

CITY OF SANTA FE
STREETLIGHT LED
CONVERSION PROJECT

FEBRUARY 24, 2021

OUR STREETLIGHT SYSTEM TODAY

- HIGH FAILURE RATE AND LONG REPAIR TIMES
- CONFUSING CUSTOMER SERVICE
- DOUBLE ENERGY USE
- HIGH COST FOR ELECTRICITY AND MAINTENANCE
- FAILURE TO MEET LIGHTING REGULATIONS AND SAFETY-SECURITY EXPECTATION
- EXCESSIVE FUGITIVE LIGHT AFFECTING HOMES AND DARK SKY

WHAT WE WILL HAVE: CENTRALIZED MAINTENANCE MANAGEMENT

- ONLINE PROBLEM REPORTING AND CUSTOMER SERVICE HOTLINE
- ROUTINE REPAIRS WITHIN 5 DAYS – FASTER IF MORE THAN 1 LIGHT
- AUTOMATIC DETECTION OF FAILURES ON CITY OWNED LIGHTS.
- COMPANY DEDICATED TO STREET LIGHT PERFORMANCE
- REPORTING AND ACCOUNTABILITY FOR REPAIRS, RELIABILITY AND ENERGY USE
- ACCURATE INVENTORY IN POWERFUL DESIGN AND TRACKING TOOL

WHAT WE WILL HAVE: ENVIRONMENTAL IMPROVEMENT

- 50-60% REDUCTION IN ENERGY USE
- PROGRESS ON CITY GOAL OF CARBON NEUTRALITY BY 2040
- LEED CITIES POINTS TOWARD PLATINUM
- NEW FIXTURES COMPLY WITH STATE AND LOCAL DARK SKY CODE

WHAT WE WILL HAVE: ENERGY SAVED SINCE LEDS USE LESS ENERGY FOR SAME LUMENS 400W HPS VS 168W LED

Fc.: 2.99
Ave./Min.: 1.83
Max./Min.: 3.15

BEFORE
400 W HPS
(465 W)

Fc.: 1.76
Ave./Min.: 1.52
Max./Min.: 2.22

After
168 W LED
(168 W)



WHAT WE WILL HAVE: LIGHTS SHINE ON STREET, NOT INTO HOMES



Stoddard St. HPS #1

HPS fixture with more back light than ideal.



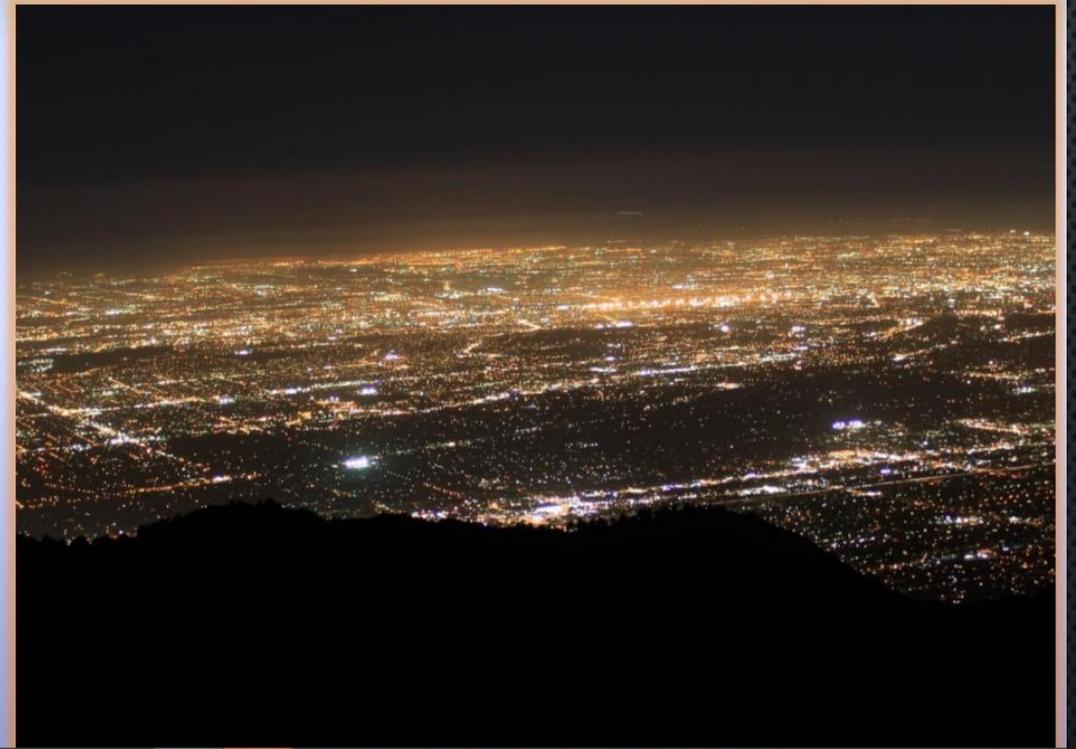
Fairview Ave. LED #2

WHAT WE WILL HAVE: SHIELDED FIXTURES REDUCE SKY GLOW

**Los Angeles Basin – View from Mt. Wilson
Before LED Retrofit Project – 2008**



**Los Angeles Basin – View from Mt. Wilson
After LED Retrofit Project – 2012**



CITY OUTDOOR LIGHTING CODE GUIDES DESIGN

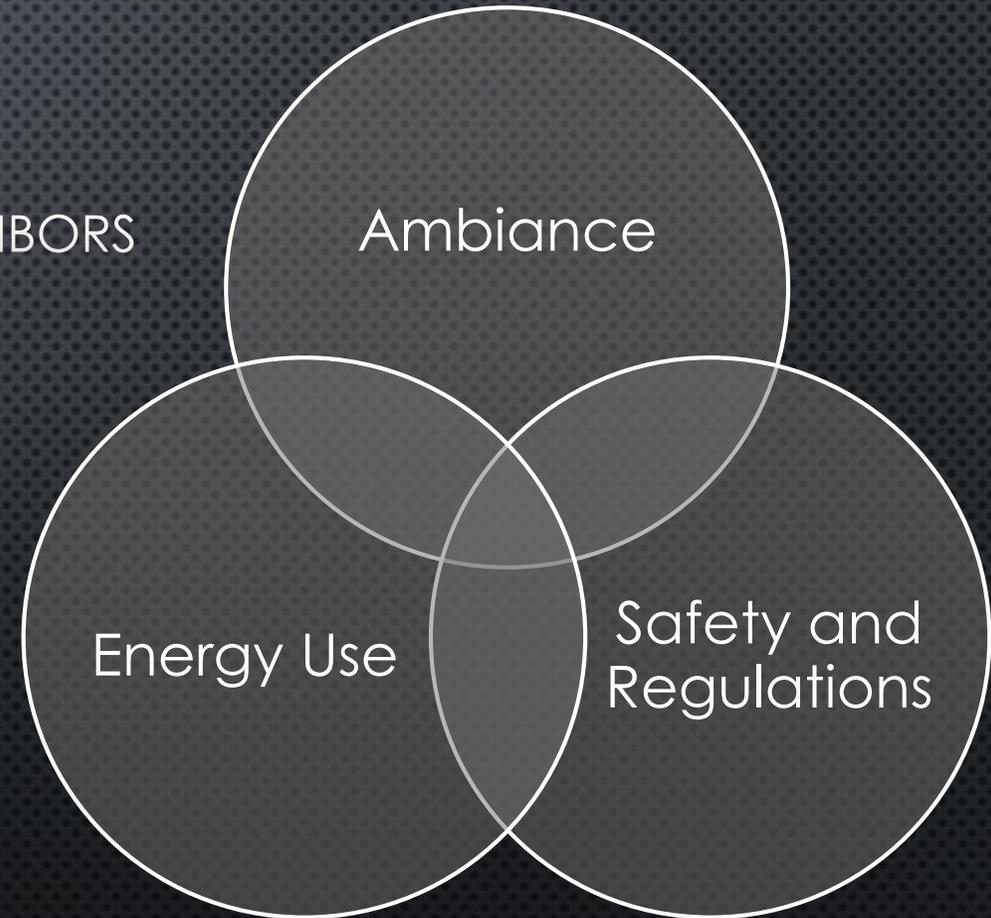
“Regulate outdoor lighting in order to

- **reduce light pollution**, reduce or prevent glare, reduce or prevent light trespass,
- **conserve energy**,
- promote a sense of **safety and security**
- and ensure **aesthetically appropriate** outdoor lighting
- in keeping with the **character of Santa Fe”**

LIGHTING BY DESIGN PROCESS

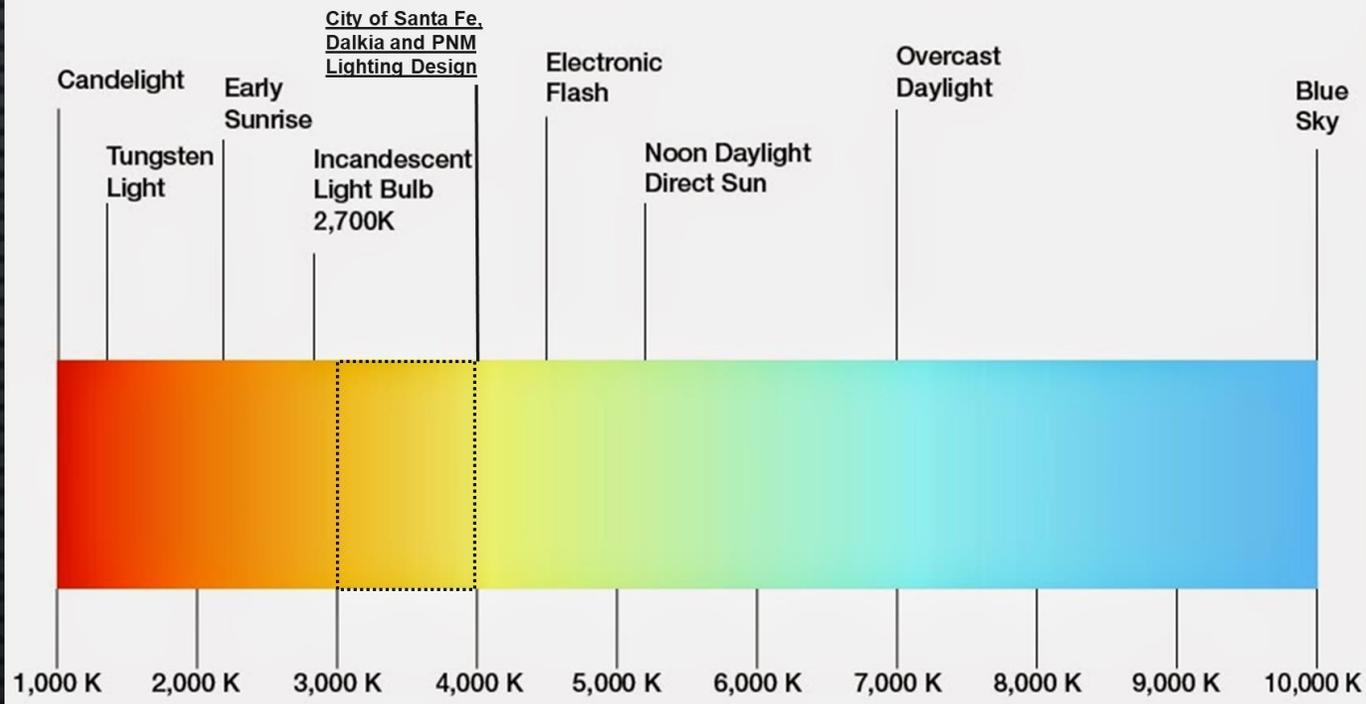
- CREATE DEMONSTRATIONS AND ENGAGE NEIGHBORS
- ANALYZE OPTIONS AND TRADEOFFS
- ENSURE REGULATORY COMPLIANCE
- GOVERNING BODY APPROVAL OF DESIGN

[HTTPS://YOUTU.BE/Q_Q1QD5FLBU](https://youtu.be/Q_Q1QD5FLBU)



DESIGN PARAMETERS

Color Temperatures in the Kelvin Scale



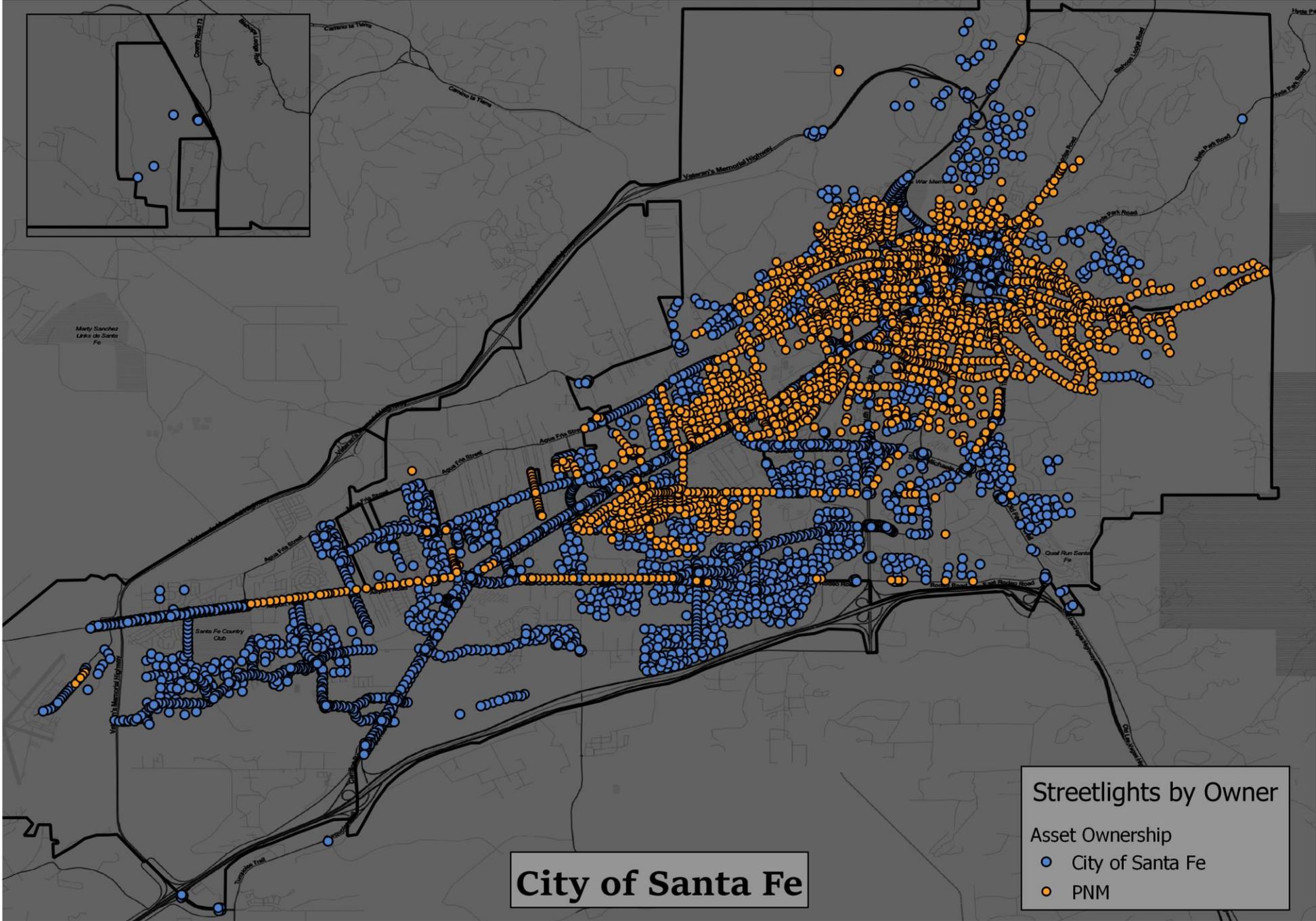
Key LED Lamp Specs

Watts – energy use
Lumens - brightness
Shielding – direction of light
CCT- Color temperature

Regulations

Dark sky
MUTCD requirements
NMDOT
PNM/PRC

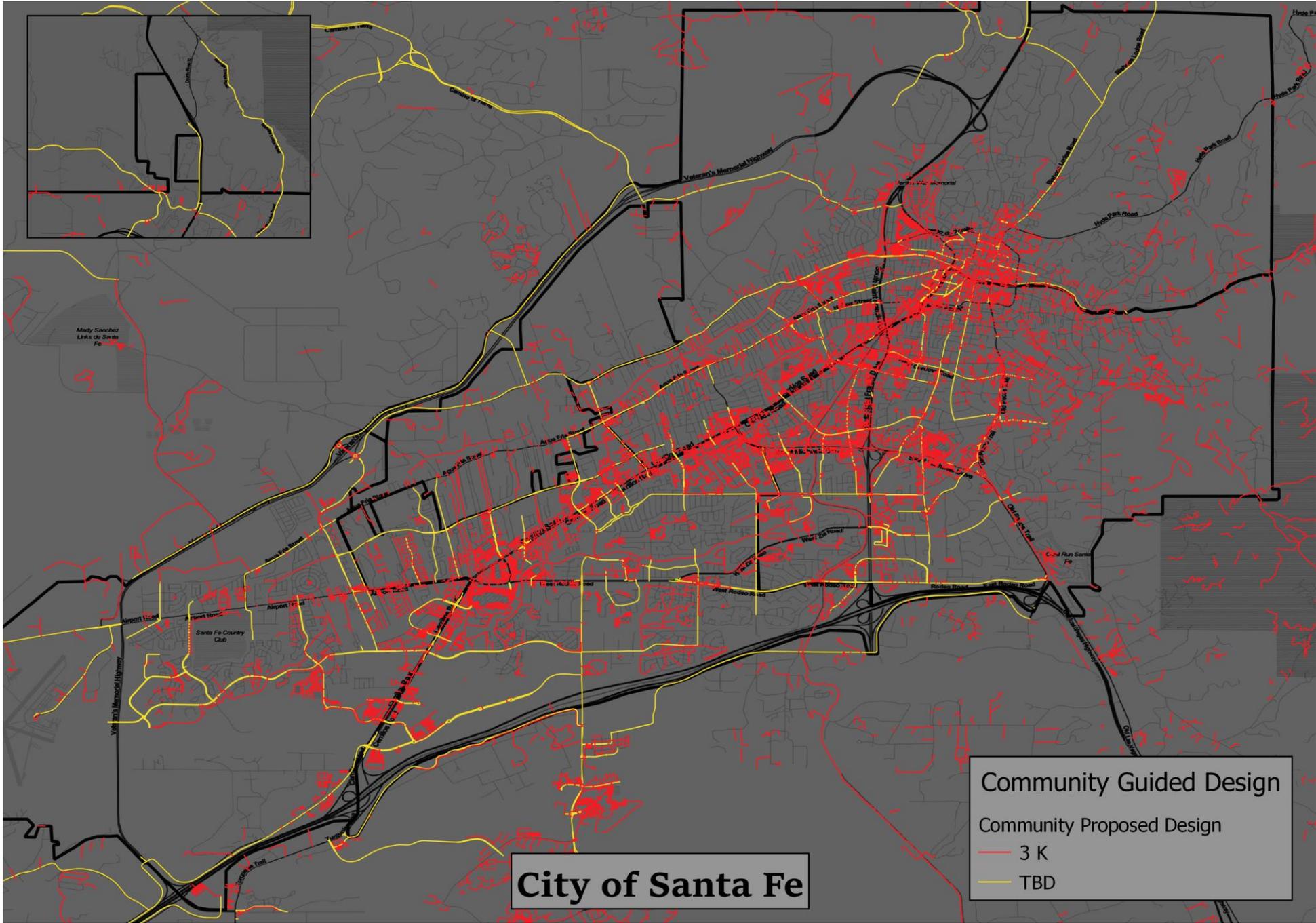
Community Comfort and Safety



City of Santa Fe

Streetlights by Owner

- Asset Ownership
- City of Santa Fe
- PNM



PROJECT AND FUNDING APPROVAL PROCESS

- FINANCING
 - PACKAGED WITH SOLAR
 - PAY BACK PERIOD IMPROVED
 - COMBINATION MAKES ATTRACTIVE ENERGY PACKAGE
- TWO STEP APPROVAL PROCESS
 - APPROVE CONTRACTOR TO FINALIZE DESIGN
 - APPROVE LIGHTING DESIGN