The Cameron County Dark Sky Park Virtual Meeting will start shortly



6:00 Presentation – general Q&A

- Sign in to the chat box (name and affiliation)
- Type your question into the chat box
- AfterReview displays on-line using the following link
(https://www.lardnerklein.com/cameron-dark-sky) and submit comments
buy email to: darkskypark@lardnerklein.com



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Help us Plan for the Cameron County Dark Sky Park

6:00 PM Virtual and In-Person

- Overview Presentation: Cameron County Dark Sky Park
- Q&A/discussion

7:00 PM In-Person

- View displays and talk to the planning team members
- Provide comments and suggestions

7:30 PM Adjourn



The focus of this meeting will be to review the initial draft master site plan generated from ideas suggested by the planning committee and from the June 6 public meeting.



Cameron County Dark Sky Park Context

Emporium



1 Nearby Bike, Hike, and Ski Trails (DCNR)





3 Existing Site Conditions









3 Existing Site Conditions



View west from upper meadow



View west toward lower meadow



3 Existing Site Conditions



Looking south-west from group viewpoint



Looking south from upper viewpoint



3 Proposed Master Site Plan











4 Dark Sky Viewing

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D. Upper Viewing Area

Night Sky

Access

Path

Observatio

Access

Path

Min- Line and the sender of

Hilltop Night Sky

Observation Station

Paver

Access

Paved

Access

Path

E. Group Viewing Area















Guidelines for Pavilions:

- locate away from landfill cap (no excavation for footings within cap area
- use roof for solar energy
- no lighting within open
 shelter if located in open
 area



















5 Wildlife Viewing











Retrofit existing lighting Host outreach events Collaborate to encourage the expansion of night sky

Submit documentation of all

efforts in an IDSP Annual

protection

Maintain Certificate in

Good Standing

Built Environment Category:

- Provides a nighttime experience of reduced light pollution
- · Utilizes effective lighting polices that use light only when necessary and create safe public spaces
- · Protects nearby areas that depend on natural darkness.

events

Community or Populated Area









Nighttime public access and outreach

Dark-Sky Friendly Lighting Policy









Steve Conard PA Wilds Astronomy Club

- The Milky Way is visible to the unaided eye
- · There are no artificial light sources nearby with significant glare
- Any light domes are dim, resisticted, and closer to the horizon

Park or Protected Land with sky quality above or close to 21.1 mags/arcsec Zenith Luminance AND



Land is Legally Protected



 \checkmark

Nighttime Lighting & public access Restoration and outreach Examples events



Protected, exceptionally dark sky

- Land is legally protected \checkmark
 - Nighttime public access and

outreach events

Lighting & restoration examples

Emporium Sky Darkness Measurements

Steve Conard PA Wilds Astronomy Club 14 November 2024

BLUF: Measurement Results

- Single set of measurements performed 7/31-8/1/2024, data collected once per minute all night
- Measurement indicates Bortle Blue (3 or 21.7 mags/sq-arcsec) based on about 1 hour of data
 - Weather conditions during this time period might have *marginally* degraded the results an outstanding night might give a slightly better result
 - This is a "sample of one", and must be repeated
 - This result does match current dark sky maps
- Light dome from St Marys visually estimated to be ~10° (El) x ~15° (Az) in the west
 - Possible very faint light dome from Emporium in north, mostly hidden in tree line
- Only directly visible artificial light seen from field is a cell tower to the north, but treeline, distance and low elevation make it a non-issue
 - Distance from parking lot and road make vehicle lights also essentially a non-issue

SQM Plot (mags/sq-arcsec)



Preliminary Result

- Data collected just after the end of astronomical twilight would have not had the Milky Way in the field of view, and would not have had a dewed window
- These data show a level of about 21.7, which is equivalent to Bortle Blue (Bortle Scale 3)
 - This matches what is shown for the area on light pollution maps
 - This meets the Darksky International requirement of 21.2 with margin

Measurements Required For Certification

From the Darksky International website:

- How many handheld sky quality meter (SQM) readings do we need to complete for certification?
 - It is best to take several measurements across the site to show the gradient of bright to dark areas and commonly visited stargazing locations. Readings following <u>this protocol</u> should be taken periodically throughout the year to capture seasonal sky quality variations and establish a consistent night sky quality baseline. Advocates should provide at least one full year of documentation before submitting a Place application for review.
- We'll need to get direction from Darksky on what they mean by "periodically"
- Then we'll want to put together a measurement plan to collect the full year of data required

How to provide input

- 1) Write comments on the back of this agenda and leave with the planning team
- 2) Leave sticky notes on displays or mark up directly on maps
- 3) Fill out the on-line questionnaire
- 4) Send an email to: darkskypark@lardnerklein.com
- 5) View presentation and displays here: https://www.lardnerklein.com/came ron-dark-sky

Please provide input by 12-2-24

PROPOSED MASTER SITE PLAN: PROGRAM ELEMENTS

1. IS ANYTHING MISSING? What else needs to be included and addressed in the master site plan?

2. IS THERE TOO MUCH? Should anything be removed from the draft plan due to potential issues and conflicts in gaining implementation? If so, please elaborate.

PRIORITIES

The site plan will need to be phased over time. Please list the top three priorities that should be implemented first (refer to display #3, master site plan).

OTHER GENERAL COMMENTS OR SUGGESTIONS



The presentation and meeting displays will be posted here at the time of the meeting: https://www.lardnerklein.com/cameron-dark-sky or use the QR code.

Send your comments or questions to: darkskypark@lardnerklein.com

This project is financed in part by a grant from the Community Conservation Partnerships Program and the Heritage Areas Program under the administration of the Pennsylvania Department of Conservation and Natural Resources, Bureau of Recreation and Conservation.

The Cameron County Dark Sky Park Virtual Meeting How to provide input





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to: darkskypark@lardnerklein.com

Use the questionnaire online at the QR code (left) or the URL below:

https://www.surveymonkey.com/r/darkskypark-siteplan

Back-up Slides

Original Data Collection System

- SQM-LU in environmental tube
 - Mounted to photo tripod
 - Dewcap and dew heater added
 - Leveled to ~1 degree
- USB 2.0 data to Toughbook computer, power to SQM from USB
 - Measurements recorded each minute
 - EGO battery and inverter feeding laptop
- Dew heater on SQM top
 - Powered by PWM controller (at 100%) and Celestron Power Tank Lithium
- Plastic box to protect electronics

Data Collection System (Laptop shown outside of box)



Dew Cap

Portable Sky Monitoring System ("PoSMS")

- Since our measurement this summer, the data collection system has been upgraded with these additions
 - Second wide-field SQM
 - All-sky camera
 - Infrared cloud sensor
 - Weather station
 - LiFePO battery pack (8+ hours)

