City of Beachwood
Mayor Justin Berns

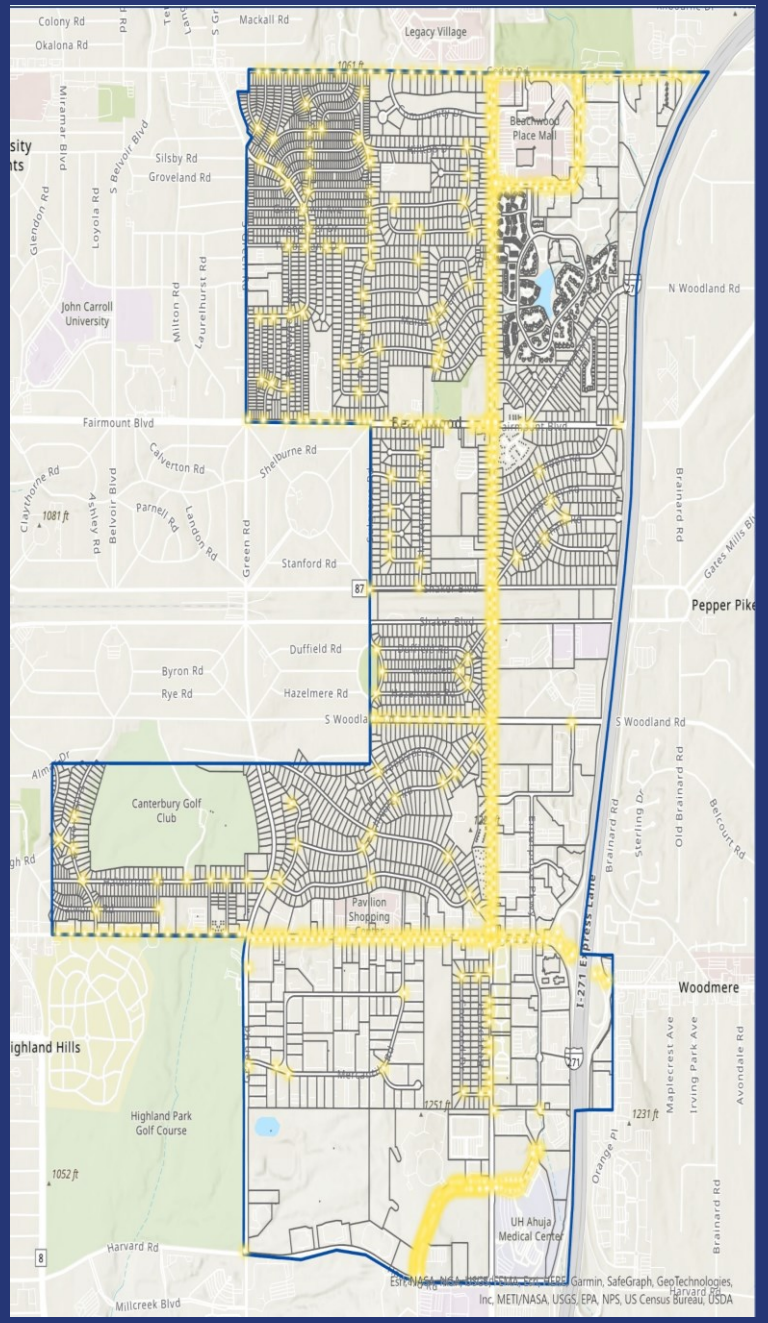
# Residential Lighting
# PROJECT REVIEW

August 20, 2024

# Overview of Streetlighting

## Current Street Lighting Map

- 650 Lights on Major Roads and Most Intersections
- To effectively light the remaining community, 900-1,000 additional streetlights would be required.



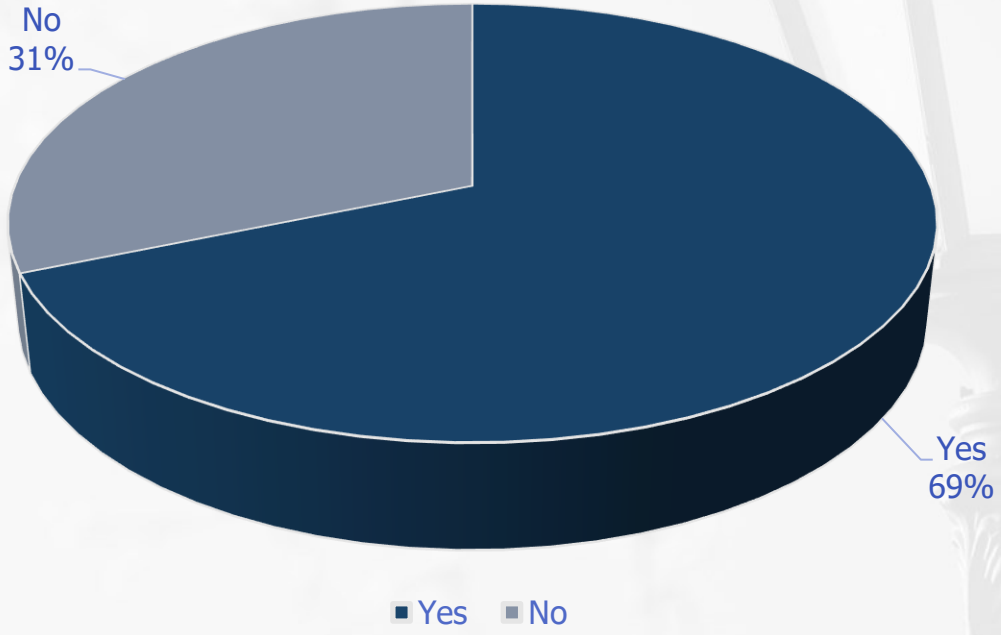
# What Our Residents Want

**FAST**

**EASY**

**NO TAX INCREASE**

**69% of survey respondents want residential lighting on their street.**



# Finding Balance

**Fiscal Responsibility**

**Potential Tax Assessment**

**Maintenance & Electricity Costs**

**Installation Timeline**

**City vs Resident Responsibility**

**Environmental & Dark Sky Considerations**

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# Residential Lighting Options

Traditional Lighting
Carriage Lighting
Solar Lighting

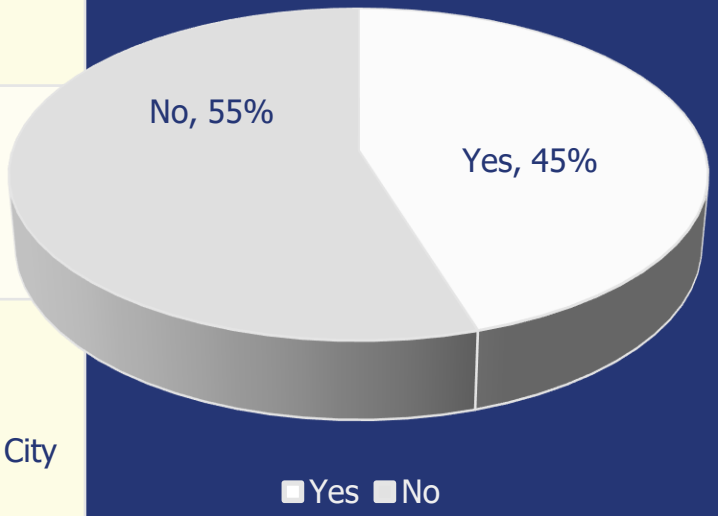
# Traditional Lighting

| | Existing Wood Poles | New Decorative Poles |
|---|---|---|
| **Location** | Public Property | Public Property |
| **Cost Estimate** | $3-3.2 Million<br>(Plus additional transformers as needed.) | $12-15 Million<br>(Underground infrastructure required.) |
| **Timeline** | 5 Years | 5-10 Years |
| **Pros** | • Reliable<br>• More Cost-Effective than Decorative<br>• Quicker Installation with Existing Poles | • Reliable<br>• Visually Appealing<br>• Underground Infrastructure<br>• Less Maintenance & Tree Trimming |
| **Cons** | • Overhead Wiring<br>• Visually Unappealing<br>• Maintenance<br>• Tree Trimming | • Extremely Expensive<br>• Installation Time<br>• Potential Tax Assessment<br>• City Responsible for Underground Infrastructure |

# Carriage Lighting

| | |
|---|---|
| **Location** | Private Property (Homeowner) |
| **Cost Estimate** | $1.6-2.1 Million |
| **Timeline** | 2+ Years |
| **Pros** | • Reliable<br>• Cost-Effective<br>• Visually Appealing<br>• No City Maintenance<br>• Low Homeowner Maintenance |
| **Cons** | • Homeowner Responsible for Free Permit & Installation Logistics<br>• Low Light Emission<br>• Inconsistent Lighting Throughout City<br>• Homeowner Responsible for Electricity & Maintenance |

**45% of survey respondents were interested in the carriage lighting used in the Beacon Drive demo.**




**TOP SURVEY REASONS AGAINST:** Not enough light emission; Did not like the look of the lights; Did not fully illuminate the street

# Solar Lighting

FONROCHE lighting AMERICA

| | |
|---|---|
| **Location** | Public Property |
| **Cost Estimate** | $3-3.2 Million |
| **Timeline** | 2-4 Years |
| **Pros** | • Self-Sustaining<br>• No Electric Infrastructure Needed<br>• Variable Lighting Intensity<br>• Warranty on Solar Systems<br>• Dark Sky Approved<br>• Progressive, Eco-Friendly Option<br>• Ease of Installation & Little Maintenance |
| **Cons** | • Potential Reliability Issues<br>• City Responsible for Installation<br>• Battery Replacement Every 8 Years (Estimated project cost $500,000)<br>• Increased Tree Trimming |

*The city tried solar lighting options in city parks between 8-10 years ago and found them unreliable. Since then, technological gains in LED efficacy, solar panel output, and battery technology have made solar power a viable option for residential lighting solutions*.

**Waiting on pricing for a small pilot program (5-7) lights to determine the efficacy of Fonroche solar lighting.**

# At A Glance Comparison

| | **Traditional**<br>Expensive, but reliable option that will take 5-10 years to complete. | **Carriage**<br>Reliable less expensive option that requires homeowner installation. | **Solar**<br>Progressive, eco-friendly option that may have reliability concerns. |
|---|---|---|---|
| **Timely Installation** | ✗ | ✓ | ✓ |
| **Installed on City Property** | ✓ | ✗ | ✓ |
| **City Funded** | ✗ | ✓ | ✓ |
| **Environmentally Sustainable** | ✗ | ✗ | ✓ |
| **100% Reliability** | ✓ | ✓ | ✗ |
| **No Potential Tax Assessment** | ✗ | ✓ | ✓ |
| **Dark Sky Approved** | ✗ | ✗ | ✓ |