

# BPA LED's Program Metrics & You

A Quick Introduction to BPA Program Metrics

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## BPA Non-Residential Lighting

- Lighting Program Manager is Responsible for
  - Implementing & supporting lighting programs for public power utilities across the region
  - Integrating new lighting technology when it's ready
  - Works Directly with
    - E3T (New Technology)
    - BPA Planning (Number Crunchers)
      - Savings claimed
      - Incentives paid

## BPA History on LEDs

- 2000 – 2005 No incentives for LEDs
- 2005 -2010
  - Hesitant to rapidly adopt
    - Majority of LED's were not cost effective
    - Overall performance was lacking
    - Abundance of proven low cost / high alternatives
- 2010 – Present
  - Top performing LEDs integrated into Program Offerings
  - All LED products available for case by case review

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## How BPA Groups LEDs

- Ranks LED products into 3 tiers:
  - Varsity
  - Junior Varsity
  - Freshman Team



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## How BPA Groups LEDs

- Varsity
  - Already in BPA Lighting Calculator
  - Proven cost effective
  - Plenty of data available (more is always better)
  - Incentives offered through BPA shift the market
- Screw in Reflectors
- Down Lights
- LED Traffic Signals
- LED Exit Signs



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## How BPA Groups LEDs

- Junior Varsity
  - Already in BPA Lighting Calculator
  - Available data lacking / BPA Needs more data
  - Incentives typically pretty minimal / not shifting market
- Troffer Fixtures
- Canopy Fixtures
- Wall Packs
- Yard / Area Lights



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## How BPA Groups LEDs

- Freshman Team
  - Not in BPA Lighting Program / Calculator
  - All available indicators point to not cost effective
    - Always could use more data
  - System efficacy much less than 'go to' option
- Street Lights
- Highway Lights
- Flood Fixtures



## How BPA Judges LEDs

- Cost Effectiveness
  - Benefit Cost Ratio  $\geq 1$  (BC Ratio)
  - BC Ratio = Total Savings / Total Cost
    - 50,000 rated life
    - 12 hours / 7 days a week use = ~4,300 hours / year
    - 12 year measure life

Present Value of 12 years energy savings + O&M Savings

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Total installed cost (material + labor)

## Cost Effectiveness

- Performance (System Efficacy)
  - Proposed LEDs must be comparable or exceed 'most common practice' EE technology
- Example: (High Bay Application)
  - HP T8 / HO T5 = ~ 70 design lumens / watt
  - LED product would have to be within 10-15%
- BPA doesn't spend rate payer dollars on expensive LEDs when something more efficient is available for much less

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## In Summary

- 'Junior Varsity' LED applications will benefit the most from TAG research
- All LEDs are subject to the same qualifying metrics
- LEDs (and everything else) must be 'Cost Effective' as a measure

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## BPA's Priority Picks

- [401: LED Linear Commercial Office Lighting \(including troffers and pendants\)](#)
- [402: LED Interior High Bay and Low Bay Luminaires](#)
- [413: LED High and Low Bay Retrofit Lamps](#)
- [417: LED Area and Parking Lot Lighting](#)
- [78: LED Street Lighting](#)
- [414: LED Outdoor Commercial Flood Lighting](#)
- [398: LED Parking Garage Lighting](#)
- [411: LED Outdoor Residential Lighting](#)
- [214: LED A-Lamp Replacement](#)
- [395: LED Outdoor Wall Packs](#)