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## 3.2. Decorative Fixture Selection and Evaluation Process

When selecting decorative fixtures, our team of experts works with the Town to consider all existing streetscape and design guidelines plus local aesthetics in the surrounding area. RTE designers, working with the array of decorative manufactures will assist the Town in the selection of fixtures that exhibit an aesthetic as well as functional purpose to create interest and a sense of scale for pedestrians using glare-free luminaires. This allows for a seamless visual transition and ensures that the optimum solution, both from a lighting quality and economic basis is chosen for the Town.



### Our Methodology Entails:

#### Step One:

- Reviewing each type of incumbent decorative fixture;
- Working with the Town to determine any potential reduction of model types to a more manageable number;
- Considering aesthetic concerns, BIA input, efficacy, color and other criteria;
- Developing a preliminary list of options and required specifications.

#### Step Two:

- Once this preliminary list is determined, we take sample roadway types for several applications and design the optimized streetscape for each possible fixture, to determine photometric performance and the efficiency of each potential alternative;
- Photometric scores are compiled by our design software to offer comparable metrics on the overall lighting performance of each alternative;
- The designs for each alternative also display the amount of wattage required to obtain the optimized design results, which are an essential element to the long-term energy savings potential of each potential replacement;
- Generally, we look to obtain that balance between optimized lighting on the roadway, using the least wattage possible while meeting safe and effective lighting criteria (such as RP-8-18, currently used throughout North America).

#### Step Three:

- Once the aesthetic decisions have been made, along with the photometric score and relative efficiency of each alternative, we obtain the best pricing from each finalist using our exclusive e-bidding portal;
- The e-bidding portal allows RealTerm to go to the manufacturing community to specify the model types and quantities that are required by the town and to get the best price possible from the manufacturers;
- Manufacturers know that they are in a competition, just like an RFP and respond with their best and final pricing using this method;

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#### Step Four:

- Once all of the selection criteria and price information has been compiled, we set out to evaluate each alternative in a systematic, transparent manner, using client input to rank the alternatives.

Clients tell us in advance which weighting we are to allocate to each of:

- Cost
- Photometric performance, and
- Life cycle costs (efficiency)

The result is an efficient, transparent and unbiased selection of the best that the market can offer for each application, where the Town has the final say in the ranking criteria and the ultimate selection. This process offers much greater assurances of obtaining the right fixture for each application, because of its reliance upon design, which exceeds those of typical RFP offerings, as well as utilizing RealTerm's considerable experience in decorative manufacturers and their evaluation.

### **Each of these four steps are discussed in greater detail below:**

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#### ***Step One: Initial selection***

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We recommend utilizing only decorative luminaires that have best-in-class lumen output, efficacy, BUG ratings, warranty provisions and durable reputations, while minimizing glare and light trespass.

A range of illumination via a dimming profile is added when adaptive controls are being considered.







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RTE constantly monitors these improvements in our fixture selection process to ensure that the latest models are incorporated into our lighting designs to optimize both light quality and energy efficiency.

Our process is to work with the town to first understand the incumbent fixture, then to present a list of optional LED replacements from the manufacturing community that fit all the above criteria. There will be subtle differences in photometric performance and efficacy, and of course cost in all of the potential replacements. RealTerm Energy will then present to the Town a list of potential alternatives that optimize the various criteria that are of important to the town.

In previous mandates, this saves the client potentially hundreds of hours of staff time utilizing RealTerm's expertise to replace a conventional RFP process which would result in the same range of alternative choices. We then present the alternatives in an easily understood table showing the incumbent fixture, and those that offer viable replacement options along with the various metrics that will impact the town's selection process, such as photometric performance, efficiency (wattage required) and of course acquisition cost.

As an example of this step, the following pages are taken from a recent mandate to replace one type of decorative fixture, with the impact on the overall project costs. These tables can be modified to illustrate any significant difference between manufacturers.

Before Upgrade	After Upgrade					
Fixture Type - Before Upgrade	Fixture Type	Wattage	Energy Savings - Overall Impact	Total Project Costs	IESO Incentive	Net Total Project Costs
Decorative Tear Drop – HPS 200W  	Baseline  MAJESTA CO12P1UF  	120W 60W	60.5%	\$ 5,403,059	-\$293,781	\$5,259,237
	HISTORIA –  	100W 60W	61% - +0.5%	\$5,359,178	-\$293,781	\$5,065,397
	LIBERTYVILLE –  	112W 76W	60.6% - +0.6%	\$5,456,259	-\$321,879	\$5,134,380

Before Upgrade	After Upgrade					
Fixture Type - Before Upgrade	Fixture Type	Wattage	Energy Savings - Overall Impact	Total Project Costs	IESO Incentive	Net Total Project Costs
Decorative Victorian Lantern Post Top – HPS 100W  	Baseline  King Luminaire - K601  	80W	60.5%	\$ 5,403,059	-\$293,781	\$5,259,237
	CLASSIC –  	88W	60.5% - 0%	\$5,355,462	-\$287,229	\$5,068,233
	SEVILLE –  	92W	60.5% - 0%	\$5,361,484	-\$293,781	\$5,067,703
	GEORGIAN –  	51W	60.8% - +0.3%	\$5,373,068	-\$287,229	\$5,085,839

Quantity: 52

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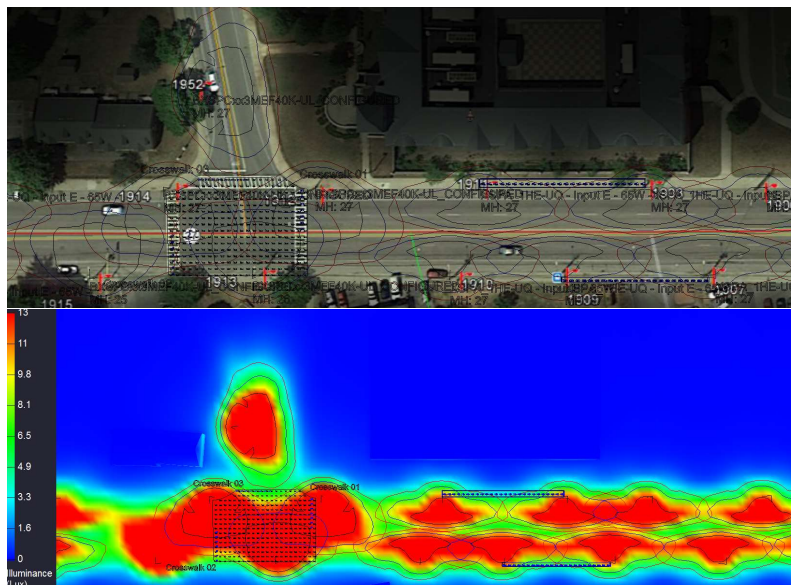
## Step Two: Photometric design

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RealTerm Energy's in-house design team uses GIS-based inventory data to create photometric design plans that optimize lighting quality, safety levels and energy savings.

1. All designs follow the RP-8-2018 Roadway Lighting recommendation produced by the IES.
2. Each design reduces back-light and up-light while delivering the required light to the targeted area.
3. Light trespass and Dark Sky considerations are incorporated to avoid light pollution.

Our team delivers the most efficient design methodology to achieve standardized designs that meet the RP-8-2018 guidelines wherever possible, thereby reducing the number of over- or under-lit roadways. Concerns specific to the Town will be addressed by the design team (such as adding or reducing light levels where desired by the Town). Unique regional characteristics such as neighborhoods, schools, hospitals and areas with higher levels of street crime, accidents and/or vehicle-bicycle-pedestrian conflicts, are included.



"Many municipalities seemed to be going with a one-for-one replacement. We liked the GIS mapping, and the design process brought additional value to the project."

Barry Thompson, Manager of Energy Management, City of Barrie, ON

Figure 1: The sample graphic above is a digital rendering of RealTerm's photometric calculations, taking into account the GIS inventory survey data and the lighting recommendations for the given street, intersection, sidewalks and pedestrian crosswalks.

The design phase allows us to compare the photometrics of each potential fixture on actual roadway locations using our design software. Each potential alternative will be designed and compared to the other potentials to enable us to compare the photometric performance of each along the various roadway segments in Hawkesbury. These scores will be utilized in the evaluation stage, which compares cost, photometric performance and efficiency (which wattage is needed to optimize the lighting levels).

### Step Three: E-Bidding Portal - Procurement

*Our e-Bidding and procurement process offers an approach that focuses on efficiency and reduces the potential for bias by promoting a standardized evaluation centered on a robust scoring method.*

An impartial procurement process is a critical part of a successful LED conversion project, particularly with regards to fixture selection. Only with a thorough careful analysis of multiple fixtures can municipalities be ensured that the optimum solution is chosen for their project.

RealTerm Energy acts as an informed but impartial advisor to our clients through our vendor agnostic approach. Our team works with clients to first identify their needs and capacity, and then competitively select equipment and installation services to address those needs.

RealTerm Energy carries out all services related to ordering, delivery, receipt, verification and inspection (including inventory control), and/or administration of all equipment and labor purchases.

The image below is an example of our eBidding system's online interface.

The screenshot displays the BUILDINGCONNECTED eBidding portal. The top navigation bar includes the logo, a search bar, and a user profile for Amelia. The left sidebar shows the project details (03-070-2966 WILDCAT PLAZA) and a list of bid packages, with '02900: Landscape' selected. The main content area shows the 'PROPOSALS' tab for project 02900: Landscape. It features a table with three columns for different vendors: CMP Landscape, Frank and Sons, and Star Landscapers. Each column shows a total bid amount and a breakdown of costs for various items like Irrigation, Plantings, Mulch, etc. The table also includes sections for 'ALTERNATES' and 'GENERAL ACKNOWLEDGMENTS'.

Item	CMP Landscape	Frank and Sons	Star Landscapers
<b>BREAKOUTS</b>			
Irrigation	\$13,538	\$40,230	\$83,210
Plantings	\$101,336		\$69,600
Mulch	150 cubic yards @ \$33 = \$4,950	215 cubic yards @ \$32 = \$6,880	525 cubic yards @ \$30 = \$15,750
Soil Prep & Fine Grade	\$10,240	\$12,110	\$13,372
Site Furnishings		\$109,110	\$111,295
Misc / Other	\$8,450	\$32,090	\$14,072
<b>SUBTOTAL</b>	<b>\$138,514</b>	<b>\$200,420</b>	<b>\$307,299</b>
<b>ALTERNATES</b>			
Playground	\$41,200	\$47,220	\$52,430
Bioswale	\$12,350	\$1	
Flagstone pavers	\$1,120	\$1,480	
<b>GENERAL ACKNOWLEDGMENTS</b>			
Did you download Addenda 1 & 2?	Yes	Yes	Yes
Are you insured to perform this scope o...	Yes	Yes	Yes
Did you download the plans & specs?	Yes	Yes	Yes

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RealTerm's competitive selection process achieves the following:

- **Obtains value** for money by implementing a best and final offer approach that focuses on efficiency, effectiveness and the economy of the proposed options.
- **Reduces risk** by employing the latest and most relevant specifications and requirements that include SMART goals in the statement of work.
- **Promotes understanding** for the client based on lessons learned from our 230+ projects and their vision for project success.
- **Provides clarity** and competition by ensuring a level playing field for all potential vendors and using a consultative approach with multiple vendor touchpoints.
- **Reduces a potential for bias** by promoting a standardized evaluation centered around a robust scoring method.

The process above is familiar to almost all of the manufacturers of decorative fixtures that sell into the Ontario market. The transparent and digital process assures that the client can see all interactions between ourselves and the manufacturer, to be assured that the very best pricing for each potential alternative is obtained prior to the final step, that of evaluating photometric performance of each of the potential LED replacements.



#### Step Four: Final Fixture Evaluation

From initial concept to final installation, RealTerm Energy's Decorative Procurement Program assures a complete, unbiased and cost-efficient process to procure and install decorative fixtures, without having to conduct a formal RFP

Initial Cost, Efficiency (NPV) and Photometric performance assigned customer-designated weighting to select best fitting model and manufacturer for each location. The Score Weighting technique allows the client to dictate the relative importance of each of the evaluation criteria to the final ranking. As can be seen in the table below, different fixtures would be selected depending upon the client's preference for a higher score for one criteria over another, or to give them equal weight.

Once these criteria are determined, our team of experts works with the manufacturing community to consider all existing streetscape and design policies plus local aesthetics in the surrounding area. RTE designers select fixtures that exhibit an aesthetic as well as functional purpose to create interest and a sense of scale for pedestrians using glare-free luminaires

Score Category	Score Weighting	King Luminaire	Cyclone	GE	Sternberg	Acuity
Weighted Senario1: Photometrics Prioritized						
Photometric Score	50	50	43	28.9	39.2	45.6
Cost Score	25	21.2	25	19.4	22.5	19.4
NPV Score	25	24.7	25	23.1	24.7	24.2
Total Score	100	95.9	93	71.4	86.4	89.2
Weighted Scenario 2: Equal Distribution						
Photometric Score	33.3	33.3	28.6	19.2	26.1	30.4
Cost Score	33.3	28.3	33.3	25.9	30	25.8
NPV Score	33.3	32.9	33.3	30.8	32.9	32.2
Total Score	100	94.5	95.2	75.9	89	88.4
Weighted Scenario 3: Net Present Value Prioritized						
Photometric Score	25	25	21.5	14.4	19.6	22.8
Cost Score	25	21.2	25	19.4	22.5	19.4
NPV Score	50	49.4	50	46.2	49.4	48.3
Total Score	100	95.6	96.5	80	91.5	90.5

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## Summary – Decorative Procurement

The above methodology assures the client that all phases of the evaluation process are comprehensive, transparent and provide best value in the final selection of the replacement fixtures, without having to undergo a costly and time-consuming tendering process by the Town.

The same standards of professional and unbiased advice apply to our Decorative Procurement program as are employed in our LAS Cobra head program. RealTerm Energy has no relationship with any decorative manufacturer and leaves the final selection criteria to the client.

In this way, you can be assured of value for money and reliable service delivery that the Town has previously received with the LAS/RealTerm Energy program.