

Adaptation Case Study #5: Horizon Utilities Corporation

SECTOR: ELECTRIC UTILITY

Location: Southern Ontario



Natural Resources
Canada

Ressources naturelles
Canada

Canada



Network for
Business Sustainability

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Introduction

When Hollywood depicts climate change, it shows underwater cities and a frozen planet (see: [The Day After Tomorrow](#)).

Horizon Utilities Corporation, based in Hamilton, Ontario, hasn't experienced anything that dramatic. But it has seen increasing extreme weather events: strong winds, heavy rain and ice storms. And these extreme weather events may occasionally interrupt Horizon Utilities' electricity distribution system, damaging poles and lines.

Climate scientists say that such extreme weather will become increasingly common with climate change.¹ So Horizon Utilities is taking steps to adapt.

Its experiences show how accountants can help organizations adapt to climate change.

Background on Horizon

Horizon Utilities is one of the largest municipally owned electricity distribution companies in Ontario. The company provides electricity and related utility services to 242,000 residential, commercial and industrial customers in Hamilton and St. Catharines. Owned by the cities of Hamilton and St. Catharines, Horizon has \$582 million in total assets.²

Sustainability is a cornerstone of Horizon Utilities, and the company is one of the first utilities in Canada to evaluate its performance based on triple bottom-line reporting—focusing on the overall social, environmental and economic performance of the company.³ Horizon Utilities was also the first company in Canada to earn the **Sustainable Electricity Company**TM designation from the Canadian Electricity Association.⁴

1 Shawn McCarthy, Government says climate change will make weather more extreme, *The Globe and Mail* (www.theglobeandmail.com/news/politics/government-says-climate-change-will-make-weather-more-extreme/article19322385/, June 24, 2014).

2 Horizon Holdings, *2013 Sustainability-Based Annual Report* (www.horizonutilities.com/ourCompany/Pages/reports.aspx, 2014).

3 Horizon Utilities, *Our History* (www.horizonutilities.com/ourCompany/about-us/Pages/OurHistory.aspx, 2015).

4 Horizon Utilities, *Sustainability* (www.horizonutilities.com/ourCompany/sustainability/Pages/default.aspx, 2015).

How the Physical Impacts of Climate Change Influence Horizon

Horizon Utilities sees increasing impacts from climate change. In its operating area, climate change means temperature shifts, more intense storms and increased precipitation (see box).

- Temperature shifts.** Ontario has been experiencing erratic temperature shifts over recent years, significantly affecting Horizon Utilities' revenues as a result of electricity consumption (for heat in the winter and air-conditioning in the summer). Peter Vallieres, CPA, CA, director, Financial Reporting and Accounting, explained that "because the summer of 2014 was significantly cooler as compared to previous years, our revenue was negatively impacted."

Climate Change Impacts in the Hamilton Area

Over the next 50 years, the Hamilton area can expect:

- warmer temperatures
- more extreme weather events: heavy precipitation in a short time
- more total annual precipitation

Source: Hamilton Conservation Authority and City of Hamilton, *Environmental and Infrastructure Vulnerabilities from Climate Change—Pilot Project in Hamilton, Ontario* (in preparation).

- More intense storms.** "There has always been weather," said Vallieres. But Horizon Utilities sees storms occurring more frequently, occasionally causing power outages. Storms damage poles, overhead lines, transformers, substations and other distribution assets, forcing the company to invest in additional labour crews and maintenance programs. Unhappy customers also pose reputational risks.

In July 2013, for example, high winds and lightning strikes felled hundreds of trees. Approximately 20,000 Horizon customers lost power at the storm's peak; completely restoring power took several days. "We were in emergency mode for a significant period of time," said Brian Lennie, Horizon Utilities' policy advisor.

"The July 2013 storm was a significant strain on Horizon Utilities' resources," said Lennie. Then the December 2013 ice storm left more than 30,000 customers without power at the storm's peak.

- **Increased rain.** Rain affects Horizon Utilities' infrastructure and electricity delivery. Rain results in more vegetation, said Joseph Almeida, director, Supply Chain Management. As vines and plants grow on poles, they attract animals such as squirrels and snakes; these animals travel up the poles and onto the wires, occasionally interrupting electricity distribution.

How Horizon Addresses Climate Change Adaptation

The two major storms of 2013 highlighted the importance of adaptation. "But Horizon has been on the climate change adaptation path, via sustainable development, since about 2008," said Lennie.

The motivation for climate change adaptation—and sustainability more generally—was a shift in corporate culture to the "understanding that sustainable development was good for our customers and for our business," explained Lennie.

Horizon Utilities addressed the issue through the Enterprise Risk Management system, where climate change is a standalone indicator. "Our company implemented a formal and comprehensive Enterprise Risk Management system approximately six years ago," explained Vallieres. "All identified risks are prioritized on the basis of a detailed matrix that considers both their likelihood and impact to the company. 'Major disruptions due to weather' is categorized as a hazard risk; it has been assessed by management as a major risk for the organization."

In 2012, Horizon Utilities extended its adaptation efforts.

1. It developed a **vulnerability assessment and initial adaptation strategy**.
2. In 2015, it will introduce its long-term **adaptation plan**.

Almeida explained the rationale: "As a company, we felt that we needed to understand the climate trends, identify our gaps, measure those trends, and put a long term plan together to reduce our risk going forward."

This effort should build resilience into Horizon Utilities' service, so that it can come through extreme weather with minimal losses. Lennie commented: "We are trying to plan ahead so we have fewer instances where our customers are negatively impacted by climate change, both in terms of service disruptions and rate increases due to the significant damage caused by more frequent storms."

Part 1: The Vulnerability Assessment and Initial Adaptation Strategy

During 2012, Horizon Utilities engaged Navigant Consulting to analyze the significance of climate change for its service territory. Navigant used historic weather data and recent studies of climate change to identify:

- alternative climate change scenarios for the next 20 years
- the impact of recent climate changes around Horizon Utilities' service territory
- how these changes could affect the company's design, planning, emergency preparedness, procurement and related functions over the next 20 years
- an action plan designed to meet the company's climate change objectives

In response to this Climate Change Adaptation Strategy Report, Horizon Utilities has addressed climate change through these actions:

- **Infrastructure planning.** Horizon Utilities considers climate change adaptation as the utility locates substations and poles, for example. Flood avoidance is a particular focus. Horizon Utilities assesses whether an area is likely to experience flooding; if so, it builds infrastructure to minimize flood risk.
- **New technologies.** Horizon Utilities is exploring technologies that will allow poles to flex in high winds, reducing the risk of downed lines.
- **Outage management.** Horizon Utilities has improved its geographic information and outage management systems to locate and respond to outages more efficiently. "For example, if we have strong winds one night that cause outages, we are now able to pinpoint down to the specific pole where the outage has occurred in real time and without necessarily waiting for a customer's call," explained Lennie.

When an outage does occur, Horizon Utilities dispatches the 'trouble crews,' who are specifically trained to address outages. These crews have existed for a long time, but greater and more frequent storms have increased their role.

Part 2: The Long-Term Adaptation Plan

In 2014, Horizon Utilities developed a 20-year adaptation plan and policy to be implemented in 2015. The first five years of the effort will focus on data collection and monitoring, which will support the required actions through the remainder of the plan. Collected data should also enable Horizon Utilities to develop specific key performance indicators around climate change.

“We want to reduce power outages and see some reduction in costs,” explained Almeida.

The Role of Accountants

Among Horizon Utilities’ diverse adaptation efforts, accountants are most centrally involved in risk management. They work closely with the Enterprise Risk Management system, which includes climate adaptation considerations. Vallieres explained that “accountants at Horizon Utilities assume a leadership role in adapting the organization to climate risk. Their perspective on numbers is critically helpful with risk avoidance and risk management.” Accountants’ contributions are enhanced by their objectivity and broad business background.

Regarding infrastructure planning and other **operational responses** to climate change adaptation, Horizon Utilities employs a financial advisor in Utility Operations who supports operations, engineering and capital planning.

Looking forward, Horizon Utilities sees its accountants being closely involved in **data control and analysis**. Data are the key to the development of a long-term adaptation plan. Almeida explained: “Accountants will be involved in ensuring the accuracy and quality of the data collected. They will analyze it to determine the required actions, as well as monitoring the financial impact of the potential risks and benefits.”

Vallieres described how climate change impacts affect all parts of the organization, including accountants:

“Typically, we manage 15 external crews of highly skilled employees who are largely engaged in either building or maintaining assets. When a significant storm hits, our crews are needed to repair damage and restore service to our customers. If there is more than one significant weather-related disruption or incident during the year, there is a material impact on the ability of the company to achieve its renewal and upgrade objectives, and related capital expenditure targets. Not only do such incidents put a strain on the external crews, they also affect the accounting staff, internal departments, and the resultant financial reporting to our management, the Board of Directors and shareholders. There is a significant ripple effect to the organization as certain projects and related capital spending may be deferred to future years.”

How Accountants Can Become Better Suited to Work with Climate Change Adaptation

Looking at the accounting profession, Horizon Utilities' interviewees call for **more education** for accountants on climate change adaptation. This education may be obtained through formal university education, professional development programs or a combination of both.

In parallel, the **broader business community** needs to know how accountants can contribute to climate change adaptation. "There is this infamous belief that accountants just deal with numbers," said Vallieres, "[and] that climate change adaptation is not an accounting problem."

To increase broader awareness of accountants' potential role in climate change adaptation, Almeida suggests that organizations connect accountants with employees who are working on climate change initiatives. Greater accountant training on enabling skills around collaboration and communication would facilitate this connection with those outside the accounting discipline, Horizon interviewees said.

"Engaging accountants from the beginning supports long-term solutions to complex initiatives," said Almeida.

Case Summary

- *What is the business impact from climate change?*
As a utility provider, Horizon Utilities sees its ability to distribute electricity significantly influenced by extreme weather.
- *What is the adaptation strategy?*
Horizon Utilities has developed a vulnerability assessment and initial adaptation strategy, and is introducing a long-term adaptation plan. Specific actions include risk management, infrastructure planning, new technologies and outage management.
- *What is the current role of accountants?*
Horizon Utilities accountants play a leadership role in adapting to climate risk. Their skills in data control and analysis allow for better assessment of how storms will affect future budgets.
- *How can accountants be better positioned in the future?*
Horizon Utilities staff encourage accountants to seek increased training in climate change adaptation, and to be involved in adaptation initiatives from the beginning.

This case study was written by S. Jeff Birchall, based on interviews with Horizon Utilities staff.



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