

AQUATERA WAY WHITE PAPER



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Aquatera Utilities Inc. (Aquatera) provides a full range of services including consulting, contracted services and the maintenance and management of owning and operating water, wastewater and solid waste services. Its operators are some of the most qualified in the province of Alberta and its people deliver best-in-class services for its customers.

In business since 2003, Aquatera has been a model of regional cooperation between its municipal shareholders in northern Alberta (the City of Grande Prairie, County of Grande Prairie No.1 and Town of Sexsmith), serving 80,000 people plus businesses and industry in one of Canada's fastest growing regions. This model is both profitable and sustainable, and consistently delivers value to shareholders, even through challenging times.

Operating in Western Canada - an area dealing with the downturn of the oil industry - Aquatera was faced with the challenge of providing competitive services while the sales of its core products declined.

Aquatera's brand promise of Trusted Quality, Valued Service and Peace of Mind aligns well with the values of Toyota's Production System, which led the organization to invest in Lean.

"Our Lean culture of continuous improvement provides increasing customer value and effectiveness."

Lean includes a set of techniques and a way of doing business that was originally developed by the automotive industry, but has evolved over the last 30 years and is now being adopted across a variety of diverse sectors. Lean seeks to identify and eliminate unnecessary activities so that work is completed with less effort, less time and improved quality. Lean frees up the time of employees to do more valuable good work and less unnecessary work.

In Canada, many organizations have realized significant benefits from Lean transformations over the last five years, and continuous improvement is supporting these organizations to provide the best level of service to their customers. Lean challenges organizations to carry out their day-to-day work easier, better, faster and safer

This paper presents how, with a small, motivated, focussed and flexible team, Aquatera established a complete shift in its culture over a short period of time with the adoption of the Lean philosophy and associated practices. This paper will demonstrate how establishing a Lean program, supported by simple governance, strategy and a clear roadmap and vision, resulted in improved safety, capacity, capability and savings in time and money along with a mindset and culture change that are now driving the organization to exceed its targets.

Aquatera began its Lean journey in 2013 with some training for all staff and a newly created Lean Committee whose members had a passion for Lean introducing a number of small scale improvements. However, Lean did not gain traction across the entire organization right away.

In 2014, Aquatera hired a new HR Manager (Meredith Pilkington) with previous experience in Lean principles and methodology. Established as the new champion for Lean, Meredith was able to source more formal training for Lean team members. With the support of the CEO (Bernd Manz) and the senior leadership team - known as the Aquatera Corporate Team (ACT) - Aquatera entered into a new journey of discovery with Lean.

During this time, eight Lean team members started working towards their Green Belt certification through Leading Edge Group. Leading Edge Group’s Senior Transformation Consultant - Callie Woodward - was appointed as the mentor for the group and it quickly became apparent that there was an overall lack of understanding across the company for Lean.

Aquatera subsequently introduced Yellow Belt training for all staff members, and this proved to be the catalyst for a culture shift that embraced Lean.



Fig. 1 -Yellow Belt Training

→ COMPLICATION ←

When Aquatera initially began its Lean journey, it did so without committing sufficient resources to ensure enough momentum would be created to develop an organization-wide understanding of what Lean was, and how it could be implemented to ensure efficiencies were both realized and sustained.

Looking at developing a future state of sustained continuous improvement, the organization wasn’t positioned appropriately in the formative years of its Lean journey and lacked the knowledge and ability to take on the shift in culture it would need to realize its potential.

Aquatera sought a program that would change the culture and have all employees aligned to strategic objectives, while becoming engaged in “reducing waste from a customer’s perspective”. To this end, Leading Edge Group was re-engaged to assess the current Lean environment and develop a Lean strategy and roadmap.

→ RESOLUTION ←

Through this assessment and findings, the “Aquatera Way” was developed with the overriding principle that each and every employee can see the flow of value to the customer, and can fix that flow as it breaks down. The Aquatera Way facilitated a standardized and flexible approach to: Seeing, Improving and Sustaining.

A framework was required to ensure that everybody in the organization was working on the right thing and involved in making the business better. The creation of the Aquatera Way framework requires a step-by-step process that evolves over time. The Aquatera Way framework presented in this paper was developed to support each individual journey in Lean and consists of six core pillars.



Fig. 2 - Aquatera Way Framework

GOVERNANCE

Governance for Lean was established and formalized with the CEO as sponsor as well as the following key elements:

- 👍 The Chief Human Resources Officer established as champion of the cultural evolution and lead for Lean
- 👍 Accountability and authority across the senior leadership team to prioritize, sponsor and ensure improvements are achieved and sustained in their respective areas of the operation
- 👍 Key roles and responsibilities established for Lean throughout the company
- 👍 Enthusiastic support for Lean from the Aquatera Board Chair

CAPABILITY

The company has recognized the importance of developing awareness, understanding and advanced capabilities among its employees so that they can effectively contribute to the success and sustainability of the Aquatera Way. To date, this has incorporated:

- 👍 150+ Yellow Belt certifications and education for all employees. This was the “tipping point” for the organization’s Lean journey. The education created momentum and understanding of a Lean culture at Aquatera.
- 👍 10+ Green Belt certifications (verified savings of over \$50,000 each) as cross functional improvement specialists.
- 👍 Three Black Belt certifications (verified savings of over \$100,000 each) in safety, culture and operations.

MAKE IT HAPPEN

In early 2016, Leading Edge Group conducted a continuous improvement maturity model (CIMM) assessment at Aquatera’s request. The assessment provided a detailed report emphasizing the gaps in the organization’s ability to move towards operational excellence.

Specific areas that required defined plans included: change management, standard work, visual controls, root cause and problem solving and leadership development. With this report, Aquatera’s CEO and senior leadership team oversaw significant changes and an agreed commitment to creating accountability across the organization.

The CIMM therefore provided the roadmap to establish Aquatera’s new way of conducting business -“The Aquatera Way.” With it, a 12-month plan was developed to set Aquatera on its journey towards establishing a culture of continuous improvement.

Initially four major projects were identified through Leading Edge Group’s CIMM report as high priority areas for improvement:

- 👍 Safety
- 👍 Governance
- 👍 Supply Chain Management
- 👍 Project management and new development processes

Six individual projects were identified in the scope of the safety program to address key wastes and improve safety outcomes:

1. Manager accountability and standard work
2. Standardizing incident prevention and root cause analysis
3. Just-in-time orientation and training
4. Standardizing systems and templates
5. Standardizing PPE and visual management
6. Supply Chain Management improvements



Fig. 3 - Development Project

The following are some of the key results achieved through the six projects:

- 👍 Safety audit scores have increased from 89% in 2016 to 96% in 2017
- 👍 Safety culture survey results increased from 3/5 to 4/5, with greatly reduced variability in the individual rankings
- 👍 The supply chain management project achieved annual savings of \$105,000
- 👍 Increased visual management and accountability in safety processes resulting in a sustained reduction in lost time and recordable injuries

A Lean strategy and deployment (Hoshin Kanri) pilot was conducted with the People Culture and Communications team, encompassing communications, safety, Lean and human resources, and a Hoshin Kanri training and education session was conducted with the board of directors.

👉 USE TOOLS DAILY 👈

In the spirit of continuous improvement, Aquatera drove constantly for the selection and use of best practice tools. Leading Edge Group worked with Aquatera to provide best practice tools and resources that were made available for Lean initiatives.



Fig. 4 - Value Stream Mapping Tool

MEASURE IMPROVEMENTS



Fig 5. - Plan, Do, Check, Act (PDCA)

Annual CEO strategic objectives were developed and cascaded across all work teams through the use of Hoshin Kanri.

In 2017 Aquatera established key performance indicators (KPIs) that are linked from the CEO scorecard to the front line. These KPIs are reviewed weekly through the use of visual management boards, weekly operational team huddles and problem solving.

TOTAL CALLS	504	OUTSTANDING SDO		ROOT CAUSE ANALYSIS + PROBLEM SOLVING	
ABANDONED CALLS < 2 MINS	14	OUTSTANDING ACCOUNTS (H)	20	Problem!! → 5 whys	
ABANDONED CALLS > 2 MINS	0	OUTSTANDING ACCOUNTS (S)	83K	↳ why?	
HCI within team	12%	SINCE OPS. REWORKED TO OPS	7	↳ why?	
HCI TO MANAGE	8%	MIS BUDGET	38%	↳ why?	
HCI to (CFO, CEO)	15%			↳ why?	
LEAN		ROOT CAUSE ANALYSIS		SAFETY	
JDs submitted (YTD)	25			Incidents	0
Lean Ideas submitted (YTD)	4			New losses	5
Rapid Improvement Events (YTD)	2			Corrective Actions Compl.	75%

Fig 6. - KPI Board



Fig 7. - KPI Board

ACTIONS AND RESULTS

To date, Aquatera has certified 95 percent of its employees with some level of Lean training; adopted the Lean strategy planning and deployment process (Hoshin Kanri); established visual management boards across all facilities and work teams and realized **cost savings of \$980,000**.

The Aquatera Way now provides a means for the organization to meet strategic objectives developed by the senior leadership team and approved by the Aquatera board of directors.

This paper shows how, in a short period of time, with the right structure and vision, and with senior management support, a small group of dedicated people can help to create change throughout an organization. The Aquatera Way has had an immediate and sustained impact and is recognized as the management system to achieve Aquatera's strategic goals.

Ongoing improvement will occur once teams naturalize the habit of practicing Lean daily management. Through the use of visual management boards with weekly review of targets and results - along with the implementation of 'Just Do Its' and rapid improvement events - teams have the autonomy and support to continuously improve while ensuring full alignment with the CEO's KPIs.

Aquatera’s goal is to achieve a Level 3 (Execute Processes) or higher on its next Leading Edge Group CIMM assessment.

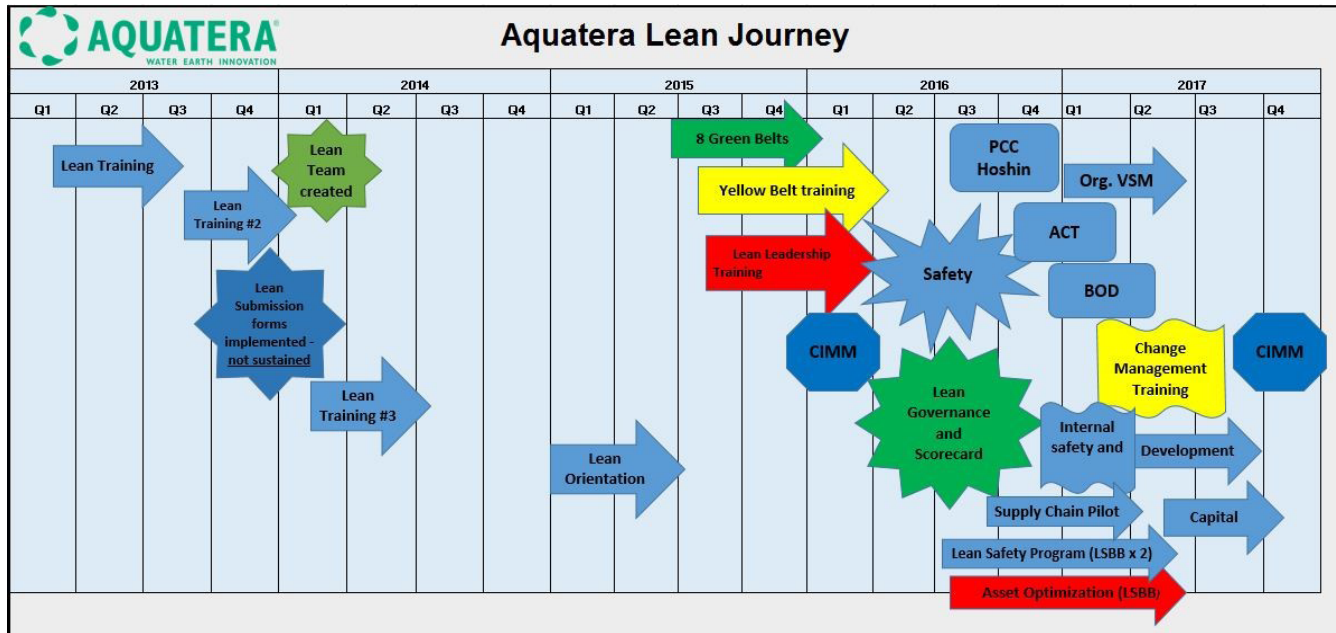


Fig 8. - Aquatera Lean Journey

CLOSING COMMENTS

Leading Edge Group was engaged by Aquatera to implement the Aquatera Way; solidifying a corporate culture based on best practice Lean philosophy and Aquatera values. This combination has established a relatable and sustainable management system for success.

Key to achieving this success was engaging the senior leadership team to define its vision, illustrating what was required and how it would be achieved. A culture change program such as the Aquatera Way needs time to implement and become ingrained. It requires the appropriate forums and capability development to involve all staff in the journey.

When undertaking such a large scale change, time needs to be dedicated at the beginning to plan and establish the framework; achieve effective stakeholder engagement; establish relevant accountability and communication and develop a support network to make it happen.

Any change - large or small - is dependent on key individuals and leaders until a point is reached where the new way is the only way. Therefore, it is important that change agents be selected very carefully at the outset; that accountabilities are clearly set and alignment with this corporate culture is an expected condition of employment.