

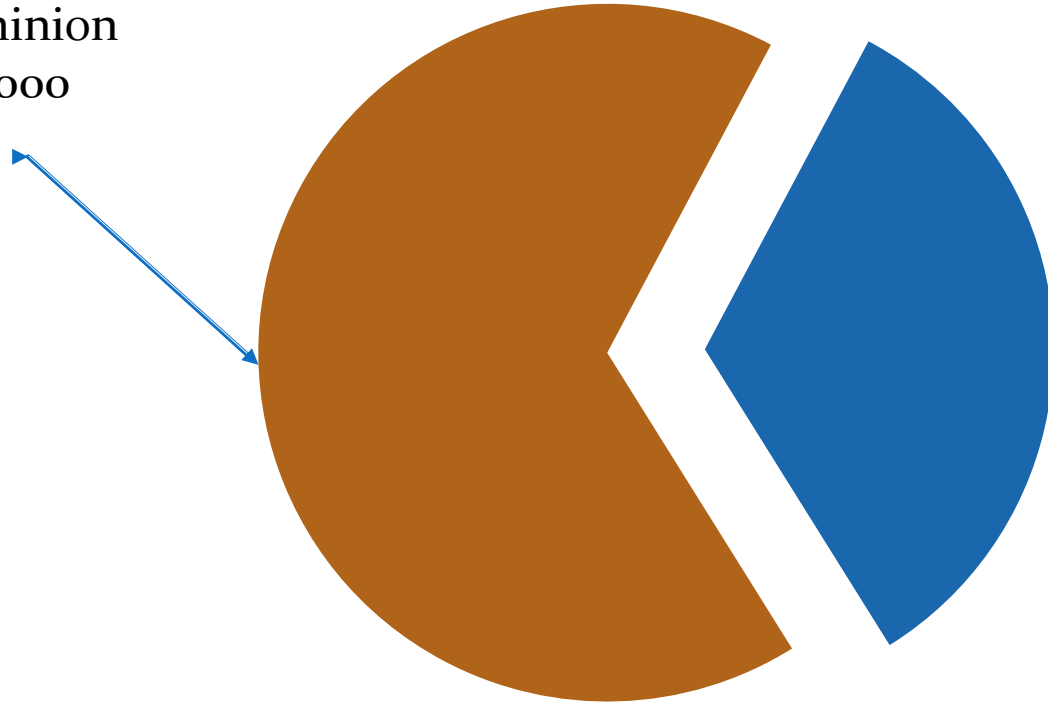
An aerial photograph of Arlington County, Virginia, showing a dense urban skyline with various high-rise buildings. In the foreground, a lush green park with a winding path and trees borders a body of water. A bridge spans the water in the middle ground. The sky is blue with scattered white clouds.

# Smart LED Streetlight Program

Arlington County  
Experience

# Inventory Overview

Dominion  
12000



County 6000

# Inventory

## What does it mean?

- 12 million kWh of electricity per year=2000 homes
- 3 million dollars in operation and management
- A crew of 4 FTE, a fleet of 4 service vehicles, 6000 service requests
- 9300 metric tons of GHG (County only – 2800 metric tons) = 20 million pounds

# Smart Streetlight System

- Centrally controlled
- Improved roadway safety
- Reduced power consumption and GHG
- International Dark Sky Compliant
- Environmentally-friendly
- Helps incidents and emergency managements
- Proactive maintenance system
- GIS web based inventory



# What Are We Doing?



150W HPS(180W)

→ 68%



58W LED

# Dimming Program

Dusk – 8PM

100%



8PM-10PM

75%



10PM-11PM

50%



11PM-Dawn

25%



80%



Residential Group

# Smart Streetlight System



Arlington County

Wednesday, April 24, 2013 9:04:34

**Main Municipality Scheduler Reports Installer Registers Logout**

Add Lamp

Add Group

Add Lamps To Group

Edit Lamp

Delete Lamp

Control Lamp

Enter Group Emergency

Read Energy Usage

Reset Energy Usage

Read Output Status

Total Lamps: 1231  
Anser Lamps: 155  
Lee Lamps: 172  
Ritz Lamps: 686  
CHP Lamps: 215  
Other Lamps: 3

Map

Satellite

Map data ©2013 Google - Terms of Use Report a map error

Municipality: Arlington County Group:  Find Lamp:

Anser  Lee  Ritz  CHP Lamp Filter:

Select	Zone	Lamp ID	Lamp Name	Pole #	Address	Last Control Time	Output 1	Output 2	Energy Read Time	Energy Usage
<input checked="" type="checkbox"/>	Ritz	12180	Potomac Yard	PTA3507S	3535 S. Potomac Arlington VA 22202	4/24/2013 1:59:50 AM	27% T	Off N	4/24/2013 2:23:26 AM	19W, 178kWh
<input type="checkbox"/>	Ritz	12172	Potomac Yard	PTA3101S	3400 S. Potomac Arlington VA 22202	4/24/2013 1:59:50 AM	27% T	Off N	4/24/2013 2:23:38 AM	19W, 288kWh
<input type="checkbox"/>	Ritz	12173	Potomac Yard	PTA3502S	3500 S Potomac Ave Arlington VA 22203	4/24/2013 1:59:50 AM	27% T	Off N	4/24/2013 2:23:35 AM	20W, 285kWh
<input type="checkbox"/>	Ritz	12165	Potomac Yard	CPD3103S	3000 S. Crystal Drive Arlington VA	4/24/2013 1:59:50	27% T	Off N	4/24/2013 2:23:32	19W, 103kWh

100%





50%

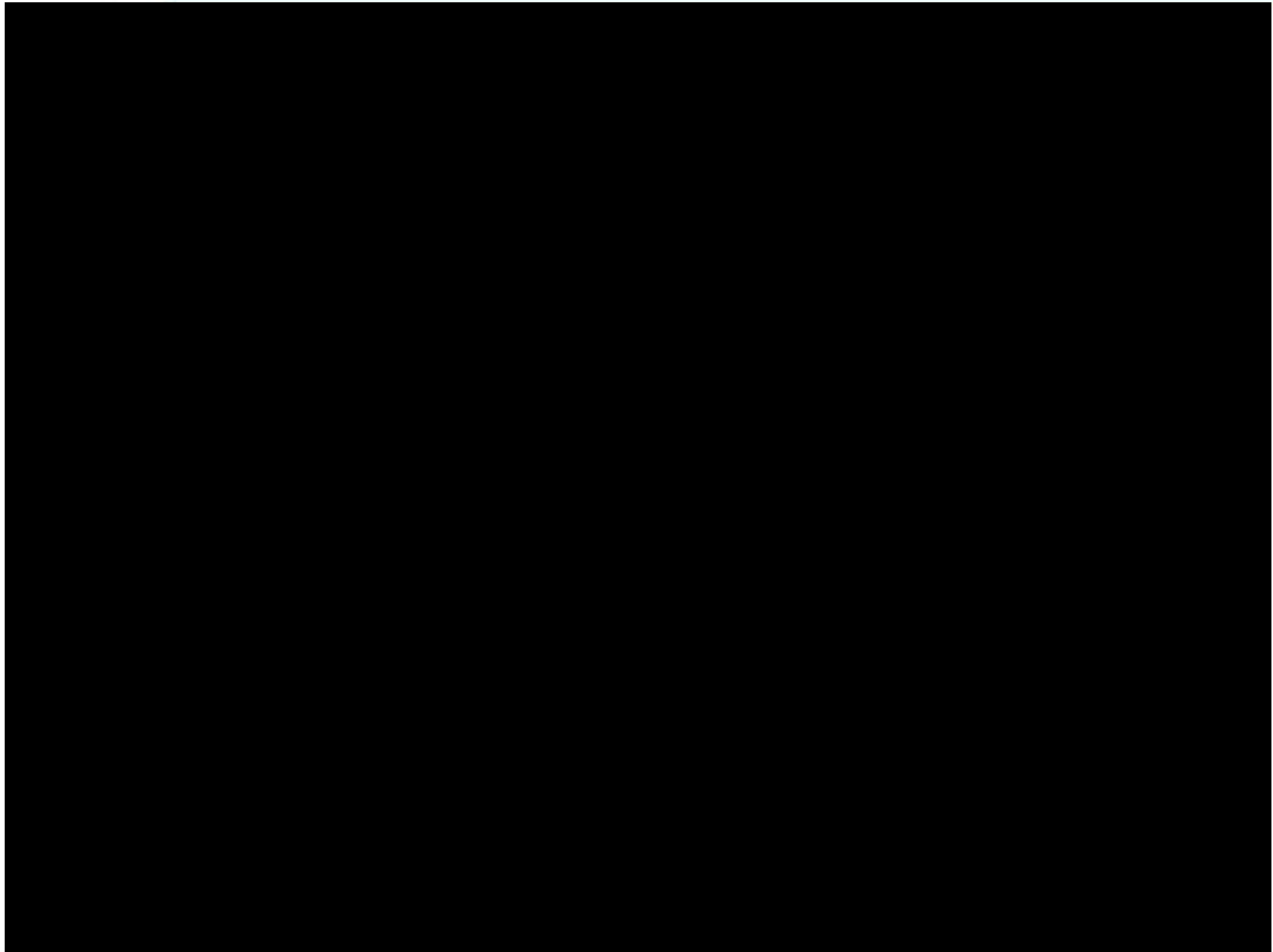


25%



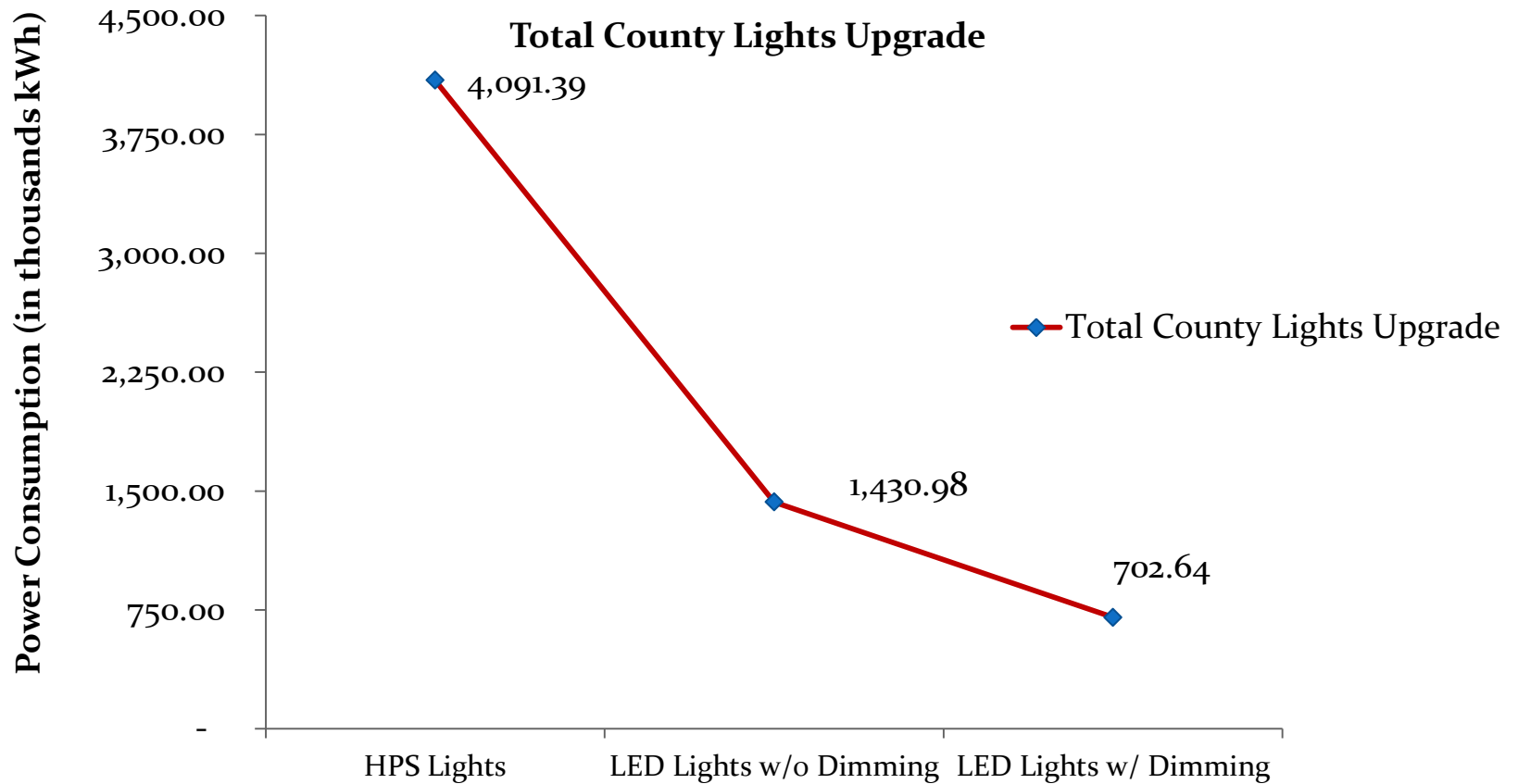
10%





# Dimming Program

## What does it mean?



\* Considering 6000 County Lights Only

# LED Conversion + Dimming

## WHAT WE GET?

### Before

- 4 MkWh = 1,333 homes
- \$3 million in Ops & Mgmnt
- 2,800 Metric tons of GHG  
(6 Million pounds)

### After

- 0.7 MkWh = 117 homes
  - \$1.8 M in Ops &Mgmnt
  - Reduction to 450 Metric tons of GHG (1 Million pounds)
- 
- Investment - \$6M
  - Payback – 5 years
  - Benefit to cost ratio = 6

Design life – 30 years

County Target: Emission per capita 13.2 Metric tons to 3.0 Metric tons by 2050

# Mercury Concerns

- Approx. 35million streetlights in the US
- Each HPS or MV contains: 10 – 100 mg
- In average, 2000kg of mercury on the US streets
- 2000kg not recycled, where does it go?
  
- Mercury contents in LED: .....0 kg

# Questions

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# Contact

Santosh Neupane([sneupane@arlingtonva.us](mailto:sneupane@arlingtonva.us))

Project Manager, Streetlight Engineer

703-228-0778

Arlington County

Shahid Abbas ([Sabbas@arlingtonva.us](mailto:Sabbas@arlingtonva.us))

Program Manager, Streetlights, Signal Systems & ITS

703-228-7588

Arlington County