



A Natural Attraction

5 Year Energy Management Plan

City of Quinte West

From: July 1 2014 to July 1 2019



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Commitment

- **Declaration of Commitment:** The City of Quinte West is COMMITTED to being the Leader in our Municipality in Energy Conservation, Demand Management and in the Reduction of our Carbon Footprint.

- **Vision:** Our VISION “To CREATE a CULTURE where ALL Employees of the City are aware of our consumption of Energy”.

We ENVISION that we will LEAD our COMMUNITY PARTNERS in this same direction and we will therefore help lower their CARBON FOOTPRINT as a direct result, thus; benefitting the City as a Whole.

- **Policy:** Incorporating Energy Conservation and Efficiency into everything we do will ensure we stay on the correct path. We will create Policy that will be adapted into our Purchasing Policies, Building Standards within the City, Facility Repairs, and all other areas within the City that comes into contact with Energy

- **Goals:** The City of Quinte West has an Overall Goal to create a Culture that is all inclusive for every employee within the City. The City also has a Goal to create a Steering Committee of Senior Management and Key Personnel together with members of the Public to ensure we always stay on this path.

- **Overall Target:** The City of Quinte West will reduce our consumption of Natural Gas by 2% per (ekWh/sqft) each year for a total of 10% from current 2014 consumption rates, and further reduce our 2014 Electricity consumption by an average of 10% per year per (ekWh/sqft) for a total of 50%.

- **Objectives:** The City of Quinte West has set the following as some of our Objectives both short and long term.

1. Create an Energy Conservation Steering Committee of City Employees, Council and Public Members.
2. Create an internal team structure for Energy Conservation that directly imitates the Health & Safety Structure where every department in every discipline has a Team that has input and responsibilities.
3. Create an internal Energy Conservation team structure in all City Departments that matches the Health & Safety Program
4. Create a Policy for Purchasing that will be adapted into all purchases for the City of Quinte West.
5. The City of Quinte West will set specifications on new buildings and renovations in regards to but not limited to; Lighting, HVAC, Insulation, Windows.
6. The City of Quinte West will leverage all LAS and Ministry Websites and Resources in attaining our Goals and Objectives.



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7. Through the use of Benchmarking, we will always compare ourselves to best in practice with the Objective of being the one others benchmark against.
8. Through the use of our data input that covers 4 years of consumption, we will use this data to trend each facility and group of like facilities to show declines, improvements and targeted areas for projects.
9. Over the next 5 years we the City of Quinte West will conduct Energy Audits on all Facilities that consume energy. These audits once performed will be conducted on each Facility every year thereafter.
10. To ensure we use latest knowledge we will use offered resources from our Local Colleges and Universities.
11. It is our intent to use whatever incentives are existing to help fund future projects and not just take what we can to the bottom line

Organizational Understanding

- **Our Municipal Energy Needs:** The City of Quinte West currently utilizes a combination of LAS Services and Spot Market Buying for all of our Energy use. We will continue with this practice while always looking for ways to utilize best practices.

- **Stakeholder Needs:** Internal stakeholders (Council, CAO, Staff) need to be able to clearly communicate the corporate commitment to energy efficiency, and to develop the skills and knowledge required to implement energy management practices and measures. External stakeholders (the Province, Community Citizens and Groups) need the municipality to be accountable for energy performance and to minimize the energy component of the costs of municipal services. We are going to accomplish this with our newly created Energy Conservation Steering Committee inclusive of the Public as well as with our internal "a Team in Every Department" approach.

- **Municipal Energy Situation:** We currently asses our Strengths, Weaknesses, Opportunities and Threats in the following way.

- ✓ Commitment = Strong
- ✓ Understanding = In Development
- ✓ Planning = In Development
- ✓ Execution = Opportunity
- ✓ Evaluation = Weak

- **How We Manage Energy Today:** Today the City of Quinte West places the responsibility of Energy Awareness and Conservation on each Senior Manager and in turn they on Staff with little or



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no knowledge or training. Each person tasked with purchasing or dealing with any energy use or device that may use energy does so in isolation.

- Summary of Current Energy Consumption, Cost and GHGs: The total energy consumption for the City of Quinte West can be found on our Website at:

https://icreate3.esolutionsgroup.ca/230636_QuinteWest_City/en/cityhall/energyconservation.asp

- Trends in Energy Consumption: As we are new to Energy Conservation and the tracking of it within City Facilities we are just now starting to look into trends. We have used local Loyalist College Students to input past data and we are now looking at our trends. More detail of this will be used in many of our decisions within the City.

- Summary of Current Technical Practices: It is too early in this journey to assess correctly our Current Use of Technical Practices, however; as we continue to develop our policies and practices, and as we update this 5 Year Plan we will be able to make this evaluation. At present we are doing projects such as a retro of our Street Lamps to LED, retro of our three (3) ice arenas to LED Lighting, installation of a Roof Top Solar Farm with another applied for, so we do have some evidence of Technical Practices, however in isolation and not part of a larger plan.

- Renewable Energy Utilized or Planned: The City of Quinte West will be the leaders in the promotion and development of renewable energy systems that are compatible with our asset management and land use planning objectives. As a result, we will investigate the potential to develop solar photovoltaic systems on the rooftops of all corporate facilities and any other means of developing green energy that we can responsibly incorporate.

Strategic Planning

- Links with other municipal plans: As an integral component of the Energy Steering Committee and Internal Energy Team Structure, the Energy Management Plan will be coordinated with the municipality's budget planning process, preventative maintenance plans, environmental management plan, and the overall asset management plan. We will also use Best Practice examples from other Municipalities in setting our direction.

Structure Planning

- Staffing requirements and duties: The City of Quinte West is going to incorporate a two level structure that will involve all level of life within the City and will also be inclusive to the Public. The City will create an Energy Steering Committee with various levels of Management, members of Council and with members of the Public. The City will also create a "Energy Team in Every Department" that will help spread the culture of awareness while allowing input into all decisions being made on Energy in the City.

- Consideration of energy efficiency for all projects: All Projects will have incorporated into them an Energy Use Category that will have to be considered and reported on as the City goes forward with policy.

Resources Planning



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- **Energy Leader:** Our Clear Leadership will come from the Energy Steering Committee who in turn will consider all inputs from the Energy Teams.
- **Energy Team:** The City will create an exact duplicate of our very successful Health & Safety Template of Teams and Structure. We will use our Energy Steering Committee as the Lead and in addition we will have Departmental Energy Teams where every employee of the City will have the opportunity to participate and have input into the way the City uses Energy and ways the City can conserve energy.
- **Key Individuals:** The City of Quinte West will solicit key individuals from the Public to join our Energy Steering Committee. In addition the City will call on and utilize industry sector experts as required.
- **Energy Training:** We will develop and deliver energy training for relevant staff and Council members. This training will not be limited to operators and maintainers with "hands-on" involvement with energy consuming equipment but will also include others since they also make energy consumption decision in their daily work. Training focused on the energy use and conservation opportunities associated with employees job functions will be utilized whenever possible.

Procurement Planning

- **Energy Purchasing:** We will continue to look into the negotiation of energy purchase contracts that appropriately addresses our cost considerations, available energy services, energy quality and reliability, and other performance factors. We will continue to work closely with the AMO and LAS Services to ensure we are getting the best possible rates available as well as continuing to use the Ministry as a valuable resource center.
- **Consideration of energy efficiency for all projects:** We will incorporate life cycle cost analysis into the design procedures for all capital projects.
- **Consideration of energy efficiency of acquired equipment:** Our purchasing procedures will be modified as required to incorporate energy efficiency into the criteria for selection of materials and equipment.

Implementation Planning

- **Building Standards:** We will develop criteria for the design and/or acquisition of new buildings that include energy performance factors and that use as appropriate the principles embedded in performance standards such as LEED and the Model National Energy Code for Buildings
- **Communication Programs:** The City of Quinte West will use all communication avenues available to it to effectively relay all efforts towards energy Conservation. In addition to this we will use those same communication avenues as a two way street soliciting ideas and comments from all those that use it.

Investment Planning



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- Creative Approaches:

We will investigate and document options for the implementation of energy projects that utilize public-private partnerships, creative financing arrangements including energy performance contracting, and other creative approaches.

We will look into the possibility of utilizing Energy Rebate and Incentives to finance future Energy Conservation Projects.

Implementation Planning

- **Business Procedures:** Through the use of a Purchasing Policy developed by our Staff Energy Teams and our Energy Steering Committee we will set the direction for all City Controlled Processes that touches on Energy Use.

Projects Execution

- **Municipal Level:** The City of Quinte West will examine and follow through with any required development of business procedures and communication programs and implement them according to appropriate planned time lines and within the resource and time constraints that apply.

- **Asset Level:** The City of Quinte West will use our Energy Teams along with appropriate Staff and Management to facilitate the implementation of facility level business procedures and communication initiatives, including energy performance reporting. In addition and from time to time, the City may engage third parties and Students to help with implementation actions and energy reporting.

Review

- **Energy Plan Review:** The City of Quinte West will review and evaluate our energy plan, revising and updating it as necessary, on an annual basis within our corporate planning process. We will also use this plan at all levels within the City especially at the Steering Committee Level which will meet Bi-Monthly. If a need should arise to alter the plan before the annual review we will follow proper protocol and ensure we make the change.

- **Discussion of Progress:** We will correlate our progress towards corporate goals and objectives, and update those goals and objectives accordingly.

Evaluation Progress

- **Energy Consumption:** Our energy consumption in 2011 was our first measurement. We have endeavoured to enter past data through the use of College Students so that we can trend our data. At the time of this report we do not have that information or measurements. We will create a complete procedure and outline for trend and reporting on energy consumption within the City.

- **Green House Gas Emission:** Our greenhouse gas emissions in 2011 was our first measurement. We have endeavoured to enter past data through the use of College Students so that we can trend our data. At the time of this report we do not have that information or measurements. We will create a complete procedure and outline for trend and reporting on energy consumption within the City.



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- **Cost:** We have reduced our energy costs by 5% in absolute terms, in the face of marginal increases in energy prices, but only through the use of prudent purchasing policies and efforts. As we go forward we will complement those efforts with actual energy savings.



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Programs

Description	Facility	Contact	Date	Status
Steering Committee	City Hall	Bob Forder , Manager Buildings & Facilities	2014-06-30	Active
Details	<p>Recommendation:</p> <p>It is the recommendation of Staff that an Energy Conservation and Demand Management Planning Advisory Committee be formed:</p> <hr/> <p>Background:</p> <p>It is the recommendation of Staff that an Advisory Committee be formed for the purpose of:</p> <p>Create and then Lead an Environment that will Facilitate:</p> <ul style="list-style-type: none"> ▪ Changing the Culture for Staff and the Public on: <ul style="list-style-type: none"> • How we currently use Energy • How we could better use our Energy in the Future • How we purchase items that consumes Energy • How we can reduce our Carbon Footprint • How we Gather Data and Report Data as it relates to Energy Conservation and Demand Management Plans. • How we communicate successes and failures to Staff and the Public. <p><u>In other words:</u></p> <p>This Steering Committee would have the task of:</p> <ul style="list-style-type: none"> ❖ Leading our Municipality in Energy Conservation and Demand Management Planning ❖ Creating a Culture that will follow the Sustain Path of: <ul style="list-style-type: none"> ✓ Commit ✓ Understand ✓ Plan ✓ Execute 			



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- ✓ Evaluate
- ✓ Recognize Achievement.

To accomplish the above mentioned tasks would take a multi-step process.

- 1) The formation of the Upper Tier Advisory committee possibly consisting of:
 - a. Councillor(s)
 - b. Chief Administrator Officer
 - c. Manager of Buildings and Facilities
 - d. Director of Planning and Development Services
 - e. Director of Public Works and Environmental Services
 - f. Director of Corporate and Financial Services
 - g. Manager of Corporate Services
 - h. Fire Chief
 - i. Supervisor Arena Operations
 - j. CEO Quinte West Library
 - k. Manager of Human Resources
 - l. Administrative Assistant
 - m. Manager of Water / Waste Water Services
 - n. Manager of Outdoor Operations Public Works & Environmental Services
- 2) Once formed this committee would need to:
 - a. Make decisions on Chair Position
 - b. Create a Vision / Mission Statement for the City
 - c. Create a Purpose Statement with Core Values for the Committee
 - d. Create a Future Value Stream Map to plan on
 - i. How to roll out the Vision
 - ii. What and Who the Vision Statement will effect and involve.
 - iii. How and When the Public will be included.
- 3) Communicate and Present the Vision, Purpose and Core Values along with the plan to all stakeholders
- 4) Put the plan into effect.
- 5) Meet regularly to
 - a. Manage and direct the process
 - b. Set priorities for actions and projects
 - c. Remove barriers that exit that will hinder the progress.



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Purchasing Policy	City Hall	Bob Forder , Manager Buildings & Facilities	2014-12-31	Active
Details	<p>1) We must have a Procurement Policy in regards to Energy Management and Conservation. This policy must have the input from all departments and cover all aspects of purchasing energy consuming items as well as any energy conserving items.</p> <p>a. All purchases of equipment that consumes energy should have as mandatory prior to placing the purchase order:</p> <ol style="list-style-type: none"> i. Life Cycle Analysis ii. Before and After consumption data <ol style="list-style-type: none"> 1. This data has to be reported to the Advisory Committee for updating public data. <p>b. We need to set specifications on new buildings and renovations in regards to</p> <ol style="list-style-type: none"> 1. Lighting 2. HVAC 3. Insulation 4. Windows 5. Etc... 			
Building Policy	City Hall	Bob Forder , Manager Buildings & Facilities	2014-12-31	Pending
Details	<p>Create a Policy that guides Staff and Council towards energy conservation on all new builds and extensive building renovations. This policy would stipulate what components would come under the guidance of an Energy Conservation Plan and Strategy.</p>			
Lunch and Learns	City Hall	Bob Forder , Manager Buildings & Facilities	2014-09-30	Pending
Details	<p>Using available resources and third party partnerships, host Staff and Public Lunch and Learns</p>			



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Projects

Description	Facility	Contact	Start	End	Status	Cost	Save (ekWh/yr)	Save (\$)	ROI
Frankford Arena LED Lights Retro	Frankford Arena	Bob Forder , Manager Buildings & Facilities	2014-06-26	2014-09-30	Active [5%]	40000.00	54,148	8122.2	4.9
Details	Replace all Ice Related Light fixtures with an LED System								
Trenton Arena Pad 1 LED Retro	Trenton Arena	Bob Forder , Manager Buildings & Facilities	2014-06-26	2014-09-30	Active [5%]	71000.00	47,766	7165.00	10
Details	Replace all Ice Related Light fixtures with an LED System								
Trenton Arena Pad 2 LED Retro	Trenton Arena	Bob Forder , Manager Buildings & Facilities	2014-06-26	2014-09-30	Active [5%]	42000.00	52,000	7800.00	5.3
Details	Replace all Ice Related Light fixtures with an LED System								
Trenton Arena Chiller Replacement	Trenton Arena	Bob Forder , Manager Buildings & Facilities	2014-05-01	2014-06-26	Completed [100%]	118000.00	56,000	8400.00	14
Details	Replace Chiller Unit for Pad 1 Trenton Arena								



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Street Lamp LED Retro	Street Lights	Chris Angela, Director Public Works	2014-06-30	2014-10-31	Pending [0%]	1500000.00	0	0.00	0
Details	Retro all Street Lamps in the City of Quinte West with LED								
Bayside Water Plant Solar Roof	Bayside WTP	Bob Forder , Manager Buildings & Facilities	2014-02-03	2014-06-18	Pending [0%]	1000000.00	0	150000.00	7
Details	Apply for and gain approval to install a Solar Farm on the roof of the Bayside Water Treatment Plant								
Comfort Station	Centennial Park	Chris Angela, Director Public Works	2014-06-16	2014-08-29	Active [10%]	6000.00	12300	1845.00	3
Details	Install LED Lighting in the new Centennial Park Comfort Station. This is a new building that was slated and designed for T8 Fixtures. will our newly formed culture this design has been changed to now include all LED Lighting.								
Frankford Arena Solar Roof	Frankford Arena	Bob Forder , Manager Buildings & Facilities	2013-06-16	2014-01-14	Completed [100%]	1,600000.00	238,000,000.00	170000.00	9.4
Details	Crated a Solar Panel 255Kw System by installing a Grid of Solar Panels attached to 16 Inverters producing a maximum of 192 KwP. This power is on a FIT contract and is fed into the grid. We are projecting a green production equal to a reduction of over 134 Tonnes of CO2 per year.								