Big Park/Village of Oak Creek Application for the International Dark-Sky Community

A proposal to the International Dark-Sky Association Introduction & Nomination



Ted Grussing Photography © 2015

INTERNATIONAL DARK-SKY ASSOCIATION APPLICATION BIG PARK REGIONAL COORDINATING COUNCIL BIG PARK/VILLAGE OF OAK CREEK ARIZONA NOVEMBER 11, 2015

TABLE OF CONTENTS NOVEMBER 11, 2015

I.	Introduction	Page 6
II.	Initial Contact with International Dark-Sky Association	
	(IDA)	10
III.	Nomination Letters	12
	a. Chip Davis, Yavapai County Board of Supervisor b. Joanne Kendrick, Chair Dark-Sky Committee	13
	and IDA Member	14
IV.	Big Park/Village of Oak Creek	15
	a. Maps	16
	b. Demographics	23
٧.	Yavapai County Light Pollution Control Ordinance	25
VI.	History of Yavapai County Light Pollution Ordinance	40
VII.	State Route and County Owned Complaint Lighting	50
	a. State Route 179 Widening Project	
III.	Businesses that Changed Noncompliant Outdoor Lighting	
	to Compliant Outdoor Lighting	52
	a. Bell Rock Plaza	53
	b. Chevron	58
IX.	County Support for Dark Skies	61
	a. Yavapai County Lighting Brochure	62
Χ.	Broad Community Support for Dark Skies	65
	a. Big Park Regional Coordinating Council	67
	b. Coconino County Board of Supervisors	69
	c. Sedona Chamber of Commerce	71
	d. Sedona Mayor and City Council	73
	e. Sedona Fire District	75
	f. Home Elements Lighting & Design	78
XI.	Community Business and Professional Organizations Support	
	for Dark Skies	80
	a. Professional Organizations	
	i. Keep Sedona Beautiful, Inc.	82
	ii. Astronomers of Verde Valley	84
	iii. Colorado Plateau	86
	iv. Lowell Observatory	88
	v. Northern Arizona Audubon Society	90
	vi. Sirius Lookers Astro Club	92

	b. Businesses	
	i. Cucina Rustica	95
	ii. Sedona Public Library	96
	iii. Terrace Wind Design Company	97
	iv. The Greater Sedona Verde Valley Network	98
	v. Verde Valley School	99
	vi. Village Barber Shop	100
	vii. See Appendix 1 for additional thirteen (13)	
	businesses	101
XII.	Community Support from Residents, Neighboring Towns,	
	and Visitors	102
	a. Twenty (20) letters of support	103
	b. See Appendix 2 for additional 239 letters of support	
XIII.	Community Dark-Sky Awareness Events	125
	a. Red Rock Ranger District Station	127
	b. Sedona Winds	135
	c. Red Rock State Park	139
XIV.	Dark-Sky Awareness Documents	141
	a. International Dark-Sky Association Brochures	
XV.	Dark-Sky Education for School Children	143
	a. Big Park Community School	
XVI.	Success in Light Pollution Control	145
XVII.	Sky Brightness Measurement Program	148
	a. Big Park/Village of Oak Creek Dark-Sky	
	Committee's Procedure	150
	b. Sky-Quality Measurement Device	151
	c. Sky-Quality Measurements Performed on	
	February 18, 2015	153
	d. Sky-Quality Measurements Performed on	
	June 16, 2015	153
	e. Sky-Quality Measurements Performed on	
	July 15, 2015	153
	f. Map Overlay of Measurements	155
XVIII.	Wording for Designation	157
XIX.	Village of Oak Creek Photographs	159
XX.	Newspaper Articles	163

XXI.	Appendix	192
	a. Appendix 1	193
	b. Appendix 2	209





I. Introduction

Introduction

Offering incomparable beauty and included in the Greater Sedona Area (GSA), the Big Park community, more commonly known as the Village or the Village of Oak Creek (VOC), is an attractive place to visit or settle for many reasons. Nestled at the feet of the Bell Rock, Courthouse Butte, and Castle Rock red rock formations, this unincorporated area was first called "Big Park", the pioneers' name for a large open grazing area that was developed into the VOC beginning in the early 1960s after being used as a western film location in the 1940's and 1950's.

The VOC's name is derived from the largest homeowners association in the area, the Village of Oak Creek Association. Today, the VOC includes the Village of Oak Creek Association along with more than 50 homeowner associations and neighborhood residential groupings from adjacent areas. The area boasts its own sewer system and an improvement district for maintaining the landscaping and other enhancements along State Route 179 the business district of the State Road 179 corridor, Arizona's first All-American Road. Two private water companies provide service to the area. The community is surrounded by the Coconino National Forest, with a Forest Service Visitor Center located just south of the business district. Within the VOC area are retail stores, restaurants, hiking and biking trails, destination resorts, and golf courses providing a wonderful quality of life for its residents and memorable experiences for visitors to the Greater Sedona Area.

The Big Park Regional Coordinating Council (Big Park Council or Council) was incorporated in 1997 as an Arizona non-profit corporation at the request of the Yavapai County Supervisors to promote the best interests of the residents of the VOC. The Council consists of 28 members, consisting of representatives from homeowners' associations, neighborhoods, business organizations and educational institutions. The Council advises Yavapai County governmental officials on issues pertaining to the VOC community.

The boundaries of the community are outlined by the Big Park Community Plan. The Council studies community issues and seeks their solutions. In doing so, it represents the interests of the Big Park community to County, State, and Federal bodies and agencies, persons, firms or organizations that affect the community.

The Big Park Council recently adopted the following Vision Statement to inspire stewardship of our natural environment, the Big Park/Village of Oak Creek Community and the amenities that enhance the lives of our residents and visitors by:

- 1. Protecting and preserving the pristine natural beauty of the Red Rock Country surrounding our community;
- 2. Nurturing a sense of community spirit and citizen involvement by maintaining our small town atmosphere and values;
- 3. Creating a "Sense of Place" through the amenities expressed in our arts, cultural and educational opportunities and by strengthening and promoting our business community along the Red Rock Scenic Byway, Arizona's First All-American Road;
- 4. Building bridges of communication and cooperation within our Community, the Greater Sedona Area, and other Verde Valley communities recognizing that our decisions and actions have an impact throughout the area; and
- 5. Promoting in our Community effective law enforcement, access to emergency healthcare, and a comprehensive transportation infrastructure.

The Big Park Community Plan adopted by the Yavapai County Board of Supervisors on June 15, 1998 (Plan) states that the magnificence of nature that surrounds us should set the standard for everything we do. One objective is to appreciate and enjoy today, while everyone works together to sustain and enhance the natural beauty for generations to come.

The Plan is a guide for development of the area within the area shown on the attached map. The community is set in the unique red rock country at the foot of Bell Rock, Courthouse Rock, and Cathedral Rock. The natural beauty and scenic vistas are a vital asset that benefits residents and visitors alike. This natural environment helps to define the quality of life enjoyed by its citizens and the protection of this natural environment is critical to continuing that lifestyle and the economic well being of this area.

The over-riding goal and objective of the Plan is to protect the quality of life of the existing residential areas as the community develops. One of those goals is to develop additional guidelines to protect against light, water, air, odor, noise, commercial lighting and signage and other aesthetic visual pollution that detracts from the natural beauty of the area.





II. Initial Contact with International Dark-Sky Association

a. Initial contact with IDA and Big Park/Village of Oak Creek IDA application prepared by:

Joanne Kendrick, Chair Big Park/Village of Oak Creek Dark-Sky Committee P. O. Box 20248 Sedona, AZ 86341

Joanne Kendrick's home information: 120 Highland Drive North Sedona, AZ 86351

Home: 928-284-1274 Cell: 214-507-7755 Email: jck48@me.com

III. Nomination Letters

Board of Supervisors District 3



A.G. "CHIP" DAVIS Supervisor, District 3 10 S. Sixth Street Cottonwood, AZ 86326 (928) 639-8110 chip.davis@yavapai.us

September 8, 2015

International Dark Sky Association 3225 North First Avenue Tucson, AZ 85719

To Whom It May Concern:

Please accept this letter as my support for the International Dark Sky designation for the Village of Oak Creek. The Village of Oak Creek is an unincorporated community within Yavapai County and is part of my Supervisorial District.

There are only a few places left in the country where one can see such a spectacular view of the night sky. It is important for this community that this increasingly rare resource be protected. The businesses, residents and government agencies have come together to make this happen.

Yavapai County has adopted a comprehensive approach toward reducing light pollution, establishing clear and consistent standards for outdoor lighting. As a county advocating for efforts in support of responsible lighting we fully support the efforts of the International Dark Sky Association.

Thank you for your consideration.

Chip" Davis District 3 Supervisor

Best regards,

John Barentine, Ph.D.
Program Manager
International Dark-Sky Association
3223 North First Avenue
Tucson, AZ 85719

Dear John:

It is with pleasure that I nominate Big Park/Village of Oak Creek (BP/VOC) to be an International Dark-Sky Community.

BP/VOC is a unique place as its night skies are already dark. The community values this natural resource and wants to preserve it.

Yavapai County has been concerned with the issue of responsible outdoor lighting for many years. They passed a stringent outdoor lighting ordinance in 2002 with the purpose to preserve the dark night sky. The outdoor lighting ordinance was recently updated.

It has been a gratifying experience working with the Big Park Council, Yavapai County Board of Supervisors, professional organizations, BP/VOC businesses, and the BP/VOC community in obtaining support for the Dark-Sky Community designation. Their support for the designation has been extremely positive.

The Milky Way shines brightly in our night sky. BP/VOC has earned the right to be designated as an International Dark-Sky Community as they have been preserving their dark night sky for decades.

Thank you for your consideration of this application.

Sincerely, Joanne Kendrick

Joanne Kendrick

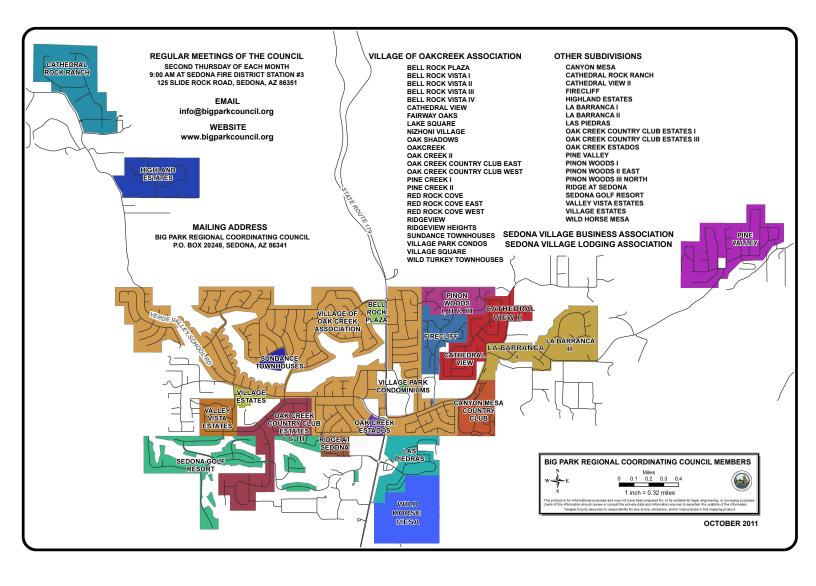
Chair, Big Park/Village of Oak Creek Dark-Sky Committee

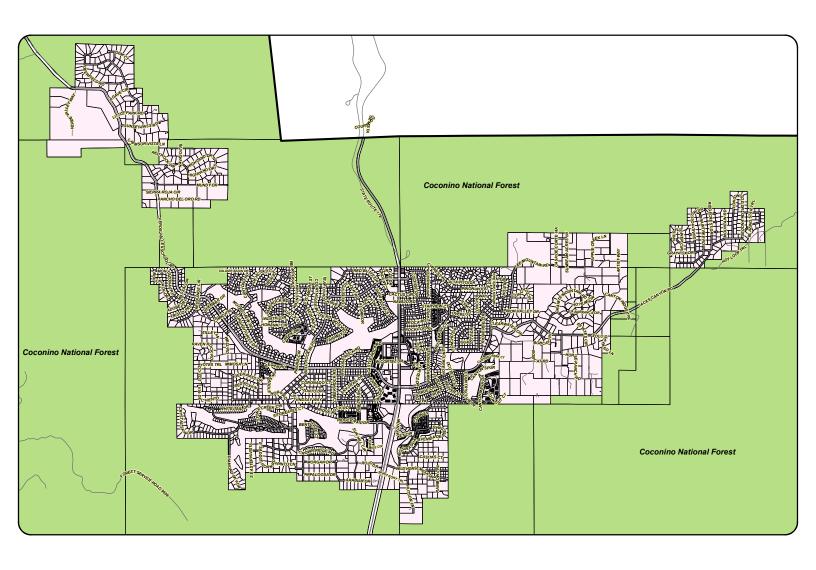
Chair, Keep Sedona Beautiful Dark-Sky Committee

International Dark-Sky Association Member

IV. Big Park/Village of Oak Creek Map and Demographics

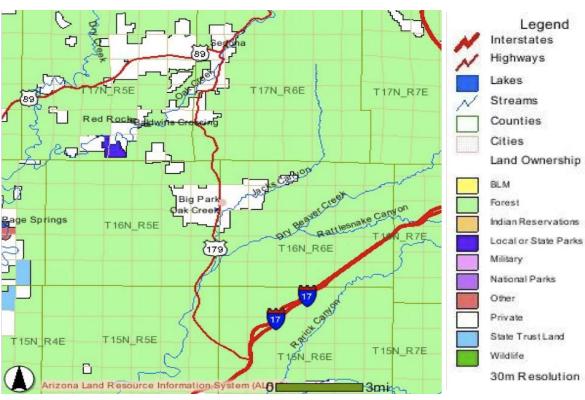
- a. Maps
 - i. Big Park/Village of Oak Creek Maps





Big Park: Unincorporated Community





Offering comparable beauty and close proximity to Sedona, Big Park is an attractive place to visit or settle for many reasons. Nestled at the feet of Bell Rock, Courthouse Butte, and Castle Rock, this unincorporated area is often referred to as the Village or the Village of Oak Creek (VOC). The name is derived from the largest homeowners association in the area, the Village of Oak Creek Association (VOCA). Big Park includes the Village of Oak Creek Association and more than 50 homeowner associations and residential groupings from adjacent areas. Big Park boasts its own sewer system and an improvement district for maintaining the landscaping along the business district of the SR179 corridor, Arizona's first All-American Road. Two private water companies provide service to the area. The Big Park Regional Coordinating Council, formed by the Yavapai County Supervisors and made up of representatives from neighborhoods and businesses, advises Yavapai County governmental officials on issues pertaining to their community. Within the Big Park - VOC area are retail stores, restaurants, hiking and biking trails, destination resorts and golf courses providing a wonderful quality of life for its residents and memorable experiences for visitors to the Greater Sedona Area.

Big Park Quick Facts:

Population: 6147 Elevation: 4075

Square Mileage: 4.54

County: Yavapai Founded: 1960's Incorporated: No

Highways: Interstate Hwy 17, St. Hwy 179, and

St. Hwy 89A

Distance to Phoenix: 119 miles
Distance to Tucson: 230 miles

Distance to Grand Canyon: 116 miles

Zip Code(s): 86351



Photo by Mel Copen

Web-Site:

Big Park Regional Coordinating Council: http://www.bigparkcouncil.org/

Big Park Community Plan:

http://www.bigparkcouncil.org/VOC/involved.php#plan (The Big Park Regional

Coordinating Council advises that Yavapai County no longer requires these plans. The information incorporated in this plan is for informational purposes only regarding the priorities of the representatives on the council at the time it was written.)

<u>Big Park Regional Coordinating Council: Vision Survey Results:</u> http://www.bigparkcouncil.org/pdf/vision survey.pdf

Profiles:

<u>City Data Profile: Big Park: http://www.city-data.com/city/Big-Park-Arizona.html</u>

Muni Net Guide: Big Park:

http://www.muninetguide.com/states/arizona/big-park/

Links:

Travel Information and Road Conditions:

- Arizona Department of Transportation 511: http://www.az511.com/adot/files/
- Arizona Road Conditions: http://www.roadcondition.us/arizona.html
- Arizona Guide: (Sedona): http://www.arizonaguide.com/places-to-visit/northcentral-arizona/sedona

Current and Extended Weather Forecast:

- National Weather Service: http://forecast.weather.gov/MapClick.php?site=fgz&textField1=34.5697&textField2=-111.8562&smap=1
- Weather Underground: http://www.wunderground.com/cgibin/findweather/getForecast?query=zmw:86351.1.99999%20

National & State Park Resources:

- Slide Rock State Park: http://azstateparks.com/Parks/SLRO/
- Red Rock State Park: http://azstateparks.com/Parks/RERO/
- National Forest and Red Rock Pass Information: http://www.redrockcountry.org/

Transaction Privilege Tax: Yavapai County: http://www.azdor.gov/Business/TPT/TPTRates/YavapaiCounty.aspx

Property Tax Rates:

		0 PROPERTY TAX							
		YAVAPAI COUN	Y						
	PRIMARY TAX RATES			SECONDARY TAX RAT				ES	
YAVAPAI COUNTY	1.	1.3524		FIRE DISTRICT ASSISTANCE				0.0813	
SCHOOL EQUALIZATION	0.3564			FLOOD CONTROL DISTRICT			0.1994		
YAVAPAI COLLEGE	1.2046			LIBRARY DISTRICT			0.1188		
TOTAL PRIMARY FOR COUNTY	2.9134			YAVAPAI COLLEGE			0.1563		
				TOTAL SECONDARY FOR COUNTY		0.5558			
Tax Rate per \$100.00 Assessed Value	ıation								
Data Source: http://www.co.yavapai.az.us/uploadedFiles/Departments/Assessor/Tax%20Rates.pdf									
Data Source: http://www.c	o.yavapai.az.ı	us/uploadedFile	<u>/Depar</u>	tments/Ass	essor/T	ax%20Rat	es.pdf	1	

Arizona Department of Revenue: http://www.azdor.gov/PropertyTax.aspx

Census Data 2010: http://2010.census.gov/2010census/

Census Quickfacts: Yavapai County & Communities: http://quickfacts.census.gov/qfd/states/04/04025.html



Photo by Mel Copen

Content:

b. Big Park/Village of Oak Creek Demographics

Demographics:

> Population in July 2007: 6,584

> Elevation: 4075

> Square Mileage: 4.54

County: YavapaiFounded: 1960'sIncorporated: No

> Highways: St. Hwy 260 I- 17, St. Hwy 179, and St. Hwy 89A

Distance to Phoenix: 119Distance to Tucson: 230

> Distance to Grand Canyon: 116

> Zip Code(s): 86351, 86341

> July 2007:

> Males: 2,992: 45.5%

> Females: 3,592: 54.5%

Median resident age: 55.5 yearsArizona median age: 34.2 years

> Estimated median household income in 2013: \$43,983

o Big Park/Village of Oak Creek: \$43,983

o AZ: \$48,510

> Estimated per capita income in 2013: \$36,402

Estimated median house or condo value in 2013: \$326,428 Big Park/Village of Oak Creek: \$326,428

AZ: \$166,000

- ➤ Mean prices in 2013:
 - All housing units: \$245,457
 - Detached houses: \$289,581
 - Townhouses or other attached units: \$217.627
 - o In 2-unit structures: \$152,685
 - o In 3-to-4-unit structures: \$183,553
 - o In 5-or-more-unit structures: \$173,000
 - Mobile homes: \$73,977
 - Occupied boats, RVs, vans, etc.: \$3,264

Some colleges and universities near Big Park/Village of Oak Creek Arizona:

- Coconino Community College, Flagstaff, AZ, 28 miles from Big Park/Village of Oak Creek, Enrollment: 1,260 full-time; 2,916 parttime
- Northern Arizona University, Flagstaff, AZ, 28 miles from Big Park/Village of Oak Creek, Enrollment 26,299
- Yavapai College, Prescott, AZ, 43 miles from Big Park/Village of Oak Creek, Enrollment: 1,801 full-time; 6,036 part-time
- Private high school in Big Park/Village of Oak Creek:
 - Verde Valley School, 3511 Verde Valley School Road, Sedona,
 AZ 86351; Grades 9-12 (Students: 108)
- Elementary/middle schools in Big Park/Village of Oak Creek and/or Sedona:
 - West Sedona Elementary School, 570 Posse Ground Road, Sedona, AZ 86336 (Students: 424)
 - Big Park Community School, 25 West Saddlehorn Drive, Sedona,
 AZ 86351 (Students: 383)
 - Sedona Charter School, 165 Kachina Drive, Sedona, AZ 86336 (Students: 158)
- > High schools Located in Big Park/Village of Oak Creek and/or Sedona:
 - Sedona Red Rock High School, 995 Upper Red Rock Loop Road,
 Sedona, AZ 86336 (Students: 507)
 - Pace Preparatory Academy School, 75 Enchanted Way, Sedona, AZ 86336

V. Yavapai County Light Pollution Control Ordinance

SECTION 603 LIGHT POLLUTION CONTROL (Approved by BOS on 9/8/15 and effective 10/8/15)

A. INTRODUCTION:

1. Incorporation By Reference:

A.R.S., Title 49, Chapter 7, Light Pollution, §49-1101 et seq., is hereby incorporated by reference.

2. Mission Statement:

To afford every citizen of Yavapai County the flexibility to engage in the pursuit of safe, effective lighting practices for the purpose of commerce and private use without being impeded upon or impeding upon other citizens desiring a more pristine nighttime environment free from light pollution, waste, trespass, or clutter while providing nighttime safety, security and productivity.

3. Purpose and Intent:

- The use of outdoor lighting is often necessary for adequate nighttime a. safety and utility, but common lighting practices can also interfere with other legitimate public concerns. Principle among these concerns are: (1) the degradation of the nighttime visual environment by production of unsightly and dangerous glare, (2) unnecessary waste of energy and resources in the production of too much light or wasted light, (3) interference in the use or enjoyment of property which is not intended to be illuminated at night, (4) the loss of the often-neglected scenic view of the heavens due to increased urban skyglow and (5) lighting practices that interfere with the health and safety of Yavapai County citizens and visitors. It is hereby recognized that these different interests of safety, utility and those of aesthetic appearance need not compete. Good modern lighting practices can provide adequate light for safety and utility without excessive glare or light pollution. Careful attention to questions of when and where and how much nighttime lighting is needed will lead to better lighting practice from all viewpoints.
- b. It is also recognized that the topography and atmospheric conditions in northern Arizona are uniquely suited for government, military, commercial, and private astronomical observation and that unnecessary or excessive uses of outdoor nighttime lighting have an adverse impact on astronomical research and observation, even at relatively distant observatories.
- c. Accordingly, it is the intent of this Section of the Planning and Zoning Ordinance to encourage lighting practices and systems which will minimize light pollution, glare, light trespass, and conserve energy while maintaining nighttime safety, utility, security and productivity.

4. Conflicting Regulations:

In the event of conflict between the regulations set forth in this Section of the Ordinance and any other regulations applicable to the same area, the more

stringent limitation or requirement shall govern.

B. DEFINITIONS:

As used in this Ordinance, unless the context clearly indicates otherwise, certain words and phrases shall mean the following:

Adaptive Controls: means devices used in conjunction with lighting installations intended to allow the amount of light, area illuminated by light and/or hours during which light is emitted to be controlled. These devices may be remotely addressable or may require on-site adjustment to achieve the desired lighting specifications. Examples of adaptive controls include motion sensors, dimmers and timers.

Class 1 Lighting: means all outdoor lighting used for but not limited to outdoor sales or eating areas, assembly or repair areas, advertising and other signs, recreational facilities and other similar applications where color rendition is important to preserve the effectiveness of the activity.

Class 2 Lighting: means all outdoor lighting used for but not limited to illumination for walkways, roadways, equipment yards, parking lots and outdoor security where general illumination of the grounds is the primary concern.

Class 3 Lighting: means any outdoor lighting used for decorative effects, including but not limited to architectural illumination, flag monument lighting, and illumination of trees, bushes, etc.

Development Project: means any residential, commercial, industrial or mixed use subdivision plan or individual building development or remodeling plan, which is submitted to the County for approval.

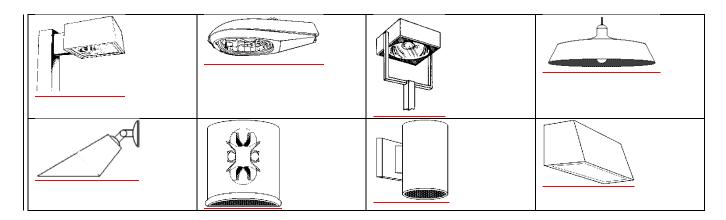
Direct Illumination: means illumination resulting from light emitted directly from a lamp, luminaire or reflector, not light diffused through translucent signs or reflected from other surfaces such as the ground or building faces.

Footcandle (fc): is a unit of measure used to specify illuminance; how much light is falling per square foot onto a surface. One (1) footcandle of illumination arises when one (1) lumen is spread onto one (1) square foot of surface. It is the luminous flux per unit area in the Imperial system. One (1) footcandle equals approximately 10 lux.

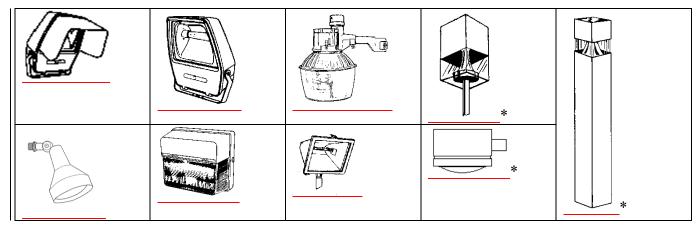
Fully Shielded Fixture: means that fixtures are shielded in such a manner that light rays emitted by the fixture, either directly from the lamp or indirectly from the fixture, are projected below the horizontal from the lowest point of the bulb within the fixture.

A practical working way to determine if a fixture or tube is fully shielded: if the lamp or tube, any reflective surface, or lens cover (clear or prismatic) is visible when viewed from above or directly from the side, from any angle around the fixture or tube, the fixture or tube *is not* fully shielded.

Examples of fixtures that are Fully Shielded (Note: to be fully shielded these fixtures must be closed on top and mounted such that the bottom opening is horizontal.):



Examples of fixtures that are NOT Fully Shielded:



*Note: even though the lamp in these fixtures is shielded from direct view when viewed from the side or above, reflective surfaces within the fixture and or lens covers *are* directly visible from the side.

Note for luminous (neon) tubes: when such lighting is installed under or behind a roof overhang, if the roof line or eave is not horizontal the tubing may be visible from above when viewed from the side and therefore be unshielded.

Glare: is the sensation produced by a bright source within the visual field that is sufficiently brighter than the level to which the eyes are adapted to cause annoyance, discomfort, or loss of visual performance and visibility; blinding light; glare and blinding light may be dangerous to the public health and safety, as they may contribute to vehicular or other accidents. The magnitude of glare depends on such factors as the size, position, brightness of the source, and the brightness level to which the eye is adapted.

Installed: means attached, or fixed in place, whether or not connected to a power source.

International Dark Sky Association (IDA): an Arizona-based 501(c)(3) nonprofit organization that develops and promotes certain standards for outdoor lighting design to help protect the nighttime environment.

Light Pollution: is any adverse effect of manmade light.

Light Trespass: is spill light falling over property lines that illuminates adjacent grounds or buildings. Direct illumination shall be confined to the property boundaries of the

source.

Lumen: is the unit used to measure the actual amount of visible light, which is produced by a lamp as defined by the manufacturer. For purposes of determining compliance with this Ordinance, initial (not "maintained" or "mean") lumen outputs of lamps (not fixtures) are the values to be considered. Examples of lumen output of typical generic incandescent bulbs (W= Watt and L= Lumen) 60 W = 840 L, 75 W = 1125 L, 100 W = 1600 L, 150 W = 2780 L, 300 W = 4620 L.

Luminaire: means the complete lighting assembly, less the support assembly; a light fixture.

Multi-class Lighting: means any outdoor lighting used for more than one purpose, such as security and decoration, when those purposes fall under the definitions for two (2) or more lighting classes as defined for Class 1, 2 and 3 Lighting above.

Motion Sensing Security Lighting: means a fixture designed, and properly adjusted, to illuminate an area around a residence or other building by means of the automatic switching on a lamp when motion is detected inside the area or perimeter, and automatic switching of the lamp off when the detected motion ceases.

Neon Lighting: means lighting using luminous gas filled tubes often formed into text, symbols or decorative elements. Neon Lighting includes tubes with typical diameters of ten (10) to twenty (20) millimeters filled with neon, argon, xenon, or other gasses and producing various colors of light. Not included are replaceable fluorescent tubes.

Net Acreage: means the remaining ground area of a parcel after deleting all portions for proposed and existing public rights-of-way and undeveloped area.

Outdoor Light Fixtures: means all outdoor illuminating devices, reflective surfaces, lamps and other devices, either permanently installed or portable, which are used for illumination or advertisement. Such devices shall include, but are not limited to, search, spot and floodlights for:

- (1) Buildings and structures.
- (2) Recreational areas.
- (3) Parking lot lighting.
- (4) Landscape and architectural lighting.
- (5) Billboards and other signs (advertising or other).
- (6) Street lighting.
- (7) Product display area lighting.
- (8) Building overhangs and open canopies.
- (9) Security lighting.
- (10) Pedestrian areas or walkways.

Outdoor Recreation Facility: means an area designed for active recreation, whether publicly or privately owned, including but not limited to parks, baseball and softball diamonds, soccer and football fields, golf courses, tennis courts, roping/equestrian activities and swimming pools.

Person: includes a corporation, company, partnership, firm, association or society, as well as a natural person.

Security Lighting: is lighting designed to illuminate a property or grounds for the purpose of visual security. This includes fully shielded lighting designed to remain on during nighttime hours in the absence of business activity as well as motion sensing lighting fixtures.

Street Lighting: refers to lighting installed by or at the direction of the County or other governmental agency to illuminate public roadways.

Temporary Lighting: means lighting which does not conform to the provisions of this Ordinance and which will not be used for more than one (1) thirty (30) day period within a calendar year. Temporary lighting is intended for uses, which by their nature are of limited duration, e.g., business grand openings or special civic event. Road and construction projects are excluded.

Total Outdoor Light Output: means the maximum total amount of light, measured in lumens, from all lamps used in outdoor light fixtures on a property. For lamp types that vary in their output as they age (such as high pressure sodium and metal halide), the initial output, as defined by the manufacturer, is the value to be considered. Includes lighting from all area lighting fixtures, external sign illumination and decorative (non-sign) neon tubes, but does not include lighting used for permitted internally illuminated signs. Also does not included interior lighting, provided however such lighting is directed and or shielded in such a manner that it will not project primarily outside the building or create glare or light trespass. Lighting used under service station canopies is included toward the total output at twenty-five percent (25%) of the rated output of the lamps (see Subsection C.4.d.(4)). Street lighting is exempt from total lumen count.

Unshielded Fixture: means an outdoor light fixture that allows light to be emitted above the horizontal direction from the lowest point of the bulb within the fixture.

Watt: is the unit used to measure the electrical power consumption (not the light output) of a lamp.

C. LIGHTING REQUIREMENTS:

1. Preferred Source:

Due to their high energy efficiency, long life and spectral characteristics, low-pressure sodium (LPS) lamps are currently the preferred illumination source throughout the County. Their use is encouraged for outdoor illumination whenever its use would not be detrimental to the use of the property.

- a. Class 1 Lighting: Businesses who choose to use at least eighty percent (80%) LPS for their Class 1 application are eligible to apply for an additional ten percent (10%) increase in the lumens per acre allowed for their site.
- b. Class 2 Lighting: LPS lamps are required though up to ten percent (10%) of the total lumens used for Class 2 lighting may be non-LPS light. Ten percent (10%) white light added to the LPS light permits nearly normal color perception.

2. General:

- a. Outdoor floodlighting by flood light or spot light projection above the horizontal is prohibited except for unshielded fixtures specifically permitted under Subsections C.4.e and C.4.f and properly adjusted motion sensing security lighting fixtures as defined in Subsection B.
- b. All commercial light fixtures are required to be shielded and shall be installed in such a manner that the shielding complies with the definition of fully shielded fixtures. Residential requirements and exceptions are provided in Subsection C.3. Building lighting that incorporates the colors of a company logo, trademark or sign shall be considered as signage.
- c. All light fixtures, including security lighting, except street lamps, shall be aimed or shielded so that the direct illumination shall be confined to the property boundaries of the source. Particular care is to be taken to assure that the direct illumination does not fall onto or across any public or private street or road. Motion sensing lighting fixtures shall be properly adjusted, according to the manufacturer's instructions, to turn off when detected motion ceases.
- d. Installation of new mercury vapor light fixtures has been prohibited since May 22, 1985 in Yavapai County. Only mercury vapor replacement bulbs shall be sold or installed for use as outdoor lighting within Yavapai County and the use of mercury vapor light fixtures for outdoor lighting is prohibited after January 1, 2005.
- e. Search lights, laser source lights, strobe or flashing lights, or any similar high-intensity portable and or temporary light shall not be permitted, except for those utilized by law enforcement, emergency services personnel, public utilities and road construction/maintenance crews or at their direction.
- f. Class 1 Lighting, including but not limited to, sales, service, commercial, assembly, repair, maintenance, and industrial areas, may only continue in operation until 10:00 p.m., or for as long as the area is in active use but once off remain off during non-business hours.
- g. Class 2 Lighting shall have no time restrictions unless stipulated as a condition of approval for new projects.
- h. Class 3 Lighting shall be extinguished after 10:00 p.m. or when the business closes, whichever is later and remain off during non-business hours, low-wattage decorations for recognized holidays shall be counted towards the business properties total lumen count. Flagpole lighting is exempt.
 - (1) Up lighting or ground mounted lighting may be allowed to accent unique features of a building (such as outstanding architectural features but not an entire building) and or surrounding landscaping (specimen trees with dense year round foliage or large native shrub masses) subject to approval by the Development Services Director.

- Up lighting or ground mounted lighting shall be designed and installed in such a manner as to minimize glare with special consideration in areas where there is vehicle and pedestrian traffic, or where such lighting will not unduly interfere with use and enjoyment of adjacent or nearby properties.
- (2) All feature lighting which is directed upwards shall be placed in such a manner that the angle of the lamp shall not be greater than forty-five degrees (45°) measured from a horizontal plane to a line projected through the center of the lamp, and fixtures shall be shielded to contain and direct the light onto the feature to be lighted.
- i. Multi-class lighting, except for security lights, must conform to the time limitations of the most strict class.
- j. Except as permitted in Subsections C.4.b, C.4.d and C.4.f, total outdoor light output (see Definitions), excluding streetlights used for illumination of public rights-of-way, of any development project other than single-family residential (see Subsection C.3) shall not exceed one hundred thousand (100,000) lumens per net acre, averaged over the entire property.

3. Residential:

- a. Class Lighting: Residential lighting, as it may contain certain aspects of any of the lighting classes as may be found in Class 1, 2 or 3 (see Definitions) shall be considered allowed so long as the intended use is allowed within the particular Zoning District.
- b. Shielding: Fully shielded fixtures are required for any lamp.
- c. Lighting Amount: Residential parcels containing more than one (1) acre are allowed twenty thousand (20,000) lumens of lighting. Residential parcels containing one-half (½) acre to one (1) net acre are allowed ten thousand (10,000) lumens of lighting. Residential parcels containing less than one-half (½) acre are allowed seven thousand five hundred (7,500) lumens of lighting. Motion sensing lights as defined in Subsection B shall not be subject to the noted lumen cap. Motion sensing lights can be turned to "constant on" for the purposes of illuminating yard areas for private recreational activities such as barbeques, parties, working with livestock or other similar gatherings without need for a temporary permit so long as they are returned to their automatic settings at the conclusion of the activity.
- d. Certification: Applicant to provide manufacturer's cut-sheet/catalog information detailing fixture shielding and lumen output of bulbs to be installed, and where required by the Development Services Director, a drawing/illustration of the proposed shielded fixture.
- e. Curfew: None
- f. Exemptions: The following fixtures are exempt from shielding and lumen requirements unless otherwise noted.

- (1) Street Lighting (excluding mercury vapor lights) provided they are fully shielded.
- (2) Low Wattage (four watts or less) decorative lighting for recognized holidays.
- (3) Permanent Low Wattage (four watts or less) landscape lighting.
- (4) Motion Sensor Security Lighting as defined provided the fixture is shielded, designed and adjusted in such a fashion to prevent spill onto adjacent parcels.
- (5) Lighting of one (1) State of Arizona, American, POW/MIA and Military flag provided lights are down-lighted.

4. Commercial/Non-Residential:

a. Airport:

Airport lighting which is required for the safe and efficient movement of aircraft during flight, take-off, landing and taxiing is exempt from the provisions of this Ordinance. Lighting used for illumination of aircraft loading, unloading, and servicing areas is exempt from the lumens per net acre limits of Subsection C.2.j, although it must conform to all other requirements of this Ordinance. All other outdoor lighting at airport facilities shall comply with the provisions of this Ordinance.

b. Outdoor Display Lots:

- (1) Class: Lighting for Outdoor Display Lots shall be considered Class 1 (Color Rendition).
- (2) Shielding: All such lighting shall utilize fully shielded luminaires that are installed in a fashion that maintains the fully-shielded characteristics.
- (3) Lighting Amount: Lighting amounts may exceed the limit listed in Subsection C.2.j for the area of the display only. However, when the proposed lumens per acre exceed the limits of Subsection C.2.j the installation shall be designed to achieve no greater than the minimum illuminance levels for the activity as recommended by the Illuminating Engineering Society of North America (IESNA). If IESNA has more than one applicable recommended practice, then the lowest figure shall apply. Street lighting is exempt from the total lumen count for a given property.
- (4) Off-Site Spill: The installation shall limit off-site spill (off the parcel containing the display lot) to a maximum of 0.5 fc at any location on any non-residential property, and 0.05 fc at any location on any residential property, as measurable from any orientation of the measuring device.
- (5) Curfew: Outdoor Display Lot lighting exceeding the lumens per acre cap of Subsection C.2.j shall be turned off at 10:00 p.m. or within thirty (30) minutes after closing of the business or activity

whichever is later and once off remain off during non-business hours. Lighting in the Outdoor Display Lot after this time shall be limited to Class 2 lighting, and shall conform to all restrictions of this Ordinance applicable for this class, including the lumens per acre caps in Subsection C.2.j and lamp type standards of Subsection C.1.

(6) Certification: Every such lighting system shall be certified by an Arizona registered engineer, other certified lighting specialist or equivalent manufacturer documentation as conforming to all applicable restrictions of this Ordinance as installed.

c. Parking Lot:

Lighting Standards (poles) shall be sized in such a manner that the top of any luminaire does not exceed eighteen feet (18') above adjacent grade, unless otherwise stipulated as a condition of approval for new projects.

d. Service Station:

- (1) Class: Lighting for Service Station or similar canopies shall be considered Class 1 lighting.
- (2) Shielding: All luminaires shall be flush with the lower surface of canopies and utilize flat glass or plastic covers.
- (3) Canopy Lighting Amount: The total light output used for illuminating service station canopies, defined as the sum of undercanopy initial bare-lamp outputs in lumens, shall not exceed sixty (60) lumens per square foot of canopy. All lighting mounted under the canopy, except internally illuminated signs, shall be included in the total.
- (4) Inclusion Toward Total Outdoor Light Output: Twenty-five percent (25%) of the lumen output of all lamps mounted within or under a canopy, except internally illuminated signs, is included in the lumen caps in Subsection C.2.j. Street lighting is exempt from the total lumen count for a given property.

e. Signs:

- (1) Externally Illuminated Signs: Lighting used for all externally illuminated signs shall conform to all restrictions of this Ordinance, shall be fully shielded, and shall be turned off at 10:00 p.m. or when the business closes, whichever is later. Such lighting is included in the Total Outdoor Output (see Subsection C.2.j).
- (2) Internally Illuminated Signs: Outdoor internally illuminated advertising signs shall either be constructed with an opaque background and translucent letters and symbols or with a colored (not white, cream, off-white, yellow or other light color) translucent background, with either translucent or opaque letters and symbols. Opaque means only that the material must not

transmit light from the internal illumination source; the color of such opaque backgrounds is not restricted by this Section. Lamps used for internal illumination of such signs shall not be included in the lumens per net acre limit set in Subsection C.2.j.

- (3) All illuminated signs shall be turned off at 10:00 p.m. or when the business closes, whichever is later and once off remain off during non-business hours. Signs subject to this curfew must have functioning and properly adjusted automatic timers.
 - (a) All neon lighting (indoor or outdoor), except for that used in permitted signage, shall be fully shielded and shall be turned off at 10:00 p.m. or when the business closes, whichever is later.
 - (b) The requirements for shielding of light emissions for outdoor light fixtures are as follows:

Shielding/Use Code:

A = allowed, unshielded, F = allowed, fully shielded

LAMP TYPE	SHIELDING
Class 1, 2 and 3 Lighting:	
All lamp types above 2050 lumens	F (See Note 1)
All types below 2050 lumens	F (See Note 2)
All neon tube lighting	F
Lamps in Motion Sensing Security Lights (See B)	F (See C.2.c)

Note 1. Examples of lamp types of 2050 lumens and below (the acceptability of a particular light is decided by its initial lumen output, not wattage. Values listed here are approximate. Check manufacturer's specifications):

- a. 100 Watt Standard Incandescent and less
- b. 100 Watt Midbreak Tungsten-Halogen (quartz) and less
- c. 25 Watt T-12 Cool White Fluorescent and less
- d 18 Watt Low Pressure Sodium and less

Note 2. Lights shall be shielded.

f. Sports Field:

- (1) Class: Lighting, in all cases, for all outdoor athletic fields, courts, pools, tracks or ranges shall be considered Class 1 (Color Rendition). Sports field lighting at schools is exempt from this Ordinance as provided for in Section 201 (Applicability and Exemptions) regarding publicly owned and operated facilities used for essential government purposes.
- (2) Shielding: Fully shielded lighting shall be required for fields

designed for amateur, recreational or non-professional sports activity. For professional level sports facilities where fully shielded fixtures are not utilized, acceptable luminaires shall include those which:

- (a) are provided with internal or external glare control louvers, or both, and installed so as to minimize up-light and off-site light trespass as defined in Subsection B; and
- (b) are installed and maintained with aiming angles that permit no greater than two percent (2%) of the light emitted by each fixture to project above the horizontal.
- (3) Lighting Amount: When the proposed lumens per acre exceeds the limits of Subsection C.2.j, the installation shall be designed to achieve no greater than the minimum illuminance levels for the activity as recommended by the Illuminating Engineering Society of North America (IESNA). If IESNA has more than one applicable recommended practice, then the lowest figure shall apply. Street lighting is exempt from the total lumen count for a given property.
- (4) Off-Site Spill: The installation shall also limit off-site spill (off the parcel containing the sports facility) to a maximum of 0.5 fc at any location on any non-residential property, and 0.05 fc at any location on any residential property, as measurable from any orientation of the measuring device. If lighting products are not available to meet these standards, then the product providing the lowest off-site spill levels shall be required.
- (5) Curfew: All events shall be scheduled so as to complete all activity by 10:00 p.m. Illumination of the playing field, court, track or range shall be permitted after 10:00 p.m. only to conclude a scheduled event that was unable to conclude before 10:00 p.m. due to unusual circumstances and once off remain off during non-business hours.
- (6) Certification: Every such lighting system shall be certified by an Arizona registered engineer, other certified lighting specialist or equivalent manufacturer documentation as conforming to all applicable restrictions of this Ordinance as installed.
- (7) Non-Field Lighting: All site lighting not directly illuminating the field, court, track or range shall conform to all applicable standards of this Ordinance.

5. Public Buildings and Street Lights

a. When new publicly-owned buildings and other facilities are constructed, the installation of outdoor lighting fixtures shall be allowed only when a specific need related to a hazardous nighttime situation is identified by the County and lighting is deemed necessary as a matter or ensuring public

safety.

- b. When existing, publicly-owned buildings and other facilities are modified by physical alterations and/or by a change of use, the installation of additional outdoor lighting fixtures beyond existing installations shall be allowed only when a specific need related to a hazardous nighttime situation is identified by the County and lighting is deemed necessary as a matter of ensuring public safety.
- c. With the establishment of any new subdivision development where street rights-of-way will be dedicated to the County, the County shall not allow the installation of street lights. In cases where it is determined that street lighting is deemed necessary in public rights-of-way for the safety of pedestrians, bicyclists and/or motorists, the installation of street lighting shall be permitted. All lighting so installed shall be fully shielded, adhere to IDA standards, make use of appropriate adaptive controls and be subject to curfews as directed by the Board of Supervisors.

6. Non-Conforming Uses:

- a. Mercury vapor lamps in use for outdoor lighting on the effective date of this Ordinance shall not be so used after January 1, 2005.
- b. No new bottom or side-mounted outdoor advertising sign lighting shall be issued permits after January 1, 2005.
- c. No other outdoor lighting fixture or use which was lawfully installed or implemented prior to the enactment of this Ordinance shall be required to be removed or modified except as expressly provided herein; however, no modification or replacement shall be made to a non-conforming fixture unless the fixture thereafter conforms to the provisions of this Ordinance, except that identical lamp replacement is allowed (no mercury vapor lamp/fixture can be replaced or be found legal non-conforming). Time restrictions described in Subsections C.2.f, C.2.g, C.2.h, C.2.i, C.4.b.(5), C.4.e.(3), and C.4.f.(5) shall however be applied to such existing lighting.
- d. In the event that the use of an outdoor lighting fixture is discontinued for six (6) months or is damaged to the point of requiring repairs for safe operation, the repaired or replacement fixture shall comply with the provisions of this Ordinance.

D. PERMITS:

- 1. Approved Materials and Methods of Construction or Installation/Operation:
 - a. The provisions of this Section of the Ordinance are not intended to prevent the use of any design, material or method of installation or operation not commercially available or specifically prescribed by this Ordinance, provided any such alternate has been approved.
 - b. The Development Services Director or his designate may approve any such proposed alternate provided that such alternate:
 - (1) provides at least equivalence to the applicable specific

requirements of this Ordinance; and

(2) is otherwise satisfactory and complies with the intent of this Ordinance.

2. Permits and Development Plan Reviews:

- a. Whenever a person is required to obtain a building or electrical permit for outdoor lighting or signage (residential or commercial), a Use Permit, subdivision approval or any development plan approval by the County, including all County projects, or whenever a person requests a rezoning, the applicant shall, as a part of the lighting permit application, submit sufficient information to enable the Development Services Director to determine whether the proposed lighting will comply with this Ordinance.
- b. All applications shall include the following:
 - (1) A site plan indicating the proposed location of all outdoor lighting fixtures;
 - (2) A description of each illuminating device, fixture, lamp, support and shield. This description may include, but is not limited to, manufacturer's catalog cuts and drawings (including sections where required), lamp types and lumen outputs; and
 - (3) Such other information as the Development Services Director may determine is necessary to ensure compliance with this Ordinance.
- c. If the Development Services Director determines that the proposed lighting does not comply with this Ordinance, the permit shall not be issued or the plan approved.

3. Temporary Permits:

- a. The Development Services Director may grant a permit for temporary lighting if he or she finds all of the following:
 - (1) The purpose for which the lighting is proposed is not intended to extend beyond thirty (30) days;
 - (2) The proposed lighting is designed in such a manner as to minimize light pollution as much as is feasible;
 - (3) The proposed lighting will comply with the general intent of this Ordinance; and
 - (4) The permit will be in the public interest.
- b. The Development Services Director shall rule on the application within five (5) business days from the date of submission of the request and notify the applicant in writing of his or her decision. The Development Services Director may grant one (1) renewal of the permit for an additional thirty (30) days if he or she finds that, because of an unanticipated change in circumstances, a renewal would be in the public interest. The Development Services Director is not authorized to grant more than one (1) temporary permit and one (1) renewal for the same

property within one (1) calendar year.

4. Variances:

Any person desiring to install an outdoor lighting fixture in violation of this Ordinance may apply to the Board of Adjustment for a variance from the regulation in question. Such variances shall be allowed only as provided by Section 207 (Adjustment Board). Commercial light installations that are removed or relocated during a building remodel will be required to meet the then current Ordinance requirements.

VI. History of Yavapai County Light Pollution Ordinance

Content:

a. History of Yavapai Outdoor Light Pollution Control

The Yavapai Outdoor Light Control Ordinance became effective as of May 1985. In December 1985 the Yavapai County Board of Supervisors adopted an amendment to add in its entirety, Section 120, Yavapai County Outdoor Light Control Ordinance. This first outdoor light control ordinance was "intended to restrict the permitted use of outdoor artificial illuminating devices emitting undesirable rays which have a detrimental effect on astronomical observations and/or inefficiently utilize scarce electrical energy and/or create a public nuisance". Since Big Park/Village of Oak Creek is an unincorporated area of the county, the outdoor lighting ordinance for Yavapai County applies to the Big Park/Village of Oak Creek area.

The creation of the updated Yavapai County Outdoor Light Pollution Code began after the successful passage of the City of Sedona Outdoor lighting Ordinance in 2001. The same Keep Sedona Beautiful (KSB) team took what they had learned writing the Sedona Outdoor Lighting Ordinance, and working with supportive staff at Yavapai County, set about to create an even better outdoor lighting code that same year. They wanted to provide dark-sky protection for Big Park/Village of Oak Creek. Chip Davis, the Yavapai County Supervisor for the Verde Valley area, was instrumental to the team's ultimate success.

In March 2002, there was correspondence to the Yavapai County Board of Supervisors, Planning and Zoning Commissioners about the Zoning Ordinance Amendment pertaining to outdoor lighting, Section 120. Below is some of that correspondence:

The Planning and Zoning Commission initiated hearings to amend the Yavapai Outdoor Lighting Ordinance in August of 2001. They conducted four public meetings October 17 (Prescott), November 7 (Cottonwood), December 5 (Cottonwood), all in 2001 and January 9, 2002 (Prescott). Numerous changes were made in response to public and Commission concerns as well as in response to technical input from various lighting experts representing APS, the U.S. Naval Observatory in Flagstaff and the International Dark Sky

Organization via the Dark Sky Committee of Keep Sedona Beautiful. At their January 9 meeting the Commission moved to recommend approval by a 7 to 1 vote the proposed Light Pollution Control Ordinance to the Board of Supervisors. On February 4, the Board moved to continue the matter until April 1, 2002, to have staff address some of their concerns with the ordinance, primarily with the residential portion of the ordinance. On February 27, 2002, at a joint session of the Commission and Board further discussion occurred with request to staff for additional modifications to the ordinance. A copy of the proposed ordinance with possible changes was included with the Board packet. Background materials included copies of comments received from the public on this matter.

OVERVIEW:

Under the proposed outdoor lighting ordinance, outdoor illumination would be regulated or limited to a maximum per acre in commercial settings or per lot in residential applications. The measuring device is the amount of light output per bulb/fixture described in lumens. The lumen output is found on the light bulb packaging. Simply put, commercial uses are limited to 100,000 lumens per acre and in response to concerns from the Board, residential lots are now proposed to be limited to a tiered system. This tiered system allows for a total of 20,000 lumens on larger than one-acre residential parcels, 10,000 lumens on $\frac{1}{2}$ to 1-acre residential parcels and 7,500 lumens on residential parcels less than $\frac{1}{2}$ acre.

Following comments from the joint session held on February 27, staff made modifications to the proposed ordinance particularly to the residential section to create the above noted tiered system. Fifty percent of any residential lighting limit on one acre or less is allowed to be unshielded lighting. A maximum of 5,000 unshielded lumens is allowed on larger parcels. Motion sensing lights as defined subsection F.15 shall not be subject to the noted lumen cap. Motion sensing lights can be turned to "constant on" for the purposes of illuminating yard areas for private recreational activities such as barbeques, parties, working with livestock or other similar gatherings without need for a temporary permit so long as they are returned to their automatic settings at the conclusion of the activity. Examples were given of what lighting could occur on a parcel in each category/size along with an example of what could occur under the current ordinance and previous examples presented to the Board of Supervisors.

RESPONSES TO QUESTIONS:

Other changes from the Commission recommended version or clarifications are offered in response to the Board members concerns in the following paragraphs.

A fully shielded light would be like the shoebox fixture utilized in parking lot lights as illustrated in the first box of illustrations in the ordinance for shielded fixtures. This fixture keeps the light from going up, or to the side of the fixture. A covered fixture would not meet the intent of this ordinance as to controlling the light spill onto neighboring properties.

Light trespass may be addressed in a number of ways. The City of Prescott's proposal is to conduct physical site inspections utilizing a light meter (cost about \$230 each) measuring the total foot- candles at the property line over a specific measured area. It was thought that this would be more trouble and time consuming, thus the utilizing of lumens from the fixture installation standpoint. However nothing is set out to determine what may be objectionable.

Staff offers wording in the text dealing with direct illumination being contained on the site or in other words determine if the light bulb itself is visible from the property line.

As to interior light trespass onto the exterior of commercial project, there are no standards to relate to. This issue goes to some commercial structures having walls of windows with the interior very brightly lit, which lighting spills out to the exterior of the building thus negating the effect of overall lumen counts or lighting glare/ nuisance mitigation.

For clarification, the **engineering requirements** noted in the ordinance are only for commercial installations. The residential section only requires the applicant to provide manufacturer's cut-sheet/catalog information detailing fixture shielding and lumen output of bulbs to be installed, and where required by the Development Services Director or his designate, a drawing/illustration of the proposed shielded fixture.

There is no curfew on residential lighting as there is for commercial/business ventures. The intent is to simply get folks to turn off lights they are not using, thus the use of motion sensing lights. Further, a proposed revision allows for the motion sensing lights to be turned to a "constant on" position for private outdoor recreational activities such as, but not limited to, birthday parties, barbeques and working or caring for livestock. This with the understanding that once the activity ceases, the lights will be returned to their automatic settings.

For outdoor **decorative lighting**, proposed is a full exemption for any low wattage displays being utilized during recognized holidays. This is similar to the draft ordinance that the City of Prescott is currently working on. This exemption eliminates the dates prescribed in the Commission recommended version to afford decorative lighting for any holiday and further negates these lights from being included in any lumen maximum calculation as proposed in a previous memo to the Board.

Emergency services exemptions have been expanded to include road and construction operations which would allow for the typical road barricade flashing lights along road construction areas as well as for the contractors work areas for road projects and commercial developments.

As staff stated at the last Commission meeting, this proposed ordinance will still allow a nationally known hotel chain to continue to state "we'll leave a light on for you". This ordinance states that if the business is in operation, the allowed lighting can remain on. So in the case of 24 hour facilities such as an all day grocery store/mini-mart or a hotel/motel, they can maintain their outdoor lighting all night long as they are open for business.

Sports lighting for schools is exempt in that schools are an allowed use, but are not regulated by the other portions of the ordinance as to activities. Modifications to that section of the ordinance have been made to address this activity.

Also included in the Boards' packet is an **organizational proposal** for the draft ordinance. The first page illustrates the current arrangement in a table of contents type of format. The second illustrates a proposed layout/arrangement that may make the ordinance more user friendly. This

modification will not change any of the text of the document (other than references to other section numbers).

Included in the Board packet is a proposed **hand out/ brochure** for residential lighting. The intent of the brochure is to illustrate the residential portion of the proposed ordinance for the intended purpose of public information and education.

The attached revised version of the light pollution control ordinance marked **DRAFT** illustrates the discussed or noted changes by bold underlining "ordinance" for additions and a double strikethrough—"ordinance" for deletions.

Hopefully the foregoing information, attached revised proposal, residential lighting examples, residential lighting handout/brochure and potential arrangement/outline adequately address the concerns presented to staff.

Chris Luginbuhl, Astronomer from the US Naval Observatory in Flagstaff, Arizona, provided expert assistance. Working with the innovative lumens measure rather than wattage or numbers of light fixtures, on April 1, 2002, the Board of Supervisors adopted amendment of Section 120 to revise the entire outdoor lighting ordinance, renaming it the 'Yavapai County Light Pollution Control Ordinance'. The amendment pertained to performance standards and definitions for outdoor lighting. Provisions included requirements for full shielding of any lights requiring shielding and set a maximum number of lumens per acre to determine adequate lighting for outdoor displays. Elimination of glare and unseemly lighting was the goal of the amendment. It passed unanimously.

It was the opinion of many that the Flagstaff Outdoor Lighting Ordinance, together with the Sedona and Yavapai Outdoor Lighting Ordinances, led to the Discovery Channel and Lowell Observatory decision to build a major telescope at a dark-sky site in the Coconino National Forest near Happy Jack, Arizona. It was completed in 2012 at a cost of \$53 million.

In 2003, the KSB team, working with Yavapai County Representatives, passed refinements to the Yavapai Outdoor light Pollution Ordinance making it, at the time, one of the finest light pollution codes nationwide. The

updated Ordinance became Section 603 and was retitled from "Outdoor Light Control" to Light Pollution Control".

On March 20, 2006, the Board of Supervisors adopted revisions of Section 603 in response to concerns raised regarding outdoor residential lighting. The amendment required all residential outdoor lighting to be fully shielded with exception of motion sensor lights. The Board voted unanimously to approve the amendment.

On November 16, 2009, the Board of Supervisors adopted the current revision of Section 603, Light Pollution Control, with regard to residential exemptions, specifically: fully shielded street lighting, low wattage decorative lighting for holidays (4 watts or less), permanent low wattage landscape lighting, fully shielded motion sensor security lighting and lighting of one flag (provided lights are down-lit).

Content:

b. News Article, Verde Independent, published September 9, 2001

Article from the front page of the Verde Independent, published September 9, 2001

County urged to switch off bad lights

By GUINDA REEVES Staff Reporter

Wiser uses of outdoor lighting, commercial and residential, is more cost-efficient and energy-efficient, and provides better security, according to an astronomer from the U.S. Naval Observatory's Flagstaff Station.

"Our hights affect more than just where we're using them," said Chris Luginbuhl, while presenting a slide show Wednesday during the Yavapai County Planning and Zoning Commission's regular meeting in Cottonwood.

An example he showed was the glare in the nighttime sky, seen from the observatory in Flagstaff, from Phoenix 110 miles away.

Luginbuhl said research has shown that three-fourths of outdoor lighting – because of the types of fixtures used – never even reaches the ground but reflects up into the sky. This also decreases visibility because of the glare, he said.

The astronomer said the culprits include unshielded cobra-head light fixtures; light fixtures that can be tipped and swiveled; and round light fixtures, in which 30-40 percent of the lighting goes to the sky instead of the ground.

of the ground.

All of these put light where it's not needed, he said, producing glare that decreases visibility.

Other bad uses are the usual filling station lighting under a canopy and globe-shaped lights, from which the light goes everywhere but down where it's needed, said the astronother.

"Lights are chosen for what they look like, not (for) how they perform," Luginbuhl said.

Bright lighting doesn't prevent vandalism, he said, if no one is watching the property.

variousisti, the property.

An example, Enginbuhl said, is one high school. where vandalism had been a big problem. The outdoor lights were turned off totally at night and police drove by more frequently, he said, and the vandalism problem decreased significantly.

Vandals need to see what they're doing, said the astronomer, and a flashlight stands out to police or other observers. "They can't write in the dark," he quipped, referring to would-be vandals.

See Lights, Page 5A

www.mobiliticam

12 DEPENDENT

Lights
Continued from Page 1

Other wasteful lighting, according to Luginbuhl, is most sports lighting; large, lit business signs; and lit billboards, in which 50-90 percent of the lighting isn't hitting the sign but the wattage used is being paid for by the business. "After a business closes for the night, why does it need a sign lit up all night?" he

asked rhetorically.

The astronomer said bad lighting produces light pollution, blocking the nighttine skyr light trespass, in which lighting affects other properties and people; glare, which reduces visibility, and clutter or confusion, in which people can't see what they need to see.

Bad lighting wastes a tremendous amount of energy, he said, adding that \$1 billion is wasted annually in the United States because of bad lighting.

Principles of light control include:

- Providing the right amount of lighting.
- Focusing lighting where it's needed.
- Having lighting on when it's needed.
- Using the most efficient lighting source, compatible with the task.

Examples of good fixtures, Luginbuhl said, are cobra fixtures with a conversion or shielding and shoebox-style fixtures. A good example of residential lighting, he said, are house or apartment porch lights focused down, with no light trespass to the sides or upward.

And modern designs can provide adequate sports lighting, said the astronomer with energy savings and no light trespass.

Luginbuhl outlined how to do business lighting properly for good visibility and security:

- Turn on lights inside the building. (This helps police and passersby see anyone moving around inside after hours.)
- Focus outside lighting down and shield the lights. (This eliminates glare, where police and passersby can actually see someone attempting to break in or vandalize the property.)
- Lit business signs during operating hours are seen better at night if they have dark backgrounds.

An example of bad lighting choices by a community is Las Vegas' floodlighting of buildings, the astronomer said, where it's barely possible to view the Big Dipper. "Choice on the ground affect the night sky," he said.

Disappearing skies

Using a computer-enhanced map of the United States, Luginbuhl showed that the glare caused by outdoor lighting has obscured most of the country's nighttime skies, to the point that people in the eastern half of the United States can see practically no stars.

Visitors to Arizona often are amazed because they can see the stars in the nighttime sky with out using a telescope, he said.

Arizona has been a longtime leader in lighting codes, said the astronomer, but there is "noom for improvement" on how to enforce the codes.

"We're not asking people to turn off lights – all we're asking is that lights be used effectively," he said, adding that he applauded Cottonwood's dark-sky lighting ordinance. However, Luginbuhl said, interests may not always be the same. He cited power companies, with their excess generating capacities at night – one answer might be to give tax credits to them.

Commissioner Curt Garner said,
"In this day and age, a little PR [public relations] goes a long way."

"We need to raise the awareness of the *quality* of lighting," he said. "This is a waste of energy."

Commissioner Lee Nelson said she lives in the county, where there's

"no compliance," and she cited glaring garage or pole lights. "Public education is needed," she said, "particularly on the residential lights."

Luginbuhl agreed, saying, "Education has to be part of it." He also said that the ways to address rural and urban lighting "isn't all that different."

Regarding improving bad lighting, the astronomer said, "There's only positive there." He reterrated that the four principles of light control can be used to tell whether lighting is good or bad.

Kenneth E. Spedding, development services director for the Yavapai County Development Services Department, asked about ways to regulate a light to enforce compliance with a dark-sky ordinance.

Luginbuhl said enforcement personnel will need to look at the types of hardware. Professional lighting people can find the efficient fixures, he said, while it probably would be difficult to find such fixtures currently at the average hardware store.

Most importantly, the astronomer said, is to look at the list of fixtures during the planning and zoning stage. Basically, look for flat-bottomed fixtures, he said, adding that light shouldn't be seen from the sides or show.

Regarding whether a light should be only partly shielded, Luginbuhl

said, "If you don't think it should fully unshielded, then don't all it."

Because Development Serviworks basically an 8 a.m. to 5 p day, said Shedding, "It's a very he enforcement issue."

Luginbuhl said, "No commur should expect perfection....Over you just do the best you can."

Most reflective light comes fr commercial, he added, but residen outdoor lighting can be improved

Bill Kusner, representing the K. Sedona Beautiful organization, (commissioners that grandfathe sites – sites where the existing liping was left intact when new or were enacted – can save money energy costs by changing to the left lighting.

"We don't want to turn off all lights," he said. "We just want attractive, well-lit pighttime enviment that is safe, secure and fitional."

Kusner also handed out pample regarding light pollution, with it tips:

- Too much light or misdire light:
 - Wastes energy dollars.
- Wastes resources, such as or oil, used to produce energy.
- Increases pollution associ with resource consumption.
 - · Creates glare, making it diff

VII. State Route and County-Owned Lighting Compliant with the Outdoor Light Pollution Ordinance

Content:

a. State Route 179 Widening Project

The State Route 179 widening project was an ADOT construction project. It was completed at the end of 2011.

The design of the road and the choice of dark-sky compliant lighting were citizen-, not ADOT-, driven. In fact, ADOT had to bow to citizen, including Keep Sedona Beautiful, pressure to involve the public in the whole design process.

The final design included the installation of 24, 30-foot tall light poles and 74, 15-foot pedestrian light poles within the City limits. The 15-foot tall light poles were fitted with light fixtures manufactured by Visionaire, model Monterey Series 1, 150-watt high-pressure sodium. These fixtures are dark sky compliant.

The 30-foot tall light poles were fitted with light fixtures manufactured by Visionaire, model Monterey Series 2, 250-watt high-pressure sodium. These fixtures are dark-sky compliant (See attached Monterey cut sheet for specifications).

b. There are no Yavapai County buildings in Big Park/Village of Oak Creek.

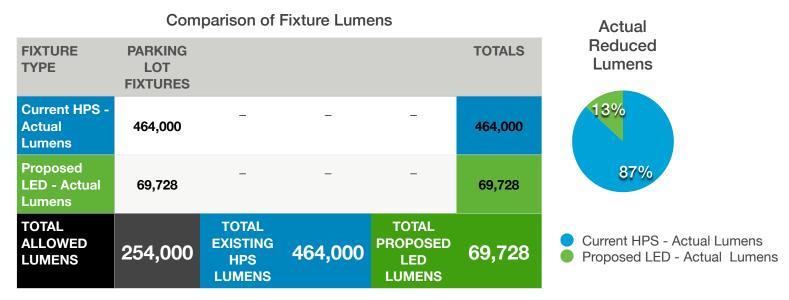
VIII. Examples of Businesses That Changed Noncompliant Outdoor Lighting to Compliant Outdoor Lighting

Content:

a. Bell Rock Plaza

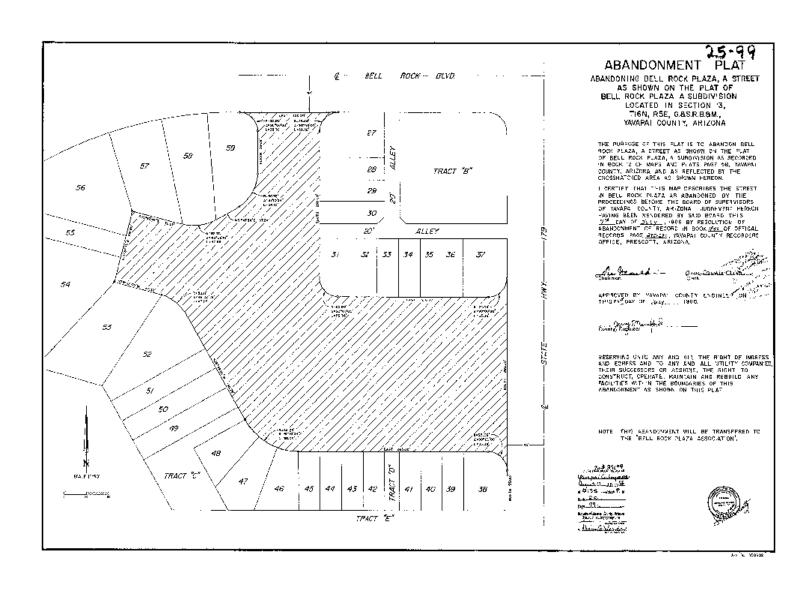
At Bell Rock Plaza the previous sixteen - 250 Watt High Pressure Sodium Light Fixtures were replaced with eight - 112 watt LED Fixtures.

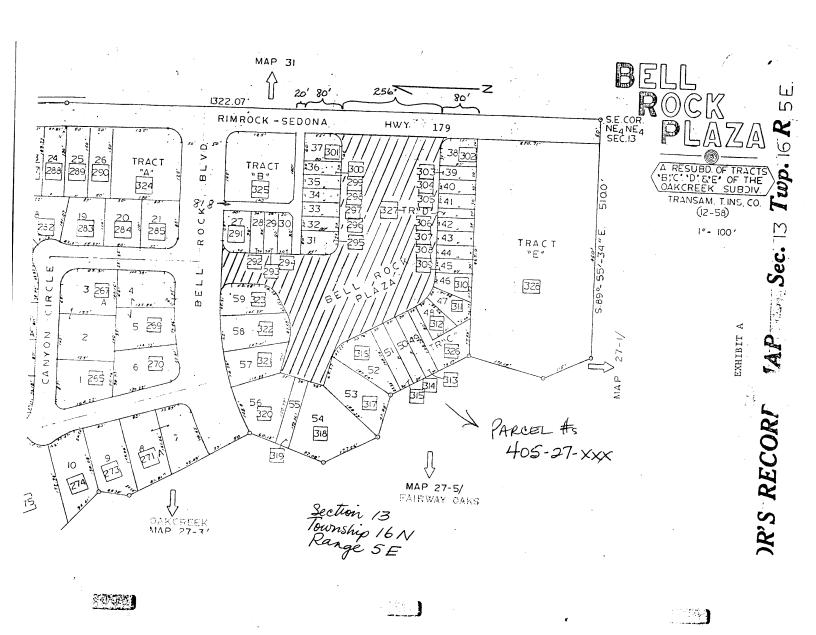
Bell Rock Plaza - Lumen Reduction

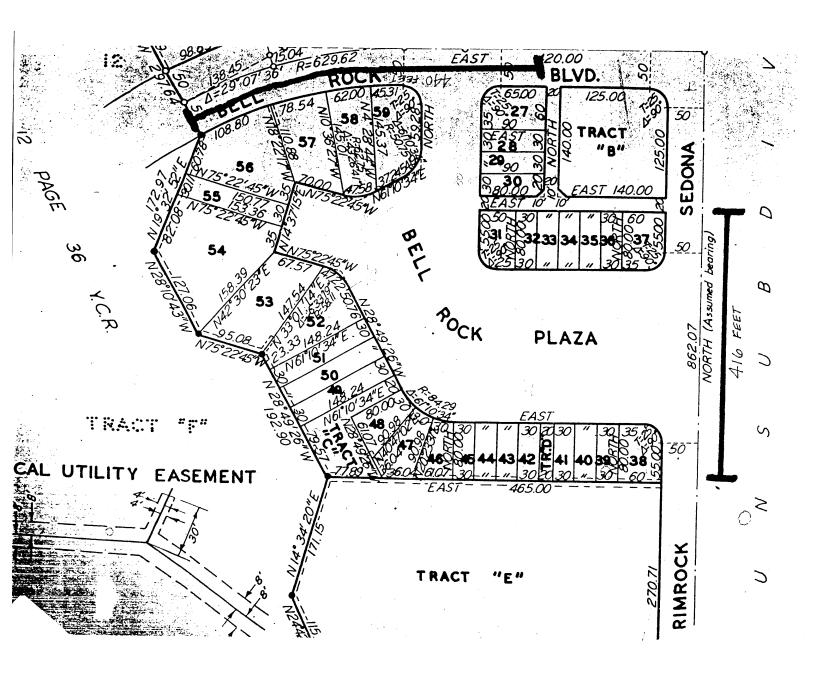








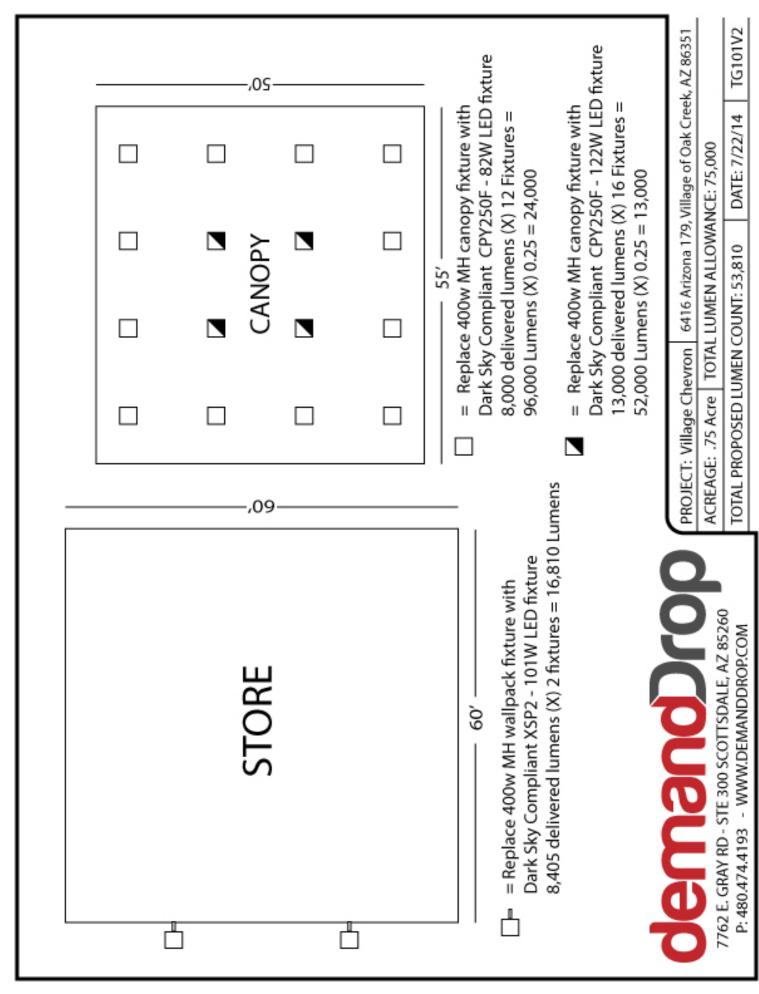




b. Chevron

At Chevron the previous sixteen - 400 Watt Metal Halide Fixtures were replaced with twelve - 82 Watt and four - 122 Watt LED Fixtures.





IX. County Support of Dark Skies

Content:

a. Yavapai County Lighting Brochure

Why have a Lighting Ordinance?

The use of outdoor lighting is often necessary for adequate nighttime safety and utility, but common lighting practices can also interfere with other legitimate public concerns.

Principle among these concerns are:

- Degradation of the nighttime visual environment by production of unsightly and dangerous glare,
- Unnecessary waste of energy and resources in the production of too much light or wasted light,
- Interference in the use or enjoyment of property which is not intended to be illuminated at night,
- (4) Loss of the often-neglected scenic view of the heavens due to increased urban skyglow and
- (5) Lighting practices that interfere with the health and safety of Yavapai County citizens and visitors.

It is hereby recognized that these different interests of safety, utility and those of aesthetic appearance need not compete. Good modern lighting practices can provide adequate light for safety and utility without excessive glare or light pollution. Careful attention to questions of when and where and how much nighttime lighting is needed will lead to better lighting practice from all viewpoints.

It is recognized that the topography and atmospheric conditions in northern Arizona are uniquely suited for government, military, commercial, and private astronomical observation and that unnecessary or excessive uses of outdoor nighttime lighting have an adverse impact on astronomical research and observation, even at relatively distant observatories.

Accordingly, it is the intent of the lighting section of the Planning and Zoning Ordinance to encourage lighting practices and systems which will minimize light pollution, glare, light trespass, and conserve energy while maintaining nighttime safety, utility, security and productivity.



DEVELOPMENT SERVICES PLANNING & LAND USE UNIT

OFFICE LOCATIONS

1120 Commerce Drive Prescott, AZ 86305 928-771-3214

10 South 6th Street Cottonwood, AZ 86326 928-639-8151



Other Areas:

Toll Free:

Ash Fork	800-771-2797
Bagdad	800-771-2797
Black Canyon City	602-495-8800
Cottonwood	928-639-8100
Seligman	800-771-2797
Yarnell	800-771-2797
Congress	928-427-3895

Light Pollution Control

DEVELOPMENT SERVICES Planning & Land Use Unit

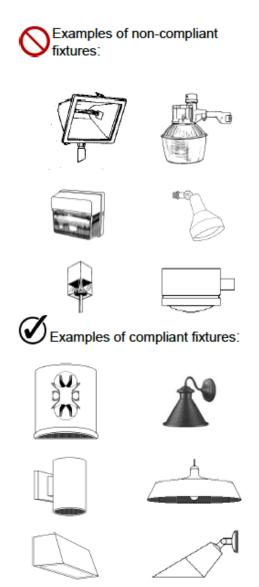


This is an overview of Section 603 only. For the full Ordinance, refer to the Yavapai County Planning and Zoning Ordinance, available online at www.yavapai.us

Fully Shielded Fixtures are required for all exterior lamps installed on a residential structure.

When viewing a light fixture from the top or side, if the bulb, reflective surfaces and/or lens covers are not visible, the fixture is fully shielded.

- Glare results when bulbs are unshielded and brighter than the level to which the eyes are adapted, effectively blinding the viewer. Glare and blinding light may be dangerous to the public health and safety.
- Light trespass is spill light falling over property lines that illuminates neighboring grounds or buildings.
 All outdoor lighting must be confined to the property boundaries of the source.
- When an older, non-compliant fixture is replaced, it must be replaced with a compliant fixture.
- There is no curfew on residential lighting.
- New construction will require a lighting permit. Existing homes without a lighting permit on file MAY be asked to complete the permit application to have on file.



A **lumen** is the unit used to measure the actual amount of visible light, which is produced by a lamp as defined by the manufacturer. For purposes of determining compliance with this Ordinance, initial lumen outputs of lamps (bulbs) are the values to be considered. Examples of lumen output of typical generic incandescent bulbs (W= Watt and L= Lumen) 60 W = 840 L, 75 W = 1125 L, 100 W = 1600 L, 150 W = 2780 L, 300 W = 4620 L.

Residential Lumen Allowances

- Parcels larger than 1 acre: 20,000 fully shielded (fs) lumens are allowed
- Between 1/2 and 1 acre: 10,000 fs lumens
- Less than 1/2 acre: 7,500 fs lumens

Exemptions: Fully shielded, automatic and properly adjusted motion sensing lights are not included in lumen counts. Decorative landscape lights (4 watt or less), including solar lights, are exempt. Down lit flag lighting and fully shielded street lighting are not included in allowable lumens per parcel.

X. Broad Community Support for Dark Skies

Content:

- a. Regional, County, and City Governments:
 Over the course of the past months, the Big Park/Village of Oak
 Creek Dark-Sky Committee has been highly successful in obtaining
 letters of support from important levels of elected regional, county,
 and city governments. See six (6) letters below.
 - 1. Big Park Regional Coordinating Council
 - 2. Coconino County Board of Supervisors
 - 3. Sedona Chamber of Commerce
 - 4. Sedona Mayor and City Council
 - 5. Sedona Fire District
 - 6. Home Elements Lighting & Design

1. Big Park Regional Coordinating Council

BIG PARK REGIONAL COORDINATING COUNCIL, INC. P. O. BOX 20248 SEDONA, AZ 86351

February 12, 2015

Dr. John Barentine Program Manager International Dark-Sky Association 3223 N. First Avenue Tucson, AZ 85719

Dear Dr. Barentine:

At the July 10, 2014, Big Park Regional Coordinating Council (BPRCC) meeting, a motion was made, seconded, and approved that BRPCC pursue the International Dark-Sky Community designation for Big Park/Village of Oak Creek.

Thank you.

Sincerely,

Steve Nelson President 2. Coconino County Board of Supervisors



April 7, 2015

Ms. Joanne Kendrick Chair, Big Park/Village of Oak Creek Dark-Sky Committee Big Park Regional Coordinating Council P.O. Box 20248 Sedona, AZ 86341

Dear Ms. Kendrick.

I am writing to show my support of the Big Park Regional Coordinating Council (Big Park Council) in their pursuit of a designated Dark Sky Community for the Big Park/Village of Oak Creek from the International Dark-Sky Association.

White I represent the communities of Coconino County including Sedona, Big Park/Village of Oak Creek has always had a strong affiliation and presence in the Sedona region which is recognized nationally and internationally. Coconino County and its communities have been at the forefront of protecting our dark skies with our ordinances, to protect our astronomical industry as well as our quality of life for our citizens and visitors to experience the sheer beauty of our dark skies. Big Park/Village of Oak Creek is a unique and picturesque community. It is a place where the Milky Way is not only visible but is also a bright presence. I understand the importance for this community to protect this rare resource.

Protection of our dark skies requires the collaborative efforts of citizens, businesses, community groups and others working together in order to protect and preserve the unique scenic beauty of our nighttime skies and obtaining the designation of a "Dark Sky Community" will enhance Big Park/Village of Oak Creek's ability to promote and protect its dark skies.

I support the efforts of Big Park Council to have the Big Park/Village of Oak Creek designated as a Dark Sky Community by the International Dark Sky Association.

Sincerely.

Matt Ryan

Coconino County Supervisor

District 3

3. Sedona Chamber of Commerce



A RESOLUTION OF THE SEDONA CHAMBER OF COMMERCE, SUPPORTING THE EFFORTS OF BIG PARK REGIONAL COORDINATING COUNCIL IN OBTAINING A DARK-SKY COMMUNITY DESIGNATION FOR BIG PARK/VILLAGE OF OAK CREEK FROM THE INTERNATIONAL DARK-SKY ASSOCIATION.

WHEREAS, Sedona is recognized world-wide as one of the most unique and picturesque locations in the United States; and

WHEREAS, among the most precious assets of the Greater Sedona Area are its dark skies where the Milky Way is not only visible but also a bright presence and the spectacular views of the heavens are enjoyed by both residents and visitors and:

WHEREAS, being the precious resource that it is, protection of our dark skies requires the collaborative efforts of citizens, businesses, community groups such as Keep Sedona Beautiful, Big Park Regional Coordinating Council, and others working together in order to protect and preserve the unique scenic beauty of our nighttime skies, and;

WHEREAS by ultimately obtaining the designation of being a "Dark-Sky Community" from the International Dark-Sky Association the area's ability to promote and protect its dark skies will be enhanced.

NOW, THEREFORE, BE IT RESOLVED BY THE SEDONA CHAMBER OF COMMERCE in Sedona, AZ:

That the Sedona Chamber of Commerce supports the efforts of Big Park Regional Coordinating Council in pursuing a Dark-Sky Community designation for Big Park/Village of Oak Creek. The International Dark-Sky Association is respectfully urged to consider formally designating Big Park/Village of Oak Creek as a "Dark-Sky Community."

APPROVED AND ADOPTED by the Sedona Chamber of Commerce in Sedona. Arizona this 26 day of March 2015.

ATTEST:

Secretary

Joel Gilgoff, Chairman of the Board

72

4. Sedona Mayor and City Council

RESOLUTION NO. 2015-09

A RESOLUTION OF THE MAYOR AND CITY COUNCIL OF THE CITY OF SEDONA, ARIZONA, SUPPORTING THE EFFORTS OF "BIG PARK REGIONAL COORDINATING COUNCIL" IN OBTAINING A DARK-SKY COMMUNITY DESIGNATION FOR BIG PARK/VILLAGE OF OAK CREEK FROM THE INTERNATIONAL DARK-SKY ASSOCIATION.

WHEREAS, Sedona is recognized worldwide as one of the most unique and picturesque locations in the United States; and

WHEREAS, the Mayor and City Council desire to further the charge set forth in the City's Vision Statement, "to be a City that is constantly vigilant over the preservation of its natural beauty, scenic vistas, pristine environment, and cultural heritage"; and

WHEREAS, among the most precious assets of the Greater Sedona Area is its dark skies where the Milky Way is not only visible but also a bright presence and the spectacular views of the heavens are enjoyed by both residents and visitors; and

WHEREAS, being the precious resource that it is, protection of our dark skies requires the collaborative efforts of citizens, businesses, community groups such as Keep Sedona Beautiful, Big Park Regional Coordinating Council, and others working together in order to protect and preserve the unique scenic beauty of our nighttime skies; and

WHEREAS, by ultimately obtaining the designation of being a "Dark-Sky Community" from the International Dark-Sky Association the area's ability to promote and protect its dark skies will be enhanced.

NOW, THEREFORE, BE IT RESOLVED BY THE MAYOR AND COUNCIL OF THE CITY OF SEDONA, ARIZONA:

That the City of Sedona, by and through the Sedona City Council, supports the efforts of Big Park Regional Coordinating Council in pursuing a Dark-Sky Community Designation for Big Park/Village of Oak Creek. The International Dark-Sky Association is respectfully urged to consider formally designating Big Park/Village of Oak Creek as a "Dark-Sky Community."

APPROVED AND ADOPTED by the Mayor and City Council of the City of Sedona, Arizona this $12^{\rm th}$ day of May, 2015.

Tundra J. Morearty Sandra J. Moriarty, Mayor

ATTEST:

Susan L. Irvine, CMC, City Clerk

Mike Goimarac, City Attorney

APPROVED AS TO FORM:

5. Sedona Fire District

Sedona Fire District

2860 Southwest Drive. School. Arisona 86336 Leophone (528) 2824300 LAX (928) 2824307

RESOLUTION NO. 2015 - 01

A RESOLUTION OF THE GOVERNING BOARD OF SKIDDNA FIRE DISTRICT SUPPORTING EFFORTS OF THE BIG PARK RESHONAL COORDINATING COURCIL IN OBTAINING A DARK SKY COMMINITY DISTRICTION FROM THE INTERNATIONAL BAINS SKY ASSOCIATION FOR BIG PARK-VILLAGE OF OAK CREEK.

WHIRIRAA, Big Park Village of Oak Creek is a unique and picturesque community, defined by daylight by its distinctive red cook landscape and in darkness offers a rich night skyt and

WHEREAS, the Governing Branch wishes to support the Big Park Reglevel Countilisating Council in its casing to promote and calculate the efforts of the ciribens of Big Park/Village of Oo. Creek to be good networds of its dark sky, and

WHEIGAS, one of the most precious users of Big Park/Village of Ock Creek is its dark sakes where the Milky Way is not only visible but also a bright presence and the spectacular vices of the howers are enjoyed by both residents and visibles; and

WHEREAS, being the presions resource that 't is, protection of our early skips requires the authoromorphisms of citizens, businesses, economity groups, and others working together in order to protect and preserve the unique scenar beauty of our nighttime skips, and;

WHEREAS, by altinuacly obtaining to designation of heing a "Dark Sky Community" from the International Dark-Sky Association Big Park/Village of Out Crock's ability to promote and protect its dark sides will be enhanced.

THEREFORE, BE IT RESOLVED BY THE SEDONA FIRE DISTRICT GOVERNING BOARD:

That the Covercine Brand supports the Big Park Regional Coordinating Council in pursuing a Dark Sky Community exaignation. The International Dark-Sky Association is representfully urged to consider formally designating Big Park-Village of Unit Creek as a "Dark Sky Community."

APPROVED AND ADOPTED by the Sections Fire District Coverning Board this 15^{th} day of April, 2015.

Ty Menderunty, Braid Christman

ATTEST:

Corne Coopernan Band Clerk



Sedona Fire District

2860 Southwest Drive, Sedona, Arizona 86336 Telephone (928) 282-6800 FAX (928) 282-6857

April 21, 2015

Big Park Regional Coordinating Council Attn: Dark Sky Committee / Joanne Kendrick, Chair P.O. Box 20248 Sedona, AZ 86351

Dear Ms. Kendrick:

Attached is a copy of Resolution No. 2015-01 approved and signed by the Sedona Fire District Governing Board at its April 15, 2015 Fire Board meeting. This Resolution is in support of the Big Park Regional Coordinating Council for its efforts in pursuing a Dark Sky Community designation for Big Park/Village of Oak Creek.

We hope this helps in your endeavor and wish you well in this pursuit.

Thank you.

Sincerely,

Tricia

Tricia Greer Executive Assistant

:tg Attachments

c: Fire Chief Kris Kazian

6. Home Elements Lighting & Design

08 June 2015

Ms. Joanne Kendrick Chair, Big Park/Village of Oak Creek Dark-Sky Committee Big Park Regional Coordinating Council P. O. Box 20248 Sedona, AZ 86341

Dear Joanne:

Home Elements supports the efforts of Big Park Regional Coordinating Council (Big Park Council) in pursuing a Dark-Sky Community designation for the Big Park/Village of Oak Creek from the International Dark-Sky Association.

Big Park/Village of Oak Creek is not only a unique and picturesque community, but also a place where the Milky Way and thousands upon thousands of stars are visible to the naked eye. The spectacular views of the heavens are enjoyed by both residents and visitors alike and form an integral part of the greater Sedona "experience". It is important for this community that this increasingly rare resource be protected.

As a business owner in the community, we endorse the efforts of Big Park Council to have the Big Park/Village of Oak Creek designated as a Dark-Sky Community by the International Dark-Sky Association.

Sincerely,

Signature: TBoude	-			
Address: Home Evene	175	57-10	W SN89	A Soire D
City: Second A	State:	AZ	Zip	86336

XI. Community Business and Professional Organization Support

Content:

Business Support and Professional Organizations
It is clear that the business community and professional organizations stand firmly in support of Big Park Regional Coordinating Council and our dark sky program. They have provided letters of support.

- a. Professional Organizations Supporting Dark Skies
 - i. Keep Sedona Beautiful, Inc.
 - ii. Astronomers of Verde Valley
 - iii. Colorado Plateau
 - iv. Lowell Observatory
 - v. Northern Arizona Audubon Society
 - vi. Sirius Lookers Astro Club

i. Keep Sedona Beautiful, Inc.



May 21, 2015

Ms. Joanne Kendrick Chair, Big Park/Village of Oak Creek Dark-Sky Committee Big Park Regional Coordinating Council P. O. Box 20248 Sedona, AZ 86341

Officers

Tom O'Halleran, President

Norris Peterson, Executive V.P.

Abbie Denton, Treasurer

Carolyn Peterson, Secretary

Trustees

Jan Bigelow

James Eaton

Joanne Kendrick

Georgia Munsell

David Norton

Bill Pumphrey

Ernie Strauch

Michael Yarbrough

Dear Joanne:

On behalf of our Board of Directors, Keep Sedona Beautiful supports the efforts of Big Park Regional Coordinating Council (Big Park Council) in pursuing a Dark-Sky Community designation for the Big Park/Village of Oak Creek from the International Dark-Sky Association.

Big Park/Village of Oak Creek is a unique and picturesque community. It is a place where the Milky Way is not only visible but is also a bright presence. The spectacular views of the heavens are enjoyed by both residents and visitors. It is important for this community that this increasingly rare resource be protected.

As a conservation-oriented nonprofit organization in the community, we heartily endorse the efforts of Big Park Council to have the Big Park/Village of Oak Creek designated as a Dark-Sky Community by the International Dark-Sky Association.

Sincerely,

Tom O'Halleran, President Keep Sedona Beautiful

Environmental Stewards Since 1972

For your records, our tax identification number is **23-7313508**.

Gifts to Keep Sedona Beautiful are tax deductible as provided by law.

Unless otherwise stated, in return for your contribution, you have received no goods or services.

Please retain this letter for your records.

Keep Sedona Beautiful, Inc., acting through the stewardship of its members and volunteers, is committed to protect and sustain the unique scenic beauty and natural environment of the Greater Sedona Area.

ii. Astronomers of Verde Valley

Ms. Joanne Kendrick Chair, Big Park/Village of Oak Creek Dark-Sky Committee Big Park Regional Coordinating Council P. O. Box 20248 Sedona, AZ 86341

Dear Joanne:

Astronomers of Verde Valley support the efforts of Big Park Regional Coordinating Council (Big Park Council) in pursuing a Dark-Sky Community designation for Big Park/Village of Oak Creek from the International Dark-Sky Association.

Big Park/Village of Oak Creek is a unique and picturesque community. It is a place where the Milky Way is not only visible but is also a bright presence. The spectacular views of the heavens are enjoyed by both residents and visitors. It is important for that this increasingly rare resource be protected.

Astronomers of Verde Valley endorse the application of Big Park Council to have Big Park/Village of Oak Creek designated as a Dark-Sky Community by the International Dark-Sky Association.

Sincerely,

J. D. Maddy

President, Astronomers of Verde Valley

iii. Colorado Plateau Dark Sky Cooperative



Colorado Plateau Dark Sky Cooperative

2282 S. West Resource Blvd Moab, UT 84532

April 15, 2015

VIA ELECTRONIC COPY ONLY- NO HARD COPY TO FOLLOW

Board of Directors International Dark-Sky Association 3223 North First Avenue Tucson, Arizona 85719-2103

Dear IDA Board of Directors:

The Colorado Plateau Dark Sky Cooperative is pleased to support the Big Park/Village of Oak Creek International Dark Sky Community nomination. Big Park/Village of Oak Creek is located in one of the darkest regions in the continental U.S., and offers an exceptional, unfettered view of the dark night skies over the Colorado Plateau. The dark skies of Big Park/Village of Oak Creek have immense value to astronomical viewing, local tourism, and wildlife conservation in the region. In addition, Big Park/Village of Oak Creek International Dark Sky Community designation would assist in the conservation of dark night skies in the nearby Sedona and Flagstaff International Dark Sky Communities, and other adjacent tribal and public lands. Big Park/Village of Oak Creek has shown exceptional commitment to conserving natural darkness, and we anticipate their success will set an outstanding example for other communities to follow.

As an essential piece of the newly formed Colorado Plateau Dark Sky Cooperative, Big Park/Village of Oak Creek is taking lighting, conservation, and educational steps to fulfill the mission of the NPS Call To Action #27, Starry Starry Night. This voluntary initiative forms America's first Dark Sky Cooperative, and links communities, tribes, businesses, state/federal agencies, and citizens in a collaborative effort to celebrate the view of the cosmos, minimize the impact of outdoor lighting, and ultimately restore natural darkness to the area. Big Park/Village of Oak Creek International Dark Sky Community designation would bring further awareness and legitimacy to the Cooperative.

We fully support the efforts of Big Park/Village of Oak Creek as they seek designation of the Big Park/Village of Oak Creek International Dark Sky Community. Such efforts to conserve dark skies will benefit residents, visitors, nearby communities, and future generations. Should you have any questions, please contact Nate Ament at 435-719-2349.

Sincerely,

Nate Ament

Colorado Plateau Dark Sky Cooperative Coordinator

iv. Lowell Observatory



May 19, 2015

Ms. Joanne Kendrick Chair, Big Park/Village of Oak Creek Dark-Sky Committee Big Park Regional Coordinating Council P. O. Box 20248 Sedona, AZ 86341

Dear Joanne:

On behalf of Lowell Observatory, I am pleased to offer my endorsement of the efforts of Big Park Regional Coordinating Council (Big Park Council) in pursuing a Dark-Sky Community designation for the Big Park/Village of Oak Creek from the International Dark-Sky Association.

Big Park/Village of Oak Creek is a unique and picturesque community, a place where the Milky Way is not only visible but is also a bright presence. The spectacular views of the heavens are enjoyed by both residents and visitors, and it is important for this community that this increasingly rare resource be protected. I have enjoyed the opportunities I've had to make dark-sky and astronomical presentations in the area, and I'm pleased to see this continuing commitment to the natural resource of the night sky.

I warmly endorse the efforts of Big Park Council to have the Big Park/Village of Oak Creek designated as a Dark-Sky Community by the International Dark-Sky Association.

Sincerely yours,

Jeffrey Hall Director v. Northern Arizona Audubon Society

Northern Arizona Audubon Society

P.O.Box 1496 Sedona, AZ 86339

Ms. Joanne Kendrick Chair, Big Park/Village of Oak Creek Dark Sky Committee Big Park Regional Coordinating Council P.O.Box 20248 Sedona, AZ 86341

Dear Joanne,

Northern Arizona Audubon Society proudly supports the efforts of the Big Park Regional Coordinating Council in pursuing a Dark Skies Community designation for Big Park/Village of Oak Creek from the International Dark-Sky Association.

It is vitally important for our community that this increasingly rare resource be protected. The Village of Oak Creek is located in the heart of a very important bird migration Fly-way. The over illumination of the night sky causes migratory birds, including the endangered Southwest Willow Flycatcher, to become disoriented and exhausted resulting in collisions with night-lit buildings and towers.

As a Non-Profit Organization working within the community toward the expansion of wildlife viewing tourism in our area, we endorse the efforts of the Big Park Regional Coordinating Council to have Big Park/Village of Oak Creek designated as a dark sky community by the International Dark-Sky Association.

Sincerely,

Signature: Matthew Crozier, President

Group: Northern Arizona Audubon Society Address: P.O.Box 1496 Sedona, AZ 86339 vi. Sirius Lookers Astro Club

Ms. Joanne Kendrick Chair, Big Park/Village of Oak Creek Dark-Sky Committee Big Park Regional Coordinating Council P. O. Box 20248 Sedona, AZ 86341

Dear Joanne and IDA,

The Sirius Lookers Astro Club and myself, Dennis Young (president of club), are in full support of the efforts of Big Park Regional Coordinating Council (Big Park Council), wishing to join the Dark-Sky Community designation for the Big Park/Village of Oak Creek from the International Dark-Sky Association.

The Village of Oak Creek, an extension, of Sedona community would greatly benefit if added to the IDA qualifications. Not only for keeping the night skies ideal for humans but also for nature's life benefit too.. All will be rewarded for generations to come, for having proper lighting in the community and the wild life to be coexisting with modern technology.

As a very active resident, business, and club advocate of public outreach for dark sky awareness we all support this union.

Sincerely,
Dennis Young,
Sedona SiriusLookers Astro Club, and Sedona by Starlight
P. O. Box 87
Sedona, AZ 86339

b. Please see below six (6) letters of support from various individual businesses.

Please see **Appendix 1** for additional fifteen (15) business letters of support.

- i. Cucina Rustica
- ii. Sedona Public Library
- iii. Terrace Wind Design Company
- iv. Greater Sedona Verde Valley Networking Club
- v. Verde Valley School
- vi. Village Barber Shop
- vii. Demand Drop
- viii. Denton Accounting, Inc.
- ix. 1st Southwest Realty
- x. Green Window Cleaning
- xi. Grote Consulting Corporation
- xii. High Desert Pest & Weed
- xiii. M H Stone Masonry, Inc.
- xiv. Mindful Hiking Red Rocks
- xv. Pamela Duffy Photo
- xvi. Peak Conditioning
- xvii. Sedona Digs Furniture
- xviii. Sedona Pet Concierge
- xix. Software for PC's
- xx. Total Tech Team
- xxi. Vogel Home Inspection

1. Cucina Rustica

May 13, 2015

Ms. Joanne Kendrick Chair, Big Park/Village of Oak Creek Dark-Sky Committee Big Park Regional Coordinating Council P. O. Box 20248 Sedona, AZ 86341

Dear Joanne:

Cucina Rustica supports the efforts of Big Park Regional Coordinating Council (Big Park Council) in pursuing a Dark-Sky Community designation for the Big Park/Village of Oak Creek from the International Dark-Sky Association.

Big Park/Village of Oak Creek is a unique and picturesque community. It is a place where the Milky Way is not only visible but is also a bright presence. The spectacular views of the heavens are enjoyed by both residents and visitors. It is important for this community that this increasingly rare resource be protected.

As a business owner in the community, we endorse the efforts of Big Park Council to have the Big Park/Village of Oak Creek designated as a Dark-Sky Community by the International Dark-Sky Association.

Sincerely,

Signature

Address

Please sign and return your letter electronically to BPDarkSky@outlook.com, or by mail to Big Park Regional Coordinating Council, Attn: Dark-Sky Committee, P O. Box 20248, Sedona, AZ 86341.

2. Sedona Public Library

March 20, 2015

Ms. Joanne Kendrick Chair, Big Park Dark-Sky Committee Big Park Regional Coordinating Council P.O. Box 20248 Sedona, AZ 86341

Dear Joanne:

Sedona Public Library in the Village supports the efforts of the Big Park Regional Coordinating Council (Big Park Council) in pursuing a Dark-Sky Community designation for the Big Park/Village of Oak Creek from the International Dark-Sky Association.

Big Park/Village of Oak Creek is a unique and picturesque community. It is a place where the Milky Way is not only visible but is also a bright presence. The spectacular views of the heavens are enjoyed by both residents and visitors. It is important for this community that this increasingly rare resource be protected.

Sedona Public Library in the Village wholeheartedly endorses the efforts of Big Park Council to have the Big Park/Village of Oak Creek designated as a Dark-Sky Community by the International Dark-Sky Association. Thank you for your efforts.

Sincerely,

Cheryl L. Yeatts

Cheryl L. Yeatts
Manager
Sedona Public Library in the Village
7000 Highway 179
Suite D-100
Sedona, Arizona 86336
928.284.1603
voc@sedonalibrary.org

3. Terrace Wind Design



Apri 1, 2015

Ms. Joanne Kendrick Chair, Big Park/Village of Oak Creek Dark-Sky Committee Big Park Regional Coordinating Council P.O. Box 20248 Sedona AZ 86341

Dear Ms. Kendrick,

The Terrace Wind Design Company supports the efforts of Big Park Regional Coordinating Council (Big Park Council) in pursuing a Dark-Sky Community designation for the Big Park/Village of Oak Creek from the International Dark-Sky Association.

Big Park/Village of Oak Creek is a uniquely picturesque community; it's a place where the Milky Way is a bright presence nearly every night. These amazing views of the heavens inspire awe in both local residents and our throngs of international visitors. It is important for our community, and the planet's future itself, that this increasingly rare resource be safeguarded, so that humans can learn to value the natural beauty inherent here.

As a business owner in the community, I endorse the efforts of the Big Park Council to have the Big Park/Village of Oak Creek designated as a Dark-Sky Community by the International Dark-Sky Association.

Many Wall

Mary Walsh

Owner, Terrace Wind Design

50 Blackjack Drive Sedona, AZ 86351

4. Greater Sedona Verde Valley Networking Club

agril 1, 2015

Ms. Joanne Kendrick

Chair, Big Park/Village of Oak Creek Dark-Sky Committee

P.O. Box 20248

Sedona, AZ 86341

Dear Joanne,

The Greater Sedona Verde Valley Networking Club supports the efforts of Big Park Regional Coordinating Council in pursuing a Dark-Sky Community designation for the Big Park/Village of Oak Creek from the International Dark-Sky Association.

Big Park/Village of Oak Creek is a unique and picturesque community. It is a place where the Milky Way is not only visible but is also a bright presence. The spectacular views of the heavens are enjoyed by both residents and visitors. It is important for this community that this increasingly rare resource be protected.

As business owners in the community, we endorse the efforts of Big Park Council to have the Big Park/Village of Oak Creek designated as a Dark-Sky Community by the International Dark-Sky Association.

Sincerely,

Sincerely,

Damiar Bruno Coldwell Banker First Affiliate Damin Curo

Omar Kenney Bay Equity Homes Loans

Trecla Campbell American Family Insurance

GSVVNC

Greater Sedona Verde Valley Networking, Club

85 Broken tance Way

Sedona AZ 85351

5. Verde Valley School



28 April 2015

Ms. Joanne Kendrick Chair, Big Park/Village of Oak Creek Dark-Sky Committee Big Park Regional Coordinating Council P. O. Box 20248 Sedona, AZ 86341

Dear Joanne:

Verde Valley School supports the efforts of Big Park Regional Coordinating Council (Big Park Council) in pursuing a Dark-Sky Community designation for the Big Park/Village of Oak Creek from the International Dark-Sky Association.

Big Park/Village of Oak Creek is a unique and picturesque community. It is a place where the Milky Way is not only visible, but is also a bright presence. Both residents and visitors enjoy the spectacular views of the heavens. It is important that this increasingly rare resource be protected.

Verde Valley School endorses the application of Big Park Council to have the Big Park/Village of Oak Creek designated as a Dark-Sky Community by the International Dark-Sky Association.

Sincerely

John Kelley

Interim Head of School JohnK@VVSaz.org

928-284-2272

3511 Verde Valley School Rd. Sedona, AZ 86351

Phone: 928.284.2272 Online: www.vvsaz.org

6. Village Barber

March 16, 2015

Ms. Joanne Kendrick Chair, Big Park/Village of Oak Creek Dark-Sky Committee Big Park Regional Coordinating Council P. O. Box 20248 Sedona, AZ 86341

Dear Joanne:

Village Barber Shop supports the efforts of Big Park Regional Coordinating Council (Big Park Council) in pursuing a Dark-Sky Community designation for the Big Park/Village of Oak Creek from the International Dark-Sky Association.

Big Park/Village of Oak Creek is a unique and picturesque community. It is a place where the Milky Way is not only visible but is also a bright presence. The spectacular views of the heavens are enjoyed by both residents and visitors. It is important for this community that this increasingly rare resource be protected.

As a business owner in the community, we endorse the efforts of Big Park Council to have the Big Park/Village of Oak Creek designated as a Dark-Sky Community by the International Dark-Sky Association.

Sincerely,

Signature: Darline May

Please see Appendix 1 for additional fifteen (15) business letters of support

XII. Community Support Letters From Residents, Neighboring Towns, and Visitors

Content:

a. Letters of Support from Residents, Neighboring Towns, and Visitors

We have had a strong show of support from individuals for preserving our dark night sky. It is important to note that this support has not only come from our fellow residents but also from neighboring towns, and visitors.

Below are twenty (20) letters of support from residents.

Please see Appendix 2 for the additional 243 letters of support.

Date: April 3, 2015 at 8:14:12 AM MST **Subject: Dark Sky Letter of support**

From: Christine Alagna <calagna1@gmail.com>

To: BPDarkSky@outlook.com

Dear Big Park Dark Sky Council:

I endorse the efforts of Big Park Regional Coordinating Council in pursuing a Dark-Sky Community designation for the Big Park/Village of Oak Creek from the International Dark-Sky Association.

I have lived in Sedona for the past 22 years and I am an Arizona native. The beautiful stars of Sedona, away from the bright lights of Phoenix is what brought me here. This is where I have raised my family and enjoyed many evenings outdoors with the constellations overhead. I have enjoyed sharing this with my Girl Scouts, as well and the opportunity to teach them about the sky above.

The spectacular views of the heavens are enjoyed by both residents and visitors. It is important for this community that this increasingly rare resource be protected.

Signature:Christine Alagna			
130 Via dell Viento Address:			
Sedona , AZ 86351			
City:	State:	Zip:	

Let Food Be Thy Medicine- Hippocrates

Christine Alagna Bio-Balance Health Coaching

Sincerely,

From: Gay Chanler <mchanler@cybertrails.com>

Subject: Support letter

Date: March 6, 2015 at 12:39:26 PM MST

To: BPDarkSky@outlook.com

Dear Joanne,

I am strongly in favor of a Dark Skies initiative and endorse wholeheartedly the Big Park Regional Council's pursuit of a Dark Sky Community designation for Big Park and VOC.

The night skies we are so lucky to enjoy are a natural treasure and a community asset. Whenever I have visitors they remark on the gorgeous star-filled heavens, because they don't see stars or the Milky Way where they live.

Increasingly this is the case all across in our nation, and for that reason it is especially important that we preserve this natural wonder here, for residents and visitors alike.

Thank you for your efforts on securing this designation.

Gay Chanler 215 Colinas Sedona, AZ 86351

Begin forwarded message:

From: ROGWRITER@aol.com

Date: March 5, 2015 at 5:55:37 PM MST

Subject: Dark Skies

To: BPDarkSky@outlook.com

Dear Ms Kendrick:

My family has been a resident of the Village for eight years. Before we moved here we came as tourists for 13 years. One thing that attracted us, and keeps us here, is that the nights are as beautiful as the days.

The wonder of the night sky has been a constant since the dawn of civilization. It has inspired countless generations, poets, scientists and dreamers. Today this natural resource is threatened by the careless use of artificial light. A trip to Phoenix will quickly remind you of how blessed we are here at night to see the stars.

I was a weather observer in the Air Force. One night in western Oklahoma the observer was carrying 'thin scattered' at 25,000 feet. The forecaster called to tell the observer there was a major high pressure center over us and there were no clouds within 500 miles of Oklahoma. They argued and argued. When the observer's relief came in, they asked him to go out to relieve the observer, and get him to point out where these imaginary clouds were.

The relief observer did as told. What he discovered was the observer seeing the clouds was from Chicago, Illinois, and had never seen the milky way. What he thought were high thin clouds was the milky way.

This is just a small example of the beauty and wonder of the area we lose as the light pollution continues to grow.

Please, for our night time enjoyment, for the attraction of tourists, and for a legacy to leave for our children, please make the Village a Dark Sky Area.

Sincerely,

Roger, Amy, Emily, and Laylah Daniel 130 Castle Rock Rd. #67 Sedona, AZ 86351 Lazy Double D Ranch Denny & Dianne Dickover 1660 Lee Mtn. Rd Sedona, AZ 86351-8738

Date: 03.13.15

To: Ms. Joanne Kendrick Subject: Dark Sky

My wife and I are owners and part-time residents of the Village of Oak Creek - more specifically, the end of Lee Mountain Road.

We would like to go on record as strong supporters of a Dark Sky designation for the Big Park/Village area. One only needs go into the big cities and look to the skies, unable to see the incredibly awesome night skies, to recognize why dark skies are so special to those of us who sought them out for the peace it provides.

Thank you for bringing this issue to our attention.

Denny & Dianne Dickover

From: Sedona32@aol.com Subject: Dark Sky Support

Date: March 12, 2015 at 3:26:46 PM MST

To: BPDarkSky@outlook.com

Hello Ms. Kendrick, attached pls find a letter in support of the Dark Sky initiative & thank you for your efforts to see this happen.

Denny & Dianne Dickover

4/17/2015

Ms. Joanne Kendrick Chair, Big Park/Village of Oak Creek Dark=Sky Committee Big Park Regional Coordinating Council PO Box 20248 Sedona, AZ 86341

Dear Joanne,

We endorse the efforts of Big Park Regional Coordinating Council in pursuing a Dark-Sky designation for the Big Park/Village of Oak Creek from the International Dark-Sky Association.

When family visited from California they asked what those clouds were in the night sky. They had never seen the Milky Way and were amazed that they were seeing through the edge of the galaxy we live in! It is important to us to preserve the spectacular views of the stars but it is also important to mitigate the ill effects that night-time lighting can have on nocturnal animals. There are few places that are far enough away from large cities to allow a truly dark sky. We are fortunate to be one of them. We fully support seeking this designation.

Thank you,

John and Pam Frazier

John Frazier

605 Deer Pass Dr.

Sedona, AZ 86351

Art & Lynn Goodman

465 Bell Rock Blvd. Sedona, AZ 86351 Phone 928-284-9313

artandlynn@hvc.rr.com

March 9, 2015

Ms. Joanne Kendrick Chair, Big Park/VOC Dark Sky Committee Big Park Regional Coordinating Council PO Box 20248 Sedona, AZ 86341

Dear Joanne:

We strongly support the pursuit of the DARK SKY COMMUNITY DESIGNATION for the Village of Oak Creek. This is a no brainer! People come for the hiking, the biking, the arts, and the scenery. They should also come to see the heavens in all its beauty.

Tourism is our business here and this designation provides another reason to read about and visit our community.

Very truly yours,

Arthur Goodman Lynn Goodman

From: <artandlynn@hvc.rr.com>
Subject: Dark Sky Designation

Date: March 9, 2015 at 11:09:55 AM MST

To: BPDarkSky@outlook.com

April 14, 2015

Ms. Joanne Kendrick Chair, Big Park /Village of Oak Creek Dark-Sky Committee Big Park Regional Coordinating Council P. O. Box 20248 Sedona, AZ 86341

Dear Joanne,

We are writing to support the efforts of Big Park Regional Coordinating Council in pursuing a Dark-Sky Community designation for Big Park/Village of Oak Creek from the International Dark-Sky Association.

We have been in the Village of Oak Creek for over 20 years, first as part-time residents, and as full-time residents for 11 years. We enjoy sitting in our hot tub at night and gazing at the wonder of the Milky Way and the thousands of stars that we are able to see. Coming from the highly populated East Coast, we know that it is a real treasure to be able to see the stars and planets shine so brightly, see the eclipses and the comets so clearly.

I sincerely hope that the Village of Oak Creek and the Big Park Regional Coordinating Council are able to obtain the Dark-Sky designation so that the beauty of our night skies is protected from light pollution.

Sincerely,

Bob and Christine Graff 55 Red Butte Drive Sedona, AZ 86351 (928) 284-0559 Ms. Joanne Kendrick
Big Park Regional Coordinating Committee
PO Box 20248

Sedona, AZ 86341

April 4, 2015

Dear Ms. Kendrick:

We recently moved to Big Park from Pennsylvania. One of the first things we noticed were the beautiful dark skies of Sedona - a rare and awesome sight. It is imperative that Big Park/VOC seek and obtain a Dark-Sky Community designation. We encourage and support this effort. We need to protect this very rare resource.

To quote the International Dark-Sky Association: The wonder of the night sky has been a constant since the dawn of civilization. It has inspired countless generations, poets, scientists and dreamers. Today this natural resource is threatened by the careless use of artificial light. Once a source of wonder--and one half of the entire planet's natural environment—the star-filled nights of just a few years ago are vanishing in a yellow haze. Human-produced light pollution not only mars our view of the stars; poor lighting threatens astronomy, disrupts ecosystems, affects human circadian rhythms, and wastes energy to the tune of \$2.2 billion per year in the U.S. alone.

We agree and hope the IDA approves Big Park/VOC as a Dark-Sky Community.

Sincerely,

Frank & Gerry Hooper

Franks Hooper

155 Colinas

Sedona, AZ 86351

cc:file

Ms. Joanne Kendrick Chair, Big Park/Village of Oak Creek Dark-Sky Committee Big Park Regional Coordinating Council P. O. Box 20248 Sedona, AZ 86341

Dear Joanne:

We endorse the efforts of Big Park Regional Coordinating Council in pursuing Dark-Sky Community designation for the Big Park/Village of Oak Creek from the International Dark-Sky Association.

Our personal story is one of many here in the Village of Oak Creek. We recently moved here from Seattle, and although there were many reasons, the top three reasons by far were weather, dark-sky policy, and scenery—in that order! When we first saw the milky way here in Sedona it was for both of us the first time since our childhoods, and we realized how much we want to be able to share that gift with our children and grandchildren. We cannot emphasize enough the importance that the dark-sky policy has in charming visitors and residents alike, offering experiences that are non-existent in most communities, towns, and cities—and therefore greatly treasured.

It is vitally important for our community that this increasingly rare resource be protected.

Sincerely,

Signature:

Vancy Outsen-Maple

Signature:

David Maple

Address:

25 Adobe Circle Sedona, AZ 86351

Phone:

206-999-4928

Rosemary Mays 230 White Tail Drive Sedona, AZ 86351

Big Park Regional Coordinating Regional Council Attn: Dark Sky Committee P.O. Box 20248 Sedona, AZ 86341

March 6, 2015

Dear Sirs,

I live in the Village of Oak Creek, Sedona, AZ. We have the most beautiful view of the stars that I have ever seen and I would like to have the dark sky protected for future generations by having our community become designated as a "Dark – Sky Community". I support the efforts of Big Park Community in their efforts to seek the "Dark – Sky Community" designation from the IDA for the Big Park / Village of Oak Creek.

Sincerely,

Rosemary Mays

From: "JJ" <jj@sedona-originals.com>

To: <BPDarkSky@outlook.com>

Subject: Support of Dark Sky designation for VOC

Date: April 8, 2015 at 7:26:22 AM MST

Ms. Joanne Kendrick

Chair, Big Park Dark-Sky Committee Big Park Regional Coordinating Council P. O. Box 20248 Sedona, AZ 86341

Dear Joanne:

I strongly support the efforts of Big Park Regional Coordinating Council (Big Park

Council) to have Big Park/Village of Oak Creek designated as a Dark-Sky

Community by the International Dark-Sky Association.

Part of our enjoyment of Big Park/Village of Oak Creek is the unique and picturesque nature of the community. It is amazing that we can see

the Milky Way almost every night and enjoy so many astral objects in the sky from our own backyards!

The spectacular night views can be enjoyed by both residents and visitors and this designation could provide a wonderful opportunity for the VOC.

It is important for this community that this increasingly rare resource be protected.

Sincerely,

Janis Mock-Jones 250 Dickison Dr S Sedona, AZ 86351 March 28, 2015

Ms. Joanne Kendrick Chair, Big Park/VOC Dark Sky Committee Big Park Regional Coordinating Council P.O. Box 20248 Sedona, AZ 86341

RE: Support of Dark-Sky-designation

Dear Joanne:

We enthusiastically endorse the efforts of the Big Park Regional Coordinating Council in pursuing a Dark-Sky Community designation for the Big Park/Village of Oak Creek from the International Dark-Sky Association.

In addition to being area residents, my husband Scott, is an amateur astronomer and member of the Sirius Lookers astronomy club. Our area is one of the last communities where we can put our telescope out in the back yard and invite our neighbors, friends and out of town visitors over to view the heavens. We can still get a really good look at all the stars and planets in our universe - it's an amazing place and needs to be protected. One crucial key to maintaining this is dark-sky community will be dark-sky compliant lighting both for the commercial and residential stakeholders in our lovely Big Park/VOC area.

We appreciate your efforts to safeguard this area for the future.

Sincerely,

Mary Morris

1440 Jacks Canyon Rd.

Sedona, AZ 86351

Scott Kummerfeldt

1440 Jacks Canyon Rd.

Sedona, AZ 86351

On Mar 8, 2015, at 8:43 PM, Jeff Munn <jeff.munn@gmail.com> wrote:

Ms. Joanne Kendrick Chair, Big Park/Village of Oak Creek Dark-Sky Committee Big Park Regional Coordinating Council P.O. Box 20248 Sedona AZ, 86351

Dear Joanne:

I endorse the efforts of Big Park Regional Coordinating Council in pursuing a Dark-Sky Community designation for the Big Park/Village of Oak Creek from the International Dark Sky Association.

As a professional astronomer who works in Flagstaff, but lives in the Village of Oak Creek, the efforts to protect dark skies by Flagstaff, Coconino County, Yavapai County, and surrounding communities such as Sedona and the Village of Oak Creek are tremendously appreciated. Flagstaff is home to three different observatories, all actively engaged in astronomical research, and all of which benefit greatly from the various county and city lighting codes, and from the value placed on our night skies by the communities at large.

As a resident of the Village of Oak Creek, seeing the Milky Way from my backyard is a special joy that greatly adds to the natural beauty of our community. The spectacular views of the heavens are enjoyed by both residents and visitors. It is important for this community that this increasingly rare resource be protected.

Sincerely, Jeff Munn and Suzanne Aldrich 185 Arch Dr. Sedona, AZ 86351 From: Rosemary Papa < Rosemary. Papa@nau.edu>

To: "BPDarkSky@outlook.com" <BPDarkSky@outlook.com>

Subject: letter in support

Date: March 5, 2015 at 3:04:52 PM MST

Here is our letter of support of the BPDarkSky initiative.

Thanks!

Dr. Rosemary Papa

The Del and Jewell Lewis Endowed Chair, Learning Centered Leadership Executive/Founding Editor, eJournal of Education Policy ISSN 2158-9232 Professor, Educational Leadership, Northern Arizona University Rosemary.Papa@NAU.edu

NCPEA International Ambassador

Founder www.educationalleaderswithoutborders.com or www.flagstaffseminar.com http://www.sacheartgallery.org/about_us.htm

April 20, 2015

Ms. Joanne Kendrick Chair, Dark-Sky Committee Big Park/Village of Oak Creek PO Box 20248 Sedona AZ 86341

Dear Joanne,

We are fully in support of the effort to achieve "Dark Sky" status by Big Park/Village of Oak Creek.

Every night, we enjoy spectacular vistas of the stars across the skies, especially the Milky Way. There is no doubt that preserving this beauty is a worthy endeavor and we appreciate your and the committee's efforts to do so.

We hope that the International Dark-Sky Association will grant our area an official designation soon which, in turn, will perpetuate the gorgeous nightly views for future generations of residents and visitors.

Sincerely,

Peggy Pavlich

Paul Pavlich

Paul Parlur

355 Mundy Dr. Sedona, AZ 86351 On Mar 5, 2015, at 3:45 PM, Juanita Peterson <jkpete@q.com> wrote: Attached and below is my letter of support to designate Big Park/Village of Oak Creek as a Dark Sky Community. Thank you.
Juanita Peterson

Big Park Regional Coordinating Council POBox 20248 Sedona AZ 86341

Dear Joanne,

I support the efforts of Big Park Regional Coordinating Council in pursuing a Dark-Sky Community designation for the Big Park/Village of Oak Creek from the International Dark-Sky Association.

We have had the pleasure of living in VOC for six years and one of its wonders is a sky dark enough to enjoy and appreciate the millions of stars and constellations visible to us. We need to protect this beautiful asset of our community by being designated a Dark Sky Community.

Thanks for the work you do.

Sincerely,

Juanita Peterson 215 Pebble Drive Sedona AZ From: Elisa Rios <elisarios61@gmail.com>
Date: April 20, 2015 at 10:08:09 PM MST
Subject: Dark-Sky designation letter

To: BPDarkSky@outlook.com

Ms. Joanne Kendrick Chair, Big Park/Village of Oak Creek Dark-Sky Committee Big Park Regional Coordinating Council PO Box 20248 Sedona, AZ 86341

Joanne:

What do the residents of and visitors to Big Park/Village of Oak Creek do at night when they cannot enjoy the beautiful red rock views? We look to the sky, at the stars, the planets, the moon and the milky way. Our lack of light pollution makes the sky dark enough to provide a view at night as unique as the daytime red rock vistas that distinguish this area. We enjoy and cherish our dark skies and want to protect and preserve them by receiving a Dark-Sky Community designation from the International Dark-Sky Association.

Thank you.

Elisa Rios Chuck Combs 65 Alta Vista Dr. (Village of Oak Creek) Sedona, AZ 86351 **Date:** March 6, 2015 at 8:02:20 PM MST

Subject: Fwd: Support for Dark-Sky Community in the Village of Oak Creek

From: Gary Stouder <garystoudermd@gmail.com>

To: bpdarksky@outlook.com, Gary Stouder <garystoudermd@gmail.com>

Dear Joanne,

My wife and I moved to Sedona (Village of Oak Creek - Big Park) 2 1/2 years ago and were amazed at how dark the sky is on clear nights. We also noted that most people didn't have bright yard lights or security lights. I realized that I needed a flashlight to go out and walk around in my yard and up and down the street which seemed very unusual coming from central Indiana.

I enjoy looking at the night sky with the naked eye, and 20 power 90 mm objective binoculars mounted on a tripod. I recently bought a cheap telescope just to see what it would do and now realize that I want to get a better telescope that has more resolution and light gathering capacity.

I would really like for Big Park/Village of Oak Creek to get the designation as a dark sky community. If there is anything else I can do to help with this please let me know.

Phone 928-325-0007

Good Luck,

Gary Stouder, M.D. 10 Cascabel Ct. Sedona, AZ 86351 March 7, 2015

Ms. Joanne Kendrick Chair, Big Park/Village of Oak Creek Dark-Sky Committee Big Park Regional Coordinating Council P.O. Box 20248 Sedona, AZ 86341

Dear Joanne,

I strongly endorse the efforts of Big Park Regional Coordinating council in its pursuit to receive a Dark-Sky Community Designation for our town of the Big Park/Village of Oak Creek, AZ from the International Dark-Sky Association.

The location of this Village is not only a unique and a picturesque community by day, but at night, the views of the heavens are unbelievably visible and to keep this awesome treasure protected is a paramount issue.

A Designation as a Dark-Sky Community would raise awareness of this natural resource and provide incentive for its preservation.

90 Soldier Basin Drive

gy in them then gifting in the light region and a her writer were much being

Most sincerely,

Maria L. Sillotson

Sedona, AZ 86351

Maria L. Tillotson

Date: 3/23/15

Ms. Joanne Kendrick Chair, Big Park/Village of Oak Creek Dark-Sky Committee Big Park Regional Coordinating Council P. O. Box 20248 Sedona, AZ 86341

Dear Joanne:

I would like to commend you for your efforts to implement a dark sky ordinance in the Big Park/ VOC area. I support your effort whole heartedly and suggest strongly that the Council adopt this idea.

We are one of the few communities that can still see the deep night sky with it's infinite stars. We need to protect that from the glare of night lighting of any sort.

Thank you, Dan Wetzel PO Box 1771 Sedona, Az. 86339 Please see Appendix 2 for additional 243 resident letters of support.

XIII. Community Dark-Sky Awareness Events

Content:

As part of its own commitment to dark skies, the Big Park/Village of Oak Creek Dark-Sky Committee has been working with community organizations to organize and implement a series of related dark-sky events. As the following list outlines, we have participated in several events.

- a. Red Rock Ranger District Station, April 11, 2015
 Dark-Sky Presentation, Solar Viewing and Night Sky Viewing
 - i. Villager Article, April 1, 2015
 - ii. Photos
 - iii. Email to Astronomer Committee Members, April 13, 2015
 - iv. USDA Forest Service Star Party Announcement
- b. Sedona Winds, July 28, 2015

Dark-Sky Presentation

- i. Article in Villager/Verde Independent, July 9, 2015
- ii. Sedona Winds Retirement Community Calendar
- c. Red Rock State Park, August 28, 2015
 - i. Moon Walk with Boy Scouts
 - ii. Photos

a. Red Rock Ranger District Station
 April 11, 2015
 Dark-Sky Presentation, Solar Viewing and Night Sky Viewing

Your future is in the stars! The Forest Service and Arizona Natural History Association invited everyone to a solar viewing/star party at the Red Rock Ranger Station at 8375 State Route 179, south of the Village of Oak Creek, on April 11. Special guests, the Astronomers of Verde Valley (AVV) and the Big Park/Village of Oak Creek Dark-Sky Committee, were onsite to share the wonders of the night sky.

J. D. Maddy, President of AVV, and Club astronomers were present with telescopes to view several different celestial objects after sunset, as well as solar viewing earlier in the day. This event was to discover the incredible beauty of our local night sky, and learn about efforts to secure an "International Dark-Sky Community" designation for the Village of Oak Creek.

Solar viewing of sunspots and solar flares were from 1:00 PM to 4:00 PM. J.D. Maddy gave a night sky presentation in the visitor center at 7:00 PM, followed by telescope viewing outside from 7:30 PM to 9:30 PM. The event was free and open to the public. The event was appropriate for all ages and hot beverages were provided during the evening program.

IDA brochures were given to attendees as well as information on darksky compliant fixtures. i. The Villager Article, April 1, 2015



rusted local news leader for Cottonwood, Arizona & Verde Valley communities

Home | Classifieds | Place Ad | Public Notices | Galleries | Kudos | Obits | Real Estate | Subscriber

Verde Independent

<u>home</u>: <u>the villager</u>: <u>the villager</u>

3/31/2015 4:11:00 PM

Star Party at Red Rock Ranger Station April 11

Your future is in the stars! The Forest Service and Arizona Natural History Association would like to invite everyone to a solar viewing/star party at the Red Rock Ranger Station at 8375 State Route 179, south of the Village of Oak Creek, on April 11.

Special guests, the Astronomers of Verde Valley (AVV) and the Big Park/Village of Oak Creek Dark-Sky Committee, will be onsite to share with you the wonders of the night sky.

J. D. Maddy, President of AVV, and Club astronomers will be present with telescopes to view several different celestial objects after sunset, as well as solar viewing earlier in the day. Discover the incredible beauty of our local night sky, and learn about efforts to secure an "International Dark-Sky Community" designation for the Village of Oak Creek.

Solar viewing of sun spots and solar flares will be 1-4 p.m.

J.D. Maddy will give a night sky presentation in the visitor center at 7 p.m., followed by telescope viewing outside from 7:30-9:30 p.m.

The event is free and open to the public.

Appropriate for all ages and hot beverages will be provided during the evening program! Please bring a flashlight with a red lens and dress appropriately for cool weather.



iii. J. D. Maddy, President of Verde Valley Astronomy Club, narrative about the event.

On Apr 13, 2015, at 08:15 AM, "J. D MADDY" < maddy0485@msn.com > wrote:

From: "J. D MADDY" <maddy0485@msn.com> **To:** Astro Nomers <members@astroverde.org>

Date: April 13, 2015 at 8:14:44 AM MST **Subject:** [members] Ranger Station

We had a good time at the Red Rock Ranger Station and Visitor center Saturday. After setting up the solar scopes at noon, the crowds started coming over for looks. The flare activity was not much, but surface action was lively and three major sun spot groups were rotating into view as the day progressed. There was quite an international crowd this day. Folks were from all over the world. India, Pakistan, France, England, Scotland, Japan, Korea, China and South America were just some of the countries there. A large tour bus rolled up and a group of 40 lined up behind the scopes. This group was from the US. We had several families from Canada also. I was actually surprised at the Canadian crowd. I would say 20 or so came by. I had set up my 11 inch on Venus and later Jupiter. Once again, most were surprised that planets could be seen with the sun up. After the crowd died down after the Visitor Center closed, a group of 4 happened to come up and wanted to have a look. They arrived at just the right time. Dave had set up his scope with a solar filter a bit earlier and we had 4 solar scopes watching as the sun set over the nearby mountain to the west. It was one of the best sets I have seen. The sun set perfectly over a tree. The late coming group got to see the best sun set ever. Over 250 viewed the sun over the after noon.

The crowd started returning at about 6:30 PM. Venus, Jupiter and a couple of stars could be seen. We herded the crowd into the media room at 7 PM and I did a power point presentation. With 92 slides to show, I had to get with it. And, I did finish right on time. (My time anyway) As we left the media room, a couple of ladies waited while I packed up my laptop and we started to talk. They were both teachers. One said she had just retired after 43 years of teaching. I complemented here on her perseverance staying with teaching. And, then she said she was a NASA Instructor. She told us about some of the things she had done to qualify her next comment. She gave me the most rewarding compliment I think I had ever received.

She said that she was very critical and critiquing when it comes to presentations and that my presentation was the best she had seen in her 43 years in the business. I was shocked. But, humbled. The other teacher also commented she really enjoyed the talk and interjected some of her anecdotes. Not that I am really looking for any compliments, but it sure makes it worth it.

As we walked out of the Visitor center, we were welcomed with a very dark sky. The group, now at about 100 quickly lined up behind the scopes and started viewing and asking questions. It was an hour before the lines started to shrink. Even after the majority of the crowd had left, we were still busy showing off our dark skies to those remaining. And, then it was time to pack up as Ranger Candace turned on the parking lights. Karen usually has to pry my hands off the scope as the last folks have looks, but the bright light told me it was time to go.

Thanks to Dave, Richard, Jim and Karen for helping out. And, to Joanne for sponsoring the event and helping get the word out about our dark skies. And, also Ranger Candace and the others that make this event possible.

We will do this again at the Ranger Station on Sept 12th, so mark you calendars.

JD

iv. USDA Forest Service Star Party Announcement

USDA Forest Service Caring for the Land and Serving People





Star Party



Saturday, April 11

Solar Gazing
1pm-4pm
Astronomy Presentation
7pm
Telescope Viewing
7:30pm-9:30pm



Telescopes & presentation provided by

Astronomers of Verde Valley

Special guests

Big Park/Village of Oak Creek Dark-Sky Committee

Red Rock Ranger Station
(One mile south of The Village of Oak Creek)

928-203-2900 www.friendsoftheforestsedona.org Free event Bring a red light and dress appropriately. b. Sedona Winds, July 28, 2015Dark-Sky Presentation

The Big Park/Village of Oak Creek Dark-Sky Committee invites the public to a dark sky astronomy presentation on Tuesday, July 28 at 1:30 p.m. The program will be held in the Activity Room at the Sedona Winds Retirement Community, 405 Jacks Canyon Road in the Big Park/Village of Oak Creek.

Dave Norton, Big Park/Village of Oak Creek resident and an astronomer with the Astronomers of Verde Valley, will lead the presentation. Come learn more about our area's amazing dark sky and what it means to night sky visibility.

b. i. Article in Verde Independent, July 9, 2015



Home | Classifieds | Place Ad | Public Notices | Galleries | Kudos | Obits | Real Estate | Subscriber Services | Villager | Health Directory | Contact Us

Verde Independent

7/9/2015 3:28:00 PM

Dark-Sky designation preserves star viewing

By Joanne Kendrick Chair, Village of Oak Creek Dark-Sky Committee

Dark-Sky presentation at Sedona Winds

Tuesday, July 28

The Big Park/Village of Oak Creek Dark-Sky Committee invites the public to a Dark Sky/Astronc Tuesday, July 28. The program is held in the Activity Room at the Sedona Winds Retirement Co Road in the Village of Oak Creek.

Dave Norton, Big Park resident and an astronomer with the Astronomers of Verde Valley, leads more about our area's amazing dark sky and what it means to night sky visibility.

ii. Sedona Winds Retirement Community Calendar

Sedona Winds



Retirement Community

2015



Sunday

Monday

Tuesday

HAPPY ATT

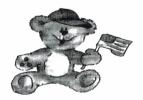
We



Danny Willingham..(Staff)..July 5
Claire Harris.....July 7
Janet Ritson....(Staff)....July 14
Carlos Eymert.....July 16
Claire Russhon....July 18

Joni Meyer...(Staff)...July 28





9:3 10:00 1:00 Pet V 1:30 Va 6:30 I

5

9:00 Bible Study & Music 12:00 – 3:00 Sunday Brunch 3:00 Matinee Movie & Popcorn " The Secret Life of Bees" 10:00 Fitness / Aquacize 11:00 Trivia Fun 1:00 Pet Visit with Laura & Lena 1:30 Knitting Club 2:30 Sedona Downs

6

10:00 Village Van / Fitness 10:00 Kitchen Tour 1:45 Van to Catholic Service 2:30 Nails w/ Savannah & Tara 2:30 Let's play Dominoes 10:00 10:00 V 11:-1:00 Pet 1:30 Vai 3:00 He 6:30

9:

12

9:00 Bible Study & Music 12:00 – 3:00 Sunday Brunch 3:00 Pet Visit w/ Laura & Lena 3:00 Matinee Movie & Popcorn " Field Of Dreams" 13
10:00 Fitness / Aquacize
11:00 Trivia Fun
1:00 Resident Advisory Council
2:30 Sedona Downs
6:30 International Issues – with

8:30 Coffee Club 5. 10:00 Village Van / Fitness 10:00 Willma's Writer Group 11:00 Wellness Clinic 11:30 Van to Lunch & Prescott 2:30 Let's play Skipbo

9: 10:00 1:00 Pct 1:30 Li Two 6 6:30

, a. Mari

9:00 Bible Study & Music 12:00 – 3:00 Sunday Brunch 3:00 Pet Visit w/ Laura & Lena 3:00 Matinee Movie & Popcorn " Apollo 13"



Bob MacDonald

10:00 Fitness /Aquacize 11:00 Moon Trivia 1:30 Knitting Club 2:30 Sedona Downs

27

10:00 Village Van / Fitness
11:30 Van Twin Arrows Casino
12:00 Caregivers Support Group
1:45 Van to Catholic Service
2:30 Crafts w/ Savannah & Tara
2:30 Let's play Dominoes

9 10:00 10:00 1:00 Pet 6:30

26

19

9:00 Bible Study & Music 12:00 – 3:00 Sunday Brunch 5:00 Pet Visit w/ Laura & Lena 5:00 Matinee Movie & Popcorn " Primary Colors "

10:00 Fitness / Aquacize 11:00 Trivia Fun 11:30 Out to Lunch at Karma Cafe

2:30 Sedona Downs

8:30 Coffee Club

10:00 Village Van / Fitness
10:00 Willma's Writer Workshop
1:30 Dark Sky Presentation
1:45 Van to Catholic Service
2:30 Let's play Skipbo

10:0 1:00 Pe 1 1:30 3:00 6:3

c. i. Red Rock State Park, August 28, 2015 Moon Walk with Boy Scouts

On Saturday, August 29, 2015, the Big Park/Village of Oak Creek Dark-Sky Committee sponsored Sedona Boy Scout Troop #48's participation in Red Rock State Park's monthly "Full Moon Hike." The Dark Sky Committee was pleased to arrange this fun, educational event for the scout troop, described on Red Rock State Park's website as "among the most popular interpretive hikes at the Park. Led by a naturalist, it gives hikers the rare opportunity to enjoy the sunset and moonrise from an overlook and return by the light of the moon, while also having the chance to learn about Sedona and its surrounding areas. Verde Valley and park history, as well as archeology, geology, botany, and riparian wildlife information, is also offered by a knowledgeable guide. The hike lasts two to 2 1/2 hours and covers a distance of approximately two miles."

By the day of the hike, the scout troop had expanded their participation to also include an overnight campout at Red Rock State Park. A perfect way to further enjoy the beautiful night sky and to learn about the importance of preserving our dark sky. At 5:30 P.M. the troop came from their campsite to the Park office where the hike was organizing, and we were off! We hiked on a winding trail with views of stunning Cathedral Rock to the east and the emerging colorful sunset to the west. The boy scouts were very attentive to the hike's naturalist as he described the plants and terrain we were experiencing. After hiking about a mile and a half to a higher elevation, and as dusk was approaching, we were led to the House of Apache Fire, a historic structure within the park. As we waited for the moon to rise up over the horizon, we were given a lesson in the history of the structure and the park itself. Then, there it was! The sky that evening was perfect for an amazing view of the glowing full moon, and there was some excitement as it grew in size and clarity. We learned that this full moon was the first of this year's three full supermoons, meaning it's a full moon near perigee, or near its closest point to Earth for the month. As an additional treat, one of the hike's participants began strumming on a drum she brought and another began to sing a Native American song as we all stood in amazement at the magnificent night sky!

Finally, we began to hike down another half mile back to the Park office. The end of our hike included viewing our own trail of lights as we wound our way through the switchbacks with flashlights. The boy scouts stated that they loved the hike, and the Big Park/Village of Oak Creek Dark-Sky Committee was happy to sponsor such a valuable learning experience for the troop!



XIV. Dark-Sky Awareness Documents

Content:

- a. International Dark-Sky Association (IDA) Brochures are distributed by the Big Park/Village of Oak Creek Dark-Sky Committee
 - i. The IDA brochures are distributed at star parties and darksky presentations. They are also distributed if businesses, residents, visitors, or students have questions about lighting, light pollution, dark-sky compliant fixtures, or preserving the dark night skies.
 - a. Red Rock Ranger District Station
 - b. Sedona Winds
 - c. Red Rock State Park
 - d. Big Park Council
 - e. Big Park Community School
 - f. Residents
 - g. Visitors
 - h. Students

XV. Dark Sky Education for School Children

a. Big Park Community School
 Big Park/Village of Oak Creek
 October 7, 2015
 Dark-Sky Presentation and Night Sky Viewing

The Big Park/Village of Oak Creek Dark-Sky Committee partnered with Dennis Young, President of Sirius Lookers Astro Club for a fun and educational evening at Big Park Elementary School. Over 40 sixth and seventh grade students attended the star gazing party along with the science teacher and some parents. The event started at 6:45 p.m. with Dennis giving an introduction presentation to the students. After the presentation, Dennis and other Sirius Lookers astronomers were present with telescopes and binoculars to show the students interesting objects in the dark sky, such as exploding stars and galactic star clusters.

We distributed the International Dark-Sky Association brochures as well as the Keep Sedona Beautiful Dark-Sky brochures.

XVI. Success in Light Pollution Control

- a. Big Park/Village of Oak Creek has achieved real success in implementing dark sky standards. The response to the Yavapai County Outdoor Light Pollution Ordinance from Builders has been positive. While new building construction has been quite modest over the past several years, the County has succeeded in implementing the code and associated dark sky requirements. The following are some of those projects:
 - i. Chevron
 - ii. Eye Boutique of Sedona
 - iii. Famous Pizza
 - iv. Goodwill Donations Center
 - v. Nutra Space Culinary School
 - vi. Red Rose Thriftique
 - vii. Schoolhouse Restaurant
- viii. A Taste of Marrekech
- ix. Verizon
- x. Villager Vet

Yavapai County, Village of Oak Creek									
		I remodels, new commercial sign, and new	<u>_</u>	e of uses with	in the Village of Oak Creek.				
All of these projects were requ	ired to comply with	n the Yavapai County Light Pollution Contro	ol Ordinance.						
Name of Project	APN		Ref. Number	Date	Type of Construction/Remodel				
Chevron	405-40-013A	6416 Hwy 179	P12014001949	6/23/15	Commercial remodel				
Eye Boutique of Sedona	405-44-047A	100 Verde Valley School Rd Ste 114	P12014000345	3/5/14	Commercial sign				
Famous Pizza	405-27-301	10 Bell Rock Plaza	C1204000235	8/15/14	Commercial Change of Use/Remodel				
Famous Pizza	405-27-301	10 Bell Rock Plaza	P12014001605	8/14/14	Commercial sign				
Goodwill Donations Center	405-40-003	64 W. Cortez Drive	P12011002463	6/19/12	Commercial sign				
Goodwill Donations Center	405-40-003	64 W. Cortez Drive	C12012000019	1/19/12	Commercial Remodel				
Nutra Spice Culinary School	405-40-006	52 W. Cortez Drive	C12015000040	1/5/15	Commercial Change of Use/Remodel				
Nutra Spice Culinary School	405-40-006	52 W. Cortez Drive	A12014001605	1/5/15	Commercial sign				
Red Rose Thriftique	405-27-309	41 Red Rock Plaza	C12014000105	4/19/14	Commercial Change of Use/Remodel				
Red Rose Thriftique	405-27-309	41 Red Rock Plaza	P12014000317	6/10/14	Commercial sign				
Schoolhouse Restaurant	405-28-270T	1000 Hwy 179 C-106	P12015000451	5/20/15	Commercial sign				
A Taste of Marrekech	407-27-306A	C, 25 Bell Rock Plaza	P12015000213	2/13/15	Commercial remodel/ sign				
Verizon	405-44-047	100 Verde Valley School Rd Ste 111,112	P12014001135	10/31/14	Commercial sign				
Villager Vet	405-40-007	48 W. Cortez Drive	P12015001255	5/27/15	Commercial sign				

XVII. Sky Brightness Measurement Program

- a. Big Park/Village of Oak Creek Dark-Sky Committee's Procedure to Conduct the Sky Brightness Measurements
- **b.** Sky-Quality Measurement Device SQM-L is the measurement device used and it will be the device of choice in the future.
- c. Sky-Quality Measurements Performed on February 18. 2015
- d. Sky-Quality Measurements Performed on. June 16, 2015
- e. Sky-Quality Measurements Performed on July 15, 2015
- f. Map Overlay of Measurements on February 18, June 16, and July 15, 2015.

- a. Big Park/Village of Oak Creek Dark-Sky Committee's Procedure to Conduct the Sky Brightness Measurements is as follows:
- Big Park/Village of Oak Creek Dark-Sky Committee has conducted three sky-quality measurements for Big Park/ Village of Oak Creek in the months of February, June, and July 2015.
- Big Park/Village of Oak Creek Dark-Sky Committee will conduct several sky-quality measurements each year.
- Big Park/Village of Oak Creek Dark-Sky Committee conducts the night-sky quality by the following procedure:
 - Sky-quality measurements are taken on or close to the New Moon
 - Six different measurements are made for each location.
 - An average of the first through sixth measurement is recorded as the average sky quality reading for each location
 - o Percent of cloud cover is noted for each location
 - Readings are taken at the same location and are recorded for each location
 - The time is recorded for each location
 - The street location is given for each location
- No permanently mounted Night Sky Brightness Monitor is installed because of probable damage by Arizona strong sun. As noted above, the Big Park/Village of Oak Creek Dark-Sky Committee will conduct annual sky-quality measurements.

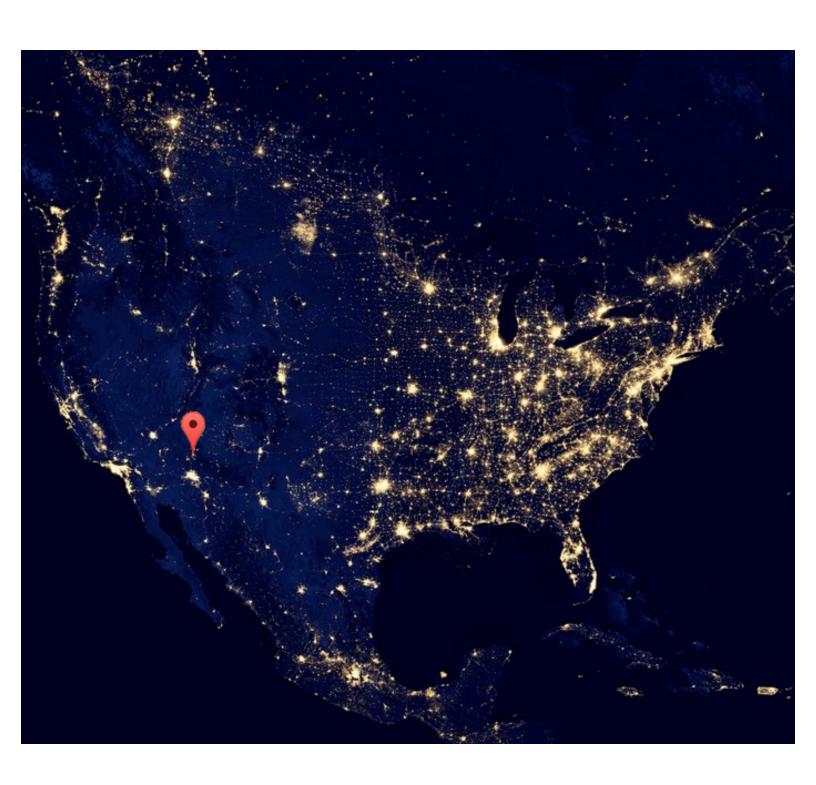
- b. Sky-Quality Measurement Device SQM-L was the measurement device used for all measurements
 - Unihedron
 - Sky Quality Meter With Lens
 - SQM-L
 - Model 2.18
 - Serial Number 7797

- c. Sky-Quality Measurements Performed on February 18, 2015
- d. Sky-Quality Measurements Performed on June 16, 2015
- e. Sky-Quality Measurements Performed on July 15, 2015

SKY QUALITY READING IN VILLAGE OF OAK CREEK PERFORMED ON FEBRUARY 18, 2015, NEW MOON									
Time		Percent of Cloud Cover	First Sky Quality Reading	Second Sky Quality Reading	Third Sky Quality Reading	Fourth Sky Quality Reading	Fifth Sky Quality Reading	Sixth Sky Quality Reading	Average Sky Quality Reading
20:38	Jacks Canyon Road/Lee Mountain-back entrance to neighborhood	10%	20.08	21.13	20.94	21.08	21.01	21.03	20.88
20:56	Crimson Vista/Verde Valley School Road	10%	21.24	21.18	21.24	21.08	21.20	21.27	21.20
21:15	15 W. Bighorn Ct.	10%	21.14	21.04	21.04	21.13	21.06	21.08	21.08
21:28	888 Saddlehorn Rd	10%	21.16	21.11	21.14	21.11	21.12	21.11	21.13
21:41	Bell Rock/Red Butte	10%	20.95	20.96	20.98	21.06	20.94	21.05	20.99

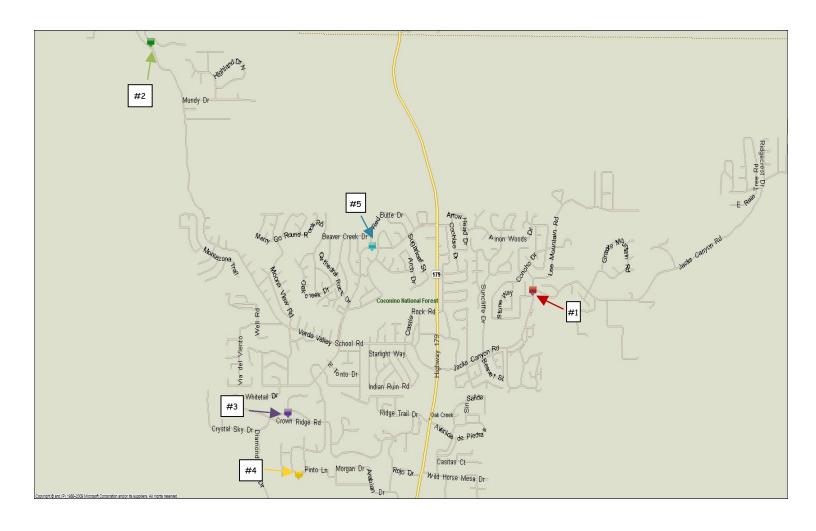
	SKY QUALITY READING IN VILLAGE OF OAK CREEK PERFORMED ON JUNE 16, 2015, NEW MOON								
Time		Percent of Cloud Cover	First Sky Quality Reading	Second Sky Quality Reading	Third Sky Quality Reading	Fourth Sky Quality Reading	Fifth Sky Quality Reading	Sixth Sky Quality Reading	Average Sky Quality Reading
22:25	Jacks Canyon Road/Lee Mountain-back entrance to neighborhood	0%	21.52	21.46	21.45	21.46	21.46	21.50	21.48
23:10	Crimson Vista/Verde Valley School Road	0%	21.68	21.69	21.65	21.67	21.62	21.66	21.66
22:46	15 W. Bighorn Ct.	0%	21.49	21.45	21.46	21.46	21.46	21.40	21.45
22:55	888 Saddlehorn Rd	0%	21.52	21.56	21.55	21.51	21.48	21.51	21.52
22:35	Bell Rock/Red Butte	0%	21.51	21.50	21.39	21.39	21.45	21.37	21.44

SKY QUALITY READING IN VILLAGE OF OAK CREEK PERFORMED ON JULY 15, 2015, NEW MOON									
Time		Percent of Cloud Cover	First Sky Quality Reading	Second Sky Quality Reading	Third Sky Quality Reading	Fourth Sky Quality Reading	Fifth Sky Quality Reading	Sixth Sky Quality Reading	Average Sky Quality Reading
22:55	Jacks Canyon Road/Lee Mountain-back entrance to neighborhood	0%	21.33	21.31	21.27	21.26	21.26	21.26	21,28
23:34	Crimson Vista/Verde Valley School Road	0%	20.89	20.93	20.84	20.87	20.84	20.86	20.87
23:10	15 W. Bighorn Ct.	0%	21.12	21.04	21.08	21.07	21.07	21.05	21.07
23:16	888 Saddlehorn Rd	0%	21.43	21.28	21.40	21.37	21.38	21.37	21.37
	Bell Rock/Red Butte	Construction or	n road - unable	to get reading					0.00



f. Map Overlay of 2015 Measurements taken on February 18, June 16, and July 15, September

Locations of Sky Quality Measurements in Sedona Village



We thank Dave Norton, Sedona Village, for producing this map



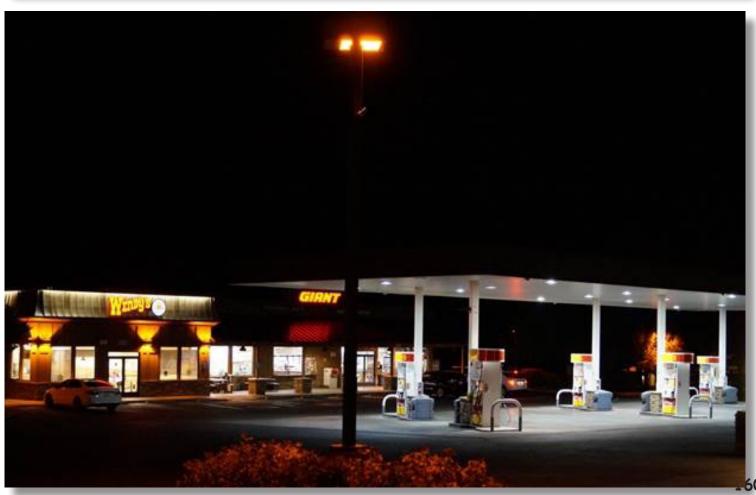


XVIII. Wording for Designation

a. The Big Park/Village of Oak Creek Dark-Sky Committee and the Big Park Regional Coordinating Council propose wording of "Big Park/Village of Oak Creek Dark-Sky Community".

XIX. Big Park/Village of Oak Creek Photographs













XX. Newspaper Articles

- a. Villager/Verde Independent Newspaper Articles on Dark-Sky
 - i. January 26, 2015
 - ii. March 1, 2015
- iii. April 2015 Edition
- iv. May 2015 Edition
- v. June 2015 Edition
- vi. July 2015 Edition
- vii. August 2015 Edition
- viii. September 2015 Edition
- ix. October 2015 Edition
- b. Red Rock News//Village View Articles on Dark-Sky
 - i. February 2015
 - ii. May 20, 2015
 - iii. September 3, 2015
- c. Keep Sedona Beautiful Newsletter
 - i. Spring 2015

a. Villager Newspaper/Verde Independent Newspaper - Articles on Dark-Sky

Verde Independent

home: the villager: the villager

1/26/2015 9:06:00 AM

Big Park Community Council moving forward with Dark-Sky Designation



Steve Nelson Big Park Council President

July 10, 2014, the Big Park Regional Coordinating Council passed a motion supporting the pursuit of the Dark-Sky Designation from the International Dark-Sky Association for the Big Park/Village of Oak Creek community.

The City of Sedona had been working on this designation and was recently rewarded with this designation.

The Council feels the Big Park/Village of Oak Creek area is a unique and picturesque community. It is a place where the Milky Way is not only visible but is also a bright presence. The spectacular views of the heavens are enjoyed by both residents and visitors. It is important for this community that this increasingly rare resource be protected.

At our January meeting, exciting information about the progress for the attainment of the Dark-Sky Designation was relayed by Joanne Kendrick, Chairperson for the Big Park Dark-Sky Committee.

Joanne let us know that the committee has been working hard to achieve the designation and our community is in a good position to be able to attain it.

The first step was the committee having discussions with Yavapai County to incorporate several minor changes that will need to be incorporated into the County's Dark-Sky Ordinance.

This meeting went well and the County is in the process of reviewing these changes. A critical next step is the receipt of letters of support from businesses and residents. The Council will be reviewing the sample notification letters and letters of support at the February meeting with the intent that notices would be going out by the end of February.

We will be working with the Sedona Village Business Association and the Sedona Village Lodging Association who will disseminate the letters to the businesses while the HOA members of the Council will disseminate the information to the residents.

We also expect to have a sample of the letters in the March Villager. A question was raised at the meeting if the designation will require retrofitting by businesses and residents. Just like the current Dark-Sky ordinance grandfathers lighting installed before the ordinance, the Dark-Sky Designation would have a similar grandfathering provision.

If you want additional information on the designation, please visit the webpage of the International Dark-Sky

Association at www.darksky.org. or send an inquiry via e-mail to the Committee at info@bigparkcouncil.org.

At the February meeting, we will also be welcoming Bruce Morrow, Transportation Manager for Cottonwood Area Transit and Verde Lynx who will be discussing the possibility of extending the Lynx service to our community

As part of the Vision and Enhancement survey completed by the Council for our community, this expansion was graded with the highest importance.

In March, Chip Davis will be our guest discussing matters impacting the county and our community. All residents are welcome at the meetings which are on the second Thursday of the month at the VOC Fire Station at 125 Slide Rock Road commencing at 9 a.m..

We look forward to your attending the meeting as exciting opportunities for our community are discussed.

http://verdenews.com/main.asp?SectionID=239&SubSectionID=904&ArticleID=64213&TM=43353.8

The time is now to preserve our dark skies

Good news for the Village! Thanks to the hard work by the Big Park/Village of Oak Creek Dark-Sky Committee led by Joanne Kendrick, the process of receiving the Dark-Sky Community Designation is moving forward.

Please read her informative article in this month's *Villager*. Her article explains the next step in the process which is the need to receive letters of support from residents and businesses. The article includes sample letters to assist the public in the preparation of their letters.

The designation is a win-win proposition for residents and businesses as our lovely skies are enjoyed by everyone.

At the February meeting, we welcomed Bruce Morrow, Transportation Manager for Cottonwood Area Transportation and Verde Lynx, who discussed the possibility of the Lynx transportation system being extended to our community.

Bruce stated he will need to get buy-off from Cottonwood



Steve Nelson

Big Park Council President

and Sedona City Councils and the County Board of Supervisors and figure out how much funding each is willing to contribute to the cause for it to be a viable option.

So, the analysis to determine the feasibility is in its early stages and we will need to be patient as the plan is developed.

To assist Bruce in the analysis, the Council will be distributing a questionnaire to the community in the near future to gather statistical information on potential Village ridership.

Stay tuned as additional infor-

mation becomes available.

At the March BPRCC meeting, we will be welcoming Chip Davis, our County Supervisor. It is always a pleasure to have him in attendance at our meetings. He will be discussing what is happening at the county level and how it will impact our community. Chip will be available for questions about the county when he attends.

As we welcome Spring, we will see an increasing number of yard sales in the community. A reminder to everyone that yard sale signs that are placed in the roundabout and sidewalk medians, on the sidewalks or between the curb and sidewalk will be removed by the Litter Lifters.

Yard sale signs should be placed inside of the sidewalk without placing on or damaging the plants, drip system or traffic sign posts.

The entire community is always invited to our monthly meeting.

The next meeting will be March 12 at the Village Fire Station commencing 9 a.m.



Trusted local news leader for Cottonwood, Arizona & Verde Valley communities

Home | Classifieds | Place Ad | Public Notices | Galleries | Kudos | Obits | Real Estate | Subscril

Verde Independent

3/31/2015 5:10:00 PM

Village moves forward with community dark sky designation

By JOANNE KENDRICK Chair, Big Park/Village of Oak Creek Dark-Sky Committee

Many thanks for your letters stating you support the efforts of Big Park Council in pursuing a Dark-Sky Communi International Dark-Sky Association (IDA).

If you have not written your letter, please do so as one of the requirements for this designation is to demonstrat support from the community.

The wonder of the night sky has been a constant since the dawn of civilization. It has inspired countless generations, poets, scientists, and dreamers. Today, this natural resource is threatened by the careless use of artificial light.

Big Park/VOC, like Sedona, has a magnificent night sky. But the dark night sky can be improved further and must be protected from light pollution that comes with growth of towns.

The Big Park/VOC Dark-Sky Committee has rolled up their sleeves and has begun to work on protecting this resource by striving for designation of Big Park/VOC as an International Dark-Sky Community, a merit awarded by the IDA.

Steve Nelson, President of Big Park Regional Coordinating Council, said that pursuing the IDA Dark-Sky Community designation is a unique opportunity for our community because the designation is merit-based and will add distinction to Big Park/VOC.

There are only six other communities in the United States with this designation.

The City of Sedona is one of those, having been designated in August 2014.

Now it is Big Park/VOC's turn to work to meet the IDA's requirements for the designation.

Big Park/VOC can build on the experience gained by Keep Sedona Beautiful, Inc. (KSB) in achieving the designation for the City of Sedona.

The KSB Dark Sky Committee will help Big Park/VOC satisfy the IDA's requirements and guide it through the application process.

The dark-sky designation enhances awareness by residents and visitors of light pollution and what we can do to prevent or reduce it. The issue is not about not having light; it is how we use light more responsibly.



Photo by Beverly Copen



Village moves forward with Dark-Sky designation

BY JOANNE KENDRICK

Chair Big Park/Village of Oak Creek Dark-Sky Committee

Less than 100 years ago, nearly everyone could look up at a spectacular starry night sky and see the Milky Way. Now, millions of children across the globe will never experience the natural wonder of the heavens.

As we pursue the International Dark-Sky Community designation for Big Park/Village of Oak Creek, we are taking steps to protect our night sky not only for our community but also for future generations.

According to the International Dark-Sky Association (IDA), light pollution hinders astronomy, harms the planet, wastes money, and threatens the health and safety of all life. Light pollution hides the stars and changes our experience of the night. We do need some light at night, but at least 30 percent of outdoor light

is wasted because it is too bright, unshielded, or unnecessary.

What is light pollution? It's excessive or inappropriate out-door lighting. The IDA defines the four common forms of light pollution:

- Glare excessive brightness causing visual discomfort Glare from bright, unshielded lights actually decreases safety; it shines into your eyes limiting your ability to see.
 - · Urban sky glow brighten-

ing of the night sky

- Light trespass light falling where it's not intended or needed
- Clutter bright, confusing and excessive groupings of light source

We all can help reduce light pollution by having dark sky compliant light fixtures that are shielded on top and on the sides. Thank you for your continuing support and help in preserving our night sky.



6/3/2015 7:58:00 AM

Dark skies in VOC: A practical guide to LEDs

By Joanne Kendrick Chair Big Park/Village of Oak Creek Dark-Sky Committee

There has been much discussion about light-emitting diode (LED) lighting and how they are used.

Here is some guidance on the subject from the International Dark-Sky Association.

LED is transforming the way we light outdoor spaces, offering a once-in-a-lifetime chance to radically improve how we use energy and outdoor light at night.

With this opportunity comes an obligation to manage these changes responsibly and sustainably.

The stakes are high and the potential rewards great, but outcomes depend critically on policymakers and the public having access to reliable information.

What is LED?

LEDs use solid-state technology to convert electricity into light. LEDs can be thought of as very small light bulbs that fit into an electrical circuit. Unlike traditional incandescent bulbs, they don't have a filament that burns out and so are very long-lived.

Initially, LEDs only emitted red, yellow, or green light, but now white LEDs are widely available.

Early LEDs were relatively energy inefficient and put out little light, but due to technological advances LED efficiency and light output have doubled about every three years.

Because of improved quality and lower prices, LEDs are now replacing conventional lighting technologies for outdoor lighting in communities around the world.

Why Adopt This Technology?

LEDs are very efficient at converting electrical energy to light, so they generate the same amount of light for a fraction of the cost and energy usage compared to other lighting types.

LED use coupled with modern luminaire design allows reduced illuminance without compromising safety. LEDs reduce the demand for energy, which in turn lowers carbon emissions.

Blue Light is Bad

New technical capabilities often come with unanticipated challenges. White LED lighting often has significant levels of potentially hazardous blue light.

Outdoor lighting with high blue light content is more likely to contribute to light pollution because it has a significantly larger geographic reach than lighting with less blue light.

Blue-rich white light sources are also known to increase glare and compromise human vision, especially in the aging eye.

These lights create potential road safety problems for motorists and pedestrians alike.

In natural settings, blue light at night has been shown to adversely affect wildlife behavior and reproduction.

This is true even in cities, which are often stopover points for migratory species.

The promise of cheaper outdoor lighting from LEDs should be weighed against these factors, and every effort should be made to diminish or eliminate blue light exposure after dark.

There are already many white LED options now available on the outdoor lighting market and that number will only rise in the future.

These suggestions will aid in the selection of lighting that is energy and cost efficient, yet ensures safety and security, protects wildlife, and promotes the goad of dark night skies:

Always choose fully shielded fixtures that emit no light upward

Use "warm-white" or filtered LEDs with Correlated Color Temperatures (CCTs) less than 3000 K

Look for products with adaptive controls like dimmers, timers, and motion sensors

Consider dimming or turning off lights during overnight hours

Avoid the temptation to over light because of the increased efficiency of LEDs.

Only light the exact space and in the amount required for particular tasks

For more information, visit the IDA website at www.darksky.org.

7/9/2015 3:28:00 PM

Dark-Sky designation preserves star viewing for future generations

By Joanne Kendrick Chair, Big Park/Village of Oak Creek Dark-Sky Committee

Preserving and protecting our nighttime environment is important -- not only for ourselves but for future generations, too.

Arizona Republic reporter Megan Finnerty wrote about vanishing darkness in September 2014. Excerpts from her article follow.

Disappearing Darkness: Let There Be (Not So Much) Light

When Laura Williams, Grand Canyon National Park's night-skies inventory coordinator, tries to explain the idea of light pollution, she often shows people a picture taken from the South Rim during a blackout at Grand Canyon National Park. It's mostly black, with stars in the sky, but then, there's this orange glow creeping from the south. It's not coming from Sedona or Flagstaff, but from the Valley. The Greater Phoenix area casts a nighttime arc of light over most of Arizona, extending more than 200 miles in each direction.

Light pollution doesn't just bleach the night sky; it squanders electricity, does little to curb crime, and disrupts life for animals including sea turtles, bats and migratory birds.

"The whole issue isn't about not having light. It's how do we use light more responsibly and thoughtfully," said Paul Bogard, author of 2013's "The End of Night." "The night is beautiful, amazing and filled with wonder, " Bogard said. "What's the value of... standing under the galaxy and wondering who you are and what your life is about? Losing it has an enormous cost to our souls and spirits.

Scientists estimate that in about 10 years, America will have only three dark patches of land where people will be able to clearly see the Milky Way and where they'll be able to do high-quality astronomy and nocturnal wilderness research.

Those areas are southeastern Oregon and western Idaho; northeastern Nevada and western Utah; and northern Arizona and southeastern Utah - the better part of the Colorado Plateau.

The light-sprawls of the greater Las Vegas and Phoenix areas imperil dark skies in both the Colorado Plateau and northeastern Nevada and western Utah.

"Phoenix is in a unique position because it's such a large metro area so close to so many dark places, " said Nathan Ament, coordinator of the Colorado Plateau Dark-Sky Cooperative for the National Park Service. "Your light affects people's experience in national parks and nocturnal wildlife environments, "Ament said. "You can't just say, 'It's my backyard and I'll do what I want.' It's a shared resource."

Williams, Ament and others within the National Park Service are part of a 15-year-old movement, born in Western national parks, to inspire individuals to protect the skyskape [sic].

During ranger talks, team members recommend putting security lights on motion sensors and making sure lights shine downward and only where needed.

Astronomy at stake

Beyond conservation, there's the economic argument.

Arizona is home to three of the five largest telescopes in the continental U.S. And the bulk of America's telescopes are concentrated in the West. Many of them sit in Southern California and on or at the edges of the Colorado Plateau: around Flagstaff, Tucson, and western New Mexico.

Astronomy, space and planetary-science fields bring Arizona \$252.8 million annually. They attract about 200,800 visitors and employ about 3,300 directly and indirectly, according to a 2008 study by the <u>University of Arizona</u>, the most recent available.

The future of this industry depends on darkness.

Reprinted with permission from Arizona Republic



Can Dark-Sky compliant lighting still be safe?

BY JOANNE KENDRICK

Chair Big Park/VOC Dark-Sky Committee

A question frequently asked is, "What lighting should be installed for security that does not cause light pollution?"

Following are some guidelines about light pollution and safety from the International Dark-Sky Association.

One of the main goals for night-

time lighting is to have good safety and security at night, both at home and away from home, for ourselves, families, homes and properties. However, the task is to be safe, not just to feel safe. This means we need effective and efficient lighting.

"Brighter" does not mean "safer." Light for the sake of light does not equal safety. Bright, glaring lights that illuminate some nighttime events and locations can diminish ambiance, as well as decrease security. Overly bright lighting creates a sharp contrast between light and darkness, making the places outside the area of illumination nearly impossible to see. Bad lighting can even attract criminals by creating deep shadows that offer conceal-

See Dark Sky, Pg. 5

Dark Sky From Page 4

ment.

One does not have to compromise security to see the nighttime sky. The key to a safe nighttime environment is to shield lighting for roadways, parking lots residences, businesses and landscapes, increasing your visibility and decreasing your distractions, such as glare.

Smart lighting that directs light where it is most useful can help one achieve a balance between safety and starlight. One does not have to choose between security and a natural night sky.

The IDA offers solutions for security lighting. They are:

Put light where it is needed during the time period it will be used and at the levels that enhance visibility.

Shield lights to reduce glare and harsh shadows. Motion sensors alert us to activity after hours.

Dimmers provide the light needed to accomplish nighttime work without the extra expense.

Effective lighting that helps people be safe, not just feel safe, is a winwin situation for everyone. VOC residents can create a safer environment while keeping the night natural.

For more information, visit www.darksky.org.

Updates considered for light pollution zoning ordinance

Yavapai County is proposing changes to the current light pollution control ordinance to comply with Dark-Sky designation.

Proposed changes include definitions for adaptive controls and the International Dark Sky Association, creating an amendment requiring all lights to be shielded, including public buildings and setting a

standard for street lights within subdivisions.

The proposed changes were heard by the Planning and Zoning Commission on July 22 in Cottonwood and will be heard again at 9 a.m. on Aug. 5 in Prescott.

The meeting is held in the Board of Supervisors' meeting room.

The Board of Supervisors will then hear the recommendation of the Commission at its Sept. 8, meeting in Prescott, with video conference available at the Cottonwood location.

The meetings are open to the public.



Verde Independent

9/2/2015 1:16:00 PM

Time to enjoy our dark skies with proper lighting

By Dave Williams

Yavapai County Land Use & Planning Unit Manager

With the end of summer coming and cooler temperatures on the horizon, this is the time for people to get out and enjoy the most amazing nighttime skies Arizona has to offer. Nothing, though, spoils the experience of sitting out in the park or in your backyard and staring up at the beauty of our stars quite like bright, glaring lights.

In 2003, Yavapai County adopted a Dark-Sky Code to help protect the night sky. It addressed such concerns as the glare and shielding of lights.

The Village of Oak Creek has been moving forward to obtain the prestigious Dark-Sky Community designation from the International Dark-Sky Association. Light surveys were done throughout the community, and Yavapai County officials are quite impressed.

In the Land Use Offices, we receive many reports of common lighting violations including: unshielded lighting, glare, light trespass onto adjacent properties and "up" lighting to bring attention to buildings or

signs. When Inspectors examine lighting on properties, they ask themselves a few simple questions to determine whether or not the lighting is compliant.

- Is the light bulb visible? If it is, this would contribute to glare from the fixture and would not be a compliant light fixture.
- How is the light aimed? If the light is aimed downward to keep all of the light on an owner's property, then the light fixture is most likely compliant.
- How many lights are there on the property? If the Inspector counts the light fixtures, and the total lumen count exceeds 20,000 lumens on a residential property, then the property is not in compliance. Even if the light fixtures themselves don't have glare and are properly aimed, this still creates a bright spot in the neighborhood, detracting from the beauty above us every night.

While you are out enjoying the evenings this fall, take a moment to check on your lights. Also, be sure to enjoy the fall meteor showers!

The Orionids are most active Oct. 21 and 22, Taurids Nov. 12 and 13 and usually the best show every fall, and the Leonids, are most active Nov. 17 and 18. Also, in the two hours before sunrise and after sunset every evening, dozens of spacecraft are flying overhead. If you are lucky, you might catch a glimpse of the International Space Station, which is one of the brightest objects in the night sky!

For more information regarding the Yavapai County Dark Sky Ordinance (Section 603), visit www.yavapai.us. If you have any questions, the Land Use and Planning Staff are ready to assist and provide guidance. They can be reached at 928-771-3214. Should you have a complaint regarding a neighbor's lights, a report can be made to the Land Use Complaint Line, 928-771-3464. For more information about spotting a satellite or the International Space Station flying overhead, visit www.heavens-above.com.



Verde Independent

10/1/2015 6:08:00 PM County amends ordinance to pave way for VOC Dark-Sky designation



The Milky Way galaxy. (pixabay)

Joanne Kendrick Chair Big Park/Village of Oak Creek Dark-Sky Committee

An amendment to the Yavapai County Light Pollution Control Ordinance was unanimously approved by the Yavapai County Board of Supervisors at the Sept. 8 meeting. District 3 Supervisor Chip Davis made the motion to approve the amendment. We appreciate the support he and his staff have given us as we pursue the International Dark-Sky Community designation for Big Park/Village of Oak Creek.

We also thank the community for their support and help in pursuing the Dark-Sky Community designation. It's been, and continues to be, a pleasure working with the community on this project.

Our goal of submitting the application to the International Dark-Sky Association (IDA) in November is still on track. Once the IDA receives the Big Park/Village of Oak Creek application, they may consider the application for up to two months before a decision is made.

Presently, we have a beautiful dark night sky. We see with our own eyes the beauty and wonder of the Milky Way's misty band of light (comprised of 200 billion stars!) arching across the night sky. The community is preserving the dark night sky today and for future generations.

b. Red Rock News/Village View - Articles on Dark-Sky

Village to seek dark-sky designation

By Ron Eland LARSON NEWSPAPERS

Last year, Sedona became just the eighth community in the world to receive dark-sky designation by the International Dark-Sky Association. So, it only makes sense that the Village of Oak Creek — which is just a few miles away

- follows suit. At the July 10 Big Park Regional Coordinating Council meeting it was unanimously voted upon that the community seek this designation. If approved, the VOC will join not only Sedona but Beverly Shores, Ind., Dripping Springs, Texas, Isle Of Coll, Scotland, Homer Glen, Ill., Isle of Sark, Channel Islands, Borrego Springs, Calif., and Flagstaff.

Joanne Kendrick, chairwoman of Keep Sedona Beautiful's Dark-Sky Committee, has been asked to serve in the same capacity during the VOC's efforts.

"I am very excited that the Big Park Regional Coordinating Council is pursuing the dark-sky community designation from the International Dark-Sky Association. The Big Park/Village of Oak Creek and Sedona share the same goals of protecting our natural resources, such as the dark night sky. We love and enjoy our dark night sky.

"It would be wonderful if it were the oal of all Verde Valley to obtain the IDA dark-sky designation by meeting the IDA requirements. I believe that goal is obtainable and I would love to continue

to be part of making that goal happen."

She said they hope to submit their application to the IDA this fall with an answer expected this time next year.

In a draft letter to residents [as well as a similar one to business owners] seeking

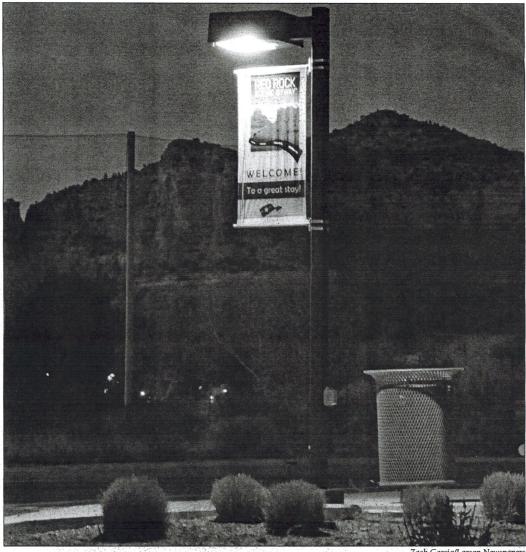
support, Kendrick wrote:
"Big Park/Village of Oak Creek is a unique and picturesque community, defined in daylight by its distinctive red rock landscape and in darkness offers a rich night sky. It is a place where on cloudless nights the Milky Way is not just visible but cuts a wide and naturally bright swath across the sky. Residents and visitors alike marvel at, and treasure, the spectacular night views of the heavens afforded by its dark skies."

She goes on to write that the Village of Oak Creek needs to protect its night skies, as they are an important part of why residents and tourists choose to live or visit here. Designation as a Dark-Sky Community would raise awareness of this natural resource and provide incentive

for its preservation.

"One of the requirements in the IDA application for a Dark-Sky Community designation is to demonstrate support from the community," she wrote. respectfully request your consideration of writing a letter stating you support the efforts of the Big Park council in pursuing a Dark-Sky Community designation for Big Park/Village of Oak Creek from the

She asked that letters of support be returned in April.



Zack Garcia/Larson Newspapers

THE VILLAGE OF OAK CREEK is seeking International Dark-Sky designation, which would make it one in only a handful of communities worldwide to have it. The designation allows communities to post the logo on letterhead and is a commitment to keeping lighting to a minimum.

According to its guidelines, an IDA Dark-Sky Community is a town, municipality or other legally-organized community such as an urban neighborhood or subdivision that has shown exceptional dedication to the preservation of the night sky through the implementation and enforcement of quality light codes, dark-sky education and citizen support to dark skies.

As for the benefits of receiving a darksky designation, Big Park Regional Coordinating Council President Steve Nelson said receiving the dark-sky designation will benefit just about everyone in the community.

"For the residents, we retain the beautiful nighttime skies that we enjoy," he said. "How often have we looked into our nighttime skies and are amazed by what we see? For our businesses, it is another marketing tool they can use in attracting tourists to our community. This designation is a win-win for both residents and businesses."

Being that Yavapai County already has an outdoor light control ordinance in place, Nelson said any homeowner or business in the Village is already grandfathered in. This means there will be no out-of-pocket costs. However, as businesses and residents upgrade their lighting, they would need to abide by the county ordinance.

"Several minor changes to the ordinance need to be made and initial discussions with the county have been positive," Nelson said. "Next, we need

support from businesses and residents. Draft sample letters have been prepared and are expected to be approved at the council's February meeting. The letter of support is a crucial piece, so we're hoping everyone will sign and return it by the deadline."

Kendrick said she learned a lot of the do's and don'ts when going through the IDA process with Sedona. She's hoping eventually all communities in the area will seek dark-sky designation.

"It's much easier this time because we're not starting from ground zero," she

Ron Eland can be reached at 282-7795, ext. 122 or by email at reland@larsonnewspapers.com

Sedona backs VOC effort in seeking dark sky designation

By Ron Eland
LARSON NEWSPAPERS

Last year, Sedona became one of eight locations in the world to receive dark-sky designation from the International Dark-Sky community. Now, the Village of Oak Creek is hoping to be added to the list.

During its Tuesday, May 12, meeting the Sedona City Council gave support to their neighbors to the south.

According to a document, when the city of Sedona was pursuing dark-sky designation, council submitted a resolution supporting the designation. Keep Sedona Beautiful is asking the city to do the same for Big Park and the Village of Oak Creek. Big Park Regional Coordinating Council is pursuing this designation and believes that the goals and strategies outlined by the IDA will promote and enhance the efforts of the residents of Big Park and the Village of Oak Creek to be good stewards of the dark sky.

One of the requirements in the IDA application for a darksky community designation is to demonstrate support from the community. Therefore, KSB and Big Park Regional Coordinating Council requested that the City Council support their efforts.

In an interview earlier this year with the Sedona Red Rock News, Joanne Kendrick, chairwoman of Keep Sedona Beautiful's Dark-sky committee, said she had been asked to serve in the same capacity during the VOC's efforts.

"I am very excited that the Big Park Regional Coordinating Council is pursuing the darksky community designation from the International Dark-Sky Association," she said. "The Big Park/Village of Oak Creek and Sedona share the same goals of their application to the IDA this fall with an answer expected early next year.

A city resolution, signed by Mayor Sandy Moriarty, states the importance of dark skies, especially in an area like Sedona, and that it takes a collaborative effort to meet that goal.

"Businesses, community groups such as Keep Sedona Beautiful, Big Park Regional Coordinating Council and others working together in order to protect and preserve the unique scenic beauty of our nighttime skies," it states. "By ultimately obtaining the designation of

being a dark-sky community from the International Dark-Sky Association the area's ability to promote and protect its dark skies will be enhanced."

It concludes by stating, "The Sedona City Council supports the efforts of Big Park Regional Coordinating Council in pursuing a Dark-Sky Community Designation for Big Park/Village of Oak Creek. The International Dark-Sky Association is respectfully urged to consider formally designating Big Park/Village of Oak Creek as a dark-sky community."

VOC Works to Get Dark-Sky Designation

Written by Ron Eland September 3rd, 2015



<u>±</u>

Jordan Reece/Larson Newspapers

Jordan Reece/Larson Newspapers The Big Park Regional Coordinating Council is continuing its efforts in seeking dark-sky designation for the community through the International Dark-Sky Association. If successful, the Village of Oak Creek will be one of less than a dozen locations around the world to earn the designation, which Sedona received in 2014. Earlier this year, residents and business owners were asked to write letters of support, which according to organizers, was successful.

It's been a little more than a year since the Big Park Regional Coordinating Council voted unanimously to seek a designation their neighbors to the north received months earlier.

That designation was dark-sky compliance as set forth by the International Dark-Sky Association, making Sedona just one of a handful of areas or communities in the world to receive it.

Joanne Kendrick, a member of Keep Sedona Beautiful who oversaw Sedona's designation process, was asked last year to do the same for the Village of Oak Creek. Over the last year, she said they have made a lot of headway in the VOC with their goal to submit the IDA application in November.

Currently, Yavapai County officials are proposing changes to the light pollution control ordinance to comply with the dark-sky designation.

"The proposed changes to the Yavapai County Light Pollution Control include definitions for adaptive controls and of International Dark-Sky Association, creating an amendment requiring all lights to be shielded, including public buildings, and setting a standard for streetlights within subdivisions," Kendrick said.

The proposed changes were heard by the Yavapai County Planning and Zoning Commission in Cottonwood and in Prescott. The Yavapai County Board of Supervisors will hear the recommendation of the commission at its Sept. 8 meeting in Prescott, with video conference available at the Cottonwood location.

Earlier this year, residents and business owners of the VOC were asked to submit letters of support for dark-sky designation. Kendrick said the response has been overwhelmingly supportive.

"They are interested in preserving our magnificent dark night sky not only for themselves, but also for future generations," she said. "The community marvels at, and treasures, the spectacular night views of the heavens afforded by its dark skies.

"When we started pursuing the dark-sky designation for the VOC, I thought the response from the community would be positive, and I have not been disappointed. It has been, and continues to be, a pleasure working with the community on this project."

According to its guidelines, an IDA Dark-sky community is a town, municipality or other legally-organized community such as an urban neighborhood or subdivision that has shown exceptional dedication to the preservation of the night sky through the implementation and enforcement of quality light codes, dark-sky education and citizen support to dark skies.

c. Keep Sedona Beautiful Newsletter



Preserving the WonderTM

Spring 2015

KSB's Quarterly Environmental Message: In Sedona, the Environment ...IS...the Economy.

- KSB receives Dark Sky Award, 2
- Speaker Series Schedule, 2
- 5-Year Business Sponsors, 3



PRESIDENT'S MESSAGE: DREAMS DO COME TRUE!

KSB knows! Because it made a long-term dream of KSB come true!

Have vou wondered what it really takes to make a dream such as the International Dark Sky Designation for the City of Sedona come true? Wishing, hoping and dreaming are great. However, it takes more than a wish to have dreams become reality. It requires a collaborative approach by all involved. Many hundreds, even thousands of volunteer hours are expended in research, community outreach and development of the final request.

The Sedona community has always wanted to keep our night skies as free from light pollution as possible to preserve our view of the universe. Former KSB Boards and members had worked to have outdoor lighting ordinances in place that help protect our magnificent dark skies.

Recently Keep Sedona Beautiful (KSB) took the lead role in applying for the dark sky designation from the International Dark Sky Association (IDA). The KSB team, with City of

Sedona staff assistance, worked tirelessly, clocking thousands of volunteer hours. There were no paid consultants or marketing professionals. This was an ambitious effort by your fellow citizens who believed that Sedona qualified for the designation.

Due to the efforts of so many, the city of Sedona became the eighth city in the world to receive this special designation. A team of KSB volunteers, led by Board of Director member Joanne Kendrick with energetic assistance from Birgit Loewenstein and other members of KSB, in collaboration with the City of Sedona council and staff, were able to complete the Herculean task of making the dream of a designation come true.

What did it really take? The application with related attachments was over 300 pages in length. Numerous presentations were given to community groups and business organizations in order to gain community support. A team of KSB members went out at night to survey current lighting conditions. Joanne Kendrick and others used specialized equipment to take measurements of Sedona's lighting impact on our skies.

Continued on page 4



10,000+ VOLUNTEER HOURS OVER 5,000 HOURS LITTER LIFTING

Yes! We are relevant and will continue to be so as long as stewardship, preservation, quality of life and caring for our community are important to our daily lives and future generations.

Dark Sky Defender Award 2

KSB Speaker Series 2

Good News! 2

Five-year Business Sporspors 3



Dark Sky Defender Award

The International Dark Sky Association (IDA) Board of Directors decided unanimously to present Keep Sedona Beautiful with an IDA Dark-Sky Defender Award.

The Dark Sky Defender Award is given to individuals and organizations in appreciation for their efforts for the IDA and its mission of preserving our night skies by promoting quality outdoor nighttime lighting.

Many past awardees have led strong campaigns for public awareness and outdoor lighting laws. Awardees are selected by the IDA board and managing directors.

Every year many volunteers from all over the world show remarkable dedication and initiative to the IDA mission:

The mission of the International Dark-Sky Association (IDA) is to preserve and protect the nighttime environment and our heritage of dark skies through environmentally responsible outdoor lighting.

THE KSB SPEAKER SERIES IS ALWAYS MEANT TO BE A SOURCE OF EDUCATION AND WONDER.

Please mark your calendars for the 2nd Wednesday evening from 5:30pm - 7pm at KSB for these interesting upcoming presentations.

Be sure to join us, meet new friends, enjoy delicious appetizers donated by El Rincon Restaurante Mexicano and find out how you can get involved to help keep Sedona beautiful.

April 8

The popular documentary film "Bag It", which offers an entertaining and highly informative narrative of one man's investigation into the role and impacts of plastics of all forms on our lives.

May 13

The Reptiles and Arachnids of Sedona.

June 10

Partnering with Animals to Heal Nature and its Eco systems.



GOOD NEWS!

The Big Park Regional Coordinating Council (Big Park Council) is pursuing a Dark-Sky Community designation for Big Park/Village of Oak Creek (VOC). A Big Park/VOC Dark-Sky Committee was formed, and is working on items needed for the application to the International Dark-Sky Association (IDA).

Big Park/VOC, sharing the same goals of resource protection as the City of Sedona, is motivated in part by the City's recent IDA Dark Sky designationwe love and enjoy our dark night sky!

Big Park/VOC's Dark Sky Committee is hopeful that once

the Dark Sky designation is obtained, other Verde Valley communities will also seek to obtain the IDA Dark-Sky Community designation by meeting the IDA requirements. I believe that goal is obtainable, and will continue to work to achieve additional Dark Sky designations for other communities of Verde Valley.

Joanne Kendrick

Chair, KSB Dark-Sky Committee Chair, Big Park/VOC Dark-Sky Committee

KSB Celebrates and Acknowledges Support of 16 Five-Year Business Sponsors

KSB is grateful to its many sponsors and volunteers. However, at the core of this support for one of Sedona's principal not-for-profits are KSB's sixteen business sponsors who have contributed a minimum of \$250/year continuously for the last five years.

KSB is very grateful for this generous and loyal support. You, too, can thank them when electing service providers and/or making your purchases!



KSB RAISES \$7,000 Keep Sedona Beautiful's 36th Annual Native Plant Workshop, held Saturday March 28th at West Sedona School, raised nearly \$7,000, funds so critical to KSB's many environmental programs. The funds originated from 78 silent auction items donated by KSB's business sponsors and members. In addition to these donated resources, KSB volunteers contributed over 1000 hours to ensure the event's success.

Over 100 participants heard keynote speakers Prescott College professor and naturalist, Walt Anderson, and Janie Agyagos, Red Rock Ranger District wildlife biologist. Seven special workshops included topics of interest to garden/plant enthusiasts, and also to new residents anxious to learn about their Southwestern botanical surroundings.



MEMBER NAME

PHONE:

JOIN/RENEW

Keep Sedona Beautiful
Environmental Stewards Since 1972

Keep Sedona Beautiful, Inc. is a 501(c)(3) organization. Contributions are tax-deductible within the limits of the law.

Our Mission: Keep Sedona Beautiful, Inc., acting through the stewardship of its members and volunteers, is committed to protect and sustain the unique scenic beauty and natural environment of the Greater Sedona Area.

MEMBER HAME.			
MAILING ADDRESS:			
CITY:	STATE:	ZIP:	

(KSB is an environmental organization. To conserve paper, ink and other natural resources, and to reduce our carbon footprint, we communicate electronically whenever possible.)

____ I prefer to remain anonymous in public membership lists ____ I am interested in volunteering. Please contact me.

Keep Sedona Beautiful, Inc.

2014 BOARD OF OFFICERS

Tom O'Halleran, President

Norris Peterson, Executive Vice President

Carolyn Peterson, Secretary Abbie Denton, Treasurer

2014 TRUSTEES

Dave Norton Ernie Strauch
Bill Pumphrey James Eaton
Georgia Munsell Mike Yarbrough
Jan Bigelow Joanne Kendrick

Office Manager: Jan Wind

Executive Assistant: Wendy Heald



2008 Garrett Dauphars - Autumn - Honorable Mention Professional Color

KEEP SEDONA BEAUTIFUL 360 BREWER ROAD, SEDONA, AZ 86336

INVITATION TO OUR MEMBERS:

If You Care About the Beautiful Nature that Surrounds Sedona, THEN IT'S YOU WE ARE LOOKING FOR!

Put your special volunteer talents to work for the greater good of Preserving the Wonder™!

www.KeepSedonaBeautiful.org or call KSB at 928-282-4938

Continued from page 1

This provided quantitative evidence to the IDA that we met or exceeded their requirements.

There were frequent meetings between KSB and the city staff to finalize the application process. New city standards protecting our night skies into the future were implemented by Mayor Rob Adams and the Sedona City Council. Cooperation with the IDA was critical and took place on a regular basis.

However, the dream does not stop

here. The KSB Dark Sky Committee is now assisting the Big Park Regional Coordinating Council and Red Rock State Park to obtain their IDA designations.

The KSB Dark Sky committee continually works with the City to ensure IDA designation requirements are in compliance. Special night sky viewing presentations, open to the public, are ongoing and will continue. After what we anticipate to be successful dark sky designations for the Village of Oak Creek and Red Rock State Park,

the committee will be reaching out to other communities in the Verde Valley to help them seek the designation.

Making a dream come true really takes commitment, leadership, volunteers and hours of effort, from people who want to preserve the quality of life we all have come to cherish and enjoy. That is why the long-awaited Dark Sky dream has become reality.

- Tom O'Halleran, President

THANKS TO KSB's BUSINESS SPONSORS WHOSE FINANCIAL SUPPORT HELPS US TO MAKE A DIFFERENCE

































otography_derekvonbrieser

GREEN









SedonaFit











































Anderson Landscape Consulting



Arizona Shuttle.com

















