New Construction Exterior Space Lighting Zones

January 10, 2018



Purpose



The purpose of this document is to provide guidance on the selection of lighting zones for outdoor lighting



New Construction Exterior Space Types

	Lighting Power Density (W/ft²)				
Facility Type	Zone 1	Zone 2	Zone 3	Zone 4	
Uncovered Parking: Parking Areas and Drives	0.04	0.06	0.10	0.13	
Building Grounds: Walkways <u>></u> 10 ft. wide, Plaza Areas, and Special Feature Areas	0.14	0.14	0.16	0.20	
Building Grounds: Stairways	0.75	1.00	1.00	1.00	
Building Grounds: Pedestrian Tunnels	0.15	0.15	0.20	0.30	
Building Grounds: Landscaping (ASHRAE 90.1-2013 only)	0.04	0.05	0.05	0.05	
Building Entrances and Exits: Entry Canopies	0.25	0.25	0.40	0.40	
Building Entrances, Exits, and Loading Docks: Loading Docks (ASHRAE 90.1-2013 specific)	0.50	0.50	0.50	0.50	
Sales Canopies: Free-standing and Attached	0.60	0.60	0.80	1.00	
Outdoor Sales: Open Areas	0.25	0.25	0.50	0.70	
Building Facades		0.075	0.113	0.150	
Entrances and Gatehouse Inspection Stations	0.75	0.75	0.75	0.75	
Loading Areas for Emergency Vehicles	0.50	0.50	0.50	0.50	

Table 2 3: New Construction LPDs for Exterior Space Types

Source per Lighting Survey Form: IECC 2015 Table C405.5.2(2) and ANSI/ASHRAE/IESNA Standard 90.1-2013 Table 9.4.2-2.

Volume 3, Section 2.1, of the Texas Technical Reference Manual provides guidance on calculation of savings from new construction exterior lighting

^[1] In June 2016, the TX Comptroller issued a state certification letter adopting ASHRAE 90.1-2013 as the energy code for state buildings while the commercial building code remains IECC 2015. State-funded buildings are required to submit SECO compliance certificates as part of the NC/Renovation process.

More details can be found at the Comptroller website: https://comptroller.texas.gov/programs/seco/code/state-funded.php. ^[2] Ibid.

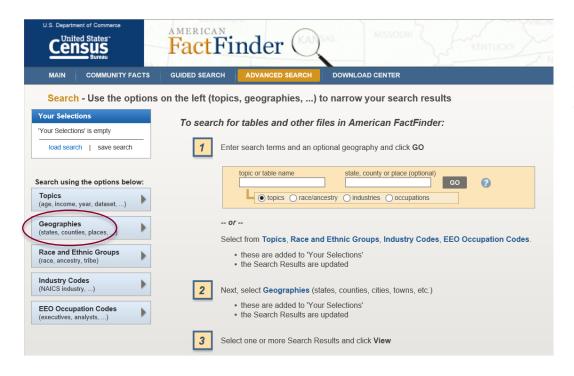
[3] ASHRAE 90.1-2013 reflects a higher baseline. The TRM specifies the higher, more conservative, baseline in order to allow the same LPD to apply to all buildings, regardless of whether they are state-funded.

Lighting Zone Descriptions

Zone	Ambient Illumination	Statewide Default Location
LZ1	Dark	Government designated parks, recreation areas, and wildlife preserves. Those that are wholly contained within a higher lighting zone may be considered by the local government as part of that lighting zone. A government designated park, recreation area, wildlife preserve, or portions thereof, can be designated as LZ2 or LZ3 if they are contained within such a zone.
LZ2	Low	Rural areas, as defined by the 2010 U.S. Census.
LZ3	Medium	Urban areas, as defined by the 2010 U.S. Census.
LZ4	High	None

80% of Texas households are in urban areas

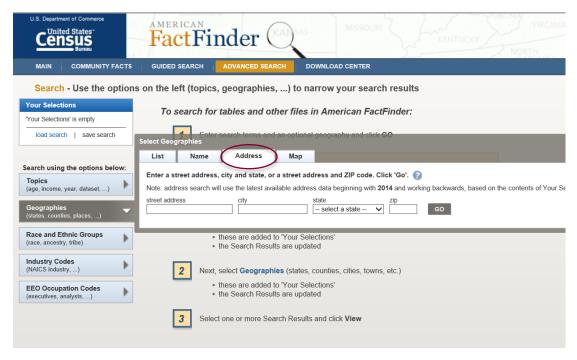
Source: California Energy Commission



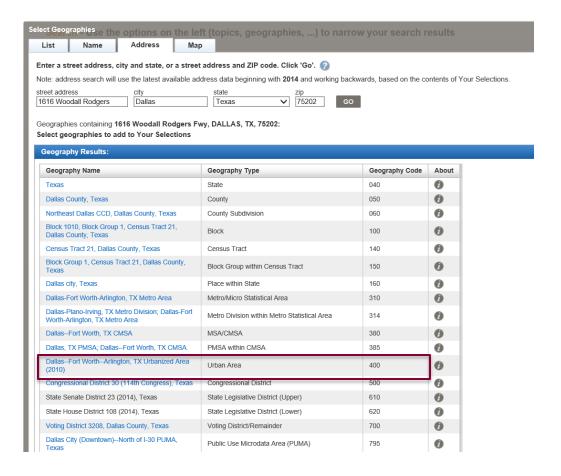
 Open a browser and paste the attached link

http://factfinder.census.gov/faces/nav/jsf/pages/searchresults.xhtml?refresh=t#none

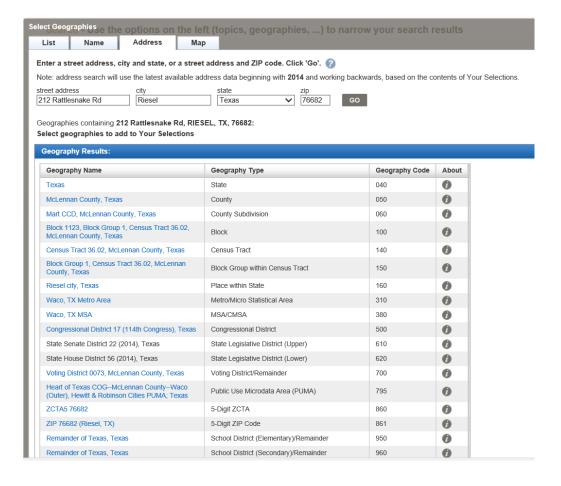
- To determine if the property is in either a rural or urban census tract, do the following:
- Click on the "Geographies" box in the left hand column. This will expand the box with 4 tabs at the top.



- Click on the "Address" tab at the top of the expanded box.
- Type in the address of the property.
- Select the "Go" button to begin the search.



- Look for Code 400
- If there is a Code 400 present, the area is classified as "Urban", which is Lighting Zone 3



 If no Code 400 is present, the area is classified as "Rural", which is Lighting Zone 2

Screen shots from the US Census Bureau website which show the address and geography type and code will be required to determine the correct zone

Geographies the options on the	left (topics, geographies,) to narr	ow your search r	esults
	Лар		
er a street address, city and state, or a str	eet address and ZIP code. Click 'Go'. 👔		
: address search will use the latest available	address data beginning with 2014 and working bad	ckwards, based on the co	ontents of Your S
et address city	state zip	_	
50 Fossil Creek Blvd Fort Worth	Texas ✓ 76137 G	D	
ographies containing 4350 Fossil Creek Blvd	I, FT WORTH, TX, 76137:		
ect geographies to add to Your Selections			
eography Results:			
Geography Name	Geography Type	Geography Code	About
Texas	State	040	0
Tarrant County, Texas	County	050	0
Fort Worth CCD, Tarrant County, Texas	County Subdivision	060	0
Block 2038, Block Group 2, Census Tract 1050.07 Farrant County, Texas	Block	100	0
Census Tract 1050.07, Tarrant County, Texas	Census Tract	140	0
Block Group 2, Census Tract 1050.07, Tarrant County, Texas	Block Group within Census Tract	150	0
Fort Worth city, Texas	Place within State	160	0
Dallas-Fort Worth-Arlington, TX Metro Area	Metro/Micro Statistical Area	310	0
Fort Worth-Arlington, TX Metro Division; Dallas- Fort Worth-Arlington, TX Metro Area	Metro Division within Metro Statistical Area	314	0
Dallas-Fort Worth, TX CMSA	MSA/CMSA	380	0
Fort Worth-Arlington, TX PMSA; Dallas-Fort Worth, TX CMSA	PMSA within CMSA	385	0
DallasFort WorthArlington, TX Urbanized Area (2010)	Urban Area	400	0
Congressional District 12 (114th Congress), Texas	Congressional District	500	0
State Senate District 9 (2014), Texas	State Legislative District (Upper)	610	0
State House District 93 (2014), Texas	State Legislative District (Lower)	620	0
Voting District 4250, Tarrant County, Texas	Voting District/Remainder	700	0
Fort Worth City (North Central) & Haltom City	Public Use Microdata Area (PUMA)	795	6



Questions

If you have any questions regarding selection of lighting zones, please contact your Program Manager

