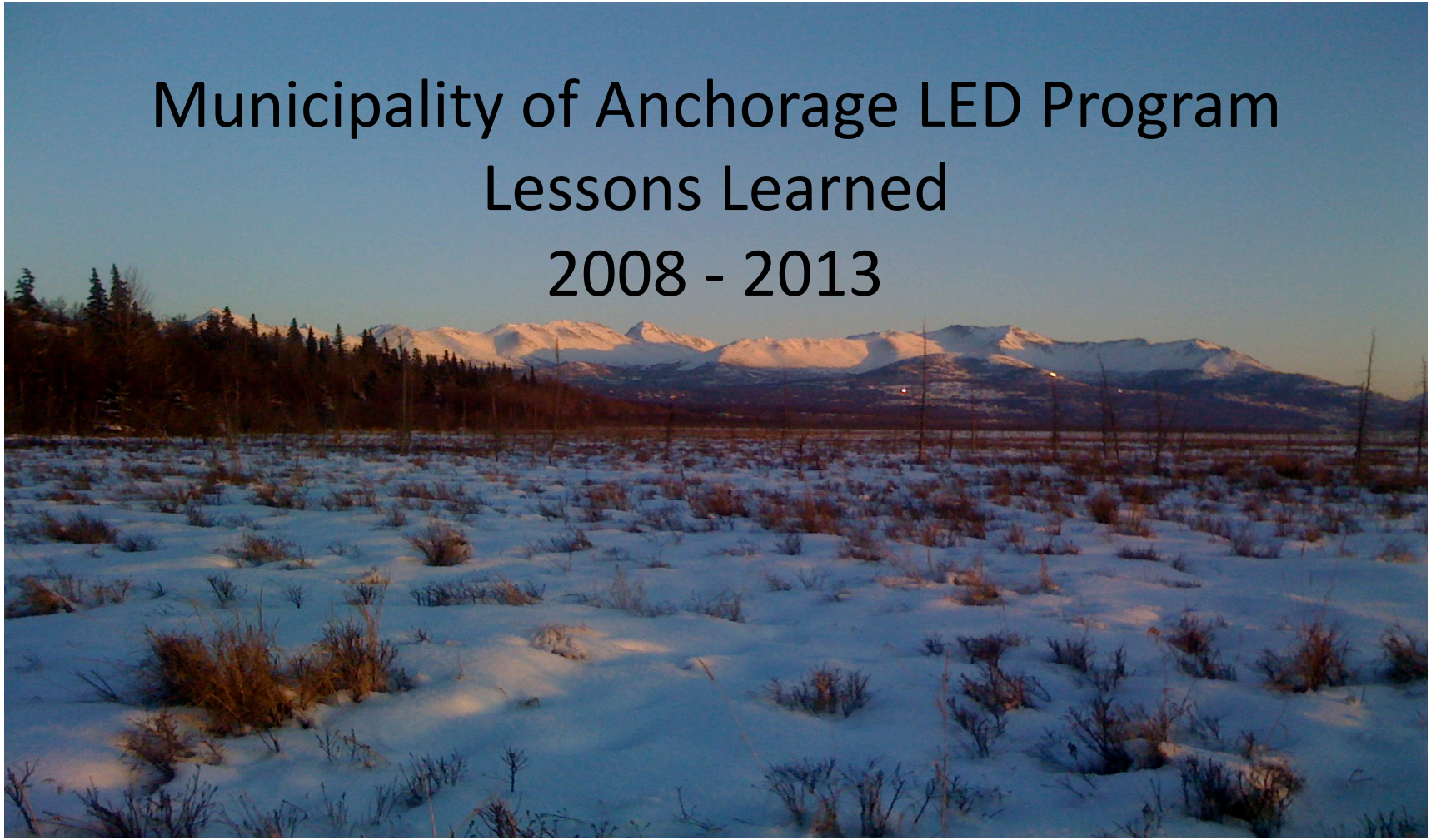


Municipality of Anchorage LED Program
Lessons Learned
2008 - 2013

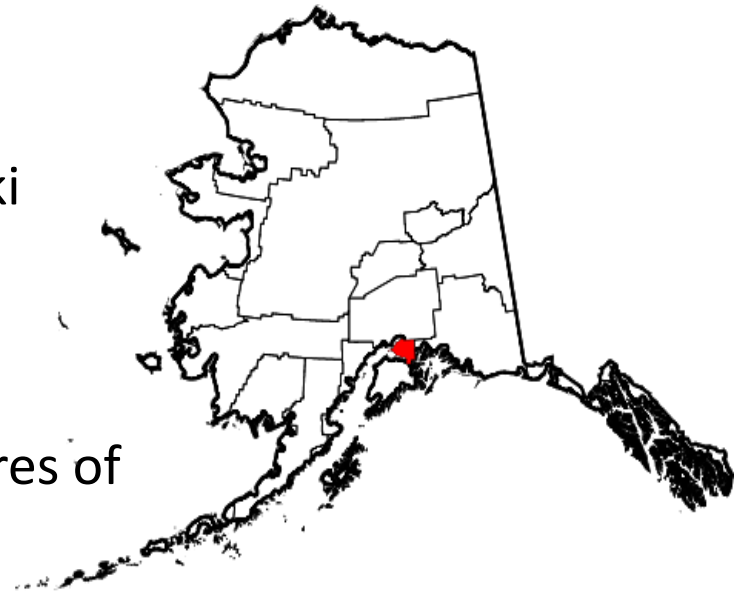
Michael Barber
Continuum Industries & City of Anchorage
mb@continuumindustries.com
www.continuumindustries.com

CONTINUUM INDUSTRIES

Anchorage, Alaska:

Located one degree of latitude above Helsinki
61°13′ N 149°54′ W

The city rests in the valley bowl between the Chugach Mountains Front range and the shores of Cook Inlet.



Anchorage is home to around 292,000 residents

CONTINUUM INDUSTRIES

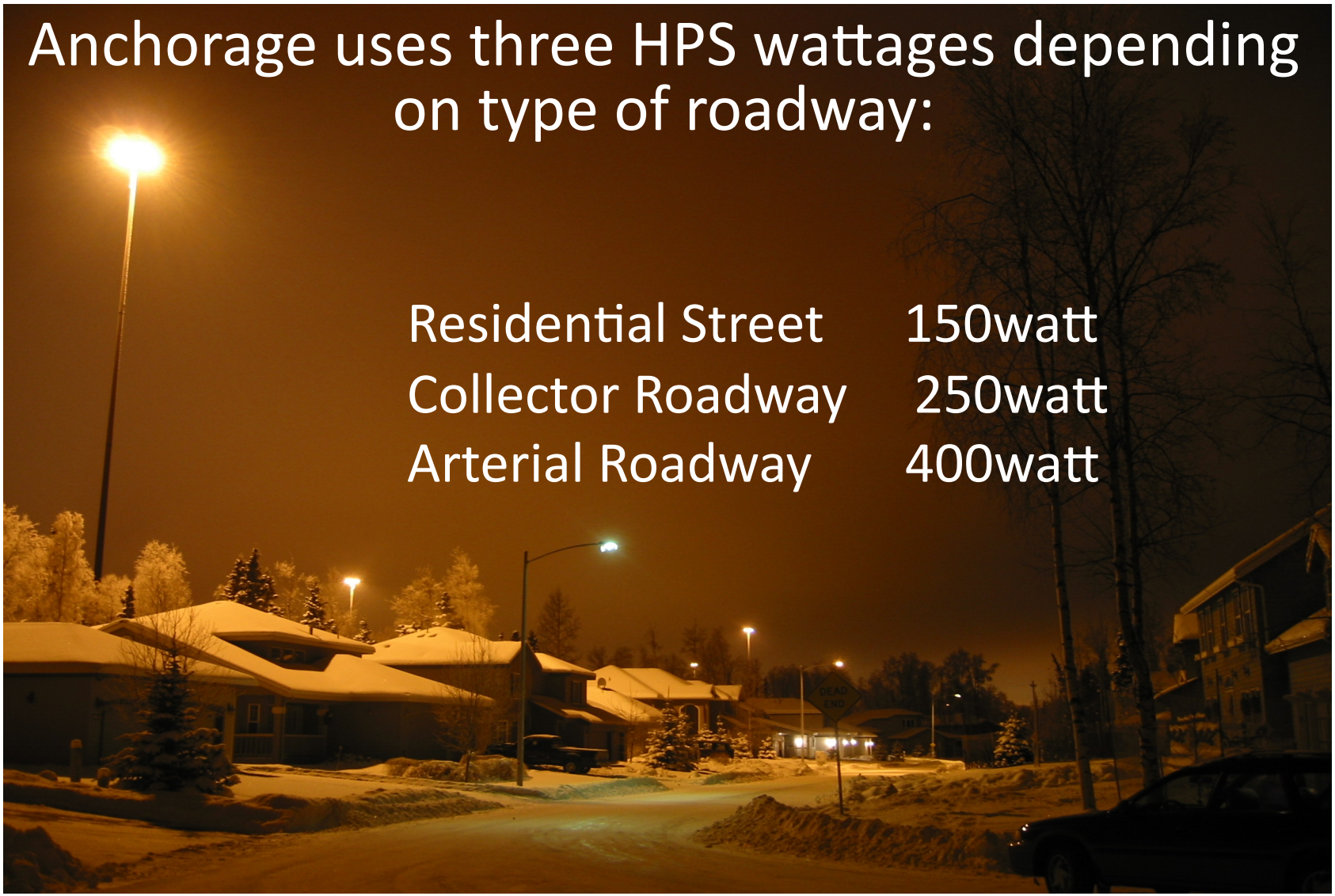
Anchorage Roadway Lighting: Ownership & Quantities

Approximately 16,500 roadway lights in Anchorage

- MEA: 30 (Flat Rate)
- ML&P: 3,403 (Flat Rate)
- CEA: 4,568 (80% Flat Rate)
- MOA: 8,200 (50% Metered)
- MOA Decorative: 299

Divided by three Utilities & the City

CONTINUUM INDUSTRIES



CONTINUUM INDUSTRIES

Vision → Input & Criteria → Economics → Implementation

- Advocate Personnel & Departments
- Political Climate
- Identify Success

- Design Standards
- Traffic Department Existing Standards
- Adaptive Standards

- Cost Benefit (reduced maintenance and energy use)
- Broke or Tight Budget
- Financing Options

- Project or Policy
- Evaluation & Reporting

CONTINUUM INDUSTRIES

2008 LED Lighting Project Drivers & Strategy:

Mayor's office (garnering City Assembly Approval)
Street Light Maintenance department
One for one swap out of HPS for LED luminaires
Energy and maintenance cost savings project

CONTINUUM INDUSTRIES

Vision

Goals and Drivers

- Budget (electricity, maintenance, staff reduction)
- Environment (waste, reduce energy consumption, GHG reduction, Climate Action Plan)
- Economic development

Whose Vision? Who's Advocating?

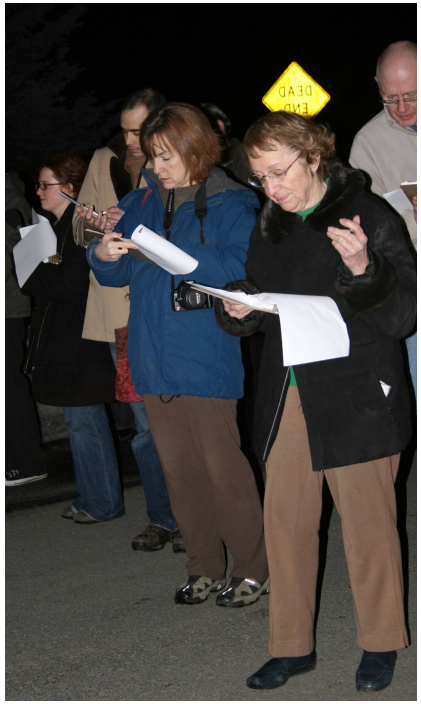
- Elected official
- Department
- Public

Measuring Success

- Reduce costs, waste, GHG, energy consumption
- Create local jobs, bring new businesses to town
- Monitoring & Reporting

CONTINUUM INDUSTRIES

2008 LED Lighting Project Drivers & Strategy:



Multiple community survey assessments
Hundreds of male and female Residents ages 17-71
Two Kinds of broad spectrum Lighting
Implemented by existing maintenance crews
Shipments 500 units every few months

Residents overwhelming preferred
LED light sources

CONTINUUM INDUSTRIES

Input

Community & Stakeholders

Inter-departmental discomfort?
Liability concerns
Community reaction- white light, dimming
Safety Perception
Dark Skies / Astronomy
Other Communities' Experience
(breaking trail can be expensive)
International & National Professionals
(Vtech, Aalto, Clanton)

Design Standard

CIE, local, is there a standard?
Revision Process
Public Demonstration

CONTINUUM INDUSTRIES

2008 LED Lighting Project Drivers & Strategy:

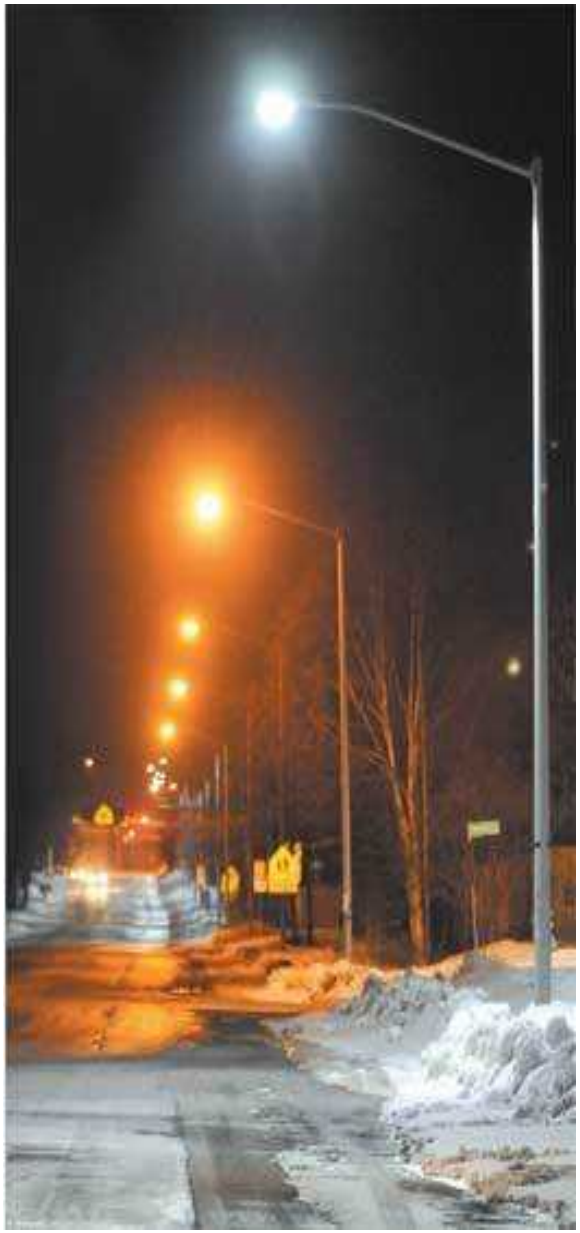
Two forms of controls tested:

Power Line Carrier
Radio Frequency (RF)

Benefits:
Ease of warranty support
Additional Energy Savings
Demand & Emergency Response
Smart Grid's Backbone
Dynamic lighting systems
Health and wellness sensitivity
Better use of maintenance dollars
Elimination of flat rates

Concerns:
Additional Failure Points in System
Additional Contract Obligations
Loss of Simplicity (Internal & Tech)
Often justified as energy saving
Better justified by quality of life?

CONTINUUM INDUSTRIES



Anchorage Project Brief

Total Capital Outlay:	**$2,199,471 ($1,708,561 EUR)**
Annual Savings:	**$340-350,000 ($271,882. EUR)**
Energy Efficiency:	**45-50%**
Payback Period:	**7 Years**

LED Luminaires Installed over 2 Years:

2,221 LED replaced HPS 150watt

1,775 LED to replaced HPS 250watt

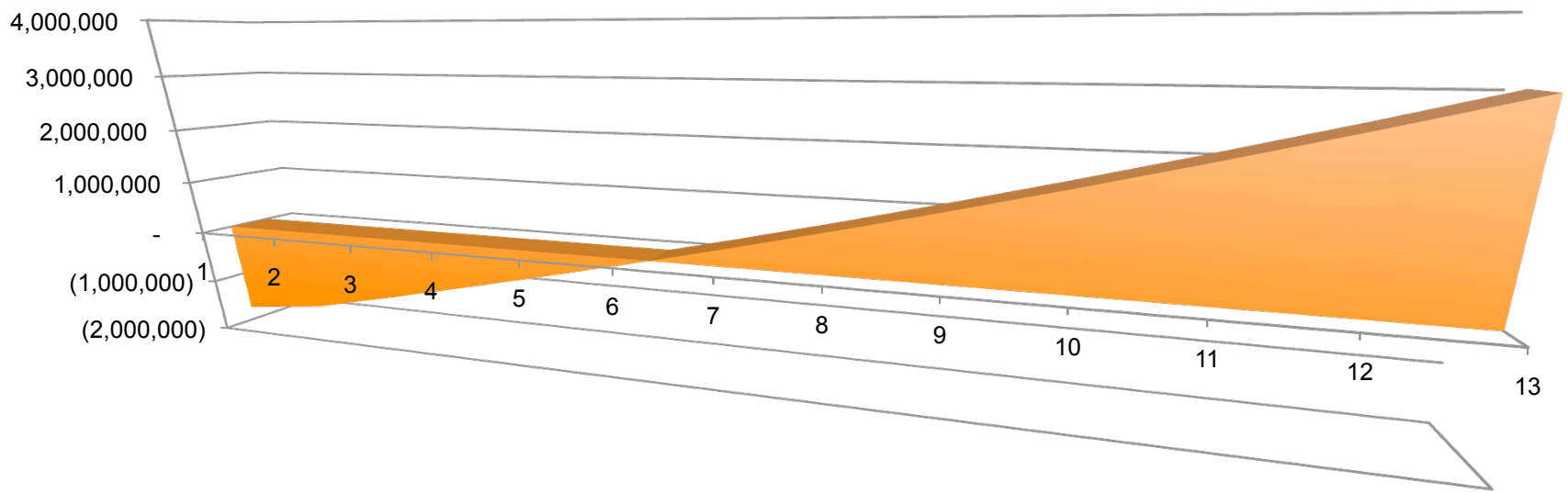
3996 Total LED Luminaires

(residential and collector roadways)

CONTINUUM INDUSTRIES

Anchorage LED Brief (2008 Start)

Total Capital Cost:	**$2,199,471 ($1,708,561 EUR)**
Annual Savings:	**$340-350,000 ($271,882 EUR)**
Energy Efficiency:	**55-60%**
Payback Period:	**7 Years**



CONTINUUM INDUSTRIES

Lessons learned

Struggles:

Program stalled as a priority in the new Mayor's Office: **leadership**

LED penetration slowed around 30% of total roadway lightings (Flat Rates)

Metrics and reporting lost opportunity

State of AK grant money for LEDs in Anchorage over three years

Utilities and Flat rates remain, controls could meter

CONTINUUM INDUSTRIES

Michael Barber
Continuum Industries & City of Anchorage
mb@continuumindustries.com
www.continuumindustries.com

CONTINUUM INDUSTRIES