

STREETLIGHT RETROFIT PROJECT

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...CLOSE ENCOUNTERS
OF THE STREETLIGHT
KIND

Inspired by Comi-Con International

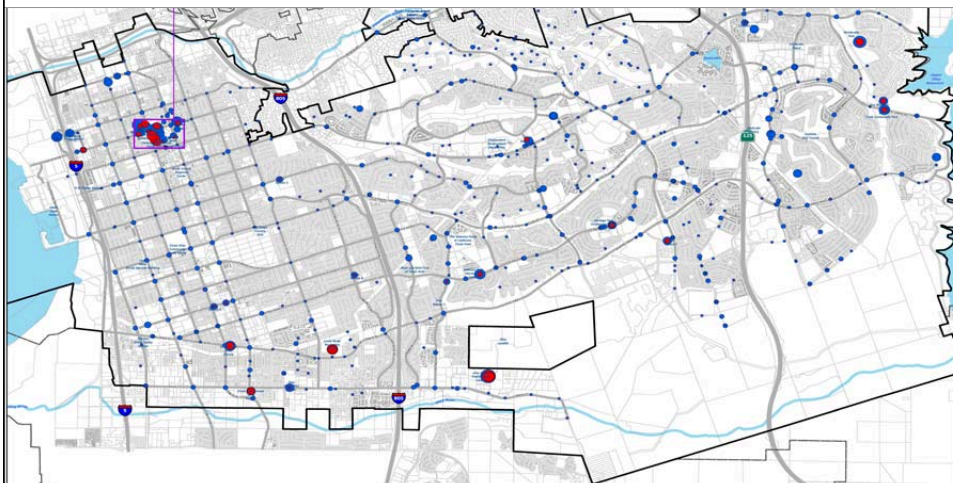
OUTLINE

- **Why Streetlights?**
 - CV Energy Statistics
 - Streetlight Inventory
- **Streetlight Retrofit Project**
 - Assessment Phase
 - Residential Streets (Phase 1)
 - Financing
- **Lessons Learned**
 - Next Steps



MUNICIPAL (ENERGY) STATISTICS

- 700+ energy utility meters
- Annual electricity use = 18 million kWh
- Streetlights = 38% of electricity use



CURRENT STREETLIGHT INVENTORY

- 9,000 streetlight luminaires
 - 4,600 100-Watt HPS (residential streets)
 - 3,800 250-Watt HPS (arterial streets)
 - 600+ various wattages

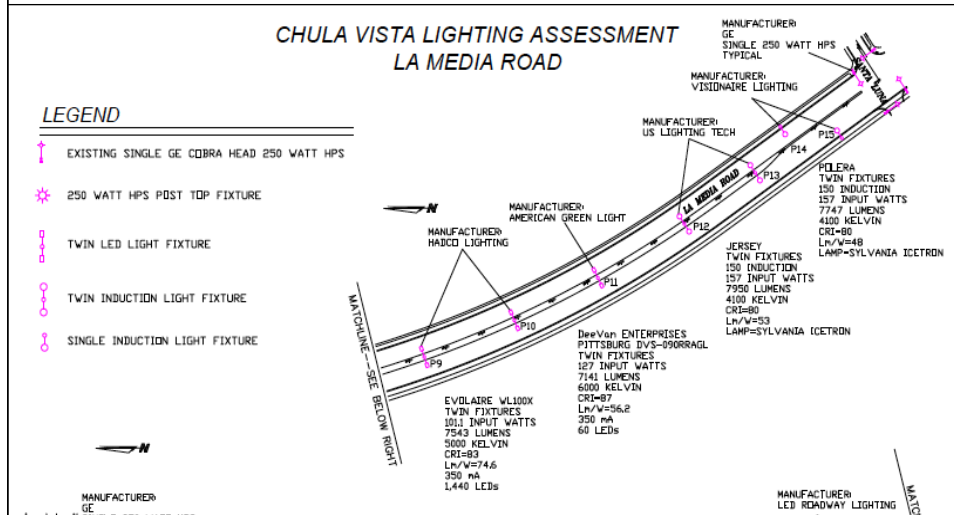


STREETLIGHT ASSESSMENT PROJECT

- Pilot Phase began in 2008
- Solicited products for testing from vendors
- Arterial roadway in new development

STREETLIGHT ASSESSMENT PROJECT

- 32 test fixtures (20 LED, 10 Induction, 2 HPS)
- Preliminary specifications for participants



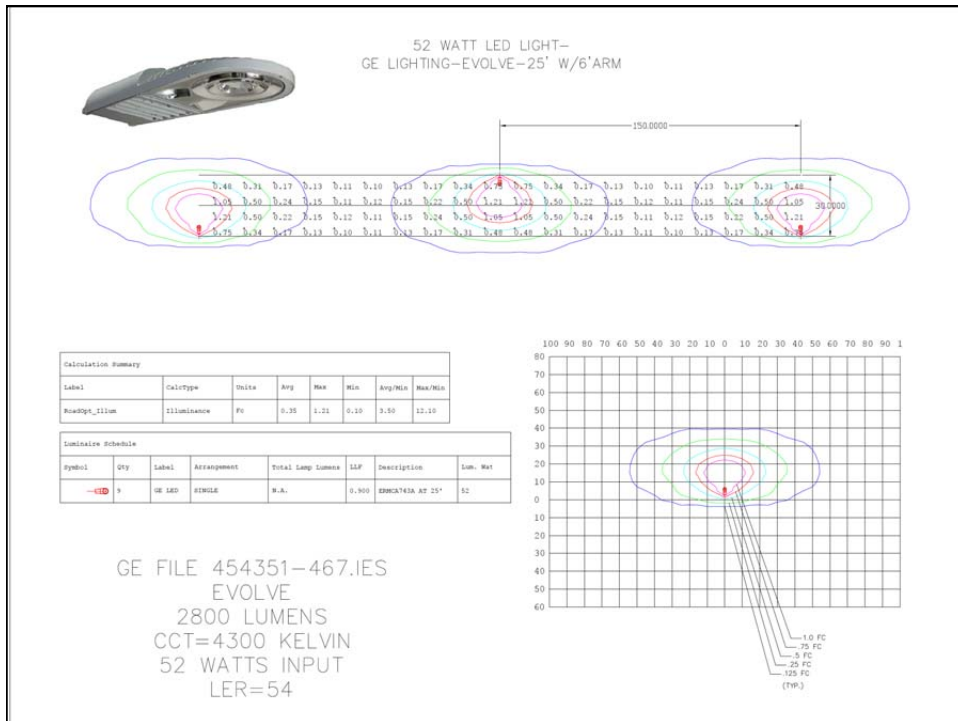
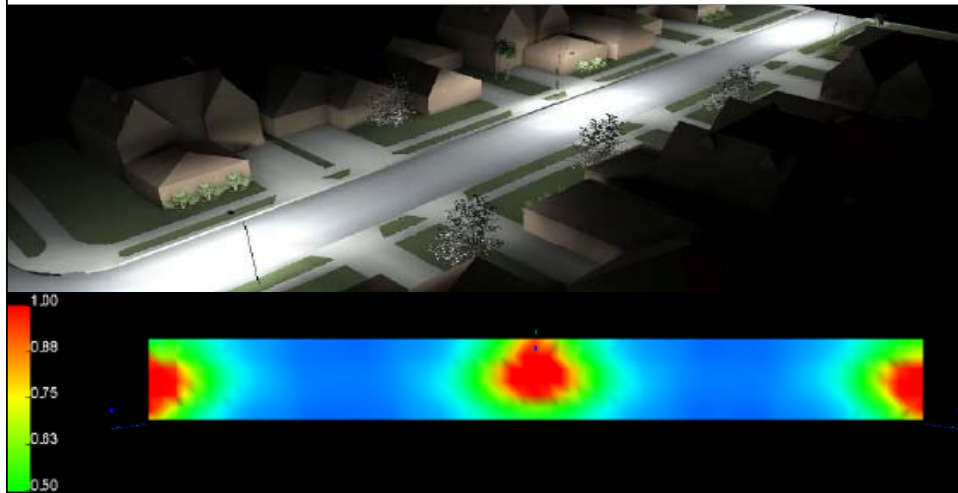
STREETLIGHT ASSESSMENT

- **Assessment metrics**
 - Performance
 - Light Quality
 - Reliability
 - Aesthetics
 - Serviceability
 - Energy consumption
 - Cost
- **LED technology chosen**
 - Mimic HPS light patterns
 - Greater controllability
 - Energy savings



RESIDENTIAL STREETS (Phase 1)

- Replace 4,600 100-Watt HPS fixtures
- Design Build RFP
- Contractor solicit & rank LED fixtures



RESIDENTIAL STREETS

- **Gross Project Costs**
\$2,281,000
- **Utility Rebate Amount**
\$230,000
- **Annual Energy Savings**
900,000 kWh
- **Finance thru CEC Loan**
1% interest rate
10-yr simple payback



LESSONS LEARNED

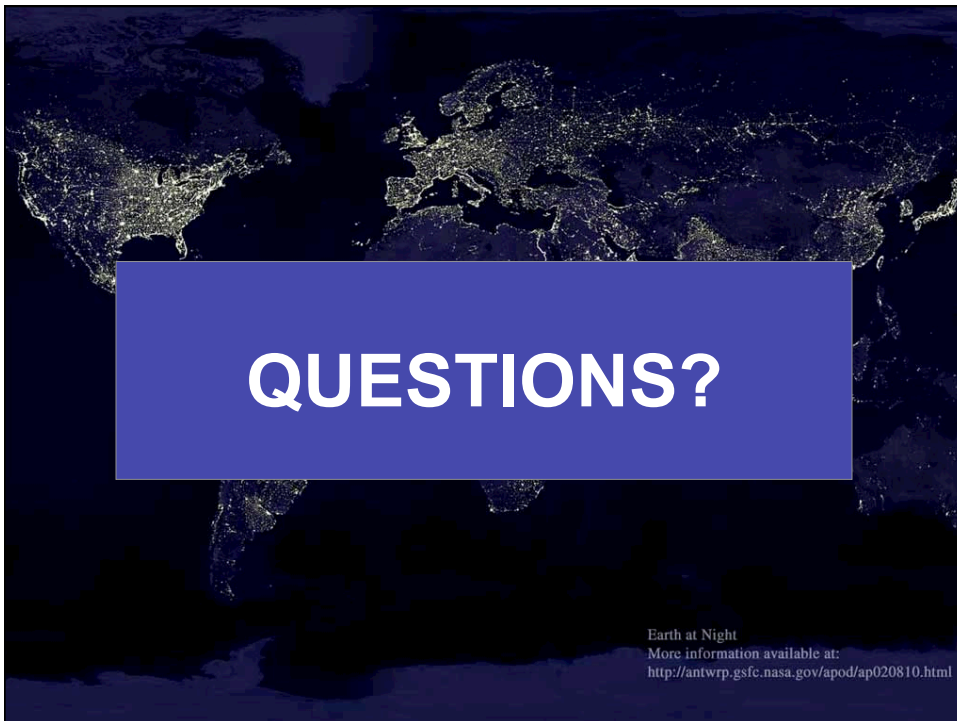
- **Require independent, 3rd-party testing**
- **Work w/ IOU on rebate eligibility & tariff switch**
- **Warranty should be 10+ years**
- **Local purchasing & hiring**
- **Have contractor receive rebate directly**
- **Involve Planning Dept staff for future development**
- **Communicate with stakeholders!**





ARTERIAL STREETS (Phase 2)

- **Planned for Fall 2011**
- **Replace ~3,000 250-Watt HPS fixtures**
- **Finance w/ Qualified Energy Conservation Bonds**



Earth at Night
More information available at:
<http://antwrp.gsfc.nasa.gov/apod/ap020810.html>