

1 **VEGETATION MANAGEMENT BENCHMARKING**

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3 **1.0 BACKGROUND**

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5 In its Decision on Hydro One’s 2008 Distribution Rates Application (EB-2007-0681), the
6 Board directed Hydro One Distribution to develop a benchmarking approach that will
7 provide information related to Vegetation Management. The direction was:

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9 *“...the Board will require the Company, in consultation with the intervenors and Board*
10 *staff, to develop a benchmarking approach which will provide the Board at the next*
11 *rebasings exercise with definitive information respecting the Company's relative*
12 *efficiency in this area of operations. In the interim, the Board will expect the Company*
13 *to give effect to any innovations which improve its productivity and efficiency in this*
14 *area.”*

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16 In response to the direction received, Hydro One Distribution undertook the following
17 actions:

- 18 1) Hosted a Stakeholder Consultation Session with Board staff and intervenors on
19 April 15th, 2009 to discuss potential benchmarking approaches, areas of focus,
20 methodology, and areas of concern;
21 2) Retained CN Utility Consulting (“CN Utility”), an independent third party
22 consultant to complete a Vegetation Management Benchmarking Study.

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24 CN Utility has expertise in both Utility Vegetation Management (UVM) and in UVM
25 benchmarking. This combination of expertise made CN Utility a good choice to conduct
26 the study. CN Utility was also suggested by intervenors as an appropriate choice during
27 the April 15th consultation session.

1 CN Utility completed the UVM Benchmarking Study and compared the efficiency
2 performance of Hydro One Distribution and its three operating zones (i.e. North, East,
3 South) to a peer group of 14 comparable utilities. The comparable utilities were selected
4 based on vegetation characteristics, weather considerations, and the existence of a
5 predominantly rural service territory as defined by a customer density of approximately
6 30 customers per circuit kilometre or less. Hydro One's performance was compared to
7 the peer group individually for each zone and in aggregate for all UVM work activities
8 including line clearing and brush control, customer notification and job planning, and
9 unplanned UVM. Performance was examined from both labour hour and cost
10 perspectives. The study also examined factors that are related to efficiency and influence
11 results such as maintenance cycle lengths, vegetation densities, safety, and reliability.
12 The completed study is contained in Attachment 1 of this exhibit.

14 **2.0 RESULTS**

16 CN Utility concludes that Hydro One Distribution's efficiency generally ranges from
17 better than average when considering labour hour measurements, to slightly worse than
18 average when considering unit cost measures. For example, in the area of Line Clearing
19 and Brush Control, Hydro One Distribution's labour hours per kilometre are better than
20 average but slightly worse than average for cost per kilometre when the impact of
21 vegetation density is factored in. In the area of Customer Notification and Job Planning,
22 Hydro One Distribution's performance is better than average for both labour hours per
23 kilometre and costs per kilometre. These areas (i.e. Line Clearing, Brush Control,
24 Customer Notification and Job Planning) make up over 90% of Hydro One Distribution's
25 planned UVM expenditures. Overall, total UVM costs per system kilometre indicate that
26 Hydro One Distribution's performance is better than average.

1 In light of Hydro One Distribution's relatively good efficiency performance and the
2 direction set out by the Board, CN Utility captured in its report innovations and initiatives
3 that have both lead to the utility's current standing and are expected to improve efficiency
4 going forward. Examples of innovations included in the report are: the deployment of
5 tablet computers to technicians for Customer Notification and Job Planning; the enhanced
6 usage of information systems (i.e. Forestry Management System integration with
7 Customer Service Systems); the introduction of an improved nozzle for herbicide
8 application; the piloting of 'mini-grinders' for Brush Control; and the development of a
9 new and lighter pruner for Line Clearing. These innovations are evidence that Hydro
10 One Distribution is continuously focused on improving UVM efficiency.

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12 Other efficiency measures that CN Utility examined included labour hours and cost per
13 tree treated, and unplanned UVM expenditures per system kilometre. For the labour
14 hours per tree, Hydro One Distribution performs better than average but for both of the
15 cost measures, Hydro One Distribution performs worse than average. CN Utility
16 attributes this performance to Hydro One Distribution's long historic cycle length (i.e. 10
17 years). Other participants that reported cycle lengths all have average cycles in the range
18 of 1 to 5 years. The differences in cycle time results in Hydro One Distribution having to
19 treat a greater amount of vegetation and biomass per tree than other utilities. It also
20 results in having a system that will require more reactive (i.e. unplanned) vegetation
21 maintenance to address hazards than other systems that are maintained on a more
22 frequent basis. As a result, CN Utility asserts that a shorter cycle will enable Hydro One
23 Distribution to improve efficiency performance in the areas of cost per tree and
24 unplanned activities. Beyond the efficiency performance findings, CN Utility's study
25 confirms that Hydro One Distribution is in fact operating on a long vegetation
26 management cycle in comparison to the industry. This supports Hydro One
27 Distribution's current strategy of increasing accomplishments to achieve a shorter cycle
28 that is more in line with peer utilities in the industry.

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Related to unplanned expenditures and cycle length is performance in reliability. CN Utility also examined this area and found that Hydro One's performance is poor compared to the peer group of utilities. CN Utility attributes this result to Hydro One's long maintenance cycle. The long maintenance cycle has lead to a system that is vulnerable to tree caused power interruptions, especially in storm conditions. Hydro One Distribution is aware of this fact and its strategy to reduce the vegetation management cycle is driven in part by the goal of improving reliability, as well as reducing costs over the long term. CN Utility's study has shown that this goal is prudent given Hydro One Distribution's reliability performance and the finding that Ontario is prone to more frequent storms and more inclement weather than other parts of North America as is noted subsequently in this exhibit.

The CN Utility report also contains a number of findings that provide context for Hydro One's UVM program. One such finding is that Hydro One has a best in class safety record as a result of having worked over 5.5 million hours without a lost time incident. Hydro One is particularly proud of this finding as it is evidence of a well managed program that is committed to worker safety. Other noteworthy findings from the study are related to Hydro One Distribution's service territory and characteristics that would challenge any UVM program's pursuit of efficiency. Three of these characteristics are:

- 1) Rural Service Territory - Hydro One Distribution's service territory is the most rural of all utilities that participated in the study with 10 customers for every circuit kilometre in comparison to an average of 18 for the peer group. Being a very rural utility has implications for locations of work centres, long crew travel times, and the need for more costly temporary work locations.
- 2) Vegetation Density - Hydro One Distribution's service territory is very heavily vegetated and has the second highest number of trees per kilometre in

1 the study at 56 in comparison to the peer group average of 33. These figures
2 indicate that an average kilometre of line in Hydro One Distribution's service
3 territory contains an almost 70% greater workload than an average kilometre
4 within the service territories of the peer utilities.

- 5 3) Weather Patterns – Hydro One Distribution's location in the Great Lakes
6 region exposes the utility to a greater frequency of storms and lower minimum
7 temperatures than other parts of North America. Wind and ice storms cause
8 vegetation to interfere with power lines and result in the diversion of UVM
9 crews from planned maintenance work to unplanned and storm restoration
10 activity. Furthermore, inclement and extreme weather increase downtime and
11 challenges for maintenance crews.

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13 **3.0 CONCLUSION**

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15 CN Utility's UVM Benchmarking Study concludes that Hydro One Distribution's
16 efficiency is generally better than average on the basis of labour hour measures and
17 slightly worse than average on the basis of unit costs. The findings consider the fact that
18 Hydro One Distribution's service territory is densely vegetated and acknowledge that it is
19 challenged by its very rural nature and the frequent weather systems that impact Ontario.
20 The study also determined that Hydro One Distribution's maintenance cycle is long in
21 comparison to the peer group and that reducing the cycle will result in better control over
22 vegetation and improved reliability.