	20,900	40,900	47,617	(94,496)	6,879	20,000	(19,999)	-9%
Legal	107,212	158,968	181,770	140,000	120,000	51,756	22,801	(41,770)	(20,000)	12,788	3%
Finance services and consulting	148,666	230,754	175,778	181,000	182,000	82,088	(54,976)	5,222	1,000	33,334	5%
Bank charges	92,494	95,321	97,832	100,800	104,000	2,826	2,512	2,968	3,200	11,506	3%
Board of Directors	147,544	141,354	134,637	155,000	160,000	(6,190)	(6,717)	20,363	5,000	12,456	2%
IESO prudentials	26,336	26,336	26,336	28,000	30,000	-	-	1,664	2,000	3,664	3%
Tender advertising	14,596	10,246	11,113	13,800	14,000	(4,350)	867	2,687	200	(596)	-1%
	597,748	771,496	641,488	639,500	650,900	173,748	(130,008)	(1,988)	11,400	53,152	2%
Locate Services											
Contractor services	484,768	703,225	831,790	851,500	853,000	218,457	128,565	19,710	1,500	368,232	15%
	484,768	703,225	831,790	851,500	853,000	218,457	128,565	19,710	1,500	368,232	15%
Corporate Communications											
Contractor services and consulting	19,442	22,018	46,699	55,000	55,000	2,576	24,681	8,301	-	35,558	30%
Advertising	165,705	215,022	262,658	275,500	280,500	49,317	47,636	12,842	5,000	114,795	14%
	185,147	237,040	309,357	330,500	335,500	51,893	72,317	21,143	5,000	150,353	16%
Human Resources, Health and Safety											
Contractor services and consulting	119,909	133,943	138,659	179,700	185,700	14,035	4,715	41,041	6,000	65,791	12%
	119,909	133,943	138,659	179,700	185,700	14,035	4,715	41,041	6,000	65,791	12%
Fleet Services											
Contractor services	18,626	22,031	21,922	15,500	22,500	3,405	(109)	(6,422)	7,000	3,874	5%
Towing	5,282	7,759	5,368	5,000	5,000	2,477	(2,391)	(368)	-	(282)	-1%
	23,908	29,790	27,290	20,500	27,500	5,882	(2,500)	(6,790)	7,000	3,592	4%
Materials Management											
Contractor services	1,772	3,893	4,811	5,000	5,000	2,121	918	189	-	3,228	30%
	1,772	3,893	4,811	5,000	5,000	2,121	918	189	-	3,228	30%
Total $	**4,612,973**	**5,372,776**	**5,678,676**	**6,122,000**	**6,214,500**	**759,803**	**305,900**	**443,324**	**92,500**	**1,601,527**	**8%**
Annual % change						17%	6%	8%	2%		

London Hydro utilizes third-party services to accommodate temporary fluctuations in volume and to obtain necessary expertise that is not economically feasible to maintain in-house. Changes since the 2013 Cost of Service Rate Application that have had a significant impact on contractor services include,

- Operations and Maintenance contractor services costs increases are primary due to outsourcing of outage notifications to customers commencing in 2015. In the past, outage notification were delivered by internal staff; however, it was determined that outage notification delivery was not an efficient use of internal resources.

- Tree trimming in an urban environment is the single most important maintenance activity that can be undertaken to maintain system reliability. Trimming of trees in proximity to overhead lines reduces the possibility of tree contact outages. Historically, London Hydro followed a 5 year trimming cycle in all areas of London that are affected by overhead lines. In 2015, however, London Hydro moved to a 3 year rotation pursuant to the Electrical Safety Authority ("ESA")/ Electricity Distributors Association ("EDA") utility-recommendation and in order to provide for more pronounced clearance. The increase in costs in 2015 represent contracted tree trimming services required in order to catch up to the new 3-year trimming cycle.

- Increases in contractor services for the Underground Cable Department are a result of an increased use of vacuum truck services contracted for site excavation and to assist with vault and maintenance hole care. These services are used primary for maintaining the underground electrical system for commercial and residential customers and in the downtown core. In addition, as direct-buried, residential secondary cables age, London Hydro has noticed a dramatic increase in cable faults. When these faults occur in a joint trench, hand digging has been shown to damage adjacent cables. In order to mitigate this problem, any secondary faults in joint cable or utility trenches are now excavated with a vacuum truck. This method speeds up the fault repair process, thus restoring the customers' electrical service faster, and it avoids accidental damage to other customers' cables.

- Substation maintenance services are increasing as London Hydro removes PILC cable from the distribution system. Splices removed have tested positive for Polychlorinated Biphenyl ("PCB") contamination and, accordingly, the Company has committed to removing lead from the system at every opportunity. The Substation Maintenance Program handles all testing and disposal through the use of contractors, as well as equipment rentals required to remove large infrastructure from services.

- Asset Management professional services are increasing primarily due to challenges emerging as a result of an infrastructure. Forensic studies and analysis associated with aging infrastructure are required in many cases to find the root cause of the problem before moving forward on future projects. For instance, projections in this area may address issues associated with porcelain insulator failures, maintenance hole explosions/fires and Paper Insulated Lead Covered Cable ("PILC"). Future distribution system investments must be carefully managed to ensure that London Hydro sustains service quality and accommodates growth, while addressing changing electricity requirements. This spending category also includes consulting and contractor services associated with compiling and maintaining the new Distribution System Plan.

- Metering and Meter Data Management contractor service costs have increased due to the need for additional consulting services associated with optimizing the wireless system and supporting the next generation design. As more data is available, customers have expressed preferences for gaining access to their data. Further, outsourcing is utilized to handle short-term spikes in workload. For instance, contractors will be hired to assist with replacement of GS>50 meters (BOARD FILE NO.: EB-2013-0311) and to ensure that meters have been switched out by the due date August 2020.

- Metering reading efficiencies gained through the use of drive-by meter reading devices.

- Contractor service costs have decreased as a result of Information Technology's increased use of internal resources resulting from the stabilization of the SAP customer information system installed in 2009 and in order to develop an in-house knowledge base to increase the focus on London Hydro's customer and business requirements and to provide consistency while reducing the time to resolve issues.

- Contractor service costs have increased in Customer Services due to the use of third-party call centre services, which commenced in 2014 to handle fluctuating volumes and monitor the change in customer behaviours as they are provided with more tools to become self-sufficient. Inbound calls to the Call Centre fluctuate during peak daily times and periods (e.g., during power outages, student moves in the summer months, or as a result of outside influences, such as Regulatory changes.) Utilizing third party call centre services helps the Company better manage these peak times and meet the OEB's performance index in connection with answering inbound calls. Third party services also increase the availability of Customer Service Representatives when a customer calls regarding more complex or escalated matters. As customers have moved towards more electronic interaction, daily inbound calls coming into the call centre have been declining while email correspondence has increased significantly. Outsourcing call overflows helps keep the Customer Service department agile while it gives the Company time to fully evaluate this change in customer direction to ensure that a flexible and cost effective approach is taken for the future.

- Field collection activities for 2015 including disconnects and reconnects have increased 7% and 6% respectively in comparison to 2013. Past due accounts available for collection action totalled 52,036 in 2013 and increased to 64,956 in 2015, which represents an increase of 25%. Stabilizing the SAP billing system, which was implemented in 2009, has improved the flow of information to Collections with respect to past due accounts resulting in more timely collection actions. On the other hand, a new regulation has been implemented through which Collections must consider the paid deposits on hand and mathematically reduce arrears by the deposit before any actions can be taken. This change has resulted in a large number of accounts going into the collection list that Collections cannot act upon until this new threshold has been met.

- Facilities and Environmental Services contractor services cost increases are due to increases in negotiated contract prices for janitorial services, fluctuating snow removal costs and inflationary increases for services such as security services. Waste disposal and recycling costs have increased as London Hydro increases its focus on environmental stewardship and utilizes more environmentally friendly alternatives.

- Increases in financial consulting are related to cost / benefit analysis, a review of best practices and the augmentation of various policies and procedures that will coincide with the JDE upgrade commencing in 2017. Many of the current processes have not been modified since the initial installation of the current JDE system in 2004.

- Contractor service costs increased as a result of the full outsourcing of locate services commencing in 2014, to reduce costs by realizing the benefits of using a third party to accommodate fluctuating volumes. Due to increased public awareness there has been a substantial increase in locate service requests. In 2013, the unit cost of a locate service was $76. By moving to a 100% contracted service model, the unit cost of a locate services has been reduced to $41.

- Increased focus on customer engagement is resulting in incremental advertising and consulting costs in the Corporate Communications Program associated with, for example, keeping customers informed, gathering input and feedback as well as educating customers. Communication strategies used for advertising programs include, but are not limited to, radio spots, billing inserts, posters and billboards, community events, home shows and even meeting with customers one on one. Advertising and promotional expenditures have increased significantly since 2013 as a result of the many new developments that have been introduced since the installation of smart meters, and to keep customers informed of the new services and features being offered. For example, communication activities have increased to keep customers abreast of new initiatives including Time-of-Use electricity pricing, energy literacy, new corporate website and features, OMS and notifications, property management portal, increased environmental awareness, paperless billing, Green Button, Interval Data Centre and Aeroplan.

- The Human Resources Department utilizes third-party consultants in support of research and policy development on a wide variety of human resources strategic initiatives, in addition to outsourcing payroll processing. Cost increases are anticipated in association with consulting services to aid in the continued focus on the corporation's human capital and supporting an engaged, talented workforce. The Health and Safety Department

consulting and contractor services has increased as a result of external audit fees and safety documentation. As part of London Hydro's Infrastructure Health and Safety Association Certificate of Recognition ("COR"), an external auditor will be hired in 2017 to perform a comprehensive health and safety audit as required for certification. Contractor services are also used to create and maintain health and safety documentation. For example, the Health and Safety department has created a comprehensive Safe Work Practices manual (500 pages) and a Health and Safety Management System (200 pages), both of which are reviewed and updated annually. The Health and Safety department has also commenced publishing an Annual Health and Safety Report, a Strategic Plan as well as a monthly Safety Bulletin.

4-VECC-40

Reference: E4/T1/S5

a) Please explain how LHI has concluded that the cost of its in-house smart meter operations have an avoided cost of $610,000 per year. Specifically please show the derivation of the $140,000 in internal costs for the smart meter network and how the estimate of $750,000 for similar third party services was calculated.
b) Please also show how London Hydro has come to the conclusion that its decision to own and operate its wireless communications equipment rather than lease has proven to be the least cost alternative.
c) What is the annual cost (labour and capital) of operating the in-house electric meter department?
d) Has London Hydro had a third party review of its in-house smart meter solutions (including owning its own telecommunications network) as compared to a third party solution? If yes, please provide that study.

LH Response:

(a)

The in-house smart meter operations still rely on some external software licensing and support costs. However these costs are significantly reduced using an in-house support model as compared to a fully externally supported cost. The $140,000 in internal costs is based on existing negotiated/publically procured contracted rates. Had a fully externally supported solution been chosen, the additional $610,000 per year charge was based on available external vendor pricing options, adjusted for inflation (within contract CPI increases). Please see the table below.

	Per Meter Costs and AMCC Licensing	External Tower Cost (AMRC and Backhaul)	Total
Internal Operated Model	$ 57,000	$ 83,000	$ 140,000
External Operated Model	$ 177,000	$ 573,000	$ 750,000
Difference	**$ (120,000)**	**$ (490,000)**	**$ (610,000)**

(b)

The differences in external costs are the avoided costs that serve as the basis for London Hydro to conclude that its decision to own and operate its wireless communications equipment rather than lease has proven to be the least cost alternative. As well, these savings do not include project work for system upgrade and enhancements that would be expected to attract an additional premium as London Hydro would be obligated to have it performed externally versus having the resident in-house expertise to perform the work.

(c)

Gross labour (including overtime and benefits) in the Electric Metering Department for the proposed 2017 Test Year is $1,714,900 of which $266,500 is projected to be allocated to capital activities.

(d)

The decision for London Hydro to own its own smart meter network was made as part of the smart meter deployment in the 2008-2009 time frame. Investments were made at that time and addressed through smart meter OEB rate submissions. London Hydro has considered alternative modes for smart meter system operation from time to time. There are several

considerations in comparing to a 3rd party provided model. Other LDCs that have a 3rd party service provider have had to spend on upgrades to IT infrastructure even though the system is operated by the third party. Overall, the external pricing rates are more expensive than the internal rates. In addition, there is value to London Hydro in operating the system as data access is more readily available and has been leveraged to provide customers with more reliable and faster data for analytics, customer engagement and other system integrations (Outage Management, Voltage Monitoring and Meter failures.) Thus there is significant value added to having in-house expertise that can not only maintain, but leverage the system for additional purposes.

Moving forward, a review of in-house smart meter solutions is being performed to meet increased requirements by the OEB to mandate interval metering for GS>50 customers. This class of consumers was excluded from the initial smart-meter project scope and now, after-the-fact, has required additional system investment to meet the regulations. Some proof of concept technology exploration is now in process in order to validate the actual costs in order to support decision making.

Additionally, London Hydro has taken the initiative to remove the need for interval metered customers to pay for a dedicated telephone lines. London Hydro submitted a stand-alone electricity rate application for an Optional Cellular Meter Read charge (EB-2016-0146) on April 7th 2016. The application was seeking approval for a new Specific Service Charge of an Optional Cellular Meter Read Charge of $30/month for General Service > 50 kW customers converted to Interval Meters who elect to have their Interval Meters read through a cellular modem. This would provide an alternative to more costly telephone lines. The OEB Registrar's letter rejected this request and stated that London Hydro has not provided any evidence for the urgency of establishing this charge in advance of its cost of service application. The inability for London Hydro to introduce cost saving communications business solutions to customers in a timely way impacts London Hydro's ability to select and implement emerging options that can reduce costs for electricity customers.

4-VECC-41

Reference: E4/T1/S5 Appendix 4-1/pg.2

a) E&Y note that LHI needs to rebuy JDE licences due to moving off Oracle software licence maintenance in 2011. What was the annual licence maintenance fee in 2011?
b) What is the estimated cost to rebuy the licences?
c) Would LHI have needed to buy any new licences had it continued its licence maintenance agreement?
d) Please provide the costs of continuing with the JDE solution if the prior licences had not been allowed to lapse.
e) Why did LHI discontinue its licence maintenance prior to having a third-party review alternative solutions?

LH Response:

(a)

The 2011 Oracle annual maintenance for JDE was $66,790.

(b)

The estimated cost to rebuy the license is $246k.

(c)

If London Hydro had continued license maintenance under the previous agreement, additional incremental licensing would have had to be purchased to account for changes in user counts and functional areas. Additionally, extended support from Oracle for London Hydro's J.D. Edwards version had ended that would have resulted in an upgrade project earlier than necessary based on London Hydro needs and priorities.

(d)

The previous Oracle maintenance agreement included 3% annual escalation; therefore based on the 2011 maintenance amount, the cost of continuing the maintenance agreement would have been $400,537 from July 2011 to December 2016.

(e)

Having implemented an SAP solution as a CIS replacement in 2009, the preferred alternative was to use SAP ERP to replace the JDE solution. Therefore, London Hydro discontinued the Oracle licence maintenance contract and decided to transition to third party support contract at a lower cost.

In late 2013, E&Y was engaged for ERP needs assessment and scoping including evaluating all the alternatives and to create a roadmap for deployment. Based on this Assessment, the upgrade to the JDE system is scheduled to start in 2017.

4-VECC-42

Reference: E4/T1/S5/pg.46

a) London Hydro states it has leased new property at an annual cost of $100,000 plus annual taxes of $19,000 for additional parking. The FTE incremental growth since 2013 is (proposed) to be 6. Please explain what additional parking requirements occurred since 2013 to require this significant investment.
b) What alternatives were reviewed to alleviate parking issues at 111 Horton? Specifically were inducements such as subsidy of public transit considered?
c) What fee(s) do staff currently pay for parking?

LH Response:

(a)

The new parking lot has helped to reduce congestion that has existed for many years. Historically, London Hydro made attempts to address safety concerns through marked pedestrian walkways and warning lights; however, near miss incidents still occurred. London Hydro's escalated focus on safety is what finally acted as the catalyst for the Company to make this significant investment commencing in 2015.

Until 2015, there were many safety concerns due to under capacity leaving pedestrians vulnerable. For example, larger vehicles (bucket trucks, RBDs, etc.) not having the required space to pull through and being forced to reverse into tight areas with long trailers. The new parking lot also helps to increase security as security staff now find it easier to identify unauthorized vehicles.

(b)

Public transit subsidies, while they would contribute to London Hydro's environmental sustainability strategy and could contribute to a modest reduction in the number of parking spaces required, were not pursued as they would not have offered a complete alternative to the

solution which was adopted. There are employees who live outside of the City and commute from outside of the city transit zone and employees who are required to travel to/from work at times when transit is non-operational (e.g. emergency on call and shift personnel).

(c)

The deemed value of the parking ($16.18 per week) is included in employee remuneration as a taxable benefit. Therefore, employees pay income tax on the deemed value of parking. Employees have the option of opting out of the parking benefit (i.e. use transit, bike/walk to work, carpool, etc.).

4-VECC-43

Reference: E4/T1/S5/Table 4-27

a) Please provide the number of manual read meters in service in 2013 and forecast to be in service in 2017.
b) Please breakdown the 610k (2013) and 550k (2017) in meter reading services into labour and other costs.

LH Response:

(a)

There are a variety of meter reading activities that determines the meter reading effort. The number of demand meters that require manual meter reading is one driver. Final reads and check reads are also reasons for meter reads and fluctuate seasonally. MicroFIT solar generation meters are also read manually and require a time-consuming process of downloading interval data.

In 2013, there were approximately 800 commercial demand meters read per month. In 2017 there are forecast to be 400 commercial demand meters read per month and an additional 200 micro-FIT generation meters read per month. As of November 30, 2016 there were 559 demand read GS>50 rate classification meters. Again, the number of final reads and check reads are a significant meter reading cost driver rather than the number of meters.

(b)

Meter reading service costs represent third party external services only. Amounts charged are based on a fee for service, therefore labour and other components are unattainable.

4-VECC-44

Reference: E4/T1/S5/Table 4-49

a) Please provide the number of FTEs in the Human Resources, Health and Safety area of responsibilities.
b) Please explain the 87% increase in corporate employee expenses since 2013.

LH Response:

(a)

There are a total of 8.5 FTE's in Human Resources, Health and Safety.

(b)

London Hydro, like many of its peers, continues to deal with a shortage in skilled trades and a significant number of retirements over a short period of time. Since the 2013 Cost of Service Rate Application, many retirements have occurred and many new employees have been brought on staff to counteract those retirements. Almost 30% of the current full-time permanent workforce has been employed by the Company for less than 5 years. Further, with a potential retirement turnover of up to 30% of the current workforce over the next 5 years, a long-term commitment to training and knowledge transfer is paramount to ensure that London Hydro's strengths in these areas are supported through this critical corporate transition.

As a result of the aging workforce and a highly competitive labour market, London Hydro has been challenged with attracting, training and retaining skilled workers required to operate, maintain and build the current legacy infrastructure, as well as optimizing through new technologies and innovations.

This challenge, which is faced by the entire electricity industry, was addressed in the Electricity Sector Council's 2008 study, "*Powering Up the Future*," the purpose of which was "*to provide a labour market information system of the current and future labour supply and demand to assist*

decision makers in industry, government, and education organizations in planning their human resource strategies accurately and effectively. The immediate purpose of the system is to reduce the impact of the upcoming loss of up to 40% of the electricity industry's existing workforce due to retirements by effective human resource planning."

Findings indicated that "*The Canadian electricity sector is about to enter into the eye of the perfect storm, whereby the supply of trained workers is decreasing just at the same time that a significant proportion of the current workforce is retiring, and the demand for electricity and investment in new capital and infrastructure projects is increasing. Although many employers, businesses, and educational institutions have started to take action to mitigate the effects of projected labour shortages on the electricity sector, there remains an increasing threat of an insufficient supply of workers to meet growing demand within the sector.*"

The 2008 study was updated in a 2011 study (Power in Motion – 2011 Labour Market Information Study) and reaffirmed the need for tens of thousands of workers to meet the needs of the Canadian electricity system.

To help neutralize the impact of this demographic shift and maintain a sustainable workforce required to continue providing a reliable distribution system, London Hydro has been working diligently by implementing numerous initiatives to assist with recruiting and attracting talent, including,

- ✓ Rebranding London Hydro and the electricity industry as a good place to work by increasing awareness and excitement surrounding working for an industry tied so closely to innovations for the future and renewable energy sources
- ✓ Increasing awareness regarding training and career development opportunities, benefits and long-term job security
- ✓ Working more closely with colleges, universities and secondary schools to entice potential candidates and ensure they are aware of special training programs (for example, co-ops and apprenticeship programs)
- ✓ Offering reimbursement for relocation costs

To help retain workers in this highly competitive labour market, London Hydro has implemented initiatives such as,

- ✓ Providing one of the safest places to work in Canada
- ✓ Being one of Canada's greenest employers
- ✓ Promoting quality of life and a work / life balance through workplace flexibility
- ✓ Providing an award-winning wellness program that includes one-on-one coaching, lunch and learns, nutritional education, healthy food choices, mental health awareness, flu shot clinics, wellness fairs, and exercise and healthy living initiatives
- ✓ Providing an on-site fitness centre
- ✓ Providing an attractive cafeteria and employee lounge
- ✓ Hosting celebration events to welcome new hires, say farewell to those retiring and observe significant accomplishments, for instance, safety milestones and new innovations
- ✓ Organizing social events, including the Company picnic, golf tournament, Earth Day cleanup, and numerous activities involving hockey, baseball of other sports
- ✓ Focusing on corporate culture through surveys, results, feedback and follow up
- ✓ Fostering employee engagement by keeping employees informed through media boards, newsletters, billboards, etc. and obtaining employee input regarding the direction of London Hydro through the volunteer Strategic Planning Employee Committee
- ✓ Offering employee assistance programs, such as London Employee Assistance Consortium ("LEAC")
- ✓ Providing management employees with supplementary health services through MedPoint, as introduced in 2015, including same day service, quick access to specialists as well as triage services, gait analysis, wellness programming, nutrition and fitness counselling
- ✓ Offering performance-based and other awards, for instance, annual award receptions for perfect attendance, long service, significant anniversary milestones and retirement

- ✓ Offering education assistance plans
- ✓ Offering employee purchase plans

4-VECC-45

Reference: E3/T1/S5/pg.378

a) Please provide the annual OEB cost assessment for each of 2012 through 2016 showing separately the annual assessment and any other (section 30 or other) assessment in each year.
b) Please provide any correspondence between the OEB and London Hydro explaining the near doubling of annual assessment costs in 2017.
c) The application costs are noted at $325k. Please reconcile Table 4-119 with the one application costs listed in Appendix 2-M of the Chapter 2 filing requirements (Excel …20160826).

LH Response:

(a)

A table of OEB cost assessments and other fees for 2012 to 2015 actuals is provided below together with projected amounts for the 2016 Bridge Year and proposed 2017 Test Year:

Corporate Services Program Ontario Energy Board Cost Assessments						
Description	**2012 Actual**	**2013 Actual**	**2014 Actual**	**2015 Actual**	**2016 Bridge**	**2017 Test**
Assessments	385,524	365,506	367,646	374,510	643,200	689,500
Section 30 costs	27,155	9,542	10,374	33,885	19,450	19,700
Annual fee	800	800	800	800	800	800
Total on-going costs	**413,479**	**375,848**	**378,820**	**409,195**	**663,450**	**710,000**

Assessments listed above for the 2016 Bridge Year include amounts reclassified to the OEB established deferral account for comparative purposes. As discussed in Exhibit 4, page 307, the OEB established a deferral account to capture variances between OEB cost assessments included in rates set pursuant to the Board Approved Cost of Services Rate Applications filed for 2013, and costs issued under the new model implemented April 1, 2016. London Hydro has

tracked monthly variances for April to December 2016 under this established deferral account for future rate recovery.

(b)

There are no correspondences between London Hydro and the OEB regarding the increase in annual cost assessments.

(c)

Table 4-119 Rate Application and Filing Hearing Costs and Table 4-120 Distribution Systems Plan Costs have been reconciled with one-time costs as reported on OEB Appendix 2-M below:

Table 4-120 Distribution System Plan Costs

Asset Management Program Distribution System Plan Costs				
Description	**2014 Actual**	**2015 Actual**	**2016 Bridge**	**2014/15 Actual + 2016 Bridge**
Consulting and contractor service costs	12,250	50,645	114,375	177,269
Prorated			(5 years)	**35,500**

Table 4-119 Rate Application Filing and Hearing Costs

Corporate Services Program Rate Application Filing and Hearing Costs								
	2013 Rebasing				2017 Rebasing			
Description	**2011 / 2012 Actual**	**2013 Actual**	**2014 Actual**	**2012 to 2014 Actuals**	**2015 Actual**	**2016 Bridge**	**2017 Test**	**2015 Actuals to 2017 Test**
Legal costs for regulatory matters	88,743	34,055	-	122,798	-	100,000	37,200	137,200
Consultants' costs for regulatory matters	101,780	4,378	-	106,158	38,964	33,836	-	72,800
Intervenor costs	3,015	97,989	1,910	102,914	-	-	115,000	115,000
Total one-time costs	**193,538**	**136,422**	**1,910**	**331,870**	**38,964**	**133,836**	**152,200**	**325,000**
Prorated			(4 years)	**82,970**			(5 years)	**65,000**

		2015 Actual	**2016 Bridge**	**2017 Test**
DSP Development Costs	**Per Table 4-120**	50,645	114,375	-
Rate Application Filing Costs	**Per Table 4-119**	38,964	133,836	152,200
Total One-time costs		**89,608**	**248,211**	**152,200**
One-time costs per Appendix 2-M	**Per Appendix 2-M**	89,608	248,211	152,200
		-	-	-

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4-VECC-46

Reference: E4/T1/S5/pg.346/Table 4-64

a) Please list and describe each of the 6 incremental FTE positions added since 2013.

LH Response:

A listing of the 6 incremental positions added since 2013 is provided below:

INCREMENTAL POSITIONS 2013 TO 2017		
Asset Management		
Engineering and Design - Engineer	1	
Engineering and Design - Technologist	1	
System Planning- Engineer	1	
Engineering Logistics - Project Manager/Accountant	1	4
Metering and Data Management		
Electric Meter Technician	1	
Engineer in Training	1	
Meter Data Management Representative	1	3
Information Technology		
Cyber Security Specialist	1	
System Integration Specialist	1	2
Human Resources, Health and Safety		
Health and Safety Field Supervisor	1	1
Facilities and Environmental Services		
Environmental Coordinator	1	1
Customer Services and Collections		
Customer Service Representatives	(5)	(5)
		6

As addressed in the Asset Management Program discussion (Exhibit 4 page 53 - 73), additional resource requirements are due to new demands associated with increased capital spending, accommodating new FIT and MFIT customers, implementing better standards, integration of best practices and new reliability tracking and analyzing required in order to sustain customer service levels.

New Asset Management resources have been added to address the increased volume of projects (including those driven by infrastructure renewal, City of London and customer requirements, system capacity) and the necessity to analyze data properly to determine which capital projects need to be undertaken, which material or equipment to install, or if spending can be deferred.

While time spent directly on capital projects will be charged to the asset cost as appropriate, the majority of new resources are OM&A expenditures as new requirements are more high level in nature (e.g.: new reliability analysis, system planning, aging infrastructure research and responding to renewable generation connection enquiries and service implementations). Further, the Asset Management Program has numerous new staff who, when fully trained will charge a large majority of their time to capital projects. However, during ‘on boarding’ time spent during training sessions is charged to OM&A.

As addressed in the Metering and Meter Data Management Program discussion (Exhibit 4 page 93- 145), due to the complexities that have evolved as a result of new initiatives such as Smart Meters, OM&A workloads and required skill sets have increased significantly. Further, new resources will assist with capital projects such as ongoing development of meter data databases and applications, as well as streamlining of metering inventories and their associated attributes for better controls and reliability.

Position increases in the Information Technology Program are for a Cyber Security Specialist and System Integration Specialist which have been added to bring the necessary skills to secure and support the growing complex IT environment. The Cyber Security Specialist is accountable for ensuring London Hydro systems are protected. The System Integration Specialist ensures dataflow between upstream and downstream systems are accurate and

perform to customer expectations (e.g. timely and responsive online eBill via MyLondonHydro that requires billing data from SAP CIS).

The Health and Safety Field Supervisor position was added to help with the Company's increased focus on improving the Health and Safety Culture. The Field Supervisor is responsible for assisting crews in the field with health and safety issues, ensuring compliance with health and safety regulations and Company safe-work practices. This new position is responsible for onsite crew safety inspections, inquires, training and near miss investigations to ensure that crews in the field maintain a safe workplace for both employees and the public.

The Environmental Coordinator position was added in 2014 to amplify London Hydro`s commitment to protect and preserve the environment in partnership with the community. This new position is mandated with creating and overseeing London Hydro's Environmental Management System ("EMS"), and demonstrates to our customers the Company's proactive undertaking towards reducing our environmental footprint within our community and supports Ontario's vision for combating climate change.

As addressed in the Customer Services and Collections Program discussion (Exhibit 4 page 231-255), the reduction in Customer Service Representative resources is primarily a result of the change in customer behaviour that favours more electronic interaction and self-sufficiency, which has been facilitated by the new website launched in 2014.

4-VECC-47

Reference: E4/T1/S5/pg.346/Table 4-69

a) Please show the 2013 and 2017 (forecast) number of hours of Emergency overtime and Planned overtime.
b) Please explain how the overtime costs for 2017 were forecast.

LH Response:

(a)

Emergency and planned overtime for 2013 actuals and the proposed 2017 Test Year are provided below:

Emergency and Planned Overtime Hours		
	2013 Actual	2017 Test
Emergency overtime	8,590	7,678
Planned overtime	19,130	17,916
	27,720	**25,595**

(b)

Emergency overtime forecasts are based on historical trends comparing similar type work, considering negotiated salary increases and then offsetting for anticipated benefits of the various rebuild and conversion programs. For example as air-insulated switchgear, SE's, are removed from the system the estimated emergency overtime related to this type of gear is reduced. Conversely if other equipment or system failure points are identified then emergency overtime forecasts are increased to accommodate potential failures.

Planned overtime forecasts are based on historical trends comparing similar type work such as 4kV conversion projects and large planned capital programs in which customer outages are estimated to be required (at a high level) and based on known and estimated System Access projects, such as new commercial or residential installations. Planned overtime is largely in

direct relation to capital projects for which outages are required and the work is completed outside of the customers' business hours. London Hydro works closely with customers to schedule work on their service, so that the outage occurs when their business is either shut down or at a time when they can accommodate a stop in their processes.

4-VECC-48

Reference: E4/T1/S5

a) Please explain how the $400k forecast for customer call overflow services was derived.
b) What have been the actual overflow costs in 2016?

LH Response:

(a)

The forecasted amounts of $400k for the 2016 Bridge Year and proposed 2017 Test Year were based on current trends at the time of budget development, the type of calls, the duration of calls taken and the availability and flexibility of accessing these services under extenuating circumstances such as weather, rate changes and new Regulations impacting customers.

(b)

Year to date costs for call overflow services to November 2016 are $343,111 and projected to be approximately $376,000 for the 2016 fiscal year.

4-VECC-49

Reference: E4/T5/S5

a) Is LHI seeking to recover 2014, 2015 and 2016 costs for its distribution system plan?
b) If yes, please explain the basis for these retroactive recoveries.
c) Are the amounts in Table 4-120 all consulting or outside contractor costs?

LH Response:

a)

Yes.

b)

These costs are included in the proposed 2017 Test Year for recovery as a one-time cost pursuant to OEB filing requirements 2.4.3.4.

c)

These costs consist of both contractor services and consulting associated with the development and review of the Distribution System Plan.

4-VECC-50

Reference: E4/T1

a) Please provide the annual EDA fees for 2013 through 2017.

LH Response:

EDA fees for 2013 through 2017 have been provided below:

EDA Fees				
2013 Actual	2014 Actual	2015 Actual	2016 Actual	2017 Actual
$ 92,800	$ 96,900	$ 100,000	$ 100,000	$ 100,000

4-VECC-51

Reference: E4/T1/S5, page 448

a) Please indicate whether the values set out in Table 4-126 reflect the expected savings for just the programs in years 2012 – 2013 or whether they also include the savings expected for 2011 programs at the time of the 2013 COS Application.

LH Response:

(a)

The values set out in Table 4-126 reflect the full year expected persistent savings from 2011 and 2012 CDM programs and full year forecasted savings from the 2013 CDM programs.

The expected kWh savings used in the LRAMVA calculations:

CDM Programs	YR 2013
2011 Programs persistence	20,990,325 kWh
2012 Programs persistence	12,100,480 kWh
2013 Programs	12,100,480 kWh
Total	**45,191,286 kWh**

4-VECC-52

Reference: LRAMVA Work Form, Tab 6 – Persistence Rates
EB-2016-0058, Interrogatory Responses, Attachment 3-VECC 23 A and 3-VECC 23 B

a) Please provide the source for the persisting savings from 2011-2014 CDM programs as set out in the above referenced Tab for the period through to 2015. Note – If there is supporting document, please provide.
b) If not provided in response to part (a), please provide IESO reports regarding the persistence of individual 2011-2014 programs similar to that provided by Brantford Power in EB-2016-0058.

LH Response:

(a)

The source for the persisting savings from 2011-2014 CDM programs reflected on Tab 6 – Persistence Rates within the LRAMVA Work Form is Page 7 of the *2011-2014 Final Results Report_London Hydro Inc.pdf* enclosed with this response. The original full report is provided for in response to IR 9-Staff-54-A. Page 7 of the 2011-2014 Final Results Report includes Table 4: Net Peak Demand Savings at the End User Level (MW) and Table 5: Net Energy Savings at the End User Level (GWh). The 2014 level of savings were assumed to persist into 2015.

Table 4: Net Peak Demand Savings at the End User Level (MW) (Scenario 1)

Implementation Period	Annual			
	2011	2012	2013	2014
2011 - Verified	6.7	4.1	4.1	4.0
2012 - Verified†	0.0	4.7	3.1	3.1
2013 - Verified†	0.0	0.2	5.9	3.1
2014 - Verified†	0.0	0.2	1.2	9.1
Verified Net Annual Peak Demand Savings Persisting in 2014:				19.3
London Hydro Inc. 2014 Annual CDM Capacity Target:				41.4
Verified Portion of Peak Demand Savings Target Achieved in 2014 (%):				46.6%

Table 5: Net Energy Savings at the End User Level (GWh)

Implementation Period	Annual				Cumulative
	2011	2012	2013	2014	2011-2014
2011 - Verified	21.1	21.0	21.0	20.9	84.0
2012 - Verified†	0.3	14.4	14.1	13.9	42.7
2013 - Verified†	0.0	1.5	15.8	13.4	30.7
2014 - Verified†	0.0	1.2	6.39	29.1	36.7
Verified Net Cumulative Energy Savings 2011-2014:					194.1
London Hydro Inc. 2011-2014 Annual CDM Energy Target:					156.6
Verified Portion of Cumulative Energy Target Achieved in 2014 (%):					123.9%

(b)

Please find the requested IESO persistence report attached for the individual 2011-2014 programs.