

ESTIMATING THE EFFECTIVE POPULATION ON NANTUCKET

FRANK CAMPANELLI, TYLER DONOVAN, ALEC WEHSE, SAMUEL WINTER

INTRODUCTION

Project Overview



Introduction to
StreetLight



Population
Analyses

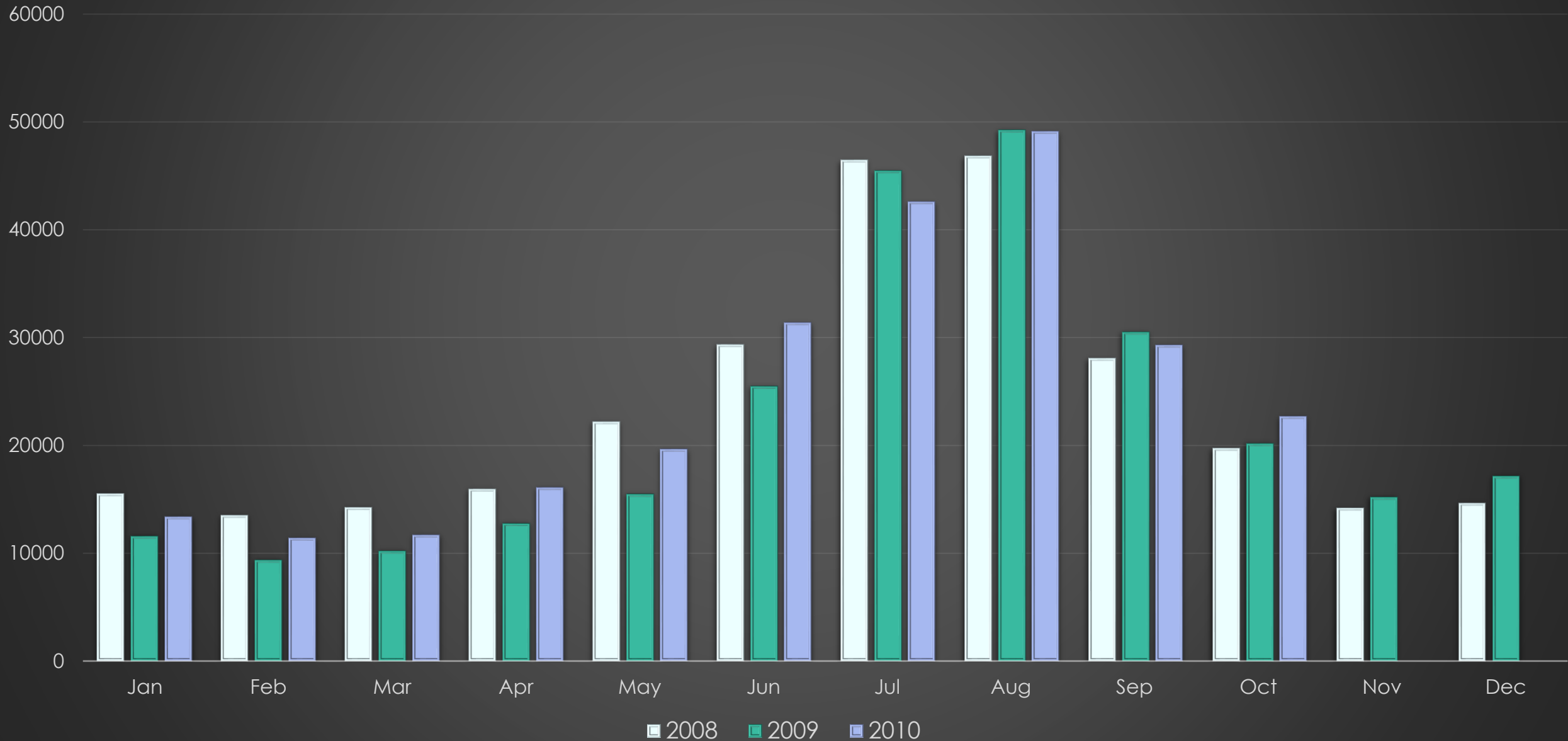


Conclusions &
Recommendations

CHALLENGES OF ESTIMATING NANTUCKET'S EFFECTIVE POPULATION



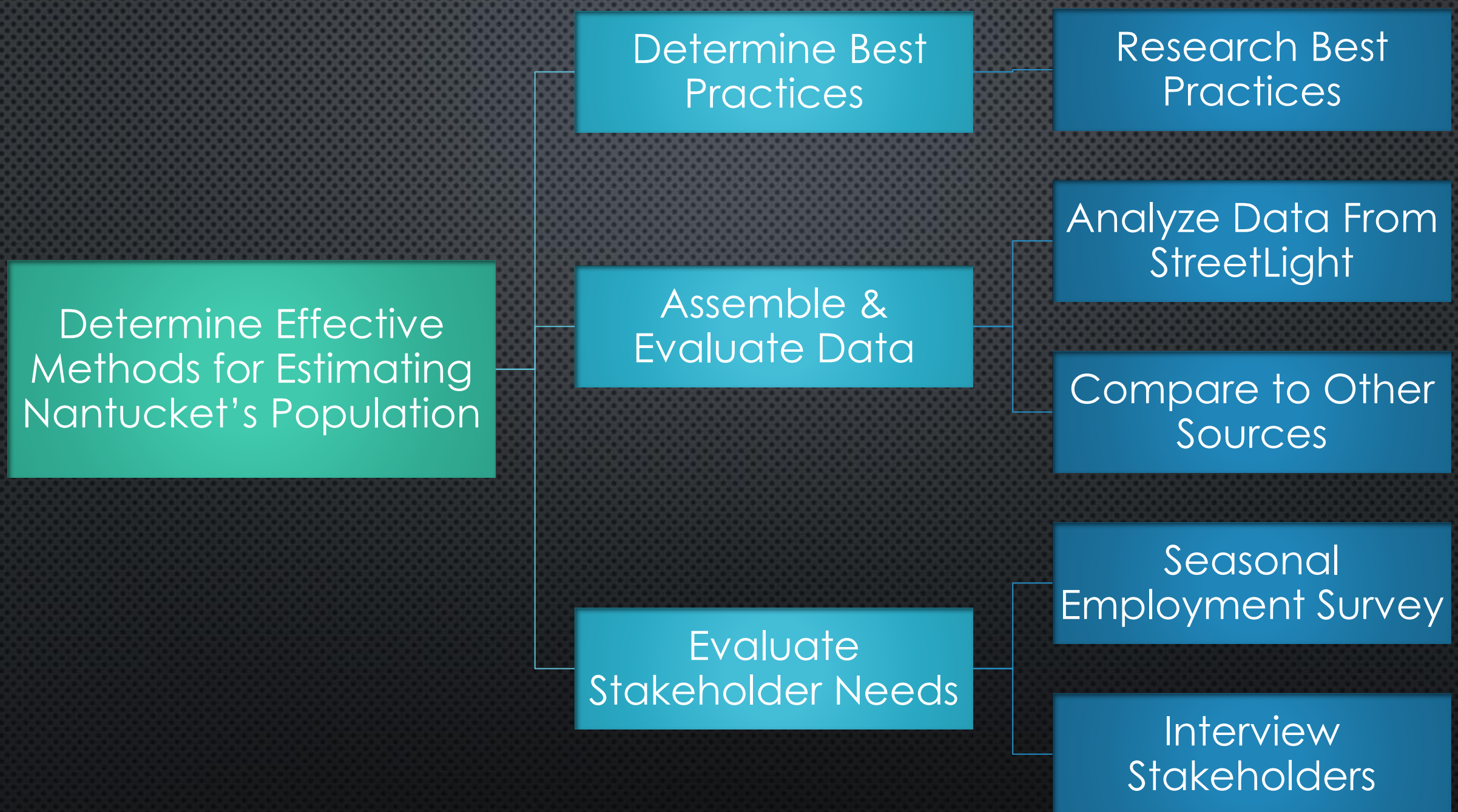
Estimates of Nantucket's Effective Population, 2008-2010



THE NANTUCKET DATA PLATFORM

- CONDUCTING EFFECTIVE POPULATION STUDY
- RESERVOIR OF RELIABLE DATA
- DATA BASED DECISION MAKING
- CATEGORIES OF PEOPLE:
 - PERMANENT RESIDENTS
 - COMMUTERS
 - VISITORS
 - SEASONAL RESIDENTS





SOURCES OF DATA

DIRECT SOURCES

- TOWN CLERK'S STREET CENSUS
- FERRY AND AIRPORT TRAVEL DATA

INDIRECT SOURCES

- SOLID WASTE (GARBAGE)
- STREETLIGHT MOBILITY DATA

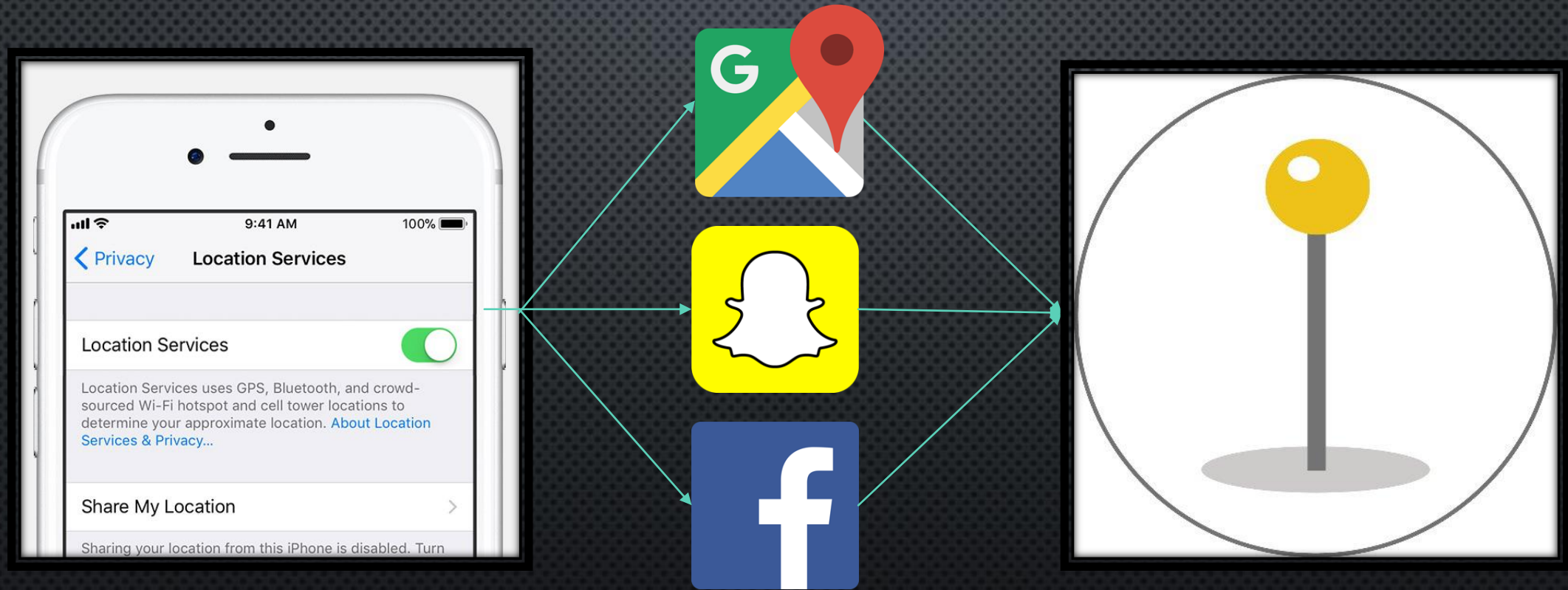
INTRODUCTION TO STREETLIGHT

WHAT IS STREETLIGHT?

- PURCHASES CELL PHONE DATA FROM SERVICE PROVIDERS
- USED BY GOVERNMENT AGENCIES
- DETERMINING EFFECTIVENESS ON NANTUCKET



HOW STREETLIGHT WORKS



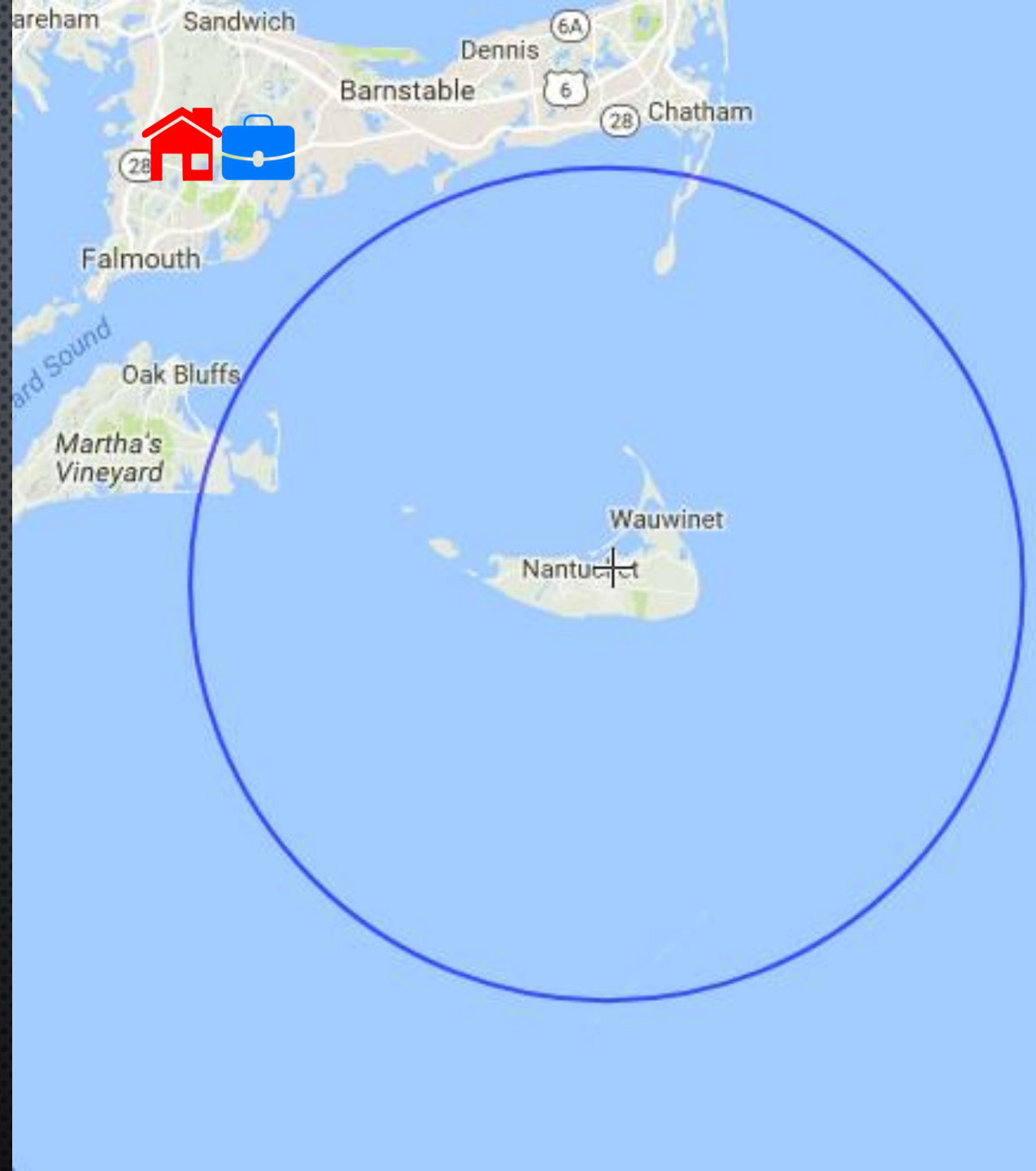
PERMANENT RESIDENTS

- LIVE WITHIN 25 MILES
- WORK WITHIN 25 MILES



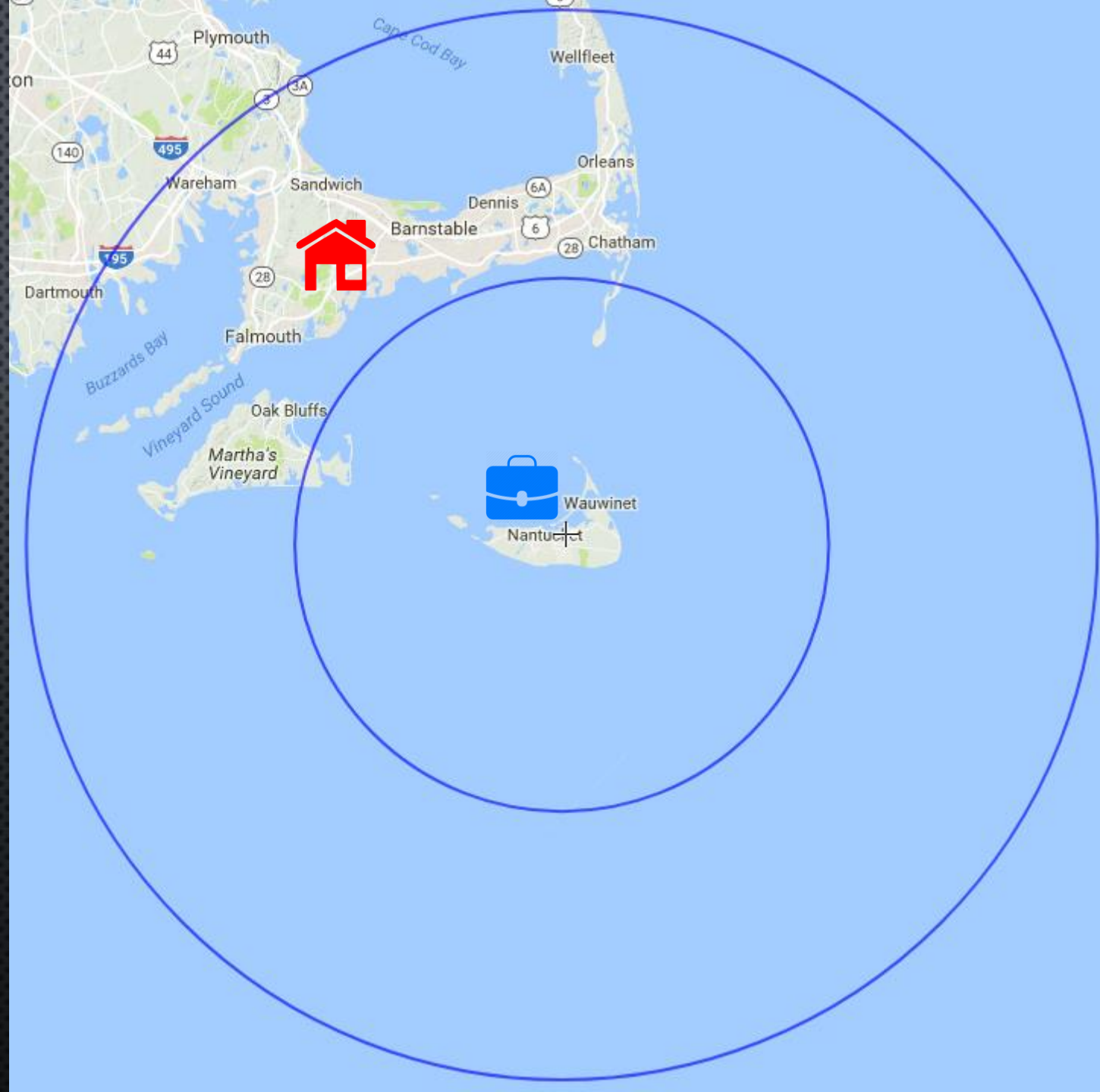
VISITORS

- LIVE BEYOND 25 MILES
- WORK BEYOND 25 MILES



COMMUTERS

- LIVE BETWEEN 25-50 MILES
- WORK WITHIN 25 MILES



StreetLight Advantages



StreetLight Limitations



ANALYSES AND ESTIMATIONS

ANCHOR MONTH

DEFINITION

- MONTH WHERE POPULATION MOST CLOSELY RESEMBLES THE PERMANENT RESIDENT POPULATION
- USED AS BASE POINT FOR EXTRAPOLATION

FEBRUARY

- LOWEST SOLID WASTE PRODUCTION
- ASSUMES LEAST AMOUNT OF PEOPLE ON NANTUCKET

ANCHOR POPULATION ESTIMATES

Street Census
13,200

77% Response
Rate

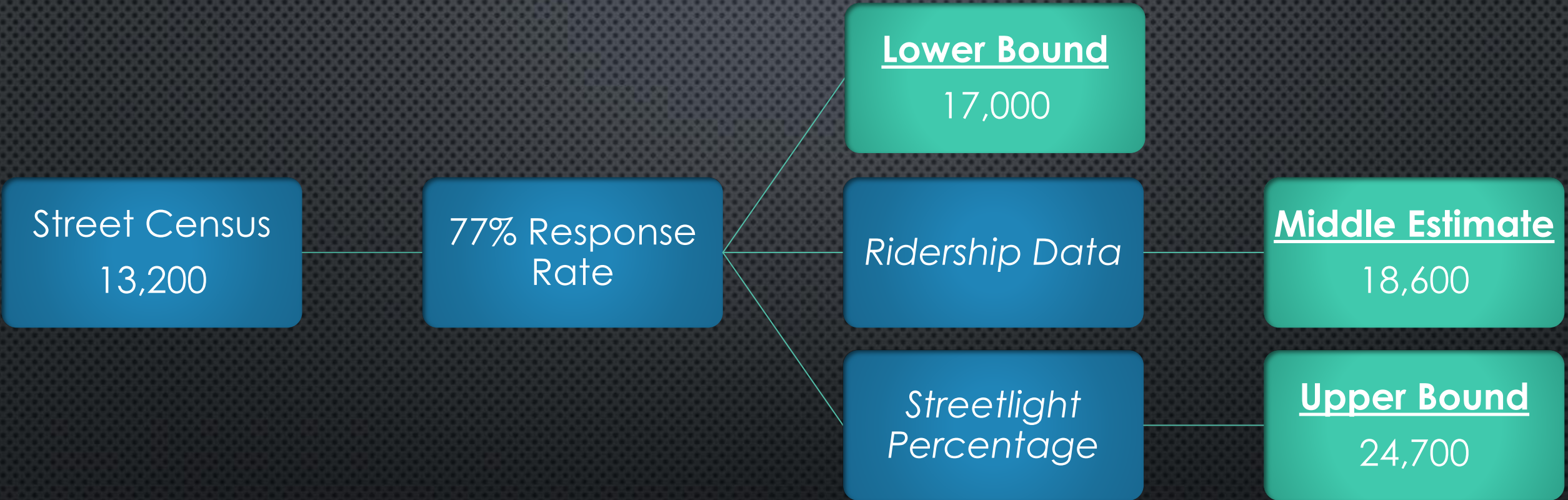
Lower Bound
17,000

Ridership Data

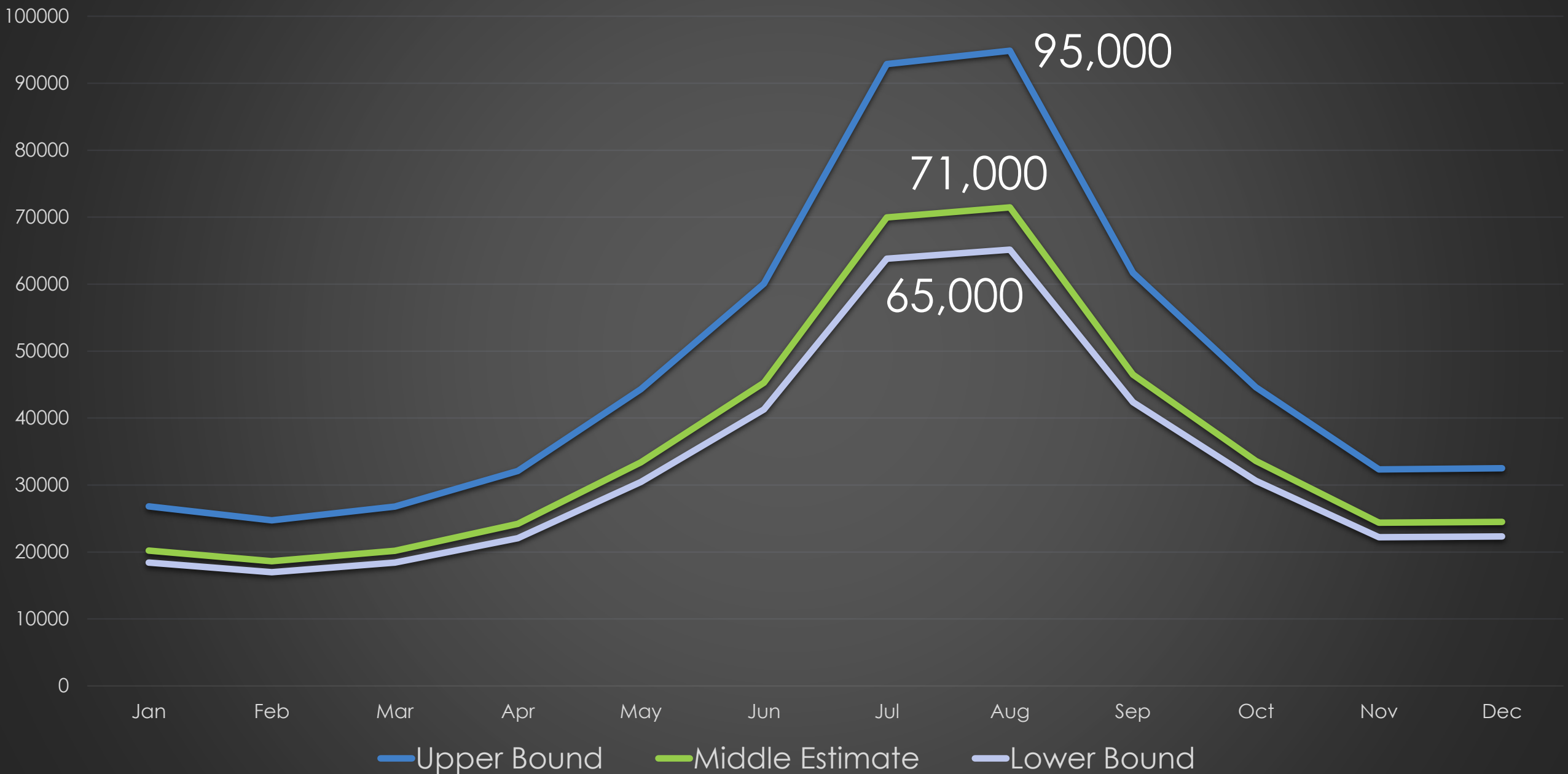
Middle Estimate
18,600

*Streetlight
Percentage*

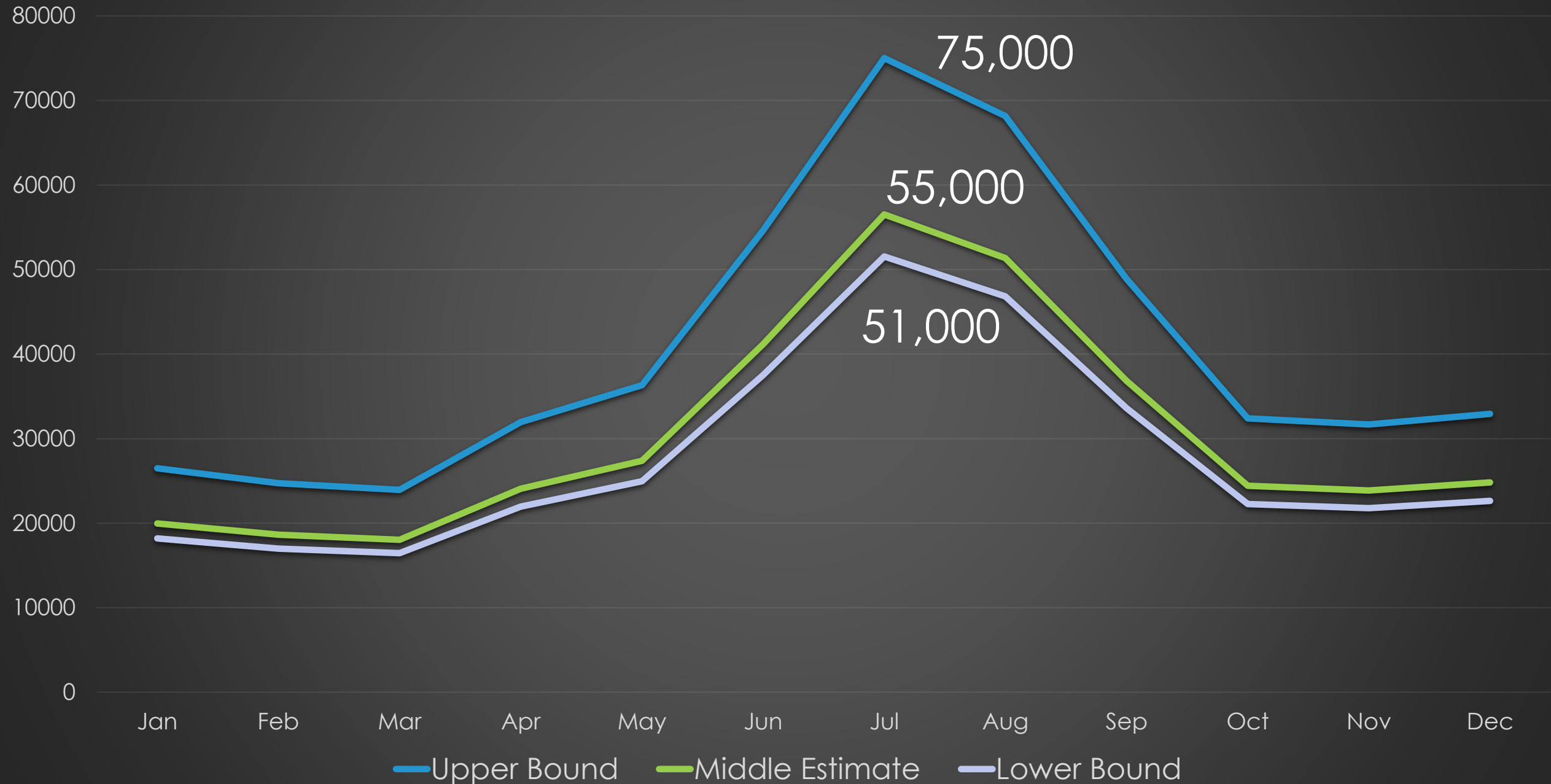
Upper Bound
24,700



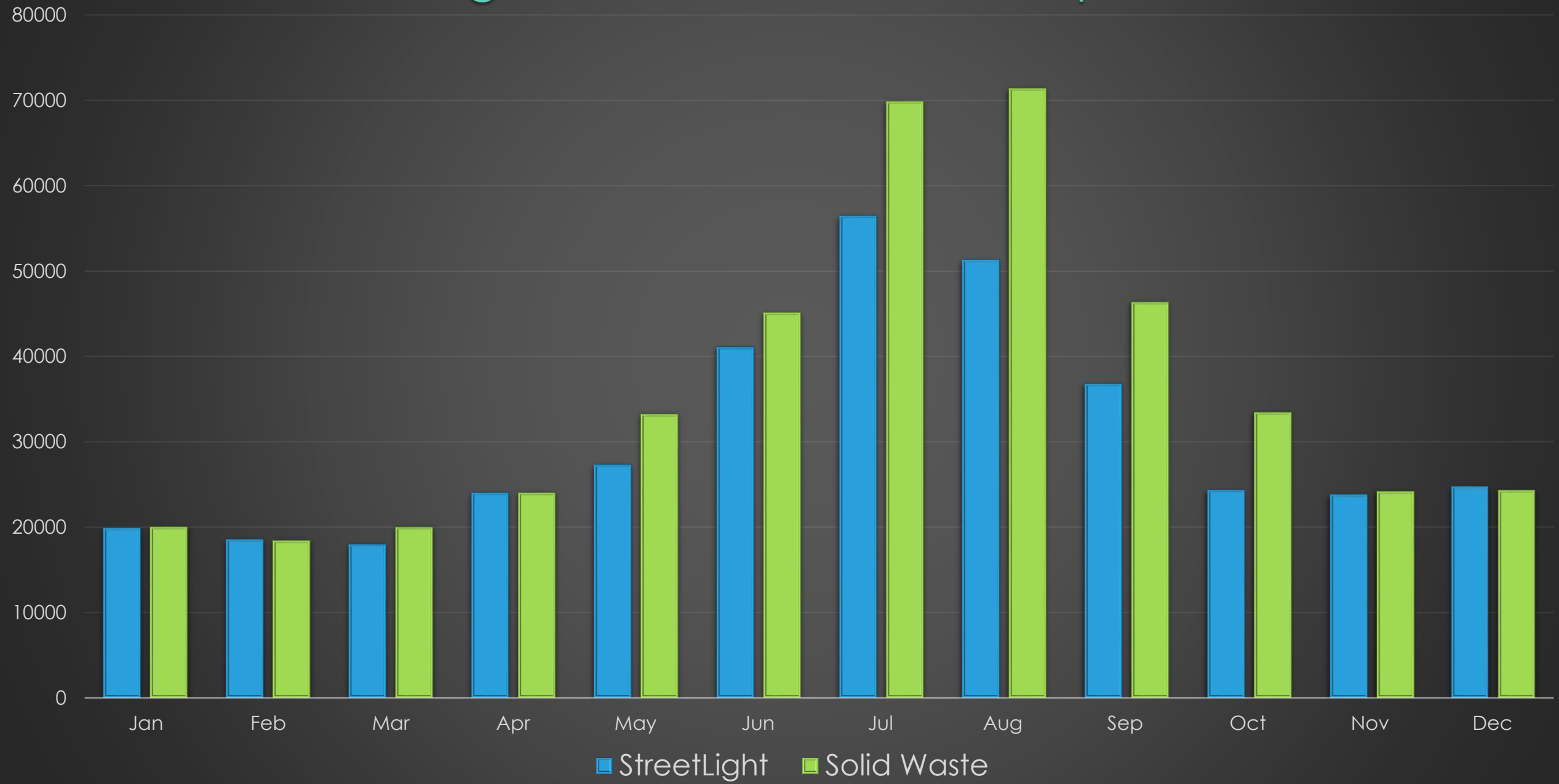
Population Estimates Based on Solid Waste Data



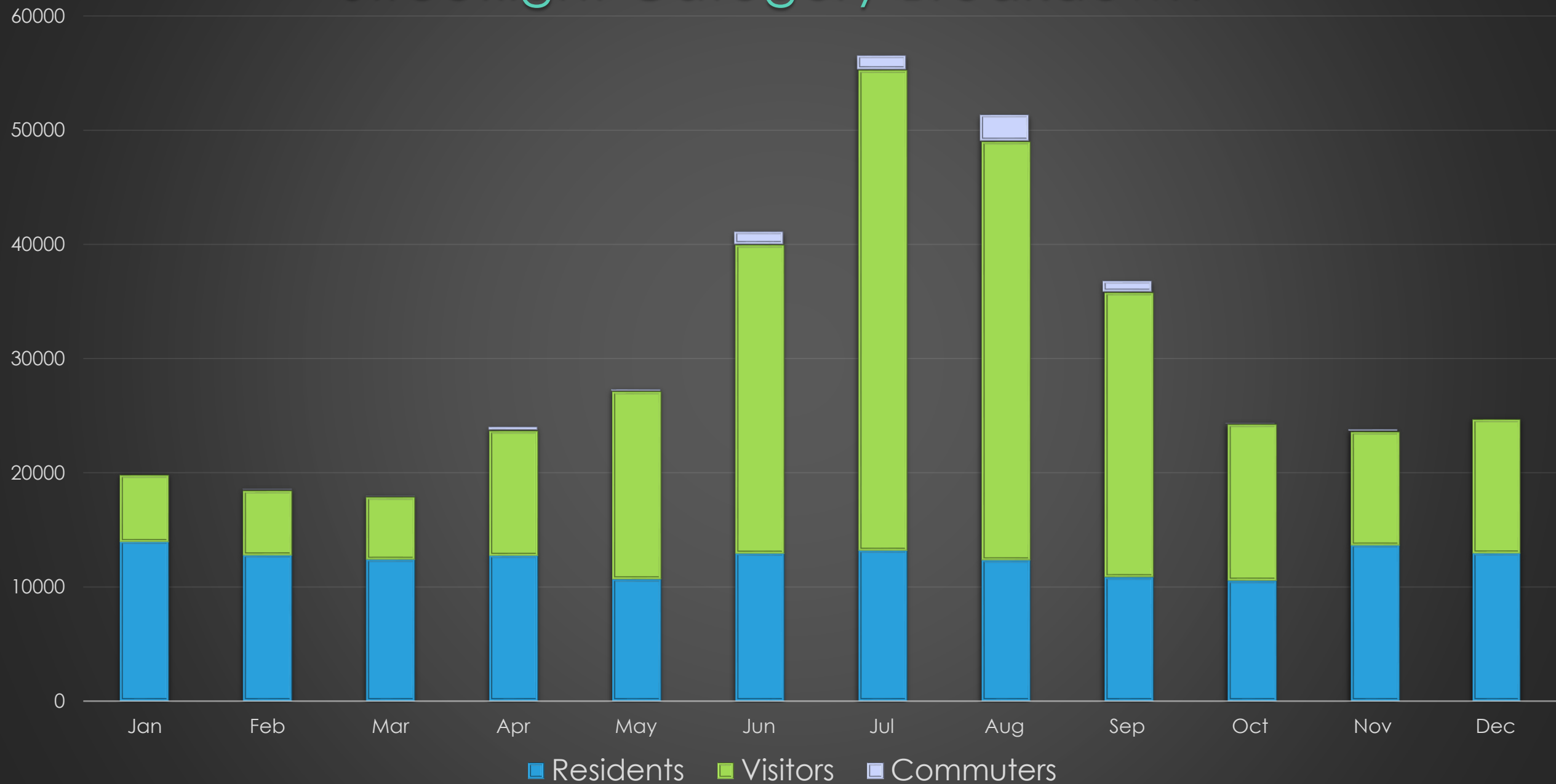
Population Estimates Based on StreetLight Data



Streetlight vs. Solid Waste Comparison



Streetlight Category Breakdown



CONCLUSIONS & RECOMMENDATIONS



Anchor Month



Weight StreetLight
Categories



Continue Solid
Waste Analysis



Refine Categorical
Identification



Use Travel Data to
Compare to
StreetLight



Maintain
Communication
with Community

STAKEHOLDER SUGGESTIONS



ACKNOWLEDGEMENTS

- NANTUCKET DATA PLATFORM
 - ALAN WORDEN
 - PETER MORRISON
 - JOSEPH SMIALOWSKI
- CATHERINE STOVER
- DOMINIC GOLDING & RICHARD VAZ
- MARIA MITCHELL ASSOCIATION
- HARVEY YOUNG & STAFF AT YOUNG'S BICYCLE SHOP
- NANTUCKET SHIPWRECK & LIFESAVING MUSEUM
- REMAIN NANTUCKET

AROUND THE HORN
VALPARAISO 5335 MILES
MEL BOURNE 11253 MILES
DAYTONA BEACH 1282 MILES
BUENOS AYRES 6914 MILES
'SCONSET 7½ MILES
BERMUDA 690 MI.
CAPE TOWN 11033 MILES
LONDON 3612 MILES
PARIS 3746 MILES
MOSCOW 5335 MILES
CALCUTTA 11124 MILES

PITCAIRN 14300 MI.
TAHITI 14650 MI.
N. ZEALAND 15800 MI.
SAMOA 15000 MI.

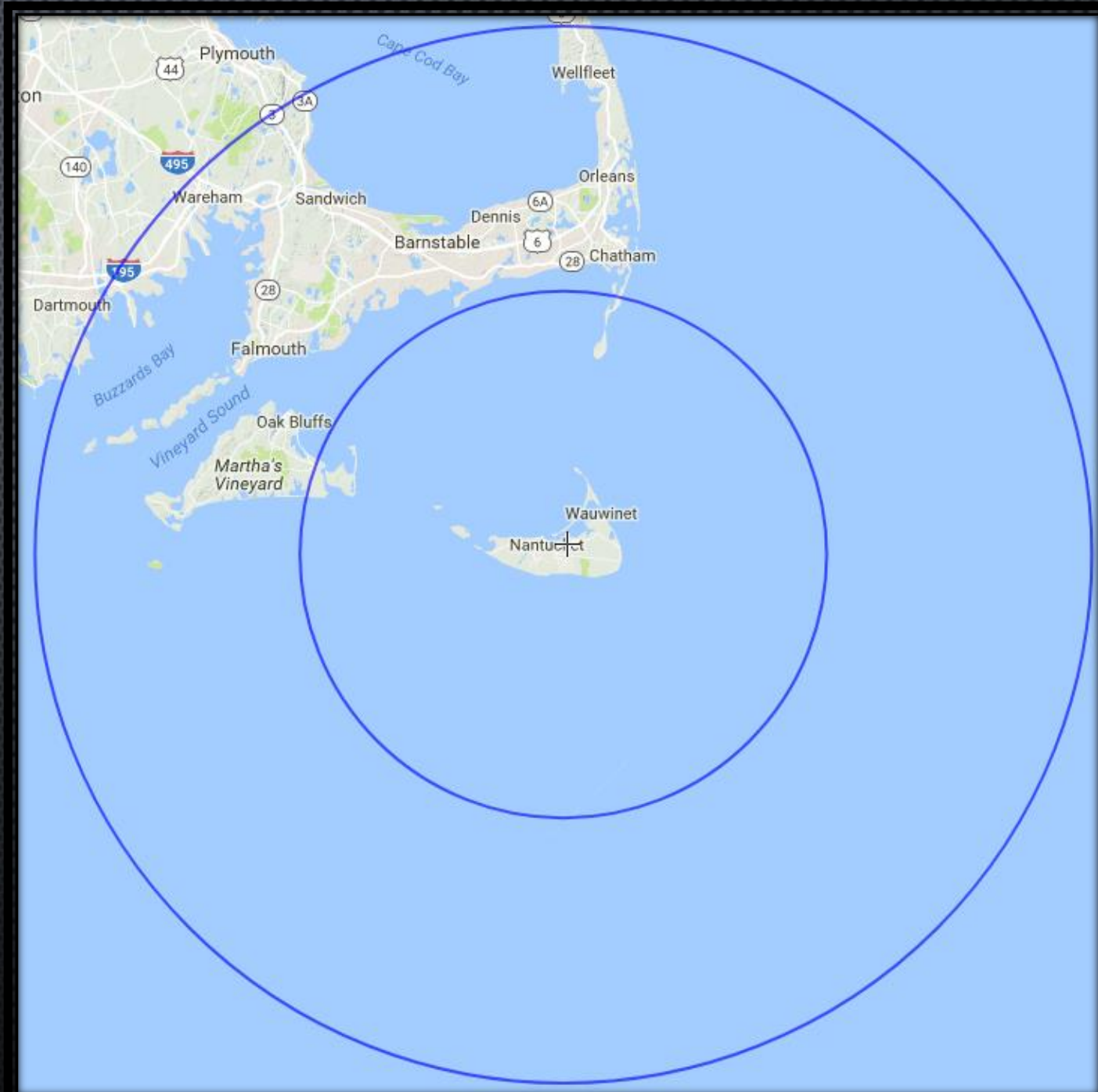
200 MILES
HONG KONG 10453 MI.
MACKINAC ISL. 1050 MI.
ICELAND 2426 MI.
POLE 2740 MI.

486 MILES
ISL. 3200 MI.

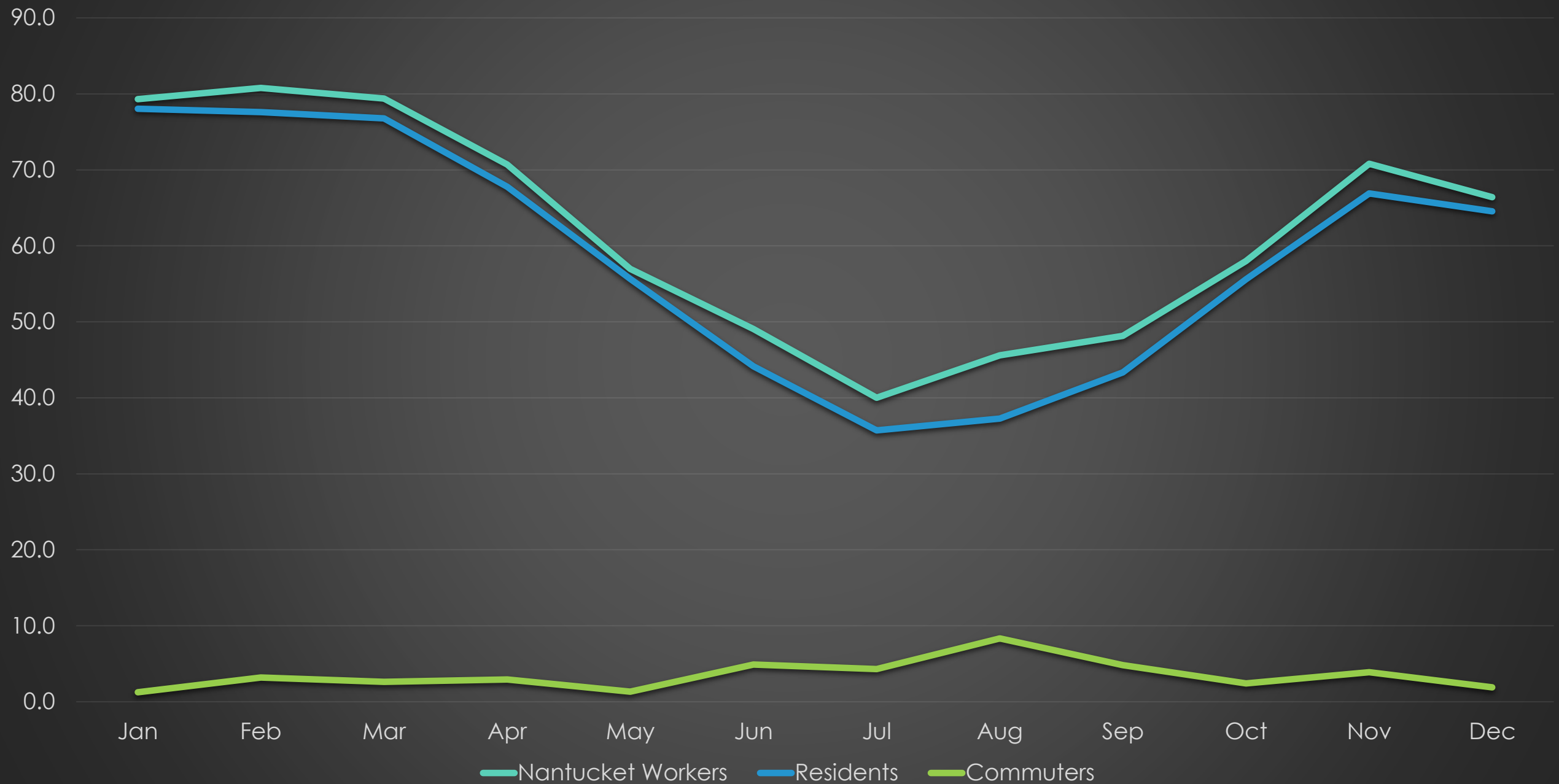


CATEGORIES

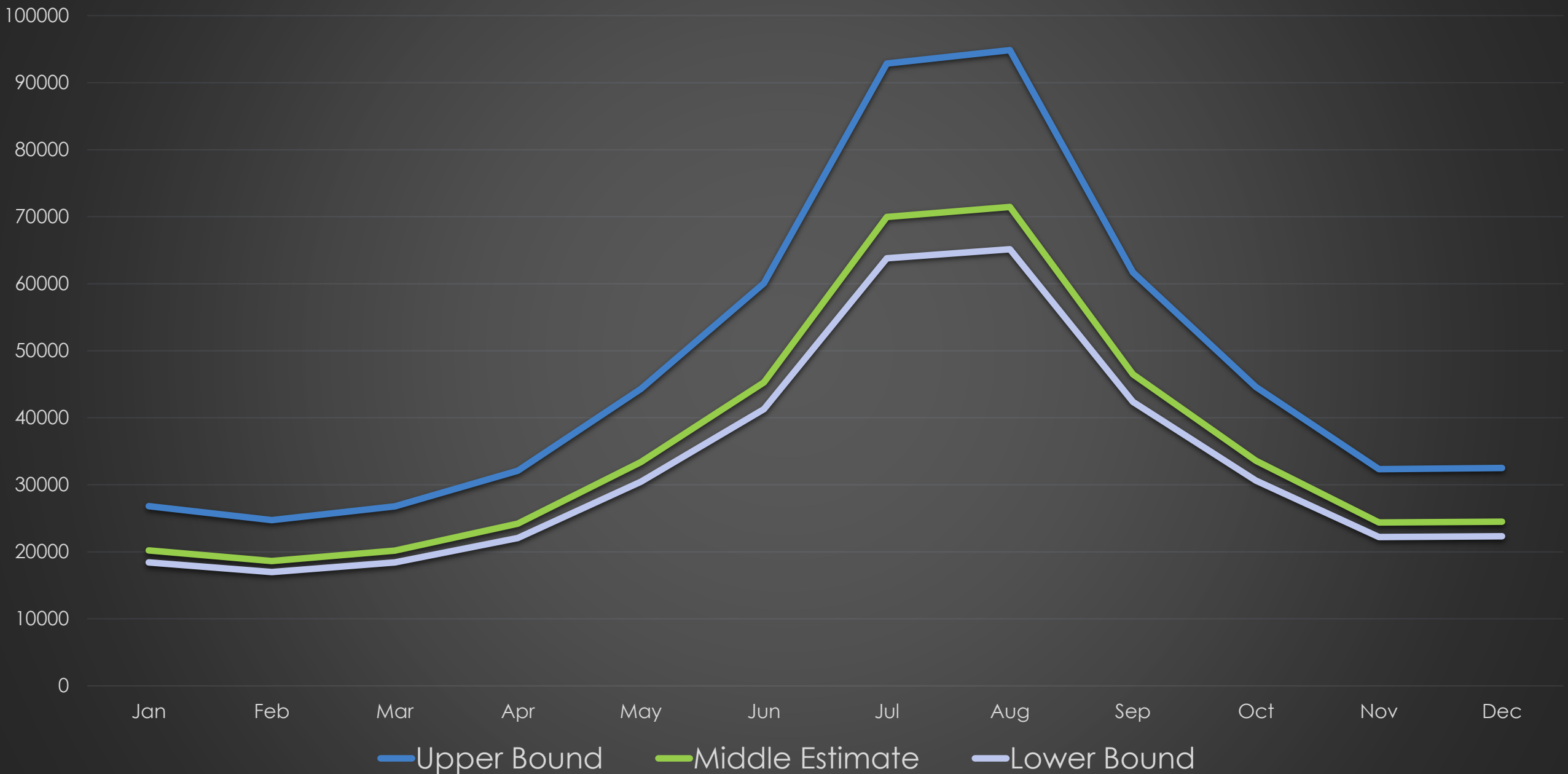
- PERMANENT RESIDENTS: WORK & LIVE INSIDE 25 MI.
- COMMUTERS: WORK INSIDE 25 MI, LIVE BETWEEN 25 & 50 MI.
- VISITORS: WORK & LIVE OUTSIDE 25 MI.



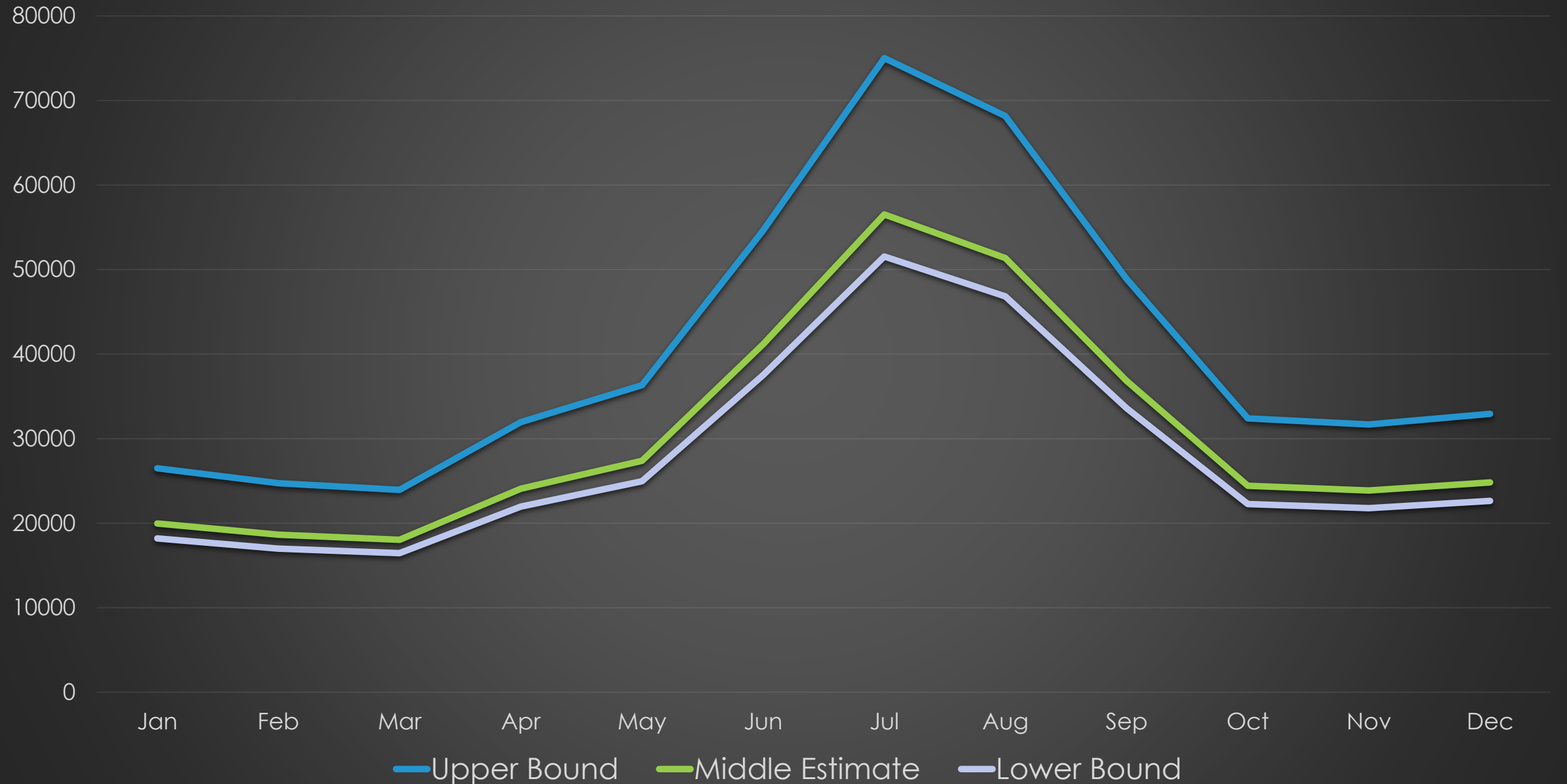
Representation of Commuters on Nantucket



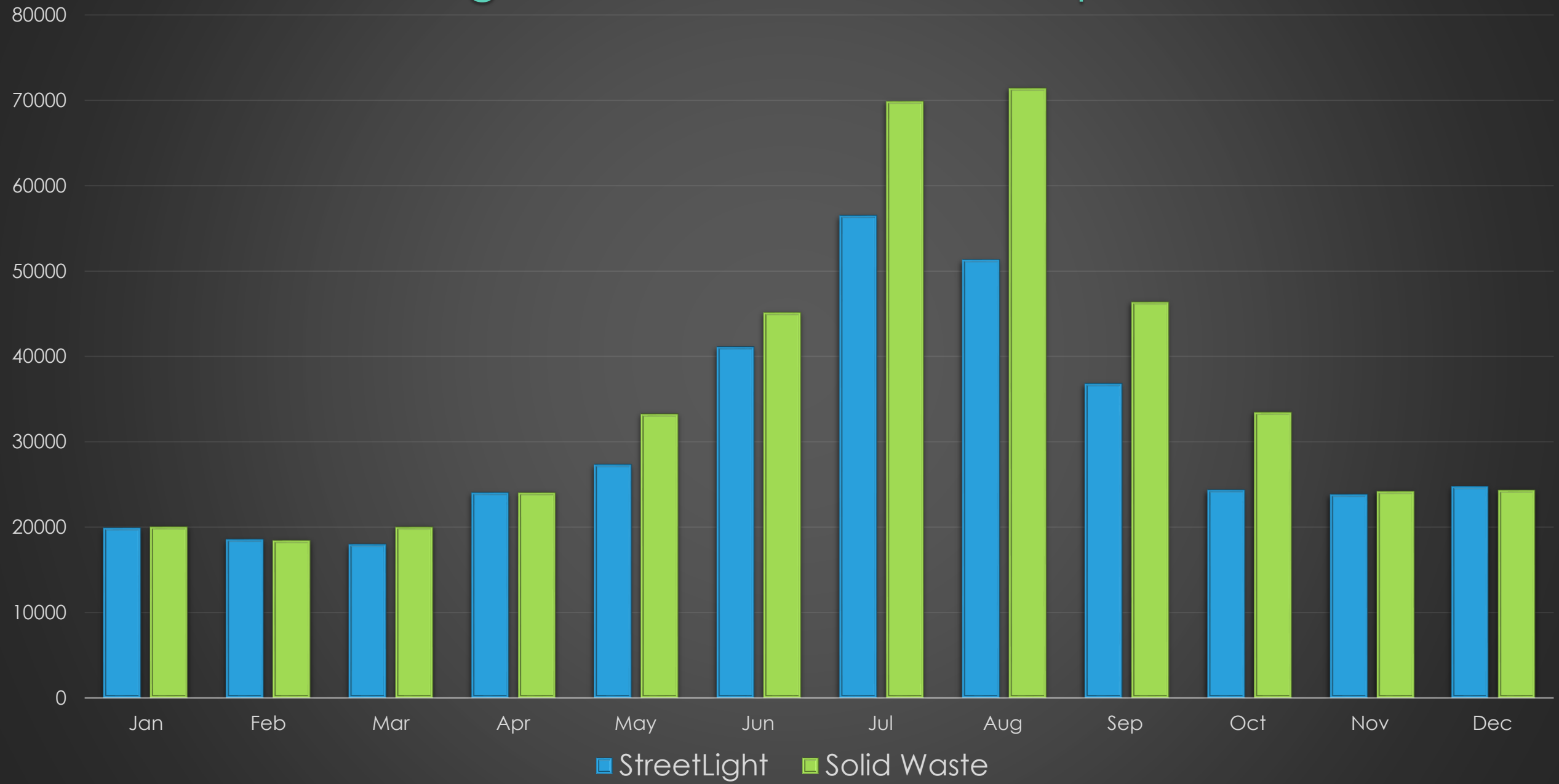
Population Estimates Based on Solid Waste Data



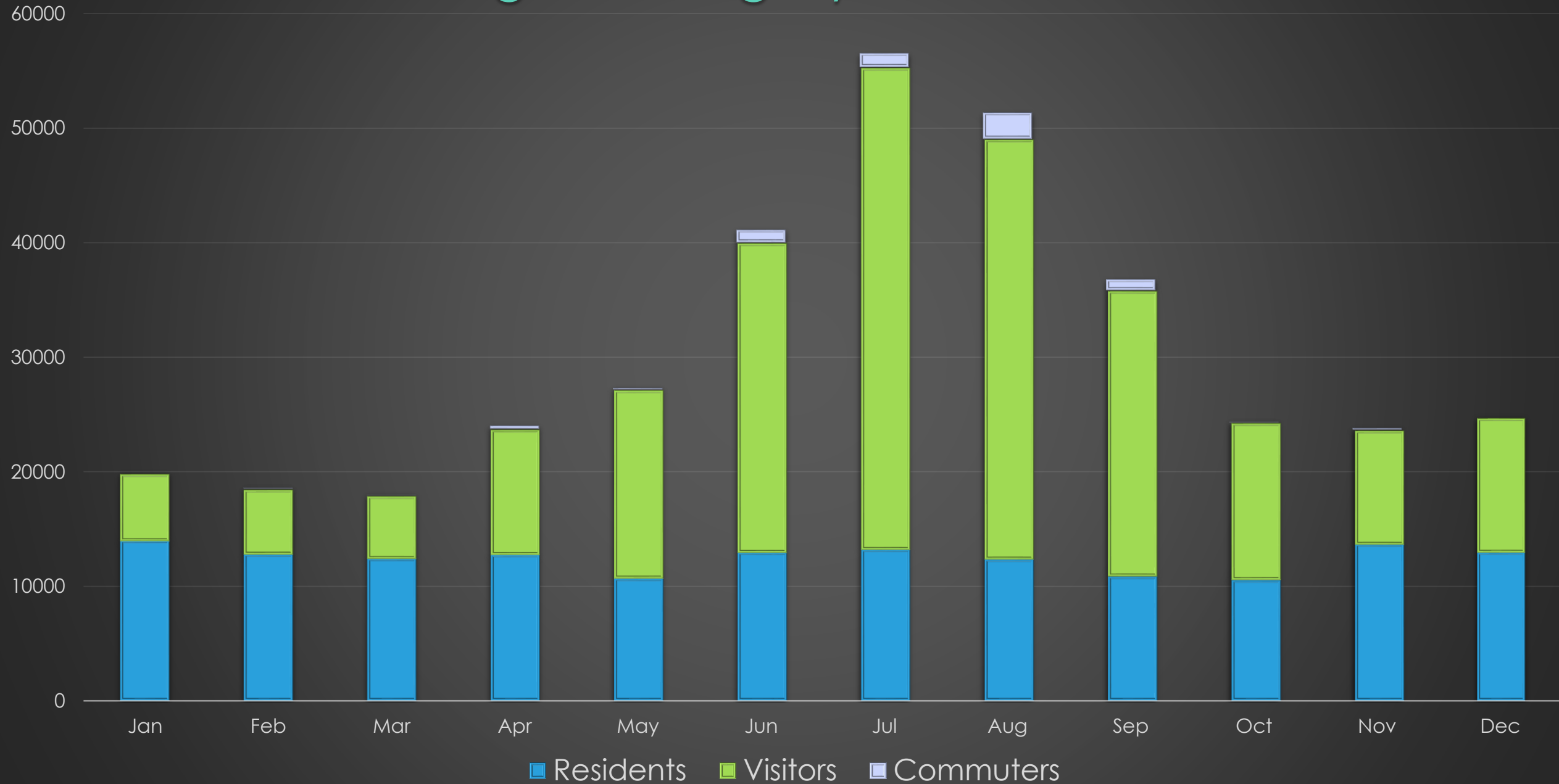
Population Estimates Based on StreetLight Data



Streetlight vs. Solid Waste Comparison



Streetlight Category Breakdown



Percent of People Visiting Nantucket by Metro Area

