

Date Received		Application for Outdoor Lighting Permit		Permit Number
Type of Lighting Permit:		<input type="checkbox"/> Permanent	<input type="checkbox"/> Temporary	
Site Address (including suite #)		City, State, Zip		
Property Owner		Phone	Email	
Mailing Address		City, State, Zip		
Applicant(s) or Contractor(s) (if different from property owner)		Phone	Email	
Mailing Address		City, State, Zip		
Parcel Numbers(s)		Parcel Zoning		

See Division 10-50.70 (Outdoor Lighting Standards) of the Zoning Code for City outdoor lighting standards.

Please contact the Dark Sky Specialist, Janice Hakala Janice.Hakala@flagstaffaz.gov or 928-213-2148

SITE INFORMATION <i>(See City of Flagstaff Lighting Zones on p. 3 of this application for more information).</i>	
Lighting Zone (1 or 2) _____	Site size in acres (provide to two decimal points, such as 10.25) _____
<p><u>Your application must include all required components listed on p. 5. Incomplete applications will not be accepted. Please do not submit pages 5-8 (these are instructional/example pages).</u></p>	
<p>_____ (Initials) I hereby certify that the information set forth on this form is complete and accurate and do hereby agree to comply with all applicable codes of the City of Flagstaff and the State of Arizona and with any conditions attached hereto, and request that all pertinent City personnel access my property at any time deemed necessary to inspect work being done relating to this permit.</p>	

Applicant Signature:		Date:
For City Use		
Received By:		Fee Receipt #:
Approval: <input type="checkbox"/> Yes <input type="checkbox"/> No	Staff Initial:	Date Approved:

PROPOSED LUMEN CALCULATIONS TABLE

Provide the required information in the table below (or in a separate table that matches the table below) for each outdoor lamp and fixture combination that will be on site after the outdoor lighting is updated. Do not include streetlights in public rights-of-way. Some of the columns will auto-calculate, others you will need to fill out yourself.

1	2	3	4	5	6	7	8	9	10	11	12
Plan ID	No. of Fixtures	Lamp Type	Shielding ¹	Lighting Class (1,2,3)	Lumens Per Lamp	No. of lamps per fixture ²	Lumens per Fixture	No. of Recessed Fixtures ³	Lumen Reduction for Recessed Fixtures ⁴	Lumens from Freestanding Fixtures	Lumens Total

Proposed Total Outdoor Light Output _____

Maximum Total Outdoor Light Output _____

Total proposed partially shielded lumens _____

Maximum permitted partially shielded lumens _____

Total proposed freestanding fixture lumens _____

Maximum permitted partially shielded lumens _____

¹**Shielding.** Use the following abbreviations: **FS** for fully-shielded; **PS** for partially-shielded. *Unshielded fixtures are not permitted.*

²**No. of Lamps per Fixture.** Put 1 for LEDs or NSALEDs that are integrated as part of the fixture.

³**Number of Recessed Fixtures.** Applies only to fully-shielded fixtures at least 5-ft. (horizontally) from the nearest roof/canopy edge.

⁴**Lumen Reduction for Recessed Fixtures.** Do the following calculation for fixtures recessed 5-9.99 feet.: (Column 9 x Column 10) x 0.75. Do the following calculation for fixtures recessed 10 or more feet: (Column 9 x Column 10) x 0.90.

TOTAL OUTDOOR LIGHT OUTPUT WORKSHEET

1. Identify the Lighting Zone where your project is located. Refer to the Lighting Zone Map in Section 10-90.40.020 of the Zoning Code, or search by address in the GIS Mapping Portal <https://map-flagstaff.opendata.arcgis.com/> (go to the Flagstaff Zoning map).
2. Do the calculations below (multiply the maximum lumens permitted in the site’s Lighting Zone by the net acres of your site).

Total Outdoor Light Output

Zone 1: 17,500 lumens/acre **Zone 2:** 35,000 lumens/acre

- Maximum permitted Total Outdoor Light Output _____

Maximum Partially Shielded Fixtures

Zone 1: 0 lumens/acre **Zone 2:** 3,850 lumens/acre

- Maximum permitted partially shielded lumens _____

Maximum Non-Building or Canopy Mounted Fixtures

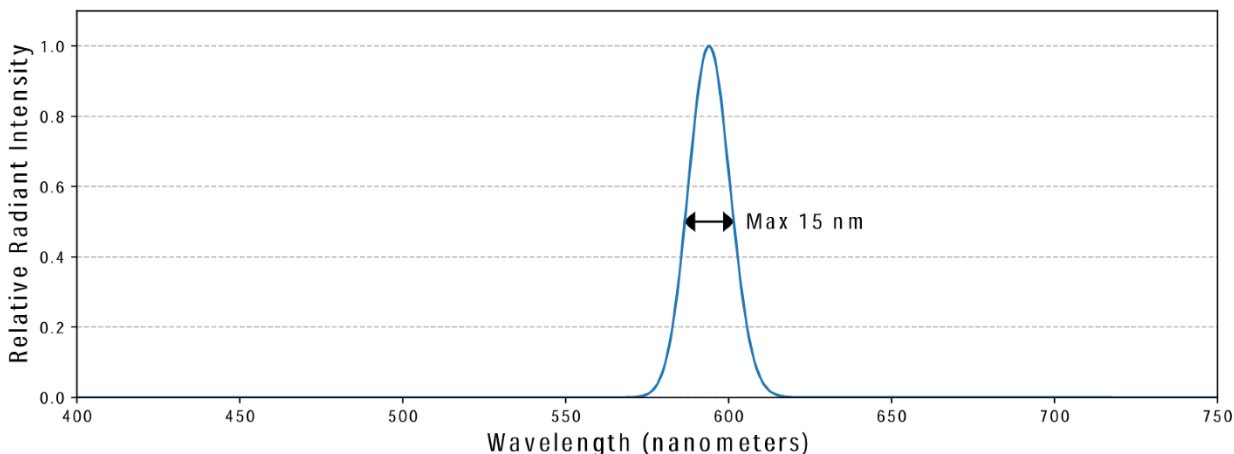
Zone 1: 4,000 lumens/acre **Zone 2:** 35,000 lumens/acre

- Maximum permitted non-building or canopy mounted fixtures _____

IMPORTANT INFORMATION ABOUT OUTDOOR LIGHTING REQUIREMENTS

Narrow-Spectrum Amber LEDs or Low-pressure sodium (LPS) (*preferred lighting sources*)

NSALEDs have a spectrum like that shown in the graph to the right, and with a peak wavelength between 589 and 595 nanometers and a full width at 50 percent power no greater than 15 nanometers. They are used for Class 2 lighting. See *Division 10-50.70.050: Requirements – All Lighting Zones* for more information.



APPLICATION SUBMITTAL REQUIREMENTS

1. \$130 non-refundable fee due when submitting the permit application.
2. Complete page 1 of this application.

One (1) copy of each of the following, on 8.5 x 11 or 11 x 17 sheets only. If the site is very large, you may use a bigger sheet for the lighting plan only.

1. Complete *EXISTING LUMEN CALCULATIONS TABLE* (APPLIES ONLY TO EXISTING DEVELOPMENTS).
 - a. Lumen output per fixture is available on the manufacturer's cutsheets for the fixture.
 - b. If manufacturer's cutsheets are not available, estimate the lumen output by looking up the lamp type, make, and model number. Choose the highest estimate (most conservative) if there is a lumen output range.
2. Complete *PROPOSED LUMEN CALCULATIONS TABLE*.
3. Complete *TOTAL OUTDOOR LIGHT OUTPUT WORKSHEET*.
4. Complete outdoor *Lighting Plan* using corresponding symbols from the *Proposed Lumen Calculations Table*, clearly showing the location of all existing and proposed lighting (refer to example plan on p. 8 of this application).
5. The manufacturers' cutsheet for each fixture (or a picture of an existing fixture, if the cutsheet is unavailable).

ADDITIONAL INSTRUCTIONS: LIGHTING PLAN

1. Print an up-to-date aerial photo or draw a plan of the entire site. This document is known as the *Lighting Plan*.
 - a. Show the entire parcel and all property lines.
 - b. *Skip to Step 3 (below) if you plan to update all lighting (remove all existing lighting).*
2. Mark on the *Lighting Plan* the location of outdoor light fixtures that will remain on-site after the Outdoor Lighting Application is approved and the outdoor lighting on the site is updated. Include all light fixtures on the site—even those that are turned off or are inoperable.
 - a. If you do not want lights that are turned off or inoperable to count toward your maximum proposed lumens, you will need to remove them from the site.
3. For all lighting that will be on site after the permit is approved (includes new and existing lighting, if applicable):
 - a. Assign a different ID (A,B,C or 1,2,3, etc.) to each unique lamp/fixture combination. The ID on the lighting plan must correspond to the symbol on the *Proposed Lumens Calculations Table* on p. 3 of this application.
4. Identify any lights located five (5) or more feet (horizontally) from a roof eave or other type of canopy edge.
 - a. If so, measure the distance between the fixture and the edge of the roof, and record the distance on the lighting plan.
 - b. Include measuring tape in the picture if needed to clarify the distance between the edge of the fixture and the edge of the roof/canopy.

ADDITIONAL INSTRUCTIONS: MANUFACTURER'S CUTSHEETS

5. Include the manufacturer's cutsheet for each lamp/luminaire combination proposed in the permit application (each Lighting Plan symbol).
 - a. Label each cutsheet with Lighting Plan Symbol that it corresponds to.
 - b. If the cutsheet shows multiple options and/or models, clearly indicate which option you plan to install.
 - c. Make sure the cutsheet shows lumen output at installation, a picture of the fixture, model number, lamp type, and manufacturer.
 - d. For all Class 2 lights (low-pressure sodium or narrow-spectrum amber LEDs), the cutsheet should state the peak wavelength and include a graph that shows the wavelengths of light produced by the fixture (it should look like the graph on the top of p. 6).
 6. Include a picture of each fixture type if cutsheets are unavailable. Label the lamp make and model number.
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Page 6. See next page for additional information.

EXAMPLE OUTDOOR LIGHTING PERMIT

This example is for a 2.50-acre site in Lighting Zone 2. It includes a recessed fixture, so the lumen reduction is calculated in the Lumen Calculations Table. It also proposes LED, NSALED, and non-LED lights. Fixture A has two lamps per fixture.

EXAMPLE LUMEN CALCULATIONS TABLE

1	2	3	4	5	6	7	8	9	10	11	12
Lighting Plan Symbol	Number of fixtures	Lamp Type	Shielding	Lighting Class (1,2,3)	Watts per Lamp	Lumens Per Lamp	No. of lamps per fixture	Lumens per Fixture	Number of Recessed Fixtures	Lumen Reduction for Recessed Fixtures	Lumens Total
A	5	LED	PS	1	12	1,000	1	1,000	0	0	5,000
B	3	NSALED	FS	2	21	NA ¹	1	3,467	0	0	10,401
C	1	NSALED	FS	2	21	NA	1	3,467	1 ²	-2,600	867

Total proposed lumens 16,268 Maximum Total Outdoor Light Output 87,500
 Total proposed partially shielded lumens 5,000 Maximum permitted partially shielded lumens 9,625

EXAMPLE MAXIMUM PERMITTED LUMENS WORKSHEET

Total Outdoor Light Output

Zone 1: 17,500 lumens/acre **Zone 2: 35,000 lumens/acre**

- Maximum permitted Total Outdoor Light Output 87,500

Maximum Partially Shielded Fixtures

Zone 1: 0 lumens/acre **Zone 2: 3,850 lumens/acre**

- Maximum permitted partially shielded lumens 9,625

Maximum Non-Building or Canopy Mounted Fixtures

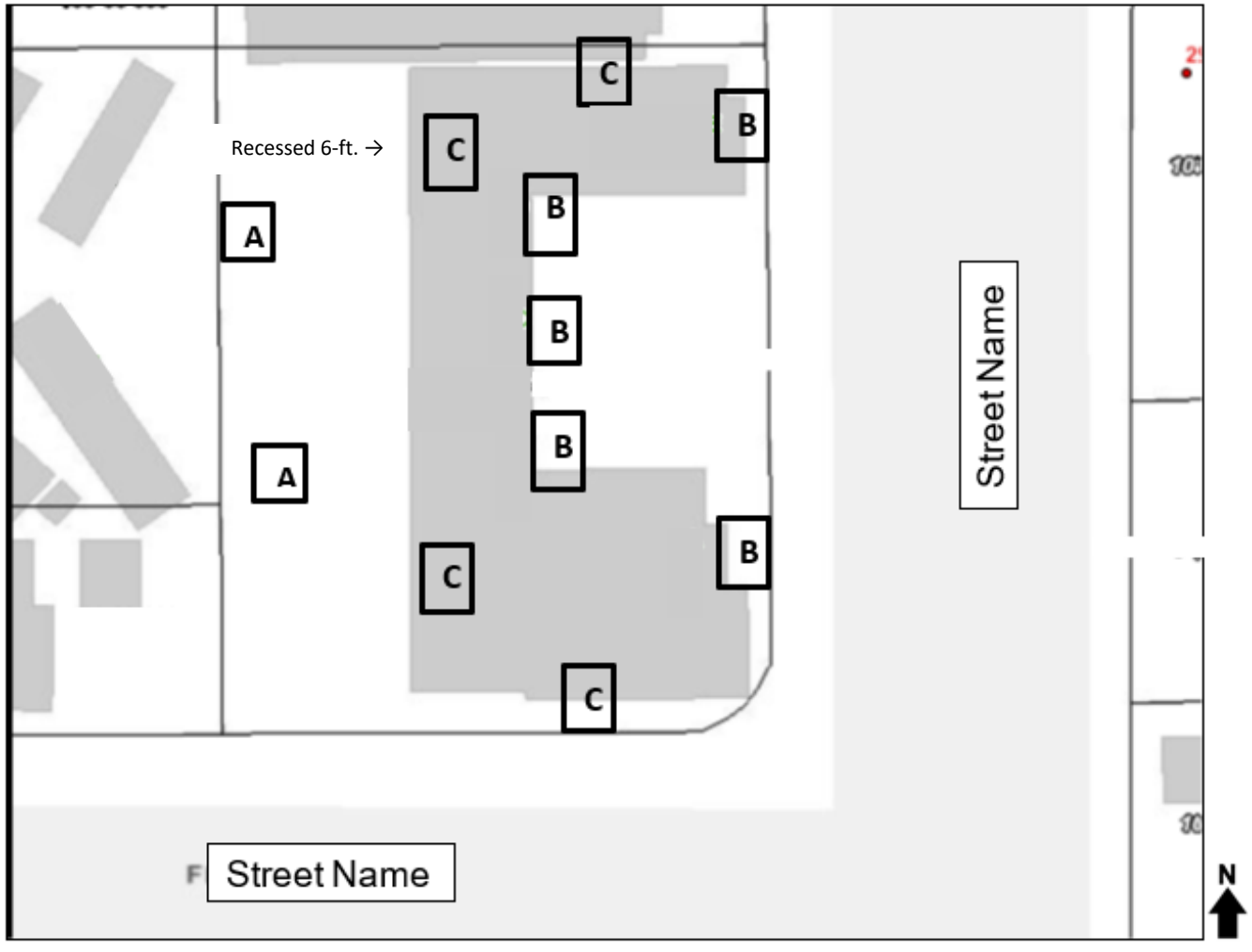
Zone 1: 4,000 lumens/acre **Zone 2: 35,000 lumens/acre**

- Maximum permitted non-building or canopy mounted fixtures 87,500

EXAMPLE OUTDOOR LIGHTING PLAN

Lighting Fixtures Count:

- A = 2 fixtures
- B = 5 fixtures
- C = 4 fixtures (one is recessed 5-9.99 ft.)



ATTACH MANUFACTURER'S CUTSHEETS ON THE NEXT PAGE