

VISUALIZING STREET LIGHTING IN AN EQUITABLE ENVIRONMENT

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EVARI

GIS Consulting






Before and after visualizations following an LED conversion.

LIGHTING DESIGN FOR SOCIAL AND ENVIRONMENTAL EQUITY

Street lighting infrastructure historically lacked investment and innovative design in socioeconomically disadvantaged neighborhoods.

Citywide LED streetlight conversions:

-  Significantly reduce energy use
-  Reduce maintenance costs
-  Provide better visibility

CURRENT DEFICIENCIES IN LIGHTING DESIGN PRACTICES

- > Disadvantaged communities lack equitable and effective lighting
- > Lack of community and stakeholder engagement in design process
- > Inability to perform citywide evaluations

EvariLUX FOR LIGHTING DESIGN

EvariLUX visualizes lighting through a map-based tool to inform decisions for allocating resources to design a safer nighttime environment on a corridor level, a neighborhood level, and city-wide level.

- > Visualizes lighting design across a region and correct inequities in underserved communities
- > Identifies where lighting could better serve the community environment based on local context

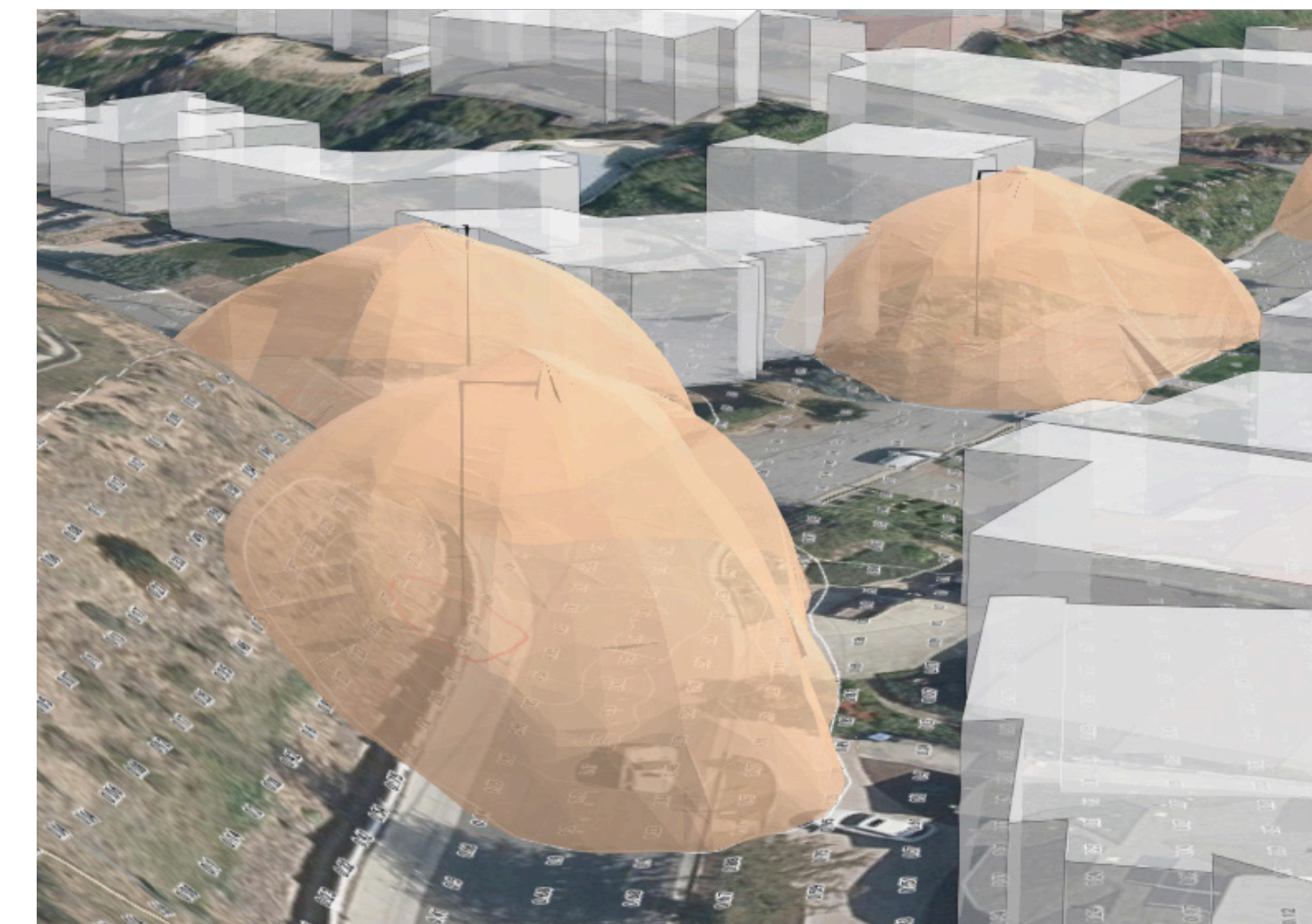


Citywide overview of EvariLUX visualizations with collision data.

BENEFITS OF EVARILUX

Enable lighting professionals to specify better lighting which will result in:

- > Reductions in light trespass
- > Energy and cost savings
- > Reductions in greenhouse gas (GHG) emissions
- > Compliance with lighting design requirements
- > Compliance with Dark Skies standards
- > Addressing racial, social and environmental equity

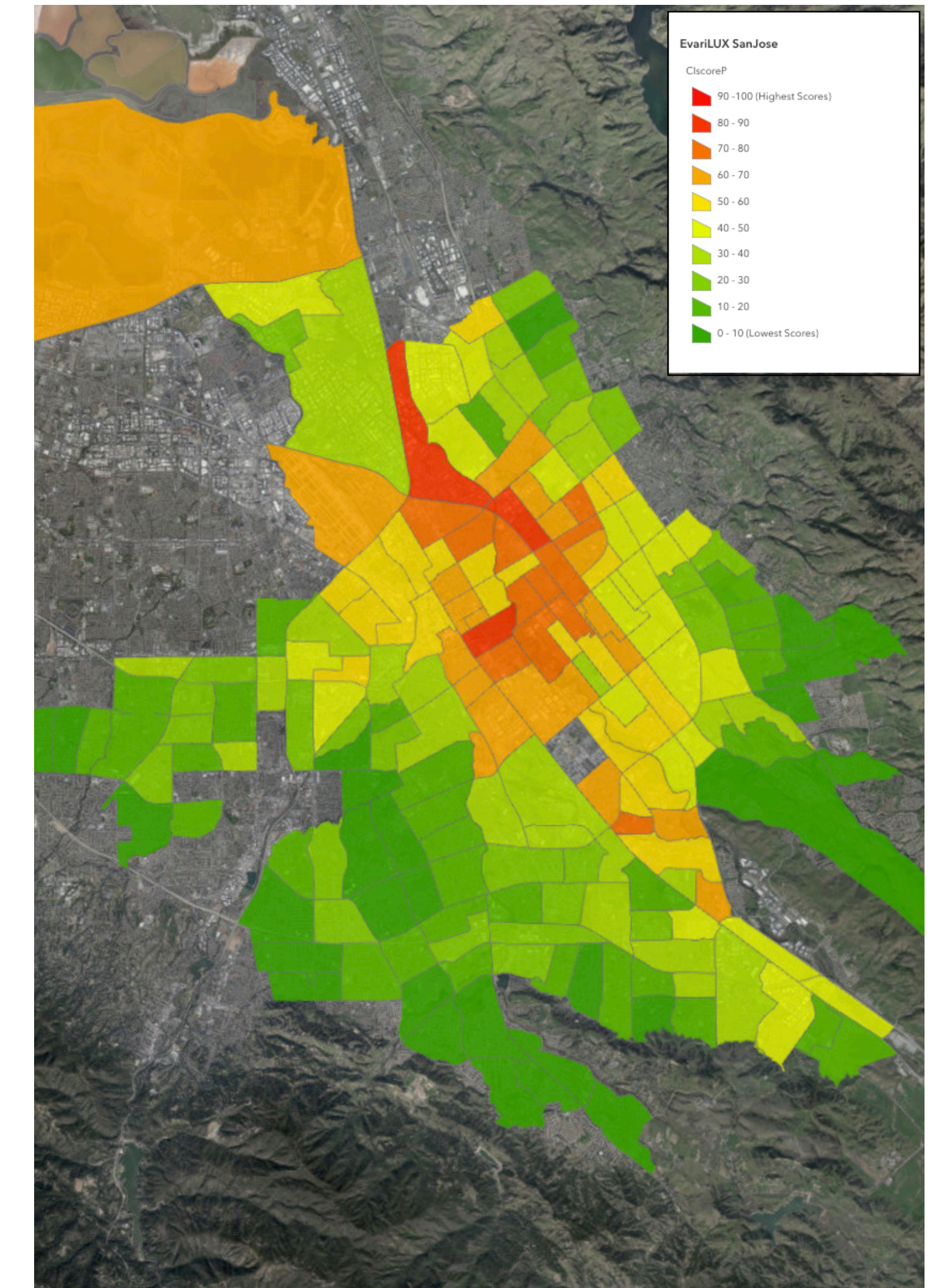


EvariLUX 3D lighting visualizations demonstrated on an area of high slope alongside building footprints in San Jose, CA.

INFRASTRUCTURE IMPROVEMENT

Lighting design practices address equity and climate goals through LED conversions.

- > EvariLUX supports city-wide analysis to identify areas optimal for less lighting and energy savings.
- > Targets improvements for community safety and better lighting in disadvantaged communities
- > Involves the community and adjacent project stakeholders to be involved in the design process



CalEnviroScreen 4.0 Results in the city of San Jose, CA.

INTEGRATION WITH EXISTING EQUITY ANALYSES AND DATASETS

Led by the California Environmental Protection Agency, CalEnviroScreen identifies communities with the highest pollution burden by census tract.

- > Racial/ethnic minorities and lower-income groups experience disproportionately high pollution levels.
- > EvariLUX integrates with existing data to direct lighting design decisions in highly impacted areas.

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