



# PROCUREMENT OF LED STREETLIGHTS IN ONTARIO

A Survey

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## Introduction & Methodology

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### 1) Introduction

The Ontario Power Authority (OPA) has funded the Canadian Urban Institute (CUI) to undertake *LightSavers Ontario: Accelerating Adoption of LEDs and Adaptive Controls in Outdoor Lighting (Phase III)*. The project encompasses seven milestones, five of which have been completed successfully and submitted to the OPA. Milestone #4 aims to assess the feasibility of group or centralized procurement of LED streetlights in Ontario. Milestone #7 provides a final tracking and fundraising report, assessing the progress of LED streetlight luminaire adoption using the framework established in Milestone #6 as a guide.

In order to complete the two milestones, #4 and #7, CUI recently undertook, in consultation with the Ontario Streetlighting Focus Group, a survey of Ontario municipal streetlighting managers. The survey had two purposes:

- 1) To assess the current status of municipal LED streetlight readiness and procurement in Ontario, and;
- 2) To ascertain interest among municipal lighting managers in potentially participating in a group or centralized LED streetlight procurement initiative in Ontario.

This report summarizes the results of the survey, which was sent to 60 municipalities, among whom 31 municipalities answered. Those who responded own approximately 463,000 streetlights or about 36 percent of the total municipal asset across Ontario, which total about 1.3 million streetlights according to a recent ICF Marbek study. The results include: the relative readiness of the responding municipalities to undertake LED streetlight conversions in the next year; remaining concerns about such upgrades; relative interest in centralized procurement; and other matters such as responsiveness to OPA rebates and interest in adaptive controls. Insights drawn from the survey apply to the 31 municipalities who responded, not the remaining 29 municipalities who did not respond.

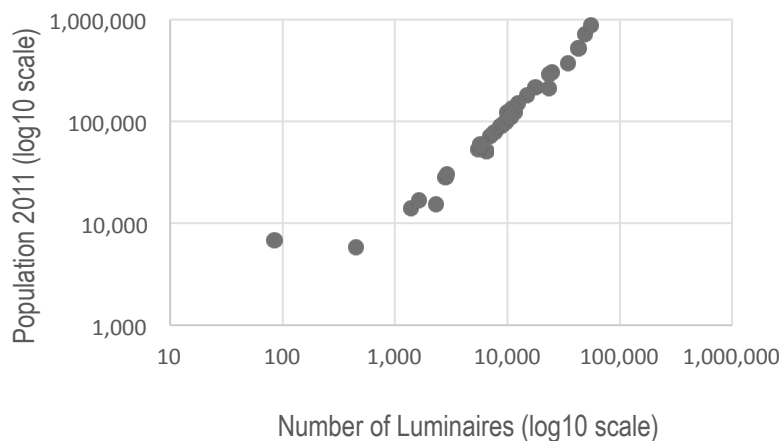
It is hoped that this report will assist the OPA and its stakeholders in determining where there is need for further activity related to municipal procurement to accelerate adoption of energy saving LED streetlighting across the province.

## 2) Methodology

Online surveys were sent by email to members of the Ontario Streetlighting Focus Group. This group largely comprises streetlight asset managers, but also includes transportation managers, traffic operations technologists, energy managers, and sustainability managers. The Group's membership favours southern Ontario, where travel to periodic meetings is feasible. Follow-up phone calls were done to ensure the accuracy of responses and to increase the response rate. CUI staff contacted all 60 municipalities by email or phone call or both. Non-respondents were called as many as three times. The survey was launched on October 20, 2014 and closed on November 11, 2014. Those municipal respondents who participated in the survey are listed in Appendix A. The survey itself is included as Appendix B.

A total of 31 municipalities located largely in southern Ontario responded to the online survey, a 52 percent response rate. These 31 municipalities own and operate an estimated 463,310 streetlight luminaires or 36 percent of Ontario's total streetlight luminaires, and have a population of 5,622,651 or 44 percent of Ontario's total population (2011).

**Figure 1: Distribution of Streetlight Luminaires by Population (2011 census)**



In the case of many municipalities, the number of streetlight luminaires available for conversion to LED was based on data collected directly from municipalities in 2012 as part of *Milestone #6*. When data was not available, we applied a per capita estimation method supported by US DOE Municipal Solid State Lighting Consortium research and employed by ICF Marbek in a recent study. These studies found a nearly linear relationship between municipal population and the number of luminaires. This approach is illustrated in Figure 1 above for Ontario municipalities by using the ratio of 0.01 lamps per person. To better quantify the municipal street lighting asset base, additional research would be required to produce sufficient data to verify these approaches.

A breakdown ranking by area code follows in Table 1 below and confirms the bias among the respondents to southern Ontario, and especially the GTA:

**Table 1—Respondents by area code**

Area code	Number of respondents	% of total
519	5	16.1%
613	2	6.5%
705	3	9.7%
905	15	48.4%

The remaining six municipalities did not provide an area code in their response. The municipal respondents are characterized by various population sizes, i.e., 23 percent had a population of less than 50,000; 45 percent, a population between 50,000 and 150,000; and 32 percent, greater than 150,000 (see Table 2 below).

**Table 2—Respondents by population**

Size of municipality	Number of respondents	% of total
Population ≤ 50,000	7	22.6%
50,001 > Population < 150,000	14	45.2%
150,000 ≥ Population	10	32.3%

Toronto Hydro, which owns the City of Toronto’s streetlights, did not respond to the survey, as their staff were preoccupied with a Request for Proposal (RFP) to purchase LED streetlights and adaptive controls. Nevertheless, internal discussions aimed at converting Toronto’s streetlights to LEDs are underway. A joint Toronto Hydro-City of Toronto staff committee is considering various options for a scale-up strategy.

### 3) Results

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#### Question 3: What is the status of your municipality's conversion to LED streetlights?

The respondents were asked to select the statement that best represents the status of their municipality's conversion to LED streetlights. All 31 municipalities answered the question. They own and operate an estimated 463,310 streetlight luminaires.

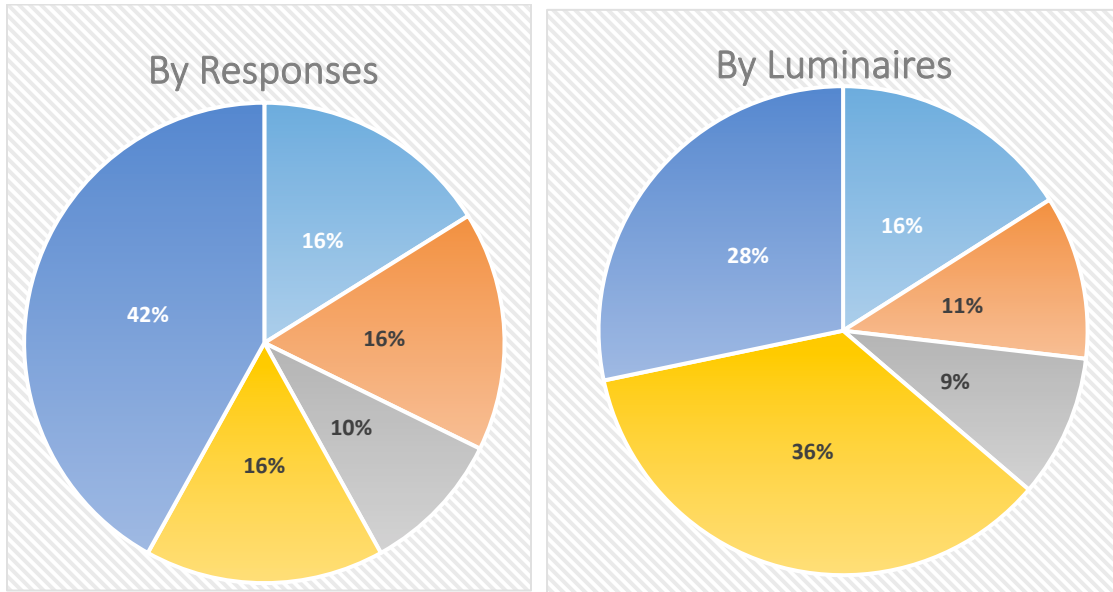
About 42 percent of the respondents reported that they have already installed or are beginning to install LED streetlights, 28 percent of the total luminaires in the sample size, or 130,949. An additional 16 percent of respondents who own 36 percent of the streetlight luminaires reported that they are or will soon undertake a request for Information (RFI) or Request for Purchase (RFP) of LED streetlights.

The results indicate that respondents representing about 64 percent of the streetlights, or 295,289 luminaires, are undergoing conversion to LEDs or will in the imminent future (see Table 3 and Figure 2 below). However, only 10 percent of the respondents indicated that council or senior management have formally approved a LED streetlight scale-up plan, representing 43,684 luminaires. Smaller municipalities appear to be leading medium and larger sized municipalities. These data indicate that acceptance of LED technology appears to be well underway in southern Ontario among the respondents to the survey, with actual adoption likely to follow.

**Table 3—Status of conversion to LED streetlights**

Question 3	No. of responses	% of total	No. of luminaires	% of total
We are studying the situation but are not yet fully committed to conversion to LEDs.	5	16.1%	74,151	16.0%
We are doing LED trials or demonstration project(s) to see how they perform.	5	16.1%	50,185	10.8%
Council or senior management have approved a LED streetlight scale-up plan.	3	9.7%	43,684	9.4%
We are or will soon undertake a RFI or RFP to procure LED streetlights.	5	16.1%	164,340	35.5%
We have already installed or are beginning to install LED streetlights.	13	41.9%	130,949	28.3%

**Figure 2—Pie Chart comparison: Responses by equal weight vs. luminaires**



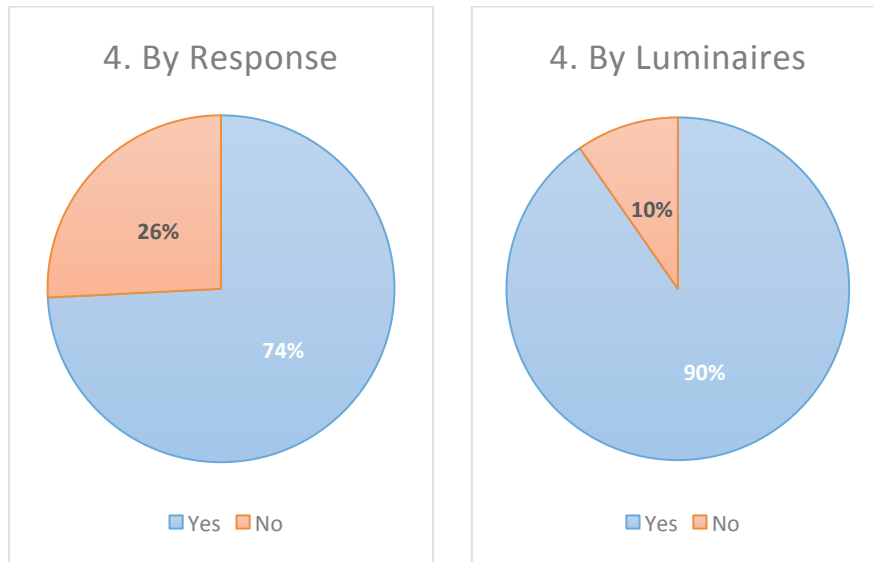
**Question 4: Part One—Are you aware of the new OPA saveONenergy financial incentives for energy efficient streetlighting?**

This question was answered by all 31 respondents. About 26 percent of the respondents were unaware of the OPA’s incentives. However, further analysis indicates that 75 percent of the “No” responses came from respondents that collectively own only 10 percent of the streetlight luminaires in the sample. (See Table 4 and Figure 3 below.)

**Table 4—Awareness of OPA saveONenergy financial incentives**

Are you aware of the new OPA saveONenergy financial incentives?	No. of responses	% of total
Yes	23	74.2%
No	8	25.8%

**Figure 3—Pie Chart comparison: Equal weight vs. Luminaires**



**Question 4: Part Two—4.2, if your answer is YES, then indicate how the new incentives might influence your municipality:**

All 23 respondents who answered “Yes” to Part One responded to this question, representing about 370,125 luminaires. Nearly half of the respondents indicated a favourable response to new incentives—they will speed up adoption locally. However, respondents representing about a third of the luminaires were unsure how incentives would affect their streetlight planning.

**Table 5—Influence of new OPA incentives**

Question 4.2	Respondents who said YES			
If your answer is YES, then indicate how the new incentives might influence your municipality:	No. of responses	% of total	No. of luminaires	% of total
I need to learn more about the incentives	4	17.4%	74,684	20.2%
The incentives will speed up our scale-up of LED streetlighting—we don't want to lose this opportunity	10	43.5%	165,817	44.8%
The incentives may slow down our scale-up of LED streetlighting—it will take time to apply for them	0	0.0%	0	0.0%
I'm not sure how the incentives will affect our LED streetlighting planning	9	39.1%	129,624	35.0%

**Question 5: Rank your concerns about undertaking a LED streetlight retrofit.**

Respondents were asked to rate each concern using a scale of 1 to 5, with 5 expressing the highest concern. This question received a 90 percent response rate or a sample size of 28 for three concerns and 29 for seven concerns, representing 403,976 luminaires (for 29 concerns).

Among the ten concerns, *“Our municipal budget is tight”* ranked as the highest concern by far, with *“Ontario’s electricity rate structure may not allow full energy savings”* in second place. The next two highest concerns were: *“LED luminaires are expensive”* and *“LED luminaires may not last as long as claimed.”* In contrast, respondents were less concerned about whether the price of LED luminaires would fall further or whether they needed more information on the business case. (See Table 6 below for a detailed breakdown of responses.)

In our analysis of the results for Question #5, we used both mean and median values to rank the respondents’ concern about undertaking LED streetlight retrofits. The mean value is an average of all the data received by respondents for a particular concern. The median numerical value, on the other hand, separates the higher half of a data sample from the lower half, militating against a skewed result if the distribution is wide, as it seemed to be in this case.



**Table 6—Concerns of undertaking LED streetlight retrofit: ratings by luminaires**

Question 5: Rank your concerns about undertaking a LED streetlight retrofit.			Ratings by luminaires				
	Mean (1-5)	Median (1-5)	1	2	3	4	5
5.1. LED luminaires are expensive	2.8	3.0	8%	25%	35%	17%	15%
5.2. The technology still has room to improve.	2.4	2.0	18%	44%	21%	16%	1%
5.3. LED luminaires may not last as long as claimed.	2.8	3.0	20%	24%	32%	6%	18%
5.4. LED luminaires may not meet the new IESNA RP-8 or TAC standards to which our municipality adheres.	2.7	3.0	30%	2%	53%	14%	1%
5.5. Our municipal budget is tight.	3.9	4.5	1%	12%	15%	25%	47%
5.6. LED luminaires are complex to procure.	2.6	2.0	23%	53%	4%	13%	6%
5.7 Not sure of the best way to scale up.	2.1	2.0	45%	31%	16%	6%	2%
5.8. Need more information on the business case.	2.1	2.0	59%	18%	11%	10%	2%
5.9. LED prices are coming down, so it's best to wait.	1.8	2.0	54%	30%	14%	3%	0%
5.10. Ontario's electricity rate structure may not allow full energy savings from LED streetlighting.	3.4	4.0	4%	7%	24%	40%	26%

Table 7 below shows the lowest four concerns indicated by municipalities when procuring LED streetlights. Close to 80 percent of the respondents provided a 1-to-2 rating for these concerns, representing 335,436 luminaires or about 72 percent of the sample size's total luminaires. Among these concerns are: falling LED prices, knowledge of scale-up processes, need for information about the business case, and the complexity of procurement. Two years ago, Ontario municipal staff often cited these very concerns as key barriers to LED streetlight scale-up. The fact that these now appear as low concerns in this survey indicate broadening acceptance of LED streetlighting, at least among respondents to the survey.

**Table 7—Lowest concerns to respondents**

Question 5 concerns (ratings by luminaires):	1	2	3	4	5
5.6. LED luminaires are complex to procure.	23.1%	53.3%	4.2%	13.1%	6.2%
5.7 Not sure of the best way to scale up.	44.9%	31.0%	15.6%	6.4%	2.1%
5.8. Need more information on the business case.	58.7%	18.0%	10.7%	10.5%	2.1%
5.9. LED prices are coming down, so it's best to wait.	53.5%	30.1%	13.6%	2.8%	0.0%

**Question 6—Please evaluate the following statements:**

In section six of the survey, respondents were asked to evaluate six statements with an answer of “Yes”, “No” or “Maybe”. This section received a 94 percent response rate representing about 403,976 luminaires.

These six questions focus especially on the responding municipality’s readiness to adopt LED streetlighting as seen in Table 8 below, with five questions directed especially at aggregate or centralized procurement. Table 8 summarizes the results, with percentages of the total respondents given to the right of the number of respondents.

**Table 8—Breakdown of responses to Question 6**

Question 6: Please evaluate the following statements:	Yes		No		Maybe	
	Count	Percentage	Count	Percentage	Count	Percentage
6.1 In the next year our municipality will procure LED streetlighting to begin retrofit of its streetlighting assets.	17	58.6%	4	13.8%	8	27.6%
6.2 Our municipality would consider joining a centralized procurement initiative, assuming we can access multiple LED products, avoid sole sourcing, and are free to make our own purchase agreement with the vendor.	14	48.3%	7	24.1%	8	27.6%
6.3 Our procurement procedures are very restrictive and probably wouldn't permit us to undertake centralized procurement.	2	6.9%	13	44.8%	14	48.3%
6.4 Bundling low interest, fast track financing in a centralized procurement package would make it attractive.	14	48.3%	7	24.1%	8	27.6%
6.5 Since our streetlighting assets are fairly large, we wouldn't expect much cost reduction benefit from centralized procurement.	3	10.3%	11	37.9%	15	51.7%
6.6 Our municipality is aware of one or other similar services in the Ontario market and has entered or may enter a relationship with them.	8	27.6%	13	44.8%	8	27.6%

Question 6.1 is similar to Questions 3.4 and 3.5, and the results appear to reinforce each other. In Question 6.1, 17 municipalities representing about 247,936 luminaires indicated they were procuring LED streetlights to begin their scale-up. In Questions 3.4 and 3.5, a total of 18 municipalities owning about 295,289 luminaires indicated they have already begun installing or will soon undertake a RFI or RFP to procure LED streetlights. While the questions are worded slightly differently, the results appear to

indicate that adoption of LED streetlights is proceeding among respondents representing 250,000 – 300,000 streetlights, or 23-to-27 percent of the province’s municipal streetlights.

**Table 9—Responses to question 6.1**

<b>Question 6.1: In the next year our municipality will procure LED streetlighting to begin retrofit of its streetlighting assets.</b>					
<b>Yes</b>		<b>No</b>		<b>Maybe</b>	
<b>City</b>	<b>Luminaires</b>	<b>City</b>	<b>Luminaires</b>	<b>City</b>	<b>Luminaires</b>
Ajax	10,686	Kingston	10,077	Brampton	42,550
Barrie	11,115	Halton Region	5,753	Markham	25,232
Bradford West Gwillimbury	9,131	Township of Douro Dummer	85	Oakville	15,000
Caledon	5,797	Waterloo	9,631	Oshawa	12,293
Fort Erie	2,921			Pickering	8,650
Hamilton	43,528			Sarnia	7,056
Kitchener	17,902			Sault Ste. Marie	1,375
LaSalle	2,793			Vaughan	23,551
London	35,010				
Niagara-on-the-Lake	2,308				
Ottawa	55,473				
Peterborough	7,673				
Selwyn Township	1,642				
Southwest Middlesex	446				
Welland	6,492				
Whitby	11,674				
Windsor	23,345				
<b>TOTALS</b>	<b>247,936</b>		<b>25,546</b>		<b>135,707</b>

Table 10 below summarizes the results to Question 6.2. Almost half the respondents representing 220,569 streetlights indicated Yes, they would consider joining a centralized procurement initiative, defined as one that offers municipalities multiple choices of vendors and products, as well as the freedom to make their own individual purchase agreements with the vendor. Positive respondents included medium and large sized municipalities such as London, Brampton, Oakville, Oshawa, Waterloo, and Ottawa.

The towns or cities answering *No* have either completed major retrofits, such as Welland and Kingston, or have already completed procurement and are in the process of retrofitting their assets in a staged approach, such as Hamilton. Windsor will undertake an RFP very soon. Among the municipalities indicating *Maybe*, Markham has already completed a retrofit of its cobra style streetlights with LED luminaires. Its decorative streetlights, however, remain.

**Table 10— Responses to Question 6.2**

Question 6.2: Our municipality would consider joining a centralized procurement initiative.					
Yes		No		Maybe	
City	Luminaires	City	Luminaires	City	Luminaires
London	35,010	Welland	6,492	Caledon	5,797
Ajax	10,686	Hamilton	43,528	Kitchener	17,902
Barrie	11,115	Kingston	10,077	LaSalle	2,793
Bradford West Gwillimbury	9,131	Southwest Middlesex	446	Markham	25,232
Brampton	42,550	Township of Douro Dummer	85	Peterborough	7,673
Fort Erie	2,921	Whitby	11,674	Pickering	8,650
Halton Region	5,753	Windsor	23,345	Sault Ste. Marie	1,375
Niagara-on-the-Lake	2,308			Vaughan	23,551
Oakville	15,000				
Oshawa	12,293				
Ottawa	55,473				
Sarnia	7,056				
Selwyn Township	1,642				
Waterloo	9,631				
<b>TOTALS</b>	<b>220,569</b>		<b>95,647</b>		<b>92,973</b>

Table 11 below summarizes the results to Question 6.3, which probed whether existing procurement procedures in the municipalities would prevent them from undertaking centralized procurement. While only two municipalities indicated *No* in response to this question, 14 municipalities representing 265,674 streetlights indicated their existing procurement procedures might limit their ability to participate in centralized procurement. They answered *Maybe*. Half representing 130,625 streetlights also had indicated an interest in participating in centralized procurement. Hence, these particular

municipalities, among them large ones such as Brampton and Ottawa, might not be able to follow through on their interest in centralized procurement due to the possibly restrictive nature of their own procurement policies, according to these survey results.

**Table 11—Responses to Question 6.3**

6.3 Our procurement procedures are very restrictive and probably wouldn't permit us to undertake centralized procurement.					
Yes		No		Maybe	
Municipality	Luminares	Municipality	Luminares	Municipality	Luminares
Fort Erie	11,115	Barrie	11,115	Ajax	10,686
Whitby	11,674	Bradford West Gwillimbury	9,131	Brampton	42,550
		Douro Dummer	85	Caledon	5,797
		Halton Region	5,753	Hamilton	43,528
		Kingston	10,077	Markham	25,232
		Kitchener	17,902	Niagara-on-the-Lake	2,308
		LaSalle	2793	Ottawa	55,473
		London	35,010	Pickering	8,650
		Oakville	15,000	Sarnia	7,056
		Oshawa	12,293	Sault Ste. Marie	1,375
		Peterborough	7,673	Vaughan	23,551
		Selwyn Township	1,642	Waterloo	9,631
		Southwest Middlesex	446	Welland	6,492
				Windsor	23,345
<b>TOTALS</b>	<b>22,789</b>		<b>128,920</b>		<b>265,674</b>

Table 12 below summarizes the results to Question 6.3, which asked whether bundling low interest financing into a centralized procurement initiative would increase its attractiveness. Fourteen largely small and medium sized municipalities representing 107,111 streetlights indicated that low interest, fast track financing would indeed increase the attractiveness of centralized procurement. Seven municipalities representing 188,5452 streetlights indicated *No*. These were mostly large municipalities that likely have relatively easy access to low interest financing through their annual capital budgets.

**Table 12—Responses to Question 6.4**

<b>6.4. Bundling low interest, fast track financing in a centralized procurement package would make it attractive.</b>					
<b>Yes</b>		<b>No</b>		<b>Maybe</b>	
<b>Municipality</b>	<b>Luminaires</b>	<b>Municipality</b>	<b>Luminaires</b>	<b>Municipality</b>	<b>Luminaires</b>
Barrie	11,115	Ajax	10,686	London	35,010
Bradford West Gwillimbury	9,131	Brampton	42,550	Markham	25,232
Caledon	5,797	Hamilton	43,528	Pickering	8,650
Douro Dummer	85	Kingston	10,077	Sault Ste. Marie	1,375
For Erie	2,921	LaSalle	2,793	Selwyn Township	1,642
Halton Region	5,753	Ottawa	55,473	Vaughan	23,551
Kitchener	17,902	Windsor	23,345	Welland	6,492
Niagara-on-the-Lake	2,308			Whitby	11,674
Oakville	15,000				
Oshawa	12,293				
Peterborough	7,673				
Sarnia	7,056				
Southwest Middlesex	446				
Waterloo	9,631				
<b>TOTALS</b>	<b>107,111</b>		<b>188,452</b>		<b>113,626</b>

Table 13 summarizes the responses to Question 6.5, which sought to identify municipal expectations about price and whether centralized procurement might provide them with a significant cost reduction in LED streetlight luminaires. All of the large municipalities indicated they would or might not expect much cost reduction. Due to their ability to purchase LED streetlights in larger quantities, this result is not surprising. It was mostly the smaller municipalities that indicated they would expect a cost reduction.

However, in retrospect, this question appears poorly worded, as it seems to address only municipalities with fairly large streetlight assets. Smaller municipalities, nevertheless, responded.

**Table 13—Responses to Question 6.5**

<b>6.5 Since our streetlighting assets are fairly large, we wouldn't expect much cost reduction benefit from centralized procurement.</b>					
<b>Yes</b>		<b>No</b>		<b>Maybe</b>	
<b>Municipality</b>	<b>Luminaires</b>	<b>Municipality</b>	<b>Luminaires</b>	<b>Municipality</b>	<b>Luminaires</b>
Hamilton	43,528	Bradford West Gwillimbury	9,131	Ajax	10,686
Kingston	10,077	Caledon	5,797	Barrie	11,115
Ottawa	55,473	Douro Dummer	85	Brampton	42,550
		Fort Erie	2,921	Kitchener	17,902
		Halton Region	5,753	London	35,010
		LaSalle	2,793	Markham	25,232
		Oakville	15,000	Niagara-on-the-Lake	2,308
		Oshawa	12,293	Pickering	8,650
		Peterborough	7,673	Sarnia	70,56
		Selwyn Township	1,642	Sault Ste. Marie	1,375
		Southwest Middlesex	446	Vaughan	23,551
				Waterloo	9,631
				Welland	6,492
				Whitby	11,674
				Windsor	23,345
<b>TOTALS</b>	<b>109,078</b>		<b>63,534</b>		<b>229,647</b>

As for question 6.6, a surprising number of medium sized cities were unaware that another centralized procurement service exists in Ontario (see table 14 below). The Association of Municipalities of Ontario (AMO) through its LAS subsidiary and in partnership with RealTerm Energy offers such a service and has already signed up 80 plus municipalities across Ontario representing about 56,000 luminaires. Since the AMO/LAS service is widely known across the province, it may be that the lighting managers who responded to this survey did not identify “centralized procurement,” as defined in this survey, with the AMO/LAS service.

**Table 14— Breakdown of responses to Question 6.6**

<b>Question 6.6: Our municipality is aware of one or other similar services in the Ontario Market and has entered into a relationship with them.</b>					
<b>Yes</b>		<b>No</b>		<b>Maybe</b>	
<b>City</b>	<b>Luminares</b>	<b>City</b>	<b>Luminares</b>	<b>City</b>	<b>Luminares</b>
Kitchener	17,902	Ajax	10,686	Fort Erie	2,921
London	35,010	Barrie	11,115	Markham	25,232
Bradford West Gwillimbury	9,131	Brampton	42,550	Niagara-on-the-Lake	2,308
LaSalle	2,793	Caledon	5,797	Oakville	15,000
Ottawa	55,473	Halton Region	5,753	Peterborough	7,673
Selwyn Township	1,642	Hamilton	43,528	Pickering	8,650
Southwest Middlesex	446	Kingston	10,077	Sault Ste. Marie	1,375
Windsor	23,345	Oshawa	12,293	Vaughan	23,551
		Sarnia	7,056		
		Township of Douro Dummer	85		
		Waterloo	9,631		
		Welland	6,492		
		Whitby	11,674		
<b>TOTALS</b>	<b>145,742</b>		<b>176,737</b>		<b>86,710</b>

**Question 9—Do you plan to procure adaptive controls as a part of your eventual LED streetlighting scale-up?**

This question was asked to prepare for an adaptive controls workshop organized by LightSavers on December 2, 2014. Networked adaptive controls offer 20-to-30 percent additional energy savings when paired with LED streetlight luminaires. In addition, they offer a number of features that substantially increase the functionality of streetlight systems.

Among the 23 respondents, 39 percent plan to eventually procure adaptive controls to their LED streetlighting scale-up, representing a total of 219,441 streetlights across Ontario, while 35 percent do not plan to acquire adaptive controls, representing a total of 80,641 streetlights across Ontario. This indicates a somewhat positive outlook for



adaptive controls, though if their benefits were more widely known—and financial incentives were available—the adoption outlook might be better.

**Figure 6.1—Procurement of adaptive controls**

9. Do you plan to procure adaptive controls as a part of your eventual LED streetlighting scale-up?					
Yes	9	No	8	Need more information	6

## 4) Conclusion

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This survey report provides insight on the current state of LED streetlight adoption and procurement in 31 Southern Ontario municipalities, who own and operate about 39 percent of the province’s 1.3 million municipal streetlights. Among the respondents were some of Ontario’s largest municipalities, including Ottawa, London, Brampton, Oakville, Hamilton, and Oshawa. Toronto, though in the midst of LED streetlight scale-up planning and a major LED streetlight procurement effort, did not respond to the survey.

On the basis of our analysis of the results of the respondents’ answers, we conclude the following:

- 1) Acceptance of LED streetlighting technology appears widespread across all sizes of municipalities in southern Ontario, with 17-to-18 municipalities owning 250,000 – 300,000 streetlight luminaires committed to procuring LED streetlights in the next year, or such procurement already in progress.
- 2) The main barriers to further adoption of LED streetlighting are tight municipal budgets and uncertainties regarding Ontario’s electricity rate structure as it pertains to streetlighting.
- 3) Almost half of those respondents were aware of OPA’s saveONenergy rebates and also indicated such incentives will speed up their adoption of LED streetlights.
- 4) In response to questions about centralized procurement, nearly half of the respondents, primarily medium and large sized municipalities, indicated they would consider joining a centralized procurement initiative offering multiple choices of vendors and products, as well as freedom to make their own individual purchase agreements with the vendor. However, a number of municipalities who indicated interest in centralized procurement also indicated that their procurement policies might be too restrictive for them to participation in such an initiative, thus tempering these results.

- 5) Respondents representing 219,441 streetlights indicated they planned to procure adaptive controls along with LED streetlights.

Overall, the results of the survey indicate a strong LED technology acceptance trend likely leading to even more robust adoption if further OPA financial incentives are offered and become fully subscribed. Finally, while there appears to be strong interest in possibly joining a centralized procurement initiative among half the respondents, many indicated their procurement policies might be too restrictive to allow them to do so, a more ambiguous result.

## 5) Bibliography

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ICF Marbek. (2014). *Evaluation of the Market Transformation Impacts of NRCan's Contributions to LED Roadway Initiatives*. Office of Energy Efficiency, Natural Resources Canada.

Municipal Solid-State Street Lighting Consortium (MSSLC). (2014). *Public Street and Area Lighting Inventory Phase 1: Survey Results: Prepared for the U.S. Department of Energy*. Pacific Northwest National Laboratory, Washington.

## 6) Appendices

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### Appendix A: Survey Respondents

<b>Municipality</b>	<b>Estimated Luminaires</b>	<b>Population</b>
City of Welland	6,492	50,631
Sault Ste. Marie	1,375	14,098
City of Hamilton	43,528	519,949
City of Kitchener	17,902	219,153
City of Mississauga	48,648	713,443
City of Kingston	10,077	123,363
City of London	35,010	366,151
Southwest Middlesex	446	5,860
City of Sarnia	7,056	72,366
Town of Oakville	15,000	182,520
City of Ottawa	55,473	883,391
City of Oshawa	12,293	149,607
City of Barrie	11,115	136,063
Town of Whitby	11,674	122,022
Town of LaSalle	2,793	28,643
City of Peterborough	7,673	78,698
City of Pickering	8,650	88,721
Township of Douro Dummer	85	6,805
City of Markham	25,232	301,709
Town of Bradford West Gwillimbury	9,131	93,650
City of Vaughan	23,551	288,301
City of Waterloo	9,631	98,780
Selwyn Township	1,642	16,846
Town of Niagara-on-the-Lake	2,308	15,400
Town of Caledon	5,797	59,460
City of Windsor	23,345	210,891
City of Brampton	42,550	523,911
The Corporation of the City of North Bay	5,472	53,651
Town of Ajax	10,686	109,600
Town of Fort Erie	2,921	29,960
Halton Region	5,753	59,008

**Appendix B: The Survey Questionnaire**

## Procuring LED Streetlights in Ontario—A New Way?

As you know, LED streetlighting offers significant operational cost savings and superior visual acuity. Procuring LED streetlighting can be challenging, however, given the demanding technical aspects.

The OPA has funded LightSavers to study the feasibility of establishing centralized procurement of LED streetlighting in Ontario to simplify and reduce the cost of purchasing LED luminaires.

Here is how it would work:

- A centralized government agency issues a rigorously designed RFP.
- Participating municipalities provide a variety of street layouts and relevant input to the RFP.
- The agency prequalifies products from three to five vendors that meet the municipalities' needs.
- Participating municipalities choose any of the pre-qualified products and negotiate their own contracts with vendors at lower prices.
- Pre-qualified products are refreshed periodically so they incorporate the latest technology advancements and pricing.

British Columbia has recently implemented this centralized procurement process, and it works well. FYI, click [HERE](#) to visit the portal.

Your response to this brief survey will help us determine whether centralized

procurement of LED streetlighting might work in Ontario. It won't take more than 5 minutes, and we'll share the results with you and the Ontario Streetlighting Focus Group.

Thanks very much for your interest and help.

A handwritten signature in black ink that reads "Philip Jessup". The signature is written in a cursive, flowing style.

Philip Jessup  
Director, LightSavers Canada  
Canadian Urban Institute  
647-391-2067

Next

Online Questionnaire Creator powered by [FluidSurveys](#)

25%

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## LED Streetlight Status in your municipality

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1. What is the name of your municipality?

Type here

2. What is the name of your electricity utility (LDC)?

Type here

3. What is the status of your municipality's conversion to LED streetlights?

- We are studying the situation but are not yet fully committed to conversion to LEDs
- We are doing LED trials or demonstration project(s) to see how they perform.
- Council or senior management have approved a LED streetlight scaleup plan.
- We are or will soon undertake a RFI or RFP to procure LED streetlights.
- We have already installed or are beginning to install LED streetlights.



4. Are you aware of the new OPA saveONenergy financial incentives for energy efficient streetlighting?

- YES     NO

If your answer is YES, then indicate how the new incentives might influence your municipality:

- I need to learn more about the incentives
- The incentives will speed up our scale-up of LED streetlighting—we don't want to lose this opportunity
- The incentives may slow down our scale-up of LED streetlighting—it will take time to apply for them
- I'm not sure how the incentives will affect our LED streetlighting planning

5. Rank your concerns about undertaking a LED streetlight retrofit.

(5 = maximum concern)

LED luminaires are expensive	<input type="text" value="---"/>
The technology still has room to improve.	<input type="text" value="---"/>
LED luminaires may not last as long as claimed.	<input type="text" value="---"/>
LED luminaires may not meet the new IESNA RP-8 or TAC standards to which our municipality adheres.	<input type="text" value="---"/>

Our municipal budget is tight.

LED luminaires are complex to procure.

Not sure of the best way to scale up.

Need more information on the business case.

LED prices are coming down, so it's best to wait.

Ontario's electricity rate structure may not allow full energy savings from LED streetlighting.

Review responses:

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## Ontario Centralized Procurement

6. Please evaluate the following statements.

	No	Yes	Don't Know
In the next year our municipality will procure LED streetlighting to begin retrofit of its streetlighting assets.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Our municipality would consider joining a centralized procurement initiative, assuming we can access multiple LED products, avoid sole sourcing, and are free to make our own purchase agreement with the vendor.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Our procurement procedures are very restrictive and probably wouldn't permit us to undertake centralized procurement.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Bundling low interest, fast track financing in a centralized procurement package would make it attractive.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Since our streetlighting assets are fairly large, we wouldn't expect much cost reduction benefit from centralized procurement.

Our municipality is aware of one or other similar services in the Ontario market and has entered or may enter a relationship with them.

## 7. Your comments or suggestions are very welcome.

Type here

Review responses:

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## Appendix C: Comments

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*Our purchasing strategy allowed us to negotiate excellent pricing for LED streetlights as well as additional benefits (warranty, labour reimbursement) and have just completed replacement of all streetlights in the City. - KINGSTON*

*We would require a business case that demonstrates payback period that properly reflects how we are billed for street lighting energy consumption (i.e., not just "kWh" savings). We would require detailed discussions with the City's Supply and Services and members of the Centralized Procurement team to address potential purchasing policy restrictions. We also see that there are two possible routes: medium/large scale capital retrofit projects, and/or centralized procurement for operating (maintenance level) budgets. – CITY OF PICKERING*

*We have been speaking with a provider for an energy saving initiative. – TOWN OF BRADFORD*

*We are already underway using the RealTerm / LAS program for a complete replacement of all cobra head fixtures. – SELWYN TOWN*

*We are currently in the process of submitting a capital budget request to convert existing cobrahead streetlights (approx. 2400) to LED in 2016. Assuming budget approval, we intend to initiate the procurement process in 2015. I would be very interested in learning about a centralized procurement option. Thanks, Sara Peckford, 905-584-2272, x4047 - TOWN OF CALEDON*

*Staff have recommended proceeding with led streetlight conversion and have requested funding in the 2015 budget. Council approval of budget not expected until February 2015, unsure at this time if this item will be included in the final approved budget - TOWN OF FORT ERIE*

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