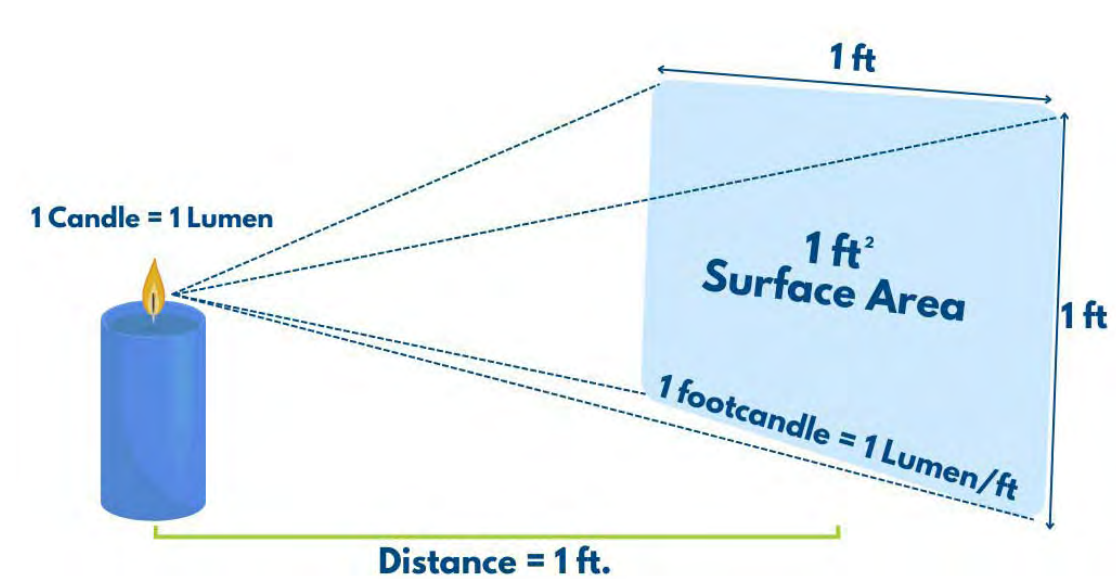


LIGHTING

How will light impacts of the Willow Bend District redevelopment site be regulated?

The City of Plano regulates outdoor lighting through its Code of Ordinances and the Zoning Ordinance. These regulations are intended to set limits on outdoor light levels and reduce light-related nuisances, while also maintaining safe lighting for development.

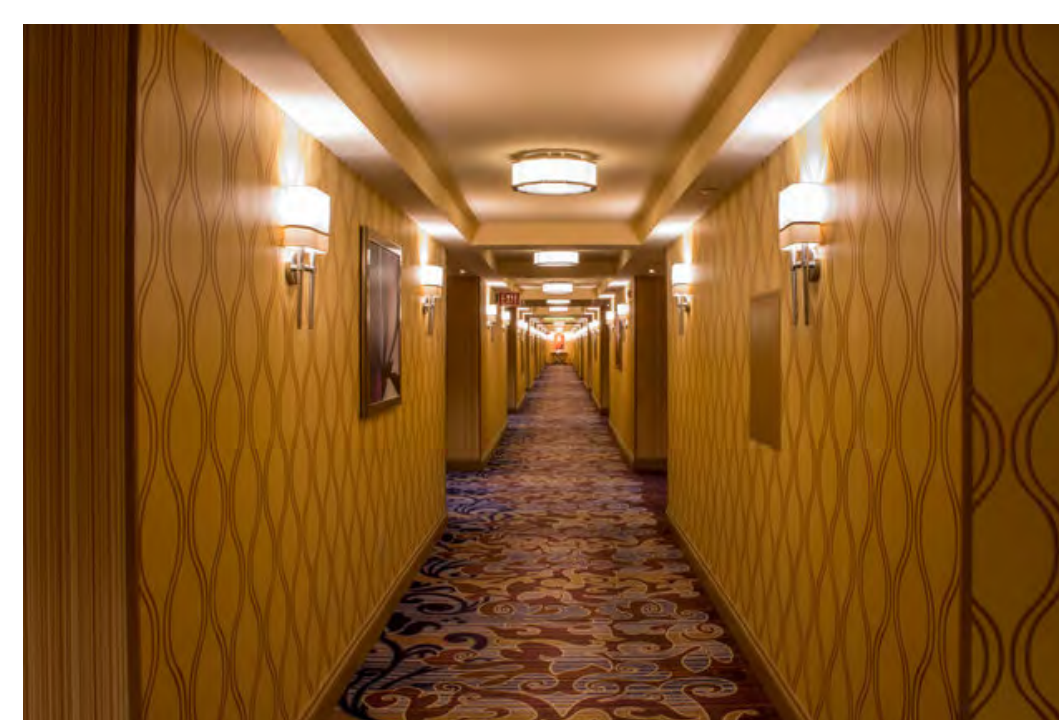
- » Outdoor lighting must be designed so that light does not spill onto neighboring properties.
- » Maximum light levels at property lines are established based on the zoning of the adjacent property.
- » Illuminated signs and electronic displays are subject to additional regulations, especially near residential areas.



Footcandles measure the intensity of light on a surface, and equal the light a candle casts on a square foot of surface at a distance of one foot. (source: Revolve LED)



0.25 to 0.5 footcandles is roughly equivalent to the light of the full moon.



5.0 footcandles is a common light level for hotel corridors and stairs.

How will the City review light levels for the Willow Bend District redevelopment site?

For any development project involving outdoor lighting fixtures, the applicant must submit information demonstrating compliance with the City's Outdoor Lighting Ordinance.

Prior to building permit approval, the applicant will be required to submit:

- » Lighting plans that indicate the location and type of lighting fixtures.
- » Detailed information on lighting fixtures, equipment, and how light will be directed away from neighboring properties.
- » A lighting study showing brightness of lighting throughout the site and at property boundaries. The study results must be field verified after construction.

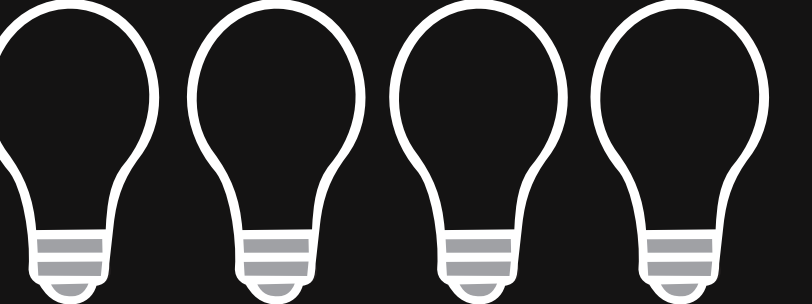
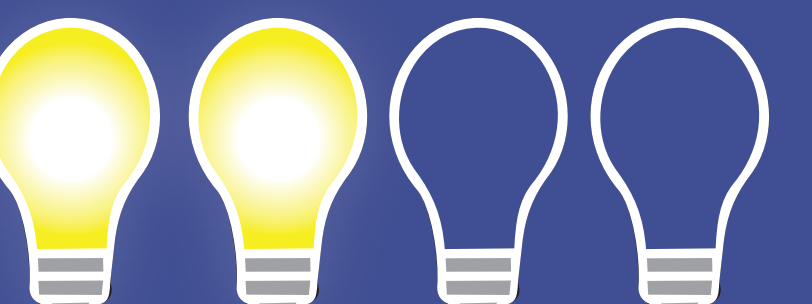
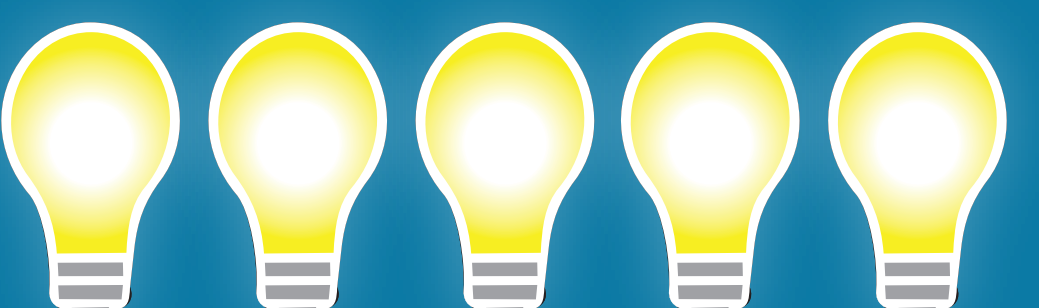


Source: Connect CRE

CITY OF PLANO

Maximum Illumination Levels

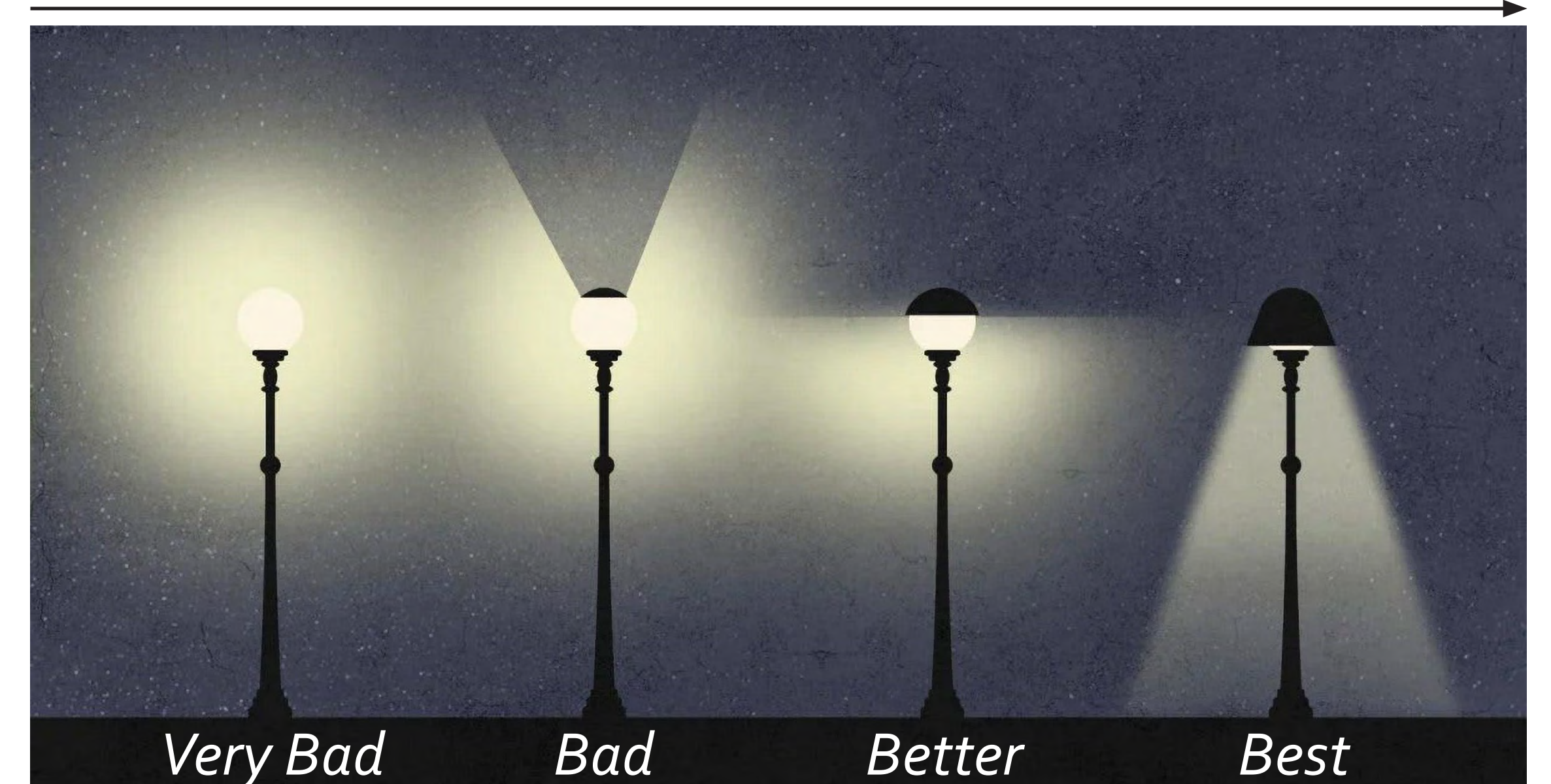


ZONING CATEGORY	FOOTCANDLES
 Single-family and two-family residential districts	  0.25
 Multiple-family residential districts	  0.5
 Nonresidential districts, streets	  3.0
 Light industrial districts	 5.0

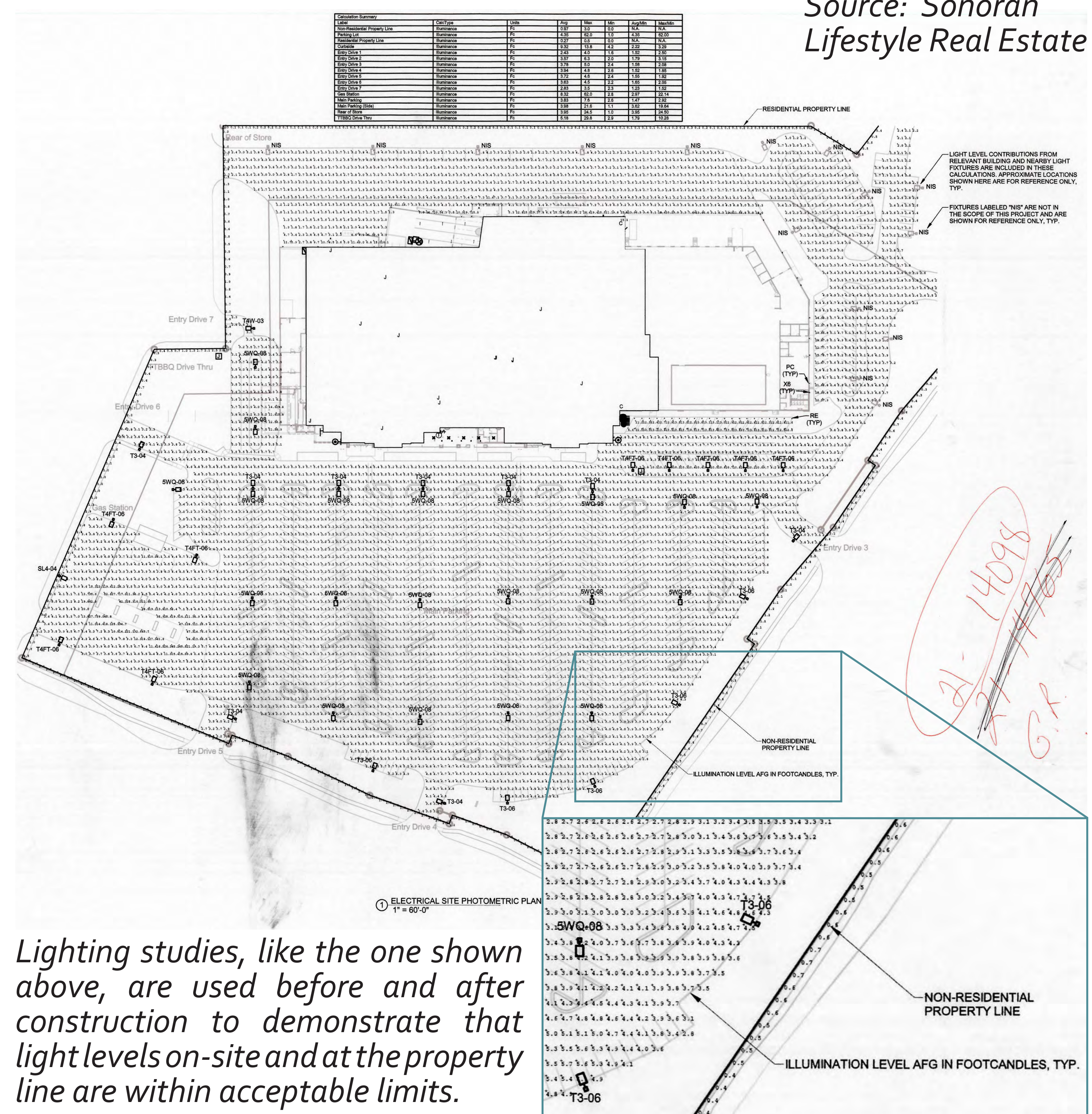
- A)** The limit of illumination on neighboring property from one (1) establishment shall be based on the zoning category of the neighboring property.
- B)** Maximum computed or measured footcandles at the neighboring property line shall not exceed the limits found in this table.

More Light Pollution

Less Light Pollution



Source: Sonoran Lifestyle Real Estate



Lighting studies, like the one shown above, are used before and after construction to demonstrate that light levels on-site and at the property line are within acceptable limits.

LIGHTING

How will illuminated and electronic signs be regulated in the Willow Bend District redevelopment site?

The Zoning Ordinance contains additional regulations for illuminated and electronic signage.

- » Illuminated signs may not produce glare or direct light across property lines.
- » Electronic signs require an automatic dimmer to maintain a maximum brightness of 0.3 footcandles at the property line.
- » Electronic signs may change content every eight seconds but cannot display animated messages or any effect that gives the appearance of movement.
- » District-specific modifications would require rezoning to amend the existing Planned Development District.



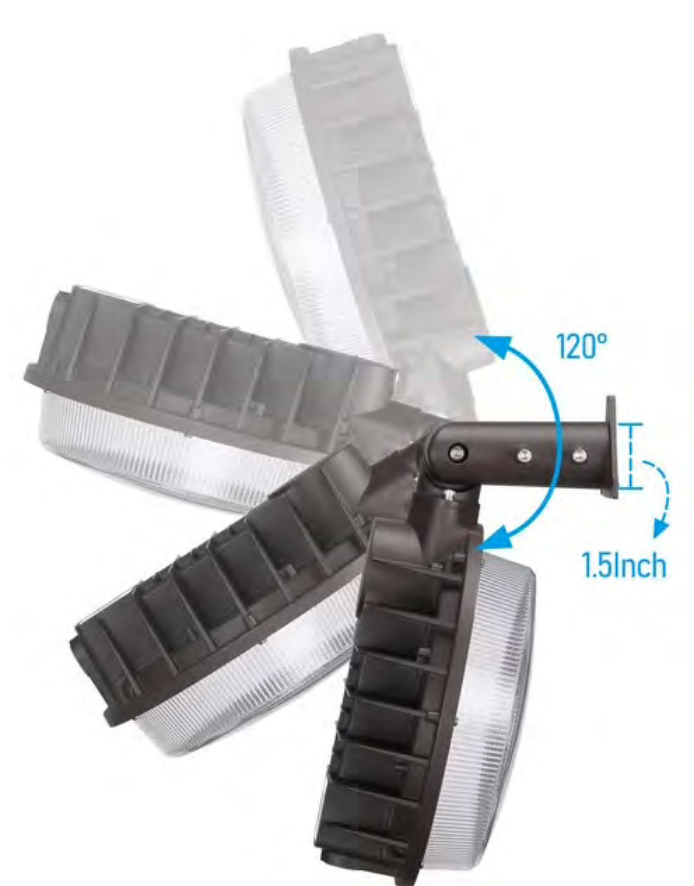
How does the City enforce light regulations after construction?

If there is a light complaint, the Environmental Health & Sustainability Department will take measurements to determine compliance.

If a violation is observed, the property owner is required to correct the issue. Examples of mitigation measures that have been used previously include:



Covers that direct light downward instead of onto neighboring properties (Source: Dark Sky NM)



Adjusting the direction the light is pointing (Source: Torchstar)



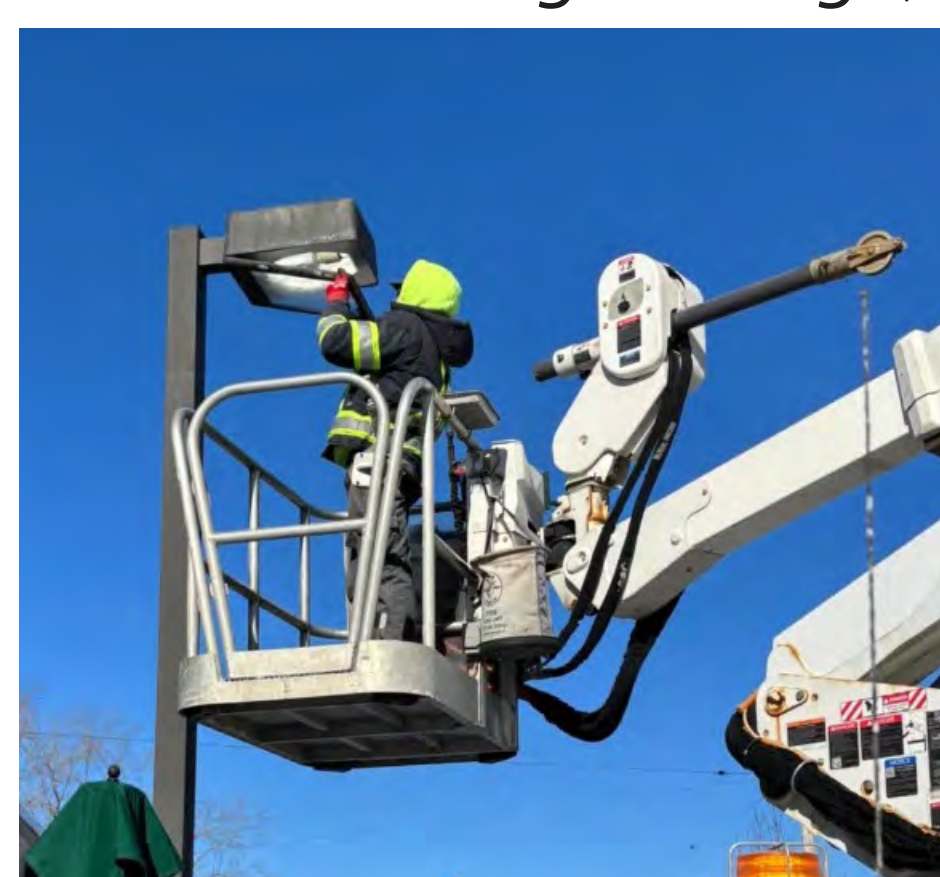
Recessed lighting that restricts glare and casting light upward (Source: Darklight Design)



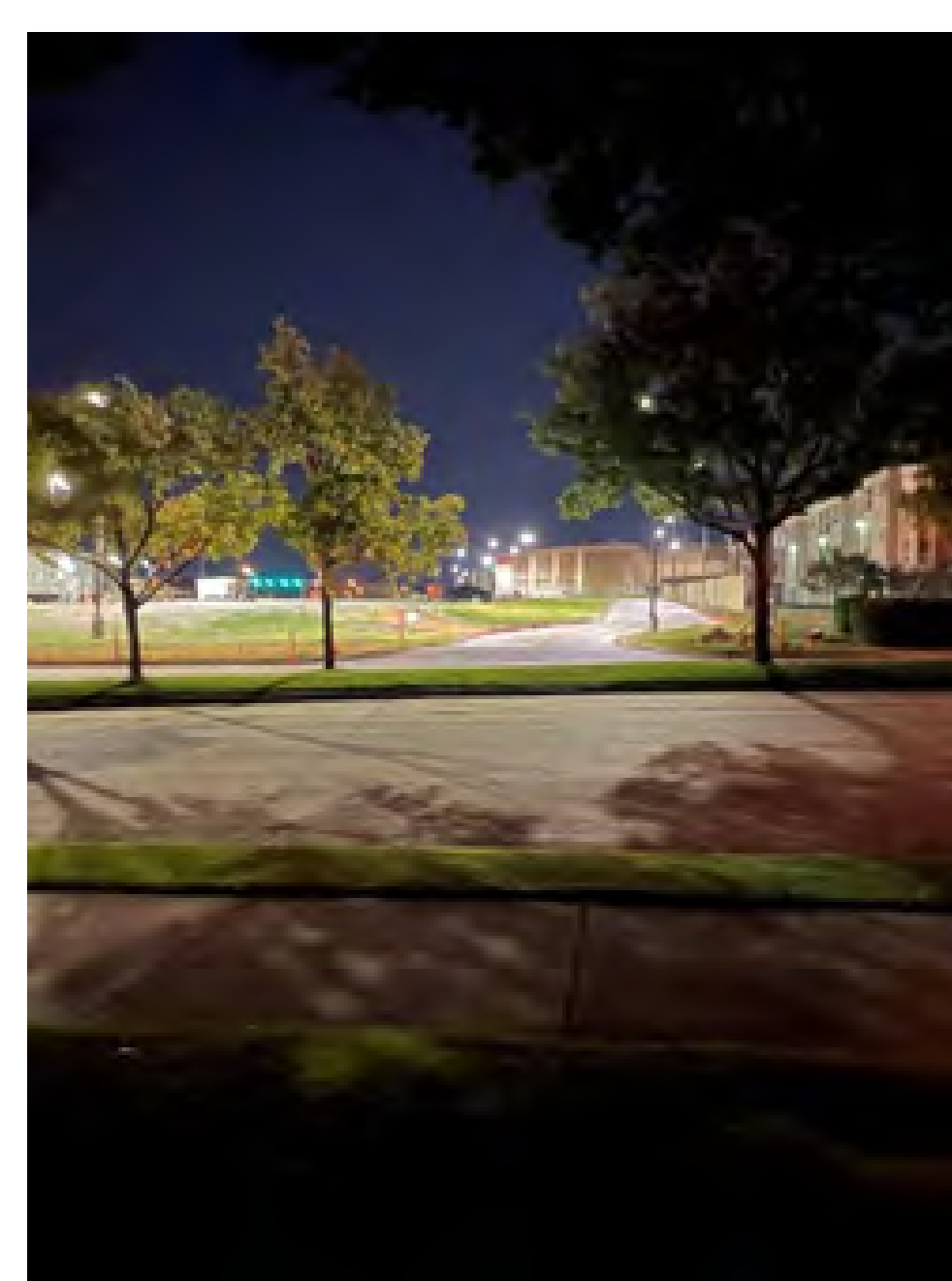
Special light covers that direct wall-mounted light downward (Source: Volt Lighting)



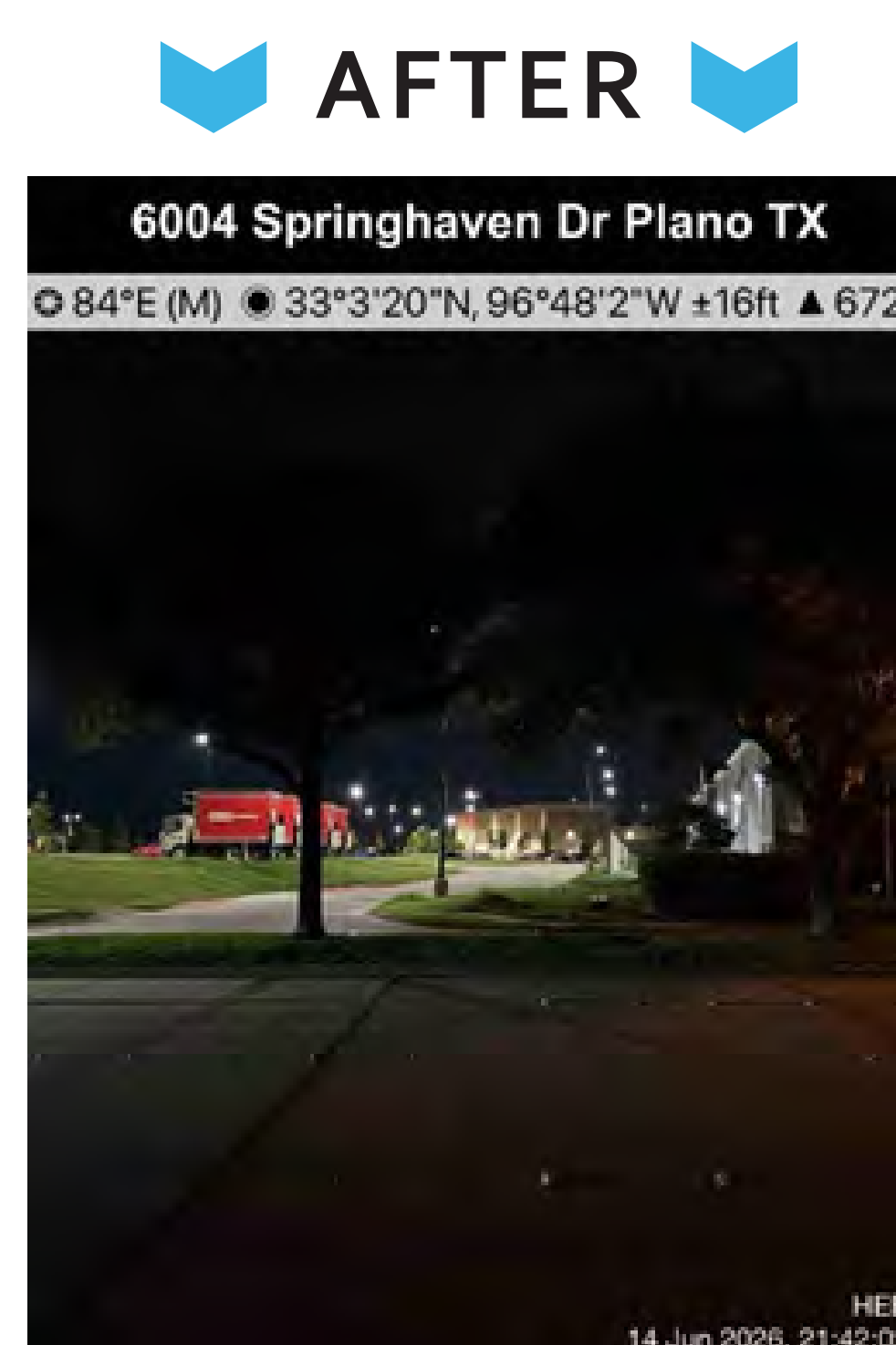
Automatic dimming equipment (Source: Biraking Beleuchtung)



Removal of non-compliant light fixtures (Source: Ace Lighting)



BEFORE



AFTER

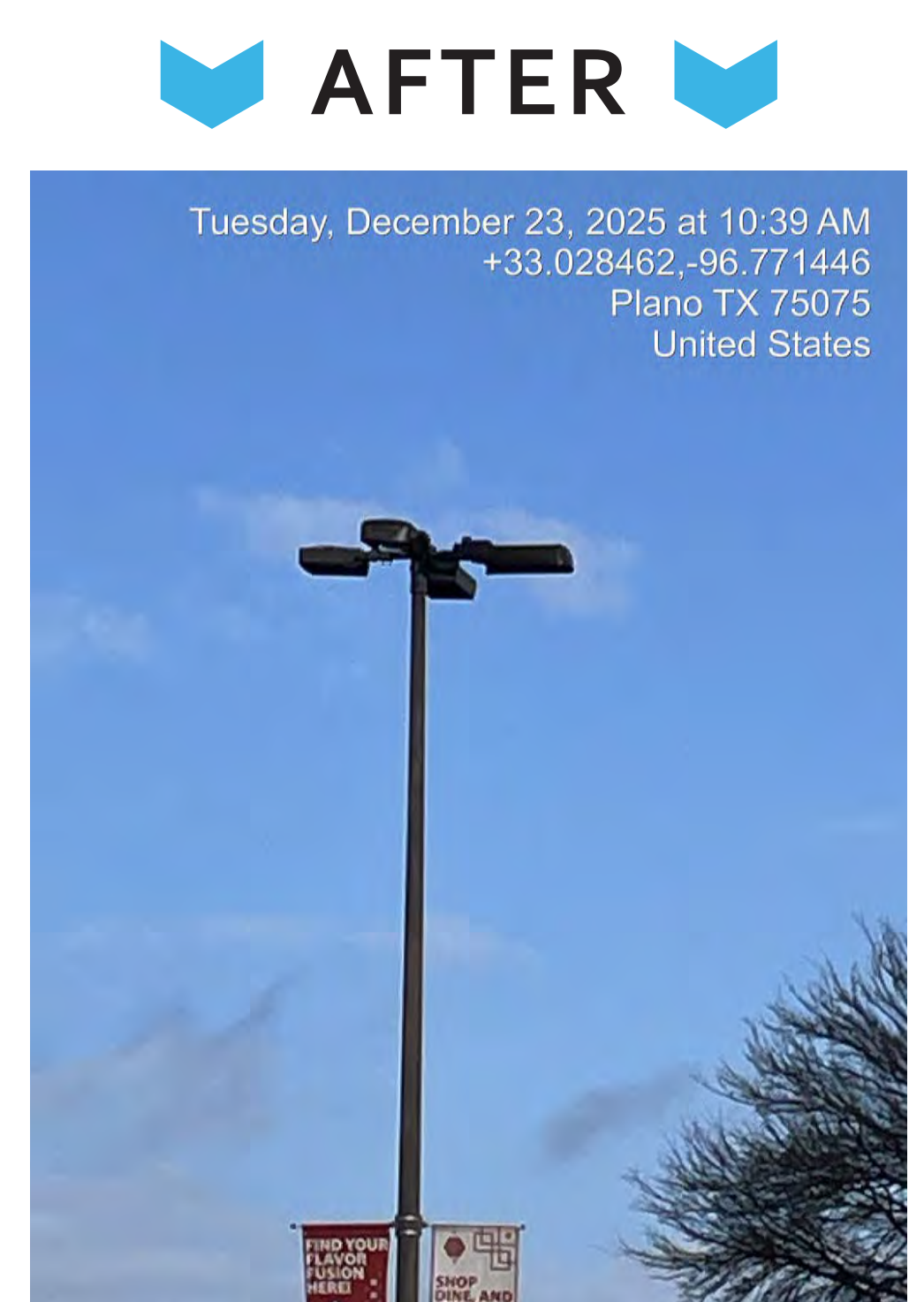
City of Plano staff investigate light complaints and help property owners comply with Plano's lighting regulations, helping to minimize impacts to neighboring properties.



Lighting mitigations for complaints are verified using handheld light meters and documented by City staff.



BEFORE



AFTER