

# LEC Recommendation for Street Lighting Upgrades

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Windham Local Energy Committee

# Windham's Current Streetlighting Status

- 100 high-pressure sodium and metal halide Lamps powered by Eversource and Liberty Utilities

Supplier	# Lamps	Annual KWH Usage (Approx. )	Annual Cost (Approx.)
Eversource	73	35,000	\$11,000 (\$0.31/KWH)
Liberty Utilities	27	10,000	\$6,000 (\$0.60/KWH)

- Upgrading to LED lamps under respective tariffs

Supplier	Tariff	Installation Charges	Approx. Annual Cost
Eversource	EOL	<ul style="list-style-type: none"><li>• Customer removes/install old/new lamps using contractor</li><li>• Town owns streetlights</li><li>• No un-depreciated costs to change lamps</li></ul>	<ul style="list-style-type: none"><li>• Eversource maintains power-related functions</li><li>• Lamp failures Town's responsibility</li></ul>
Liberty Utilities	LED-1	<ul style="list-style-type: none"><li>• LU installs;</li><li>• \$50/lamp + undepreciated installation cost (23 yr. deprec. period);</li><li>• 5 yr. minimum contract; renews annually</li></ul>	<ul style="list-style-type: none"><li>• LU retains ownership;</li><li>• maintains streetlights</li></ul>



# Affinity and EACOM Bid for Upgrading Eversource-Powered Streetlights

- Windham currently **owns** streetlights
  - No un-depreciated installation charges due upon replacement with LED
  - Eversource provides power supply-related maintenance
  - Windham responsible for any lamp failures
  - Eversource tariff EOL (Customer owns luminaires)
  - Annual Electricity Consumption = ~35,000 KWH

Bidder	# Lamps	Total Lumens	Annual KWH	Price	\$/Lumen
Affinity	73	374,357	11,400	\$33,528	\$0.090
AECOM	73	355,050	10,700	\$117,210	\$0.330

Affinity Pricing Much More Favorable



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# Eversource Streetlight Upgrade Will Save More Than \$6,000 Annually

## Annual Operating Cost Comparison

Streetlights	Bidder	# Lamps	HPS/Metal Halide (Current)	LED (Calculated)	Savings	Payback (yrs)
Eversource (\$33,528)	Affinity	73	\$11,018	\$4,848	\$6,170	5.4

Rebates May be Available for both Eversource and LU Upgrades to Reduce Payback Period



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# Liberty Utilities, Affinity, and EACOM Bid to Replace Liberty Utilities (LU) Lamps

- Windham currently **rents** LU streetlights
  - Un-depreciated installation charges due upon replacement with LED
  - Windham pays monthly rental fee
  - LU tariff M (Customer rents luminaires)
  - Annual Electricity Consumption = ~10,000 KWH
  - All vendor prices include \$1,152 un-depreciated installation costs

Bidder	# Lamps	Lumens	Annual KWH	Price	\$/Lumen	Conditions
Liberty Utilities	27	167,500	5,159	\$2,502	\$0.015	<ul style="list-style-type: none"><li><b>Continue renting</b></li><li>23-year equipment depreciation window</li><li>LU responsible for maintenance</li></ul>
Affinity	27	130,489	3,962	\$13,821	\$0.106	<ul style="list-style-type: none"><li><b>Purchase lamps</b></li><li><b>No rental fee</b></li><li>Town responsible for maintenance</li></ul>
AECOM	27	127,950	3,899	\$44,551	\$0.348	<ul style="list-style-type: none"><li><b>Purchase lamps</b></li><li><b>No rental fee</b></li><li>Town responsible for maintenance</li></ul>

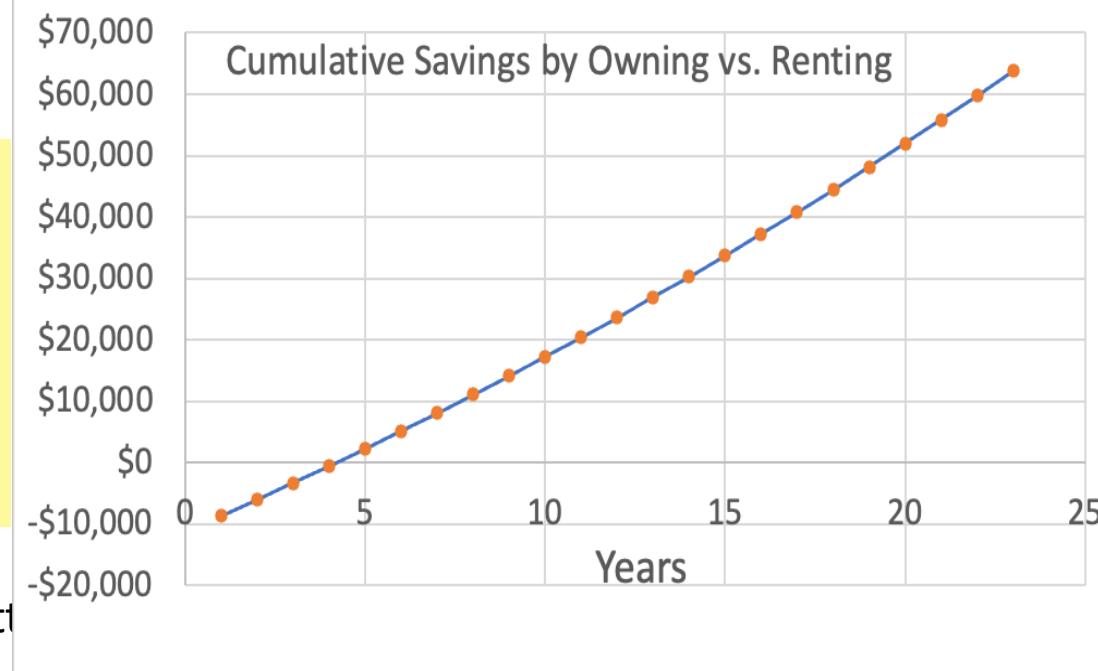
# Vendor Selection for LU Streetlights Should be Based Upon Current and Long-Term Costs

## Annual Operating Cost Comparison

Vendor	Rent/Own	Current Annual Costs	Calculated Annual Costs	Annual Savings	Payback (yrs)
LU - \$2,502	Rent	\$5,819	\$3,395	\$2,900	0.9
Affinity -\$13,826	Own	\$5,819	\$770	\$5,049	2.7

Significant Long-Term Savings\* by Owning Rather Than Renting

\*Includes 2% annual inflation



# Affinity Also Offers Option for “Networking” Eversource and LU Streetlights Enabling Customer Control of On-Off Times

- “Network operation” allows on-off and intensity control plus real-time monitoring of streetlight performance;
- LEC does not recommend “networking operation”
  - Windham streetlights currently run from dusk-to-dawn which appears to meet Town needs
  - Cannot alter “color temperature” or angular distribution
  - LEC not aware of any Town employee who would be available to operate system and utilize the additional data
  - Added capability for Eversource lights costs = \$11,588



# LEC Recommends the Following

- Affinity should install LED upgrades on Eversource streetlights
  - Save significant electrical energy
  - Payback period is reasonable (5.4 years)
  - Recommend 3,000 K (soft white)\*
- Affinity should install LED upgrades on LU streetlights
  - Save significant electrical energy
  - Payback is 2.7 years
  - Long-term benefit of owning streetlights ~ \$60,000
  - Recommend 3,000 K (soft white)\*

\* Agreed to by Chiefs Caron and McPherson; used by NHDOT on streetlights on Rt 111



– BACKUP



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Rate	Code	Street	Install Date	Pole Number	LED Install Date	LED Wattage
82	047	E NASHUA RD	9/11/95	24/17		
82	047	FORDWAY EXT	1/1/06	31/13		
82	047	FORDWAY EXT	9/5/95	31/12		
82	047	GERTRUDE RD	9/5/95	31T/1		
82	047	GERTRUDE RD	9/5/95	31T/4		
82	047	GILLIS RD	9/6/95	21/9A		
82	047	HIDDEN VALLEY RD	9/5/95	31/18		
82	047	HORNE RD	9/11/95	23/4		
82	047	INDIAN ROCK RD	9/11/95	10/2B		
82	047	KENDALL POND RD	9/12/95	1/ 83		
82	047	LONDONDERRY RD	9/5/95	29/28		
82	047	LONDONDERRY RD	9/5/95	29/40		
82	047	LONDONDERRY RD	9/11/95	24/29		
82	047	LONDONDERRY RD	9/11/95	25/ 8		
82	047	LORI RD	9/6/95	26/3B		
82	047	LOWELL RD	9/6/95	19/18		
82	047	LOWELL RD	9/6/95	19/52		
82	047	LOWELL RD	9/6/95	4/154		
82	047	MAMMOTH RD	9/6/95	2A/6		
82	047	MAMMOTH RD	9/6/95	3/43		
82	047	N LOWELL RD	9/11/95	4/ 16		
82	047	N LOWELL RD	9/11/95	4/ 70		
82	047	RANGE RD	9/11/95	17/10		
82	047	RANGE RD	9/11/95	17/59		
82	047	RANGE RD	9/11/95	20/ 9 1/2		
82	047	ROCK POND RD	9/6/95	26/ 3		
82	047	ROCK POND RD	9/6/95	26/ 7		
82	047	ROCK POND RD	9/6/95	26/ 8		
82	047	ROCK POND RD	9/6/95	26/13		
82	047	ROCK POND RD	9/6/95	26/22		
82	047	ROCKINGHAM RD	9/12/95	11/3A		
82	047	SIMPSON RD	6/15/11	26E/4		
82	047	SIROD RD	9/12/95	1F/2		
82	047	TOKANEL RD	9/6/95	43/2		
82	048	WILSON RD	8/16/95	19/53A		
82	049	ROUTE 111	1/15/17	9/11A		
82	052	N LOWELL RD	8/16/95	4/113A		
82	053	CHURCH RD	8/16/95	10/1		
82	053	N LOWELL RD	8/16/95	4/113		

## Eversource Streetlight Ledger



# Eversource Streetlight Ledger

82	053	N LOWELL RD	8/16/95	4/114			40
82	053	MINISTERIAL RD	8/16/95	12/64L1			41
82	053	MINISTERIAL RD	8/16/95	12/64L2			42
82	151	ALPINE RD	8/16/95	41C/4			43
82	151	BROOKVIEW RD	3/6/07	3/50			44
82	151	CASTLE HILL RD	8/16/95	21/13A			45
82	151	E NASHUA RD	8/16/95	24/12			46
82	151	FAITH RD	8/16/95	9C/1			47
82	151	FARRWOOD RD	8/16/95	4X/1			48
82	151	KENDALL POND RD	8/16/95	1/105			49
82	151	KENDALL POND RD	9/12/95	1/ 16			50
82	151	LOWELL RD	1/26/16	19/51			51
82	151	LOWELL RD	8/16/95	4/137 1/2			52
82	151	MARBLEHEAD RD	8/16/95	17H/ 6			53
82	151	MARBLEHEAD RD	12/14/18	17H/12A			54
82	151	MINISTERIAL RD	8/16/95	12/73			55
82	151	N LOWELL RD	8/16/95	4/ 65			56
82	151	N LOWELL RD	8/16/95	4/ 86			57
82	151	N LOWELL RD	8/16/95	4/113			58
82	151	N LOWELL RD	8/16/95	4/115			59
82	151	N LOWELL RD	10/5/18	4/ 49			60
82	151	NASHUA RD	8/16/95	25/14			61
82	151	RANGE RD	8/16/95	17/ 1			62
82	151	ROMAN RD	8/16/95	3/36A			63
82	151	ROUTE 111	8/16/95	9/28			64
82	151	ROUTE 111	8/16/95	9/35 1/2			65
82	151	ROUTE 111	8/16/95	9/43			66
82	151	ROUTE 111	11/21/97	4/118			67
82	151	SIMPSON RD	5/1/06	26E/7			68
82	151	TWIN ST	2/25/14	3/28A			69
82	153	LEDGE RD	9/24/09	9/18YJ1			70
82	153	ROUTE 111	7/13/09	9BA/1J2			71
82	158	ROUTE 111	9/11/95	9/11			72
82	161	DEPOT RD	10/23/07	4/11			73



# Liberty Utilities Streetlight Ledger

Pole #	Street Name	Town	Route			Lamp Description	Lamp Watts	Install Date	Rental Costs
1	CASTLE HILL	Windham	0107	Distribution	Luminaire	LUM HPS RWY	50	7/28/1983	
8	HAYES HART	Windham	0010	Streetlighting	Luminaire	LUM HPS RWY	100	9/6/2002	\$11.14/month
3	JOHNSON	Windham	0027	Distribution	Luminaire	LUM HPS RWY	50	unknown	
6	JOHNSON	Windham	0027	Distribution	Luminaire	LUM HPS RWY	50	5/9/1983	
7	MAMMOTH	Windham	0104	Distribution	Luminaire	LUM HPS RWY	50	unknown	
3	NORTH POLICY	Windham	0130	Distribution	Luminaire	LUM HPS RWY	50	unknown	
4	RANGE	Windham	0028	Distribution	Luminaire	LUM HPS RWY	50	unknown	
9	RANGE	Windham	0028	Distribution	Luminaire	LUM HPS RWY	50	5/9/1983	
10	RANGE	Windham	0028	Distribution	Luminaire	LUM HPS RWY	50	unknown	
12	RANGE	Windham	0028	Distribution	Luminaire	LUM HPS RWY	50	5/9/1983	
15	RANGE	Windham	0028	Distribution	Luminaire	LUM HPS RWY	50	unknown	
20	RANGE	Windham	0028	Distribution	Luminaire	LUM HPS RWY	100	unknown	
24	RANGE	Windham	0028	Distribution	Luminaire	LUM HPS FLD	250	unknown	
24	RANGE	Windham	0028	Streetlighting	Luminaire	LUM HPS FLD	250	7/8/2010	\$11.14/month
25	RANGE	Windham	0028	Streetlighting	Luminaire	LUM HPS FLD	400	1/3/2005	\$11.14/month
26	RANGE	Windham	0028	Distribution	Luminaire	LUM HPS RWY	100	2/6/2008	
37	RANGE	Windham	0028	Distribution	Luminaire	LUM HPS RWY	100	8/6/2008	
46	RANGE	Windham	0028	Distribution	Luminaire	LUM HPS RWY	50	unknown	
51	RANGE	Windham	0028	Distribution	Luminaire	LUM HPS RWY	100	8/31/2001	
26	ROCKINGHAM	Windham	0001	Distribution	Luminaire	LUM HPS RWY	50	unknown	
45	ROCKINGHAM	Windham	0001	Distribution	Luminaire	LUM HPS RWY	100	12/18/1992	
59	ROCKINGHAM	Windham	0001	Distribution	Luminaire	LUM HPS RWY	100	10/12/2006	
62	ROCKINGHAM	Windham	0001	Distribution	Luminaire	LUM HPS RWY	50	10/5/2008	
6	SEARLES	Windham	0014	Distribution	Luminaire	LUM HPS RWY	50	unknown	
1	SOUTH SHORE	Windham	0110	Distribution	Luminaire	LUM HPS RWY	50	unknown	
3	SOUTH SHORE	Windham	0110	Distribution	Luminaire	LUM HPS RWY	50	unknown	



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