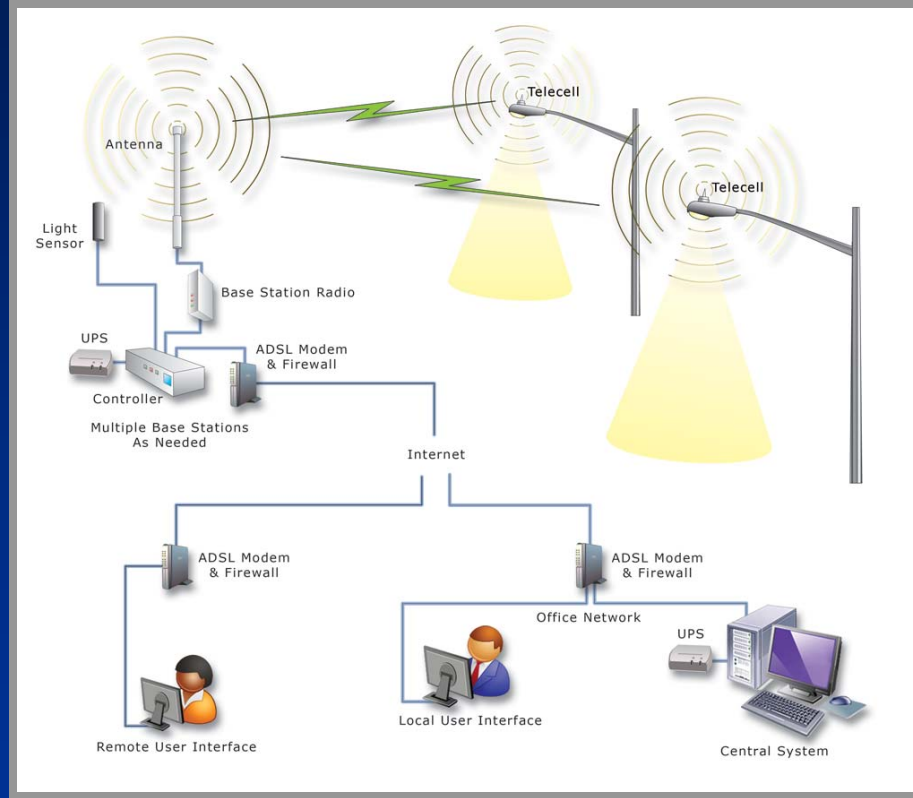


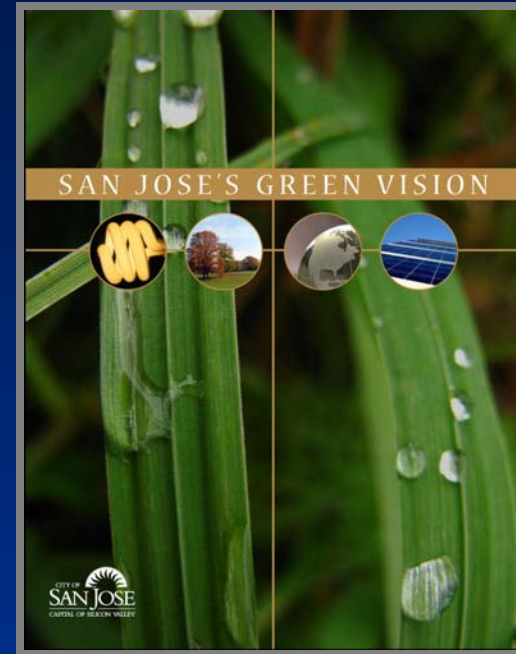
# San José's "Smart" Streetlight Strategy



Laura Stuchinsky, San José DOT  
CAL-SLA Northern California  
Energy Conference #56, May 19, 2011

# Why “Smart” Lights

- Reduce O&M costs
  - 13,000 lights replaced/repaired per year
  - 3 yr cumulative GF deficit > \$100 m
  - Spending \$6 m/year
  - 2008- shut off 900 lights
- Advance San José *Green Vision*
- Shifting from LPS
- Protect astronomical research
- Improve quality of lighting





# *Initial Steps*

- 2008:
  - Revise Streetlight Policy
  - Demo “smart” light
- 2009: Two pilots
  - Residential, powerline
  - Commercial, wireless



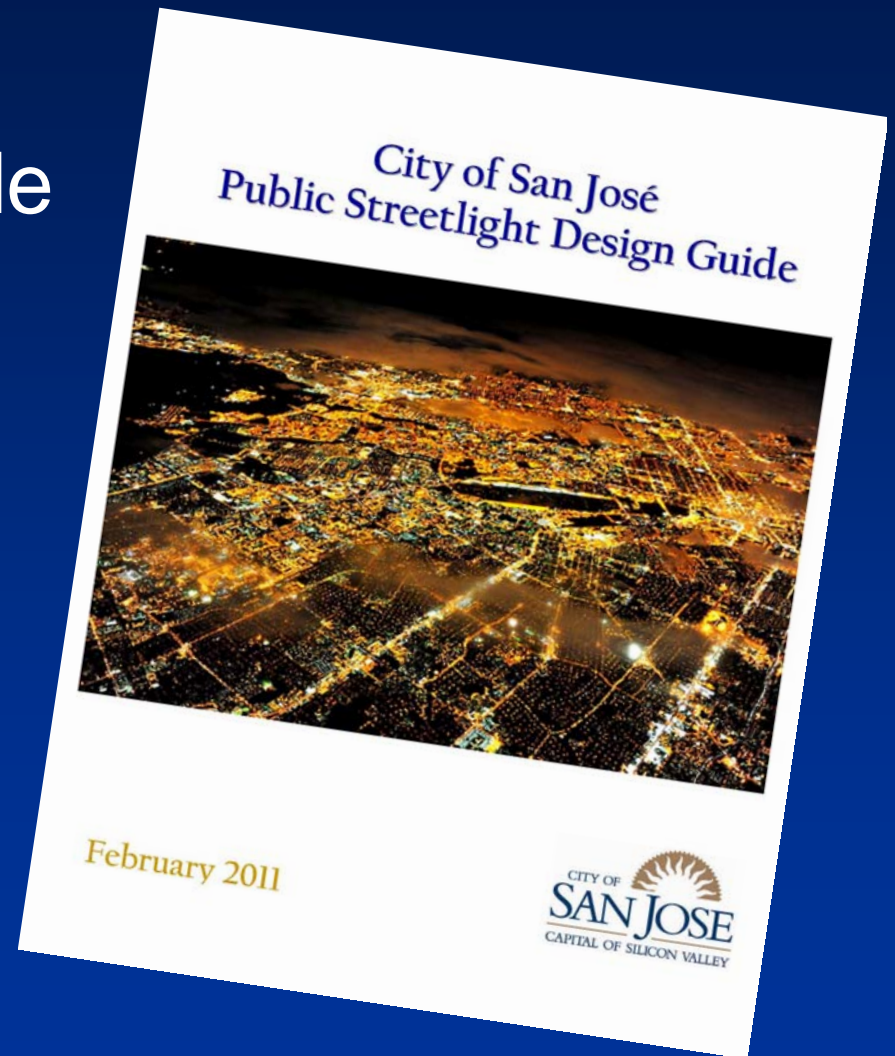
# *Recent Activities...*

- 2010:
  - Streetlight Demo
  - Testimony General Rate Case
- 2011:
  - Adopt Design Guide
  - 2011: RFP for 2,200+



# *Streetlight Design Guide*

- I. Replacement Guide
- II. Installation Guide
- III. Adaptive Lighting



# *Adaptive Lighting: RP 8*

<b>ADAPTIVE LIGHTING: LUMINANCE METHOD CRITERIA</b>			
<b>Selected Street Classification</b>	<b>Selected Pedestrian Classification</b>	<b>Average Luminance (cd/m<sup>2</sup>)</b>	<b>Adapted Luminance (cd/m<sup>2</sup>)</b>
<b>Major</b>	<b>High</b>	<b>1.2</b>	<b>0.6</b>
	<b>Medium</b>	<b>0.9</b>	<b>0.45</b>
	<b>Low</b>	<b>0.6</b>	<b>0.3</b>
<b>Collector</b>	<b>High</b>	<b>0.8</b>	<b>0.4</b>
	<b>Medium</b>	<b>0.6</b>	<b>0.3</b>
	<b>Low</b>	<b>0.4</b>	<b>0.2</b>
<b>Minor</b>	<b>High</b>	<b>0.6</b>	<b>0.3</b>
	<b>Medium</b>	<b>0.5</b>	<b>0.25</b>
	<b>Low</b>	<b>0.3</b>	<b>0.15</b>

# Strategic Conversion Strategy

<b>Location &amp; Type</b>	<b>Number</b>	<b>Annual Energy Cost</b>
<b>Downtown and NBD's</b> (HPS 100W to 400W)	4,000 (6%)	\$500,000 (11%)
<b>Major Streets</b> (LPS 90W to 180W)	22,000 (36%)	\$1,900,000 (44%)
<b>Minor &amp; Residential Streets</b> (LPS 55W)	31,000 (50%)	\$1,300,000 (32%)
<b>Pedestrian &amp; Median Islands</b> (10W to 150W)	5,000 (8%)	\$300,000 (8%)
<b>Total</b>	<b>62,000</b>	<b>\$4.0 million</b>

# Potential Benefits

- |  |                                |
|--|--------------------------------|
| 1. Convert 2,200 streetlights to LED.... | \$70,000 savings/yr.           |
|  | +                              |
| 2. Dim lights half night (av. 30%) ..... | <u>\$49,000 savings/yr.</u>    |
|  | <b>\$119,000 Total Savings</b> |



*(Assumes same cost structure as LS-2)*

# *Some of the Challenges*



1. Cost
2. Rapidly changing technology
3. Lack of common standards: wattages, communication protocols, etc.
4. Who is in lead—light or control co.?
5. Exclusive relationships
6. Metering accuracy

# *Next Steps*

- Install 2,200 & evaluate
- Refine Design Guide
- Seek additional funding/financing
- Draft Spec. - MSSL Consortium
- Collaborate on new rate



# *More Info*

## San José Design Guide

- [http://www.sanjoseca.gov/transportation/SupportFiles/greenenvision/Public\\_Streetlight\\_Design\\_Guide.pdf](http://www.sanjoseca.gov/transportation/SupportFiles/greenenvision/Public_Streetlight_Design_Guide.pdf)

## Streetlight Policy & Memos

- [http://www.sanjoseca.gov/clerk/Agenda/20110215/20110215\\_0601.pdf](http://www.sanjoseca.gov/clerk/Agenda/20110215/20110215_0601.pdf)
- [http://www.sanjoseca.gov/clerk/Agenda/20081216/20081216\\_0604.pdf](http://www.sanjoseca.gov/clerk/Agenda/20081216/20081216_0604.pdf)

## MSSL Consortium Task Force

- <http://www1.eere.energy.gov/buildings/ssl/consortium.html>