A black and white long-exposure photograph of a city street at night, showing light trails from cars and streetlights. The text is overlaid on this image.

LED STREET LIGHT CONVERSION PROGRAM



ESCO

THE ENERGY EFFICIENCY EXPERTS

GOESCO.COM

AGENDA

- **Who is ESCO?**
- **What does ESCO do?**
- **Why is ESCO here?**
- **How do I Pay for This?**
- **How Do We Get Started?**



Who is ESCO?

- Longest-standing Lighting Retrofit Company in New England
Under Continuous, Local Ownership for 20+ Yrs.
- Award-winning Energy Solutions Partner with NE utilities
- HQ in Lenox, MA with offices and strong presence in CT
- Financial Strength with \$20,000,000+ Bonding Capacity
- Fully-insured Energy and Operational Savings *Guarantee*



Who is ESCO?

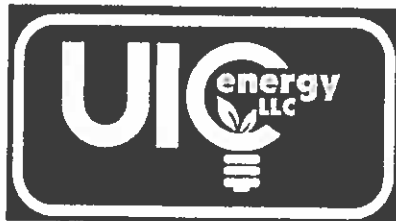
- In-house Street Light Design, Installation & Maintenance
CT E-2-Licensed & CL&P-approved crews
- Dedicated and Experienced Utility Incentive Processing Team
- Reliable, local support and experience to develop a successful Street Light Conversion Program for Darien



Who is ESCO?

Program Team

Osmose[®]



NOVEDA
TECHNOLOGIES



What Does ESCO do?

ESCO partners with your community to develop a successful Street Light Acquisition and LED Conversion Program:

- Bill Reconciliation, Street Light Audits & GIS Mapping
- Full Support for Street Light Asset Acquisition
- Street Light Design and Fixture Selection Assistance
- Turnkey Project Management, Installation & Maintenance
- Project Finance Modeling and Rebate Processing
- Fully-insured Energy & Operational Savings Guarantee
- 24/7 Emergency Response & Maintenance



Sample Projects

Projects in Process

Municipality	# of Street Lights
Plainville	1,500
Cromwell	1,200
Clinton	1,100
Essex, MA	200
North Lauderdale, FL	400





**CCM
LED STREET LIGHT
CONVERSION
PROGRAM**



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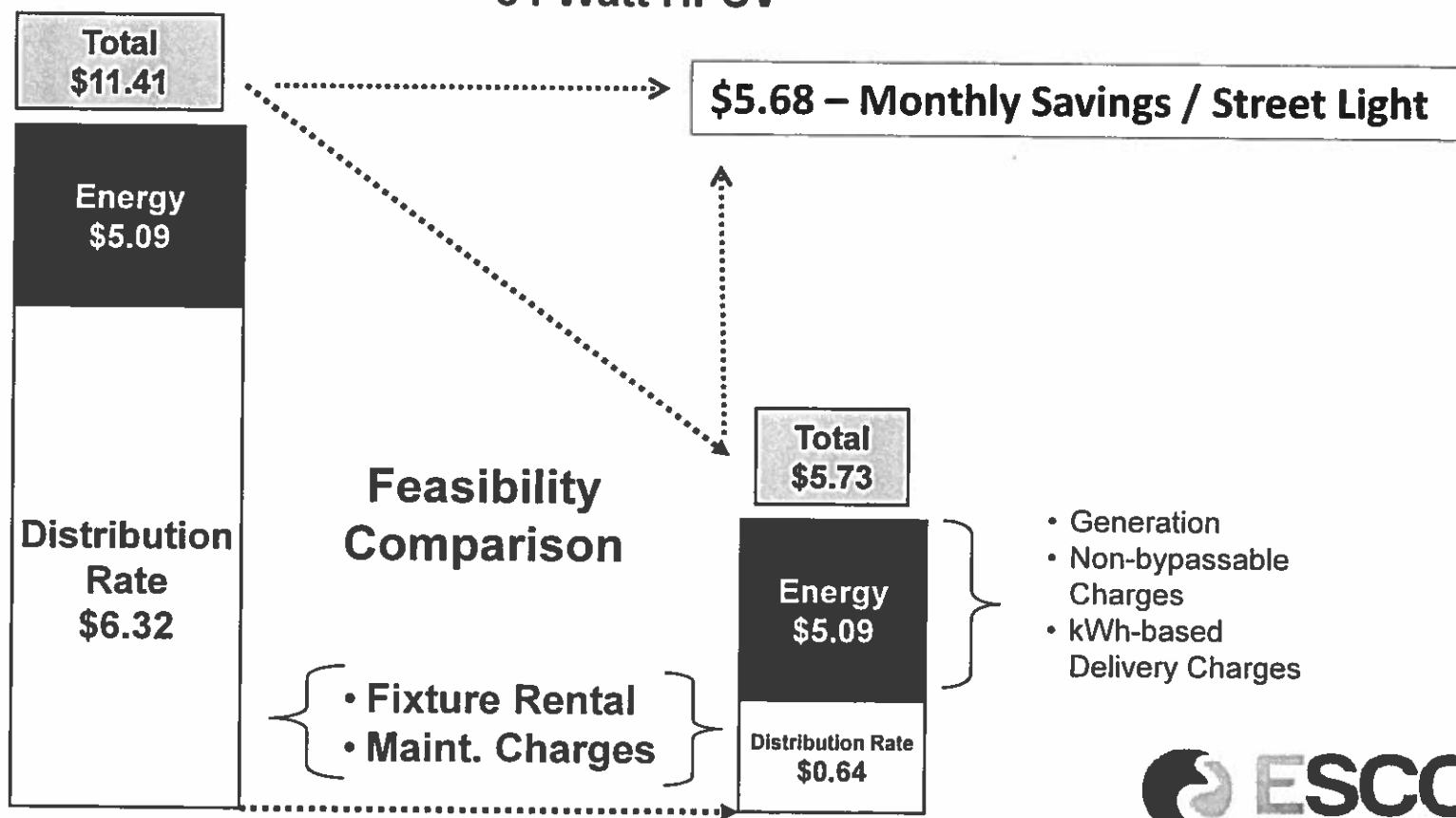
Program Background

- Most towns in CT do not own their street lights.....
- They RENT them from CL&P
- CL&P's Rate 116 is used for CL&P-owned street light assets.
- In addition to the cost of energy, each street light is assessed a "Distribution Charge".



Difference in CL&P Tariffs

Rate 116 vs. Rate 117 Monthly Cost Comparison-
84 Watt HPSV



Difference in CL&P Tariffs

CL&P NEW RATES Effective 1/1/15
 Rate 116 vs. Rate 117 Monthly Cost Comparison-
 Darien – 843 Street Lights

LED Savings Comparison	Existing	LED	
	Annual Costs	Annual Costs	Annual Savings
Annual Energy Charge	\$ 46,887	\$ 19,236	\$ 27,651
Annual Distribution Charge	\$ 67,924	\$ 6,200	\$ 61,723
Total	\$ 114,811	\$ 25,437	\$ 89,374
			77.8%





HOW DO WE PAY FOR THIS LED CONVERSION PROGRAM?



How Do We Pay for This?

Financing Options for LED Conversion Projects

- Capital Expenditure
- Tax-Exempt Municipal Lease Financing
- Utility “On-Bill” Finance

ESCO will work with client to facilitate most beneficial approach



How Do We Pay for This?

CL&P NEW RATES Effective 1/1/15
 Rate 116 vs. Rate 117 Monthly Cost Comparison-
 Darien – 843 Street Lights

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			77.8%



How Do We Pay for This?

Darien – 843 Street Lights – NO CONTROLS

Turnkey Cost & Savings	Unit Cost	Total Cost
Audit, GIS Mapping & Tagging - \$/Fixture	\$ 6.50	\$ 5,480
Acquisition from CL&P - \$/Fixture**incl. Poles	\$ 164	\$ 138,586
LED Retrofit - \$/Fixture	\$ 333	\$ 280,843
Controls & Monitoring - \$/Fixture	\$ -	\$ -
Estimated # of Utility Owned Fixtures**	843	

Gross Total Project Cost	424,909
Rebates @ \$0.30/kWh Reduced	\$ (76,054)
Cost after Rebates	\$ 348,855
Add Police Detail	\$ -
NET Turnkey Cost	\$ 348,855
Annual Energy Savings	\$ 27,651
NET Annual Maint. Savings	\$ 61,723
Total Annual Savings	\$ 89,374
Simple Payback (years)	3.9



How Do We Pay for This?

Darien - 843 Street Lights – NO CONTROLS

ESTIMATED ANNUAL MAINTENANCE	
Fixtures	843
Management/ Monitoring / Control	\$ -
Per Fixture Maintenance Cost per month	\$ 1.00
Monthly Maintenance Total	\$ 843
Months	12
Annual Maintenance Cost	\$ 10,116



How Do We Pay for This?

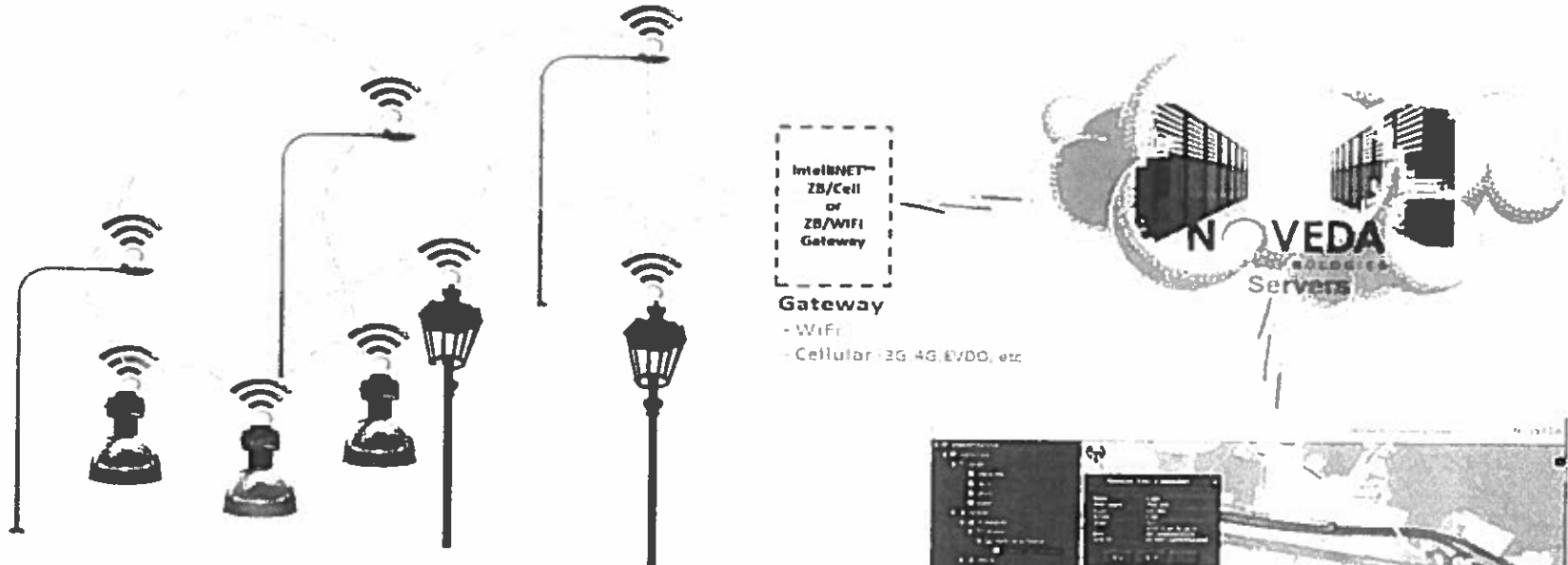
Darien – 843 Street Lights – NO CONTROLS

Year	Current CL&P Street Light Costs	New CL&P Street Light Costs	Street Light Acquisition & Conversion Annual Costs	Est. Annual Maintenance Costs	New Total Annual Costs	Total Annual Savings
1	\$ 114,811	\$ 25,437	\$ 72,464	\$ 10,116	\$ 108,017	\$ 6,794
2	\$ 117,107	\$ 25,946	\$ 72,464	\$ 10,318	\$ 108,728	\$ 8,380
3	\$ 119,449	\$ 26,465	\$ 72,464	\$ 10,525	\$ 109,453	\$ 9,996
4	\$ 121,838	\$ 26,994	\$ 72,464	\$ 10,735	\$ 110,193	\$ 11,646
5	\$ 124,275	\$ 27,534	\$ 72,464	\$ 10,950	\$ 110,947	\$ 13,328
6	\$ 126,760	\$ 28,084		\$ 11,169	\$ 39,253	\$ 87,507
7	\$ 129,296	\$ 28,646		\$ 11,392	\$ 40,038	\$ 89,257
8	\$ 131,882	\$ 29,219		\$ 11,620	\$ 40,839	\$ 91,043
9	\$ 134,519	\$ 29,803		\$ 11,853	\$ 41,656	\$ 92,863
10	\$ 137,210	\$ 30,399		\$ 12,090	\$ 42,489	\$ 94,721
Totals	\$ 1,257,147	\$ 278,527	\$ 362,318	\$ 1,897,992	\$ 751,612	\$ 505,535

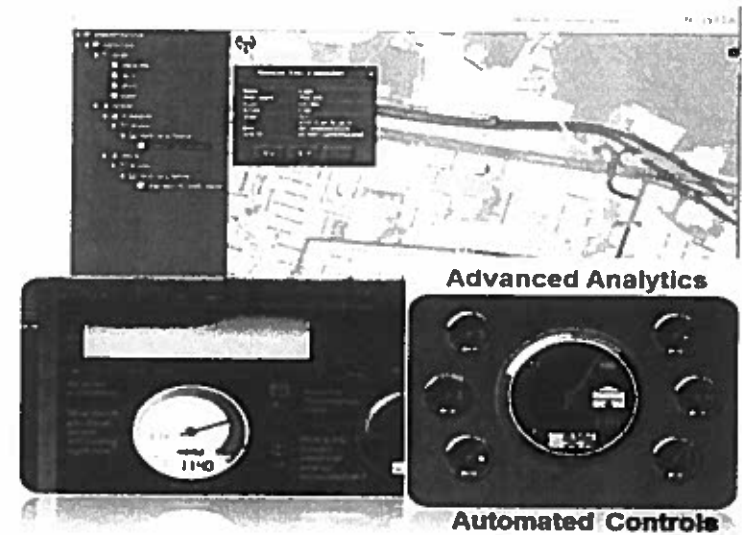
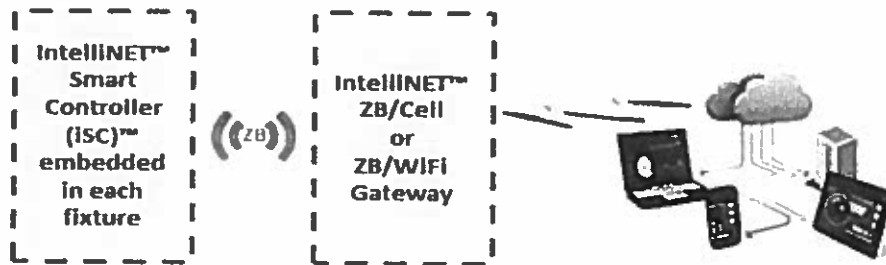
2% Annual Escalation Rate applied to Utility & Maintenance Costs.



Application of the IntelliNET™ Luminaire Management System



Each luminaire contains an embedded iSC™ which establishes the IntelliNET™ mesh network, controls and conductivity with strategically located Gateways and to host servers with highly reliable connectivity.



How Do We Pay for This?

Darien – 843 Street Lights – WITH CONTROLS

Turnkey Cost & Savings	Unit Cost	Total Cost
Audit, GIS Mapping & Tagging - \$/Fixture	\$ 6.50	\$ 5,480
Acquisition from CL&P - \$/Fixture**incl. Poles	\$ 164	\$ 138,586
LED Retrofit - \$/Fixture	\$ 333	\$ 280,843
Controls & Monitoring - \$/Fixture	\$ 100	\$ 84,034
Estimated # of Utility Owned Fixtures**	843	

Gross Total Project Cost	508,942
Rebates @ \$0.30/kWh Reduced	\$ (76,054)
Cost after Rebates	\$ 432,888
Add Police Detail	\$ -
NET Turnkey Cost	\$ 432,888
Annual Energy Savings	\$ 27,651
NET Annual Maint. Savings	\$ 61,723
Total Annual Savings	\$ 89,374
Simple Payback (years)	4.8



How Do We Pay for This?

Darien – 843 Street Lights – WITH CONTROLS

ESTIMATED ANNUAL MAINTENANCE	
Fixtures	843
Management/ Monitoring / Control	\$ 0.75
Per Fixture Maintenance Cost per month	\$ 1.00
Monthly Maintenance Total	\$ 1,475
Months	12
Annual Maintenance Cost	\$ 17,703



How Do We Pay for This?

Darien – 843 Street Lights – WITH CONTROLS

Year	Current CL&P Street Light Costs	New CL&P Street Light Costs	Street Light Acquisition & Conversion Annual Costs	Est. Annual Maintenance Costs	New Total Annual Costs	Total Annual Savings
1	\$ 114,811	\$ 25,437	\$ 65,183	\$ 17,703	\$ 108,323	\$ 6,488
2	\$ 117,107	\$ 25,946	\$ 65,183	\$ 18,057	\$ 109,186	\$ 7,921
3	\$ 119,449	\$ 26,465	\$ 65,183	\$ 18,418	\$ 110,066	\$ 9,383
4	\$ 121,838	\$ 26,994	\$ 65,183	\$ 18,787	\$ 110,964	\$ 10,875
5	\$ 124,275	\$ 27,534	\$ 65,183	\$ 19,162	\$ 111,879	\$ 12,396
6	\$ 126,760	\$ 28,084	\$ 65,183	\$ 19,546	\$ 112,813	\$ 13,947
7	\$ 129,296	\$ 28,646		\$ 19,936	\$ 48,583	\$ 80,713
8	\$ 131,882	\$ 29,219		\$ 20,335	\$ 49,554	\$ 82,327
9	\$ 134,519	\$ 29,803		\$ 20,742	\$ 50,545	\$ 83,974
10	\$ 137,210	\$ 30,399		\$ 21,157	\$ 51,556	\$ 85,653
Totals	\$ 1,257,147	\$ 278,527	\$ 325,916	\$ 1,861,590	\$ 863,469	\$ 393,678

2% Annual Escalation Rate applied to Utility & Maintenance Costs.



HOW DO WE GET STARTED?



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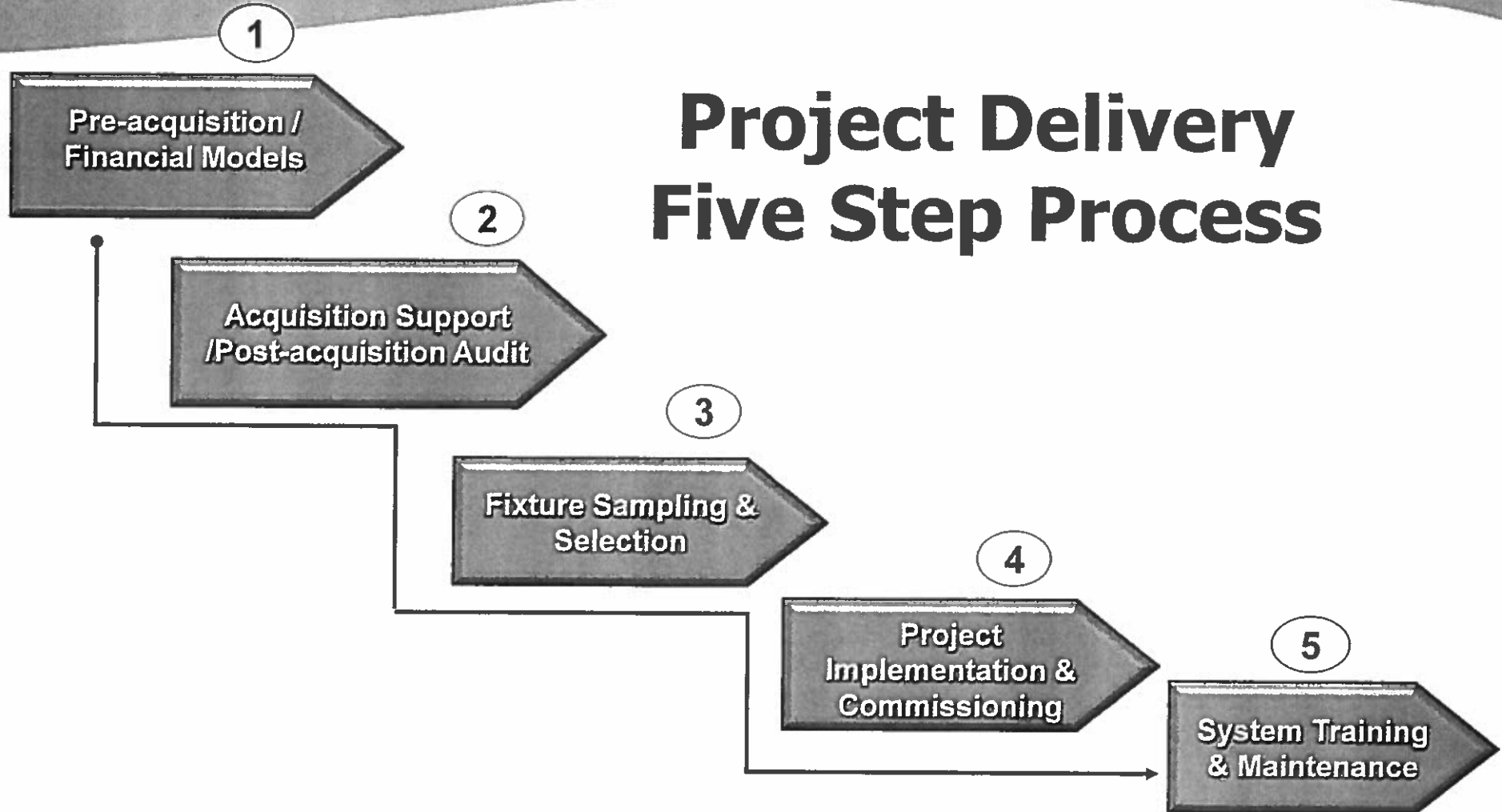




ESCO's LED STREET LIGHT CONVERSION PROCESS



Project Delivery Five Step Process



The Process

1. Pre-Acquisition Development

ESCO gathers information from CL&P :

- Streetlight Inventory
- Street Light Maintenance Records
- Net Book Value Estimate for Town Acquisition

ESCO develops preliminary Scope of Work with estimated Project Costs

ESCO completes Financial Analysis – with estimated Costs & Savings and Financing Model



The Process

2. Acquisition & Post-Acquisition Audit

Town completes acquisition of Street Lights from CL&P

ESCO performs a physical GIS audit to include:

- The Global Positional System (GPS) location (latitude & longitude) of each fixture
- Fixture type
- Wattage
- Pole mounting, fixture height, mast arm length, tennon diameter etc.
- Pole type
- Street name
- Physical characteristics and/or physical issues that may impact the project

ESCO conducts Post-Acquisition reconciliation with CL&P and verifies conversion to Rate 117



The Process

3. Fixture Samples / Fixture Selection / Control Options

ESCO facilitates Lighting design/Fixture selection

- LED samples identified and installed
- Gather feedback from stakeholders/residents
- Town selects LED type to be implemented
- Town selects street light control options to be implemented

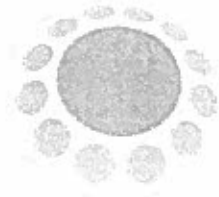
ESCO develops final Scope of Work and detailed Implementation Plan for Town approval

Town issues Notice to Proceed



The Process

Top-tier LED Street Light Products



apollo
METRO SOLUTIONS

LEOTEK®



GE
Lighting



GOESCO.COM

888-ASK-ESCO

The Process

4. Project Implementation & Commissioning

ESCO implements installation phase

- LED Street Lights installed per plan
- GIS audit verified and any required tagging completed
- Weekly progress reports are uploaded to GIS map
- Any discrepancies or modifications are addressed and completed
- ESCO performs detailed final system commissioning, inspections and obtains all CL&P sign-offs and certifications

ESCO provides required training for LED and control systems operation and reviews communications plan



The Process

ZERO-Landfill Recycling

- Cobra head street lights will be packaged in gaylord boxes on skids
- USofA will provide transportation of material to our recycling facility
- All wire, plastic, glass, capacitors, aluminum, steel and transformers will be recycled with a zero landfill policy
- High pressure sodium lamps (HPS) will be recycled at a USEPA approved facility
- Certificate of Recycling provided for all street lights received



The Process

5. Maintenance, Emergency Response & Rebates

ESCO provides all maintenance functions as directed by the town to include:

- Any routine maintenance as required
- 24/7 On-call Emergency Response

ESCO will process and submit all paperwork required to ensure all rebates and financial incentives are secured on behalf of the town and verifies that the proper Rate 117 is in effect.



The cleanest and most cost-effective energy is the energy
you save through conservation measures



ESCO

THE ENERGY EFFICIENCY EXPERTS