

# City OF Saint Paul **STREET LIGHTING**

**GENERAL INFORMATION  
& WIRE THEFT**

**April 2022**



**SAINT PAUL**  
PUBLIC WORKS

**STPAUL.GOV**

# Summary

**Theft is becoming an issue**

**What we are currently doing and seeing**

**Logistics for moving forward**



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[STPAUL.GOV](http://STPAUL.GOV)

# Saint Paul Lighting "Quiz"



King  
Lantern



Large  
Antique  
Lantern



Side Mount  
Holophane



Globe



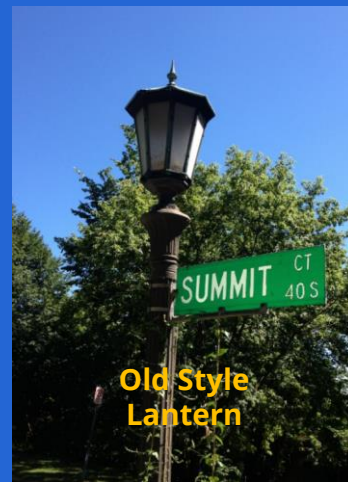
Redesigned  
Lantern



Irvine  
Park  
Lantern



Sun  
Valley  
Lantern



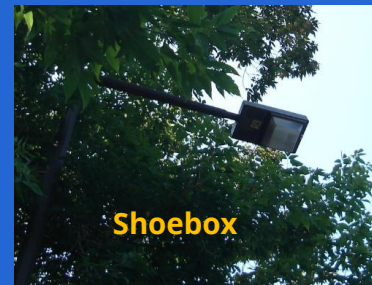
Old Style  
Lantern



Cobra



Acorn

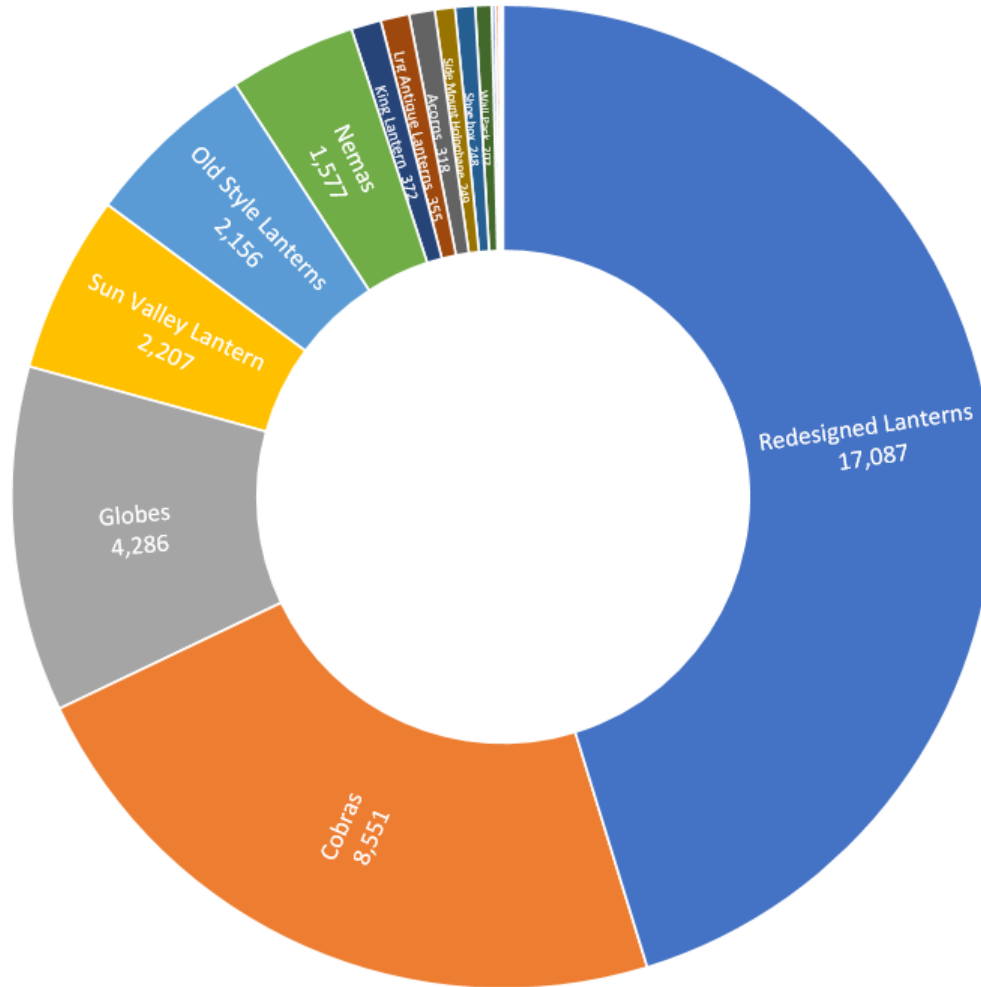


Shoebox



# City of Saint Paul Lighting

## By the #'S



STYLE	QTY
Redesigned Lanterns	17,087
Cobras	8,551
Globes	4,286
Sun Valley Lantern	2,207
Old Style Lanterns	2,156
Nemas	1,577
King Lantern	372
Lrg Antique Lanterns	355
Acorns	318
Side Mount Holophane	249
Shoe box	248
Wall Pack	202
Bollard	46
Western Style Lantern	43
Irvine Park Lanterns	31
Post Tops	22

Styles - 16  
Fixtures - 37,750

# Lighting Wire – What's Happening?

## Copper Prices – 45 Year History



Note: Shaded columns indicate recessions.

Source: Macrotrends.net



# Copper Prices – Last 20 Years





# Wire Theft (Copper Theft is More Accurate)

## Recent Cost Breakdown (\*All expenses not included in current budget):

### Public Works\*

2020 - \$104,600

2021 - \$294,500

2022 - \$ 25,300 (YTD)

### Parks & Recreation (*primarily damage assessment costs*)\*

2020 - \$21,300

2021 - \$18,700

2022 - \$ 3,100 (YTD)

### General Facts:

- Los Angeles estimates copper wire theft @ ~\$3.9M per year
- U.S. Department of Energy estimates copper theft @ \$1 billion per year
- Leading States - Copper Theft: 1. Ohio 2. Texas 3. Georgia 4. California 5. Illinois
- Most popular target for copper theft is air conditioning units

Source: [securitymagazine.com](https://www.securitymagazine.com)



# Wire – What They Are After...Currently







## Access:

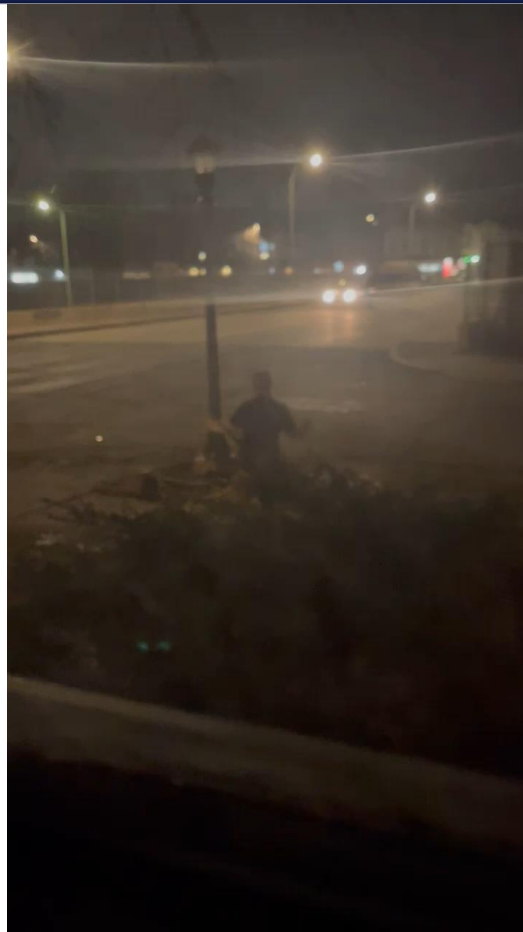
- Battery Powered Tools
- Damage to door (new and existing)
- Vehicle to knock down pole
- Sledgehammer
- Etc.

**Remote locations appear more prone to theft.**





# Video of Wire Theft (17 seconds)





# Wire Theft – Focus Areas

## DESIGN

- Maintenance Access
- Code Compliance
- Theft Deterrent Devices
- Aluminum Poles / Bases / Damage
- Wire Sizes
- Winter Theft & Replacement
- Crash Rated Poles
- Problem Displacement/"Leap Frogging"
- Budget

## CRIME

- Identification & Enforcement
- Logistics Difficult (Assets Everywhere)
- Isolated Locations
- Resource Requirements
- Priorities

## MARKET

- Copper Price
- Scrap Yards
- International Demand / Stockpiling

## POLICY

- Market Controls
- Regulation & Enforcement at Yards
- Prosecution / Deterrence
- Community Costs



# What Has Been Done

- Theft Deterrent Screws
- Banding Access Doors
- Welding Access Doors
- Reduced Wire Size
- City Property ID on Wire
- Overhead Wire (where possible)
- Daylight Burning
- Solar Lighting Options
- Aluminum Wire (other Cities)
- Media & Public Information
- Interdepartmental Coordination – PW / PARKS / SPPD / CAO / DSI
- Theft Monitoring Device
- New Installations – Design Modifications (where possible)
- Cost Tracking
- Mapping
- Alternate Pole Designs (where feasible)
- Complaint Management



# Ongoing Efforts

- Theft Deterrent Screws
- Banding Access Doors
- Welding Access Doors
- [Reduced Wire Size](#)
- [City Property ID on Wire](#)
- Overhead Wire (where possible)
- [Daylight Burning](#)
- Solar Lighting Options
- Aluminum Wire (other Cities)
- [Media & Public Information](#)
- [Interdepartmental Coordination – PW / PARKS / SPPD](#)
- [Theft Monitoring Device](#)
- [New Installations – Design Modifications \(where possible\)](#)
- [Cost Tracking](#)
- [Mapping](#)
- [Alternate Pole Designs \(where feasible\)](#)
- [Complaint Management](#)



# More Detail

- Reduced Wire Size
  - Reduced replacement cost
  - Not a good theft deterrent
- City Property ID on Wire
  - Necessary – but not permanent
- Daylight Burning
  - Marginally good theft deterrent
  - Energy and environmental costs
- Media & Public Information
  - Public reporting has been helpful
- Interdepartmental Coordination – PW / PARKS / SPPD
  - Location tracking
- Theft Monitoring Device
  - Testing
- New Installations – Design Modifications (where possible)
- Cost Tracking
- Mapping
- Alternate Pole Designs (where feasible)
- Complaint Response



# St. Paul Wire is marked on the insulation, however...



**DURABLE MATERIAL**

Roll over image to zoom in



## Happybuy Manual Wire Stripping Machine 0.06-0.98 inches, Wire Stripper Machine with Hand Crank Portable, Wire Stripping Tool Aluminum Construction, for Scrap Copper Recycling

Visit the Happybuy Store

★★★★☆ 745 ratings | 22 answered questions

\$55<sup>99</sup>

& FREE Returns

Get \$60 off instantly. Pay \$0.00 \$55.99 upon approval for the Amazon Prime Store Card. No annual fee.

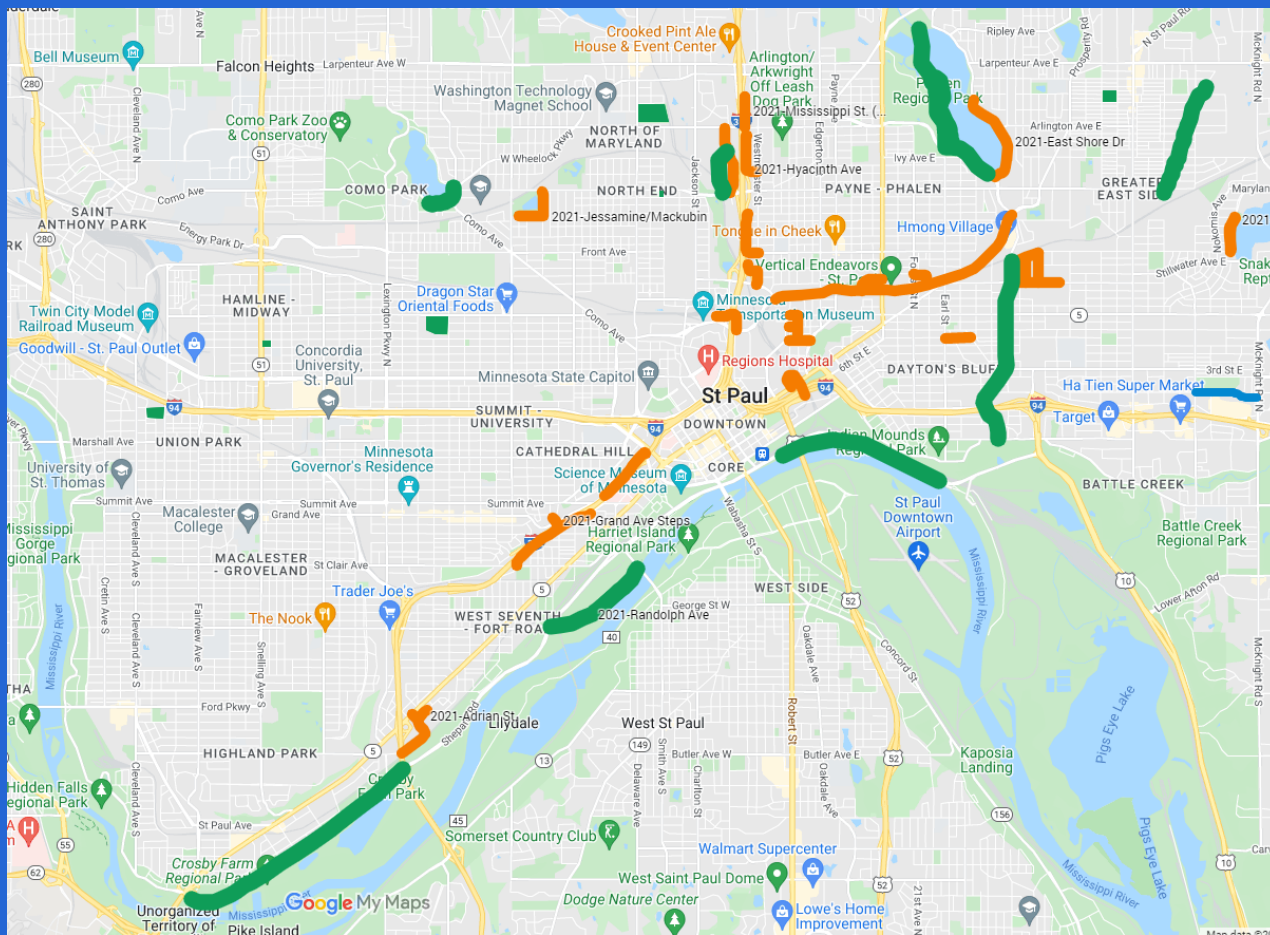
<b>Brand</b>	Happybuy
<b>Material</b>	Stainless Steel
<b>Color</b>	Manual
<b>Item Dimensions LxWxH</b>	4 x 5 x 12.5 inches
<b>Handle Material</b>	Aluminum

### About this item

- **Hand Crank Designed:** designed with hand cranks, easy to operate. Easily connects to drill for automatic wire stripping or use Handle for manual stripping
- **Aluminum Alloy Material:** Manual wire stripper with high quality lightweight construction made of durable aluminum alloy. The blades have been fully guarded to ensure complete safety
- **Recycle Your Copper:** Suitable for removing the plastic and rubber insulation from undamaged scrap wire. You can recycle your copper wire, benefit from non-insulated pure copper wire
- **Easy to Use, Portable & Energy Saving:** There is adjustable blade and rollers on the cable wire stripping machine, smoothly and good for any shapes Cable. When you use this machine to strip the wire whose diameter smaller than 3mm, please put the wire to the small hole on bottom
- **Wide Application:** This machine is automatic and the wire range is up to 25mm, widely used in wiring harness processing, aerospace wire processing, audio and data line processing, wire recycling dismantling and other industries



# Saint Paul Wire Theft Locations (2021)



**NOTE:** Many locations shown have been subject to repeat theft.

## LEGEND

-  PW
-  PARKS





## Wire Theft Indicator

- + Testing new ways to identify when wires are cut
- + Working closely with Police and CAO
- + Identifying proper technology
- Not scalable
- May not indicate actual time of theft
- Unproven / under testing





# Comparison to Minneapolis

## What's different?

- In terms of theft, not much:
  - 4,000 ft of wire stolen in 2021
  - Theft common in parkways (converting to wire in conduit)
- Minneapolis crews maintain only 20,000 lights
- Xcel maintains 24,000 wood pole lights
- 80% of Residential lighting on wood poles
- Wood poles powered w/ overhead wiring
- Intersection and midblock focus



- Criminal and regulatory authority in this issue is governed primarily by Minnesota State Statutes, while enforced locally.
- The issues are similar to catalytic converter theft and the need for Statewide strategies to address this growing concern.



# Contacts

Public Works – Traffic Operations – Joe Spah

Parks & Recreation – Tom Hagel

St. Paul Police Department – Sr. Commander Kurt Hallstrom

DSI – Joe Voyda

CAO – Ian Welsch (PW) / Judy Hanson (SPPD)