Prepare to be enlightened. Throughout the United States, more local governments are implementing outdoor lighting regulations. “Light trespass” refers to lighting directed into areas that it is not wanted (e.g., a neighbor’s yard or window). Proponents of outdoor lighting regulations claim that light pollution\(^1\) is the product of outdoor lighting that is inadequately shielded. Inadequately shielded lighting, in turn, results in over-illumination which not only wastes energy (“to the tune of $2.2 billion per year in the U.S. alone”)\(^2\) but can have detrimental effects on human health and psychology.\(^3\) It also contributes to “skylight,” the scattering of light in the atmosphere, which hinders urban star gazing.\(^4\) Although not noticeable to the human eye, reduction of natural sky polarization impairs navigation and migration patterns of certain animals and has a negative impact on native ecosystems.\(^5\)

Efforts to raise awareness about the value of dark star-filled skies and to encourage their protection and restoration have been the focus of the International Dark Sky Association (IDA).\(^6\) Since the nonprofit incorporated in 1988, the IDA’s principal approach has entailed promoting discussion of outdoor lighting practices that create less light pollution and assisting in collating lighting research on light at night’s effect on human health and ecology.

To promote awareness about the importance of such issues, the IDA in 2001 began its International Dark Sky Places (IDSPlaces) program that aims to protect “locations of exceptional night time visages for future generations.”\(^7\) The IDSPlaces program recognizes parks, reserves, and communities. As of date, there are 20 International Dark Sky Parks, including Big Bend National Park (established in 2012). In 2014, two other Texas parks joined this exclusive list: Copper Breaks State Park and Enchanted Rock State Natural Area. Currently, there are nine certified International Dark Sky Reserves. None are in the United States. The IDSPlaces reserves are “public and private lands possessing an exceptional and distinguished quality of starry nights and nocturnal environment that is specifically protected for its scientific, natural, educational, cultural, heritage and or public enjoyment mission of a large peripheral area.”\(^8\) There are eight International Dark Sky communities. An IDSPlaces Community “excels in its efforts to achieve a communitywide lighting code, promote responsible lighting, dark sky stewardship, and exists as an example to surrounding communities on the possibilities available with the proper lighting.”\(^9\) In August 2014, the City of Dripping Springs became the first city in Texas,\(^10\) and one of only four cities in the United States, to be recognized as an IDSPlaces community.

According to the IDA, 20 Texas cities have already adopted an outdoor lighting or light pollution ordinance.\(^11\) In an era of increased conservation of resources, such lighting ordinances have the potential to become as common parlance as ordinances pertaining to water rationing. The general principles of such ordinances are: (1) Do not use more light than necessary to accomplish a desired purpose; (2) Do not use lights when not needed; and (3) Direct light only to where it is needed.
Because of their technical nature, and the cost of creating a lighting ordinance from scratch, model ordinances have been promulgated to aid and expedite local governments wanting to implement lighting restrictions. The Pattern Outdoor Lighting Code (POLC) and Model Lighting Ordinance (MLO) are two competing model lighting ordinances. The MLO was developed by the IDA in conjunction with the Illuminating Engineering Society of North America. The POLC, derived from the USA Pattern Code, was created by an astronomer employed by the United States Naval Observatory and city staff in Flagstaff, Arizona. Both model ordinances are frequently relied upon by city attorneys and city planners.

Municipal lighting ordinances have the potential to be divisive and controversial. “Outdoor lighting ordinances can implicate strong sentiments regarding private property rights, safety, and the proper role of government. Public debates about exterior illumination can give rise to emotions on both sides regarding aesthetics, security, and notions about what it means to be a good neighbor.” Yet, it is a sweeping generalization to say that all of such ordinances are prone to controversy. If perception is reality, how people perceive an outdoor lighting ordinance really depends on the specifics of the ordinance and the manner in which a municipality goes about formulating and implementing its provisions. The decision to adopt lighting regulations is not one to be made lightly. It is not a one-size-fits-all proposition. (What is right for Marfa may not be right for Mineola.) What is true for all cities, however, is that the adoption of a lighting ordinance requires careful consideration by local officials and assessment of local values.

This article does not examine the merits of whether or not a Texas municipality should adopt an outdoor municipal lighting ordinance. Rather, it focuses on considerations pertaining to enforcement.

I. Enforcement Avenues

In Texas, a municipal government that chooses to promulgate a lighting ordinance has a number of avenues for enforcement. Each has distinct advantages and disadvantages. In simplest terms, enforcement is the act or process of compelling compliance with a law, mandate, command, decree, or agreement.

Enforcement is not a singular construct. Rather, it is an overarching concept that encompasses varying components and meanings. Extrajudicial enforcement entails attempting to redress a perceived wrong by one’s own actions rather than through a normal legal process. This avenue of enforcement allows for collaboration. Examples of extrajudicial enforcement include public information and education campaigns, incentives, and assistance. A number of articles on the internet explain the need and benefit for rethinking outdoor lighting. Additionally, IDA has promulgated a practical guide ideal for neighborhood associations and community discussion. Some cities have retained lighting consultants to assist businesses with implementing effective outdoor lighting. In other places, like west Texas, people like Bill Wren, who works for the University of Texas McDonald Observatory, have worked with property owners and businesses to address lighting issues without going to court. Most people, including businesses, want to be good neighbors and do not want light trespassing onto other people’s property. Using private money, the McDonald Observatory in the last 20 years has donated more than 600 light shields to residents in municipalities near the observatory. Similarly, drawing from other contexts, municipalities may opt to use incentive mechanisms to encourage the use of green infrastructure
practices on private property. Such incentives include utility fee discounts, development incentives, grants, rebates and installation financing, awards, and recognition programs.\textsuperscript{19}

On the other end of the enforcement spectrum is \textit{law enforcement}: the detection and punishment of violations of the law. Despite its common association with police work, \textit{law enforcement} is not limited to the enforcement of criminal laws. In contrast to collaboration, the preeminent feature of this enforcement avenue is confrontation within the parameters of an adversarial legal system. Criminal enforcement and civil enforcement are both examples of law enforcement.

\textbf{A. Criminal Enforcement}

While a home-rule municipality, by virtue of its home-rule status, may adopt a lighting ordinance without reference to state statutes, a lighting ordinance may only be adopted by a general law municipality pursuant to the Local Government Code authorization of ordinances pertaining to zoning (Chapter 51), building codes (Chapter 214), signs (Chapter 216), municipal regulation of subdivisions and property development (Chapter 212), and nuisance abatement (Chapter 217). Such ordinances can contain offenses punishable by the imposition of a fine (i.e., Class C misdemeanors). Generally, the Penal Code prescribes the maximum punishment for a Class C misdemeanor as a fine not to exceed $500.\textsuperscript{20} Notably, however, all convictions not obtained from a prosecution under the Penal Code are classified as a “Class C misdemeanor” if the offense is punishable by fine only.\textsuperscript{21} Thus, a defendant convicted of violating a lighting regulation which is part of a municipal zoning ordinance could face a fine as high as $2,000 per offense.\textsuperscript{22}

A municipal court, including a municipal court of record, has exclusive original jurisdiction within the municipality’s territorial limits and property owned by the municipality located in the municipality’s extraterritorial jurisdiction in all criminal cases that arise under a lighting ordinance of the municipality.\textsuperscript{23}

Whether or not to adopt a lighting ordinance is generally a matter decided by a city council. Texas law provides some notable exceptions. A municipality located in a county, any part of which is located within 57 miles of a major astronomical observatory at the McDonald Observatory, \textit{shall} adopt ordinances regulating outdoor lighting, including in subdivisions (Subchapter B, Chapter 229, Local Government Code). An offense under that subchapter is a Class C misdemeanor (punishable by a fine not to exceed $500). In addition to criminal prosecution, a municipality may also sue in any court to enjoin a violation.

Similarly, state law mandates that counties within 57 miles of a major astronomical at the McDonald Observatory \textit{shall} adopt ordinances regulating outdoor lighting (Subchapter B, Chapter 240, Local Government Code). That subchapter has prospective application to the George Observatory, the Stephen F. Austin Observatory, to certain counties with at least five military bases, and adjacent counties. It also provides certain exceptions. An offense under that subchapter is a Class C misdemeanor. (In addition to criminal prosecution, a county or district attorney may also sue in a district court to enjoin a violation of the subchapter.) Other than in the limited geographic scope of Subchapter B, Chapter 240, Local Government Code, Texas counties have limited authority to regulate land use and structures (Title 7, Local Government Code).
Public education, collaboration, and consensus building are an important prerequisite to the passage of a municipal lighting ordinance. The importance of such efforts are amplified in municipalities seeking to criminally enforce such an ordinance. In absence of such efforts and community support, the merits of a lighting ordinance may be obscured and castigated as governmental overreach in the guise of overcriminalization.24

B. Civil Enforcement

A municipality may bring a civil action for enforcement of an ordinance for the preservation of either public safety relating to the materials or methods used to construct a building or other structure or improvement, including electrical wiring or apparatus.25 It may also bring a civil action for enforcement of an ordinance relating to the preservation of either public health or to fire safety, including provisions relating to materials, types of construction or design, interior configuration, and illumination.26

Jurisdiction and venue of such a civil action are in the district court or the county court at law of the county in which the municipality bringing the action is located.27 On a showing of substantial danger of injury or an adverse health impact to any person or to the property of any person other than the defendant, the municipality may obtain against the owner, or owner’s representative with control over the premises, an injunction that prohibits specific conduct that violates the ordinance and requires specific conduct that is necessary for compliance with the ordinance.28 It is not necessary for the municipality to prove that another adequate remedy or penalty for a violation does not exist or to show that prosecution in a criminal action has occurred or has been attempted.29 In a suit against the owner, or the owner’s representative with control over the premises, the municipality may recover a civil penalty if it proves that the defendant was actually notified of the provisions of the ordinance, and after the defendant received notice of the ordinance provisions, the defendant committed acts in violation of the ordinance or failed to take action necessary for compliance with the ordinance.30 A civil penalty may not exceed $1,000 a day for a violation of an ordinance.31 However, a person is not subject to personal attachment or imprisonment for the failure to pay a civil penalty. A person may, however, be imprisoned for contempt of a valid court order and the municipality may utilize remedies and procedures for the collection of a judgment assessing civil penalties.32

From a governmental enforcement perspective, one of the more appealing aspects of civil enforcement of a lighting ordinance, discussed below, is that the government is not required to establish its case at trial beyond a reasonable doubt. This potential advantage for Texas cities should be weighed with the fact that civil enforcement will also entail increased costs and expenditure of time.

C. Quasi-Judicial Enforcement of Health and Safety Ordinances

Quasi-judicial enforcement of health and safety ordinances requires a municipality, by ordinance, to implement the provisions of Subchapter C, Chapter 54 of the Local Government Code.33 The scope of such quasi-judicial enforcement is limited, but similar to Section 54.012 of the Local Government Code, and encompasses preservation of public safety pertaining to
construction, including electrical wiring or apparatus, and to building code or appearance of property in a municipality. The governing body of the municipality may provide for the appointment of a building and standards commission, a quasi-judicial commission, consisting of at least five members, to hear and determine cases concerning alleged violations of ordinances. The rules for hearings before quasi-judicial commissions are adopted by a majority of the commission members and must provide an opportunity for parties appearing before the commission to offer evidence and to present their own testimony. Notice is required. A commission panel may issue orders or directives to any peace officer to enforce and carry out the lawful orders or directives of a commission panel and determine the amount and duration of a civil penalty as provided by Section 54.017 of the Local Government Code. A determination is final and binding and constitutes prima facie evidence of the penalty in any court of competent jurisdiction in a civil suit brought by the municipality for final judgment in accordance with the established penalty. A final judgment may be enforced by issuance of an abstract of judgment against all parties found to be the owners of the subject property or in possession of that property. Section 54.039 of the Local Government Code provides that any owner, lienholder, or mortgagee of record jointly or severally aggrieved by any decision of a commission panel may, within 30 days after delivery of the final decision, present a petition to a district court, duly verified, setting forth that the decision is illegal, in whole or in part, and specifying the grounds of the illegality. While Section 54.039(f) states that a district court’s review shall be limited to a hearing under the substantial evidence rule, in City of Dallas v. Stewart, the Texas Supreme Court held that de novo judicial review is required for all administrative decisions regulating public nuisances. In the context of quasi-judicial enforcement and the use of a building and standards commission, concerns about due process and the lack of judicial review has led commentators to conclude that Stewart has all but directly overturned the substantial evidence standard.

Another twist on quasi-judicial enforcement is that a municipality, by ordinance, may adopt a civil adjudication process as an alternative to the quasi-judicial commission process. The civil adjudication process is for the enforcement of ordinances described by Section 54.032 of the Local Government Code. The alternative process must contain provisions relating to notice, the conduct of proceedings, permissible orders, penalties, and judicial review that are similar to the provisions of the quasi-judicial commission process. State law provides a template for alternative procedures and for conducting the administrative procedures.

Neither the quasi-judicial commission nor the civil adjudication process affects the jurisdiction of the municipal court. The Legislature, however, may not have intended for a municipal court to conduct the civil adjudication process, as it is the municipal court’s role to enforce and order a hearing officer compelling the attendance of a witness or the production of a document. While bestowing administrative functions on the municipal court may be appealing to city attorneys and decision makers at city hall, it may also pose legal and ethical problems.

II. Territorial and Extraterritorial Jurisdiction of a Municipality

A municipality may generally exercise its police powers only within the city’s corporate or territorial limits unless such powers are expressly or implicitly extended by the Texas Constitution or by a statute to apply to areas outside the limits.
It is the policy of the State of Texas to designate certain areas as the extraterritorial jurisdiction (ETJ) of municipalities to promote and protect the general health, safety, and welfare of persons residing in and adjacent to the municipalities. The ETJ of a municipality is the unincorporated area that is contiguous to the corporate boundaries of the municipality and that is located:

1. within one-half mile of those boundaries, in the case of a municipality with fewer than 5,000 inhabitants;
2. within one mile of those boundaries, in the case of a municipality with 5,000 inhabitants to 24,999 inhabitants;
3. within two miles of those boundaries, in the case of a municipality with 25,000 to 49,999 inhabitants;
4. within 3 ½ miles of those boundaries, in the case of a municipality with 50,000 to 99,999 inhabitants; or
5. within five miles of those boundaries, in the case of a municipality with 100,000 or more inhabitants.

Texas appellate courts have used the following four factors to determine whether a municipality can criminally enforce violations of ordinances occurring in the ETJ of a municipal court: (1) the type of municipality; (2) the type of ordinance alleged to have been violated (subject matter); (3) jurisdiction; and (4) venue. Whether a municipality may criminally enforce a lighting ordinance in municipal court cannot be answered in the abstract but requires similar analysis in light of specific facts.

III. Evidentiary and Proof Issues

Among the advantages of extrajudicial enforcement of Dark Sky principles is the avoidance of evidentiary and proof issues. Regardless of the chosen enforcement avenue, either criminal or civil, and regardless if the cause of action is brought by a local government or a private party, law enforcement, as previously defined, poses numerous challenges. As evidenced in the United Kingdom’s passage of the Clean Neighbourhoods and Environment Act of 2005, the challenge of drafting comprehensive legislation pertaining to regulating exterior lighting is only matched, if not surpassed, by the challenges of enforcement. The challenges appear particularly acute in criminal enforcement.

A. Witnesses

Witness testimony is the most common form of evidence in the American legal system. Regardless if a witness is a member of the public at large, a sympathetic or unsympathetic neighbor, or the complainant, a witness may not testify to a matter unless evidence is introduced that the witness has personal knowledge. Under what circumstances will such witnesses have material personal knowledge (and even then, of what)? Light trespass? In absence of expert witness testimony, similar to noise ordinance cases involving barking dogs, it is easy to imagine adjudicated disputes over lighting becoming “he said, she said” matters.
Watts versus lumens? Lumens versus luminaries? Hooded versus shielded? If you think it’s hard to explain these concepts to a city council, imagine explaining them to a jury. The scientific and technical nature of laws regulating exterior lighting is immensely complicated. This factor adds to the already difficult burden of the party with the burden of proof. If scientific, technical, or other specialized knowledge will assist the trier of fact to understand the evidence or to determine a fact in issue, a witness qualified as an expert by knowledge, skill, experience, or education may testify in the form of an opinion.  

In the event of either civil or criminal litigation, who are such expert witnesses? Are they lighting consultants? Are they city staff?

For municipalities, the outcome of a litigated dispute involving exterior lighting is likely to hinge on advance planning. Coordinating city staff is essential. “Paper work” violations (e.g., failure to submit plans or evidence of compliance) will require sponsoring witnesses for documents and records. Similarly, performance standard violations (e.g., non-conforming light fixtures) will require a sponsoring witness to introduce photographs, recordings, and other admissible evidence.

B. Admissibility

In terms of free speech, implications of lighting regulations are well documented in the context of Christmas lights and “light art.” What have received less attention are the Fourth Amendment implications of instances where inspection of a light fixture requires entry upon property. In Camara v. Municipal Court for the City and County of San Francisco, the Supreme Court of the United States held that nonconsensual administrative inspections of private residences amount to a significant intrusion upon the interest protected by the Fourth Amendment. A search warrant is required for authorities to engage in a home inspection. Evidence seized in violation of the Fourth Amendment is inadmissible. In Texas, the exclusion of such evidence is possible even when it is obtained by a private citizen or when a search warrant is predicated on information illegal by an independent third party. Even in cases where no physical entry is made onto the property of an owner, rather suspicion or proof of illegal conduct is procured by using technology from a distance, Fourth Amendment challenges have been made. In Kyllo v. United States, the Supreme Court invalidated the use of a thermal scanner to measure heat emissions from the home of a person suspected of growing marijuana in the basement of his home. The Court held that if the government uses a device that is not in general public used to explore details of a private home that would previously have been unknown without physical intrusion, the surveillance is a Fourth Amendment search and is presumptively unreasonable without a warrant. Thermal imaging disclosures cannot form the basis for a valid search warrant of a home without additional evidence to support probable cause.

A related question pertains to the admissibility of evidence pertaining to light measurements. Individuals perceive light differently. Photometry is the measurement of visible light based on the response of the average human observer. How that definition translates into technically correct quantification methods is no simple matter. Photometric measurements are made with instruments called photometers. One type of photometer, a luminance meter, is used in a number of industries to test the brightness of displays, instrument panels, and lamp sources. No Texas appellate court has considered the propriety of a trial court taking judicial notice of photometry. There is no case law governing the admissibility of measurements made by use of a luminance meter. This poses evidentiary issues similar to the admissibility of radar speed readings.
Paraphrasing from case law pertaining to speed measurement, [i]t is up to the party with the burden of proof to show that he had some reasonable basis for believing that technology, properly applied, can give him reliable information, and that the person using the technology, in fact, applied the technology properly when making the measurement. In absence of a training standard or accepted protocol for use of a luminance meter, other than showing compliance with the manufacturer’s instructions, how are prosecutors to show that the testifying witness applied the technology properly when taking the measurement? If this cannot be established, it is possible that a luminance meter, like a portable breath test in a DWI case, may only be more useful in negotiations than at trial.

C. Burden of Proof

Another factor which may influence how a municipality choses to enforce an outdoor lighting ordinance is the burden of proof required at trial.

In criminal cases, the prosecution generally has the burden of proof. The offense alleged against the accused must be established by proof beyond a reasonable doubt. In a criminal case, the defendant is presumed innocent until proven guilty. The presumption of innocence means three things: (1) the defendant has no burden of proof whatsoever; (2) the prosecution must prove each and every element of the criminal offense beyond a reasonable doubt; (3) neither a judge nor jury may draw any inferences from the fact that the defendant is accused of a crime or fails to testify in his or her own defense.

In civil cases, the plaintiff generally has the burden of proof and is required to convince the trier of fact (whether judge or jury) of the plaintiff’s entitlement to the relief sought. This means that the plaintiff must prove each element of the cause of action by a preponderance of the evidence.

CONCLUSION

While governmental regulation of outdoor lighting is hardly a new concept, it is still relatively new to Texas. As more municipalities begin to consider the merits of adopting outdoor lighting ordinances, it is important that careful thought be given to the challenges of enforcement. For the time being, in absence of precedent, Texas cities choosing law enforcement (criminal, civil, or quasi-judicial) are likely to find themselves feeling their way through the dark. Notably, the challenges of law enforcement seem most pronounced in criminal enforcement. Accordingly, municipalities and city attorneys should not discount the merits of extrajudicial enforcement. Public education, collaboration, and consensus building are important prerequisites to the passage of a municipal lighting ordinance. However, sustaining such efforts is essential to long-term effective enforcement. Regardless of the avenue of enforcement, a municipality should not expect to successfully enforce an ordinance that is misunderstood or lacking popular support among residents.

1 Light pollution includes light trespass, over illumination, glare, light clutter and sky glow. http://www.texasida.org/BasicKnowledge.htm. The term, “light pollution,” has been criticized. Writing for the Independence Institute, a libertarian think tank based in Denver, Colorado, David B. Kopel and Michael Loatman
claim that light pollution is a misleading term that should be banished from public discussion because light is a good, not a bad form of pollution. Dark Sky Ordinances: How to Separate the Light from the Darkness, Independence Institute (March 2006) at 2.


6 Supra n. 2.


13 James Benya and Scott Kardell, City of Malibu Lighting Ordinance: Comparison of POLC and MLO Ordinances, IDA at 1 (August 12, 2014).


16 Lelde McCoy, Developing Innovative Campaigns to Enhance Public Awareness of Government Initiatives, The Reputation Group (February 2009).


18 Phone conversation with Bill Wren, December 19, 2014.


20 Section 12.23, Penal Code.

21 Section 12.41(3), Penal Code.

22 Section 54.001(b), Local Government Code.

23 Section 29.003, Government Code.

24 For a general discussion of overcriminalization, see, Paul Larkin, Regulation, Prohibition, and Overcriminalization: The Proper and Improper Uses of the Criminal Law, 42 Hofstra L. Rev. 745 (2014).

25 Section 54.012(1), Local Government Code (emphasis added).

26 Section 54.012(2), Local Government Code (emphasis added).

27 Section 54.013, Local Government Code.

28 Section 54.016(a), Local Government Code.

29 Section 54.016(b), Local Government Code.

30 Section 54.017(a), Local Government Code.

31 Section 54.017(b), Local Government Code.

32 Section 54.019, Local Government Code.

33 Section 54.031, Local Government Code.

34 Section 54.032, Local Government Code.

35 Section 54.033, Local Government Code.
Section 54.034, Local Government Code.
Section 54.035, Local Government Code.
Section 54.040, Local Government Code.
Alex Cameron, Due Process and Local Administrative Hearings Regulating Public Nuisances: Analysis and Reform, 43 St. Mary’s L. J. 619, 650 (2012).
Section 54.043, Local Government Code.
Section 54.042, Local Government Code.
Section 54.044 (c), Local Government Code.
Section 42.001, Local Government Code.
Section 42.021, Local Government Code.
Lawrence Provins, For City Attorneys: Enforcing Municipal Ordinance Violations in the Extraterritorial Jurisdiction by Prosecution in Municipal Court, The Recorder at 8 (July 2006).
Texas Rules of Evidence 602.
Texas Rules of Evidence 702.
Supra, note 49 at 1118-1119.
Id. at 533.
Id.
Id.
Once a scientific principle is generally accepted in the pertinent professional community and has been accepted in a sufficient number of trial courts through adversarial Daubert/Kelly hearings, subsequent courts may take judicial notice of the scientific validity (or invalidity) of that scientific theory based upon the process, materials, and evidence produced in those prior hearings. Hernandez v. State, 116 S.W.3d 26, 29 (Tex. Crim. App. 2003).