



Beyond the Stars:

*The Realities of Dark Sky
Implementation*

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Photo courtesy of Rhodes Smartt

Beyond the Stars

The Realities

Michael

STAR WARS

Community

ment Director

Photo courtesy of Rhodes Smartt

OVERVIEW

KEY TOPIC AREAS

- **APPLICATION REVIEW:** COMMON CHALLENGES, INTERPRETATION ISSUES, AND APPLICANT EDUCATION
 - **CODE ADOPTION REALITIES:** POLITICAL, CULTURAL, AND OPERATIONAL CONSIDERATION
 - **ENFORCEMENT STRATEGIES:** COMPLIANCE TOOLS, LIMITATIONS, AND LESSONS LEARNED
 - **PRACTICAL TAKEAWAYS:** FOR SMALL AND RURAL COMMUNITIES

LEARNING OBJECTIVES

- IDENTIFY COMMON CHALLENGES IN APPLYING, ADOPTING, AND ENFORCING DARK SKY LIGHTING CODES
- EVALUATE PRACTICAL STRATEGIES FOR MOVING FROM POLICY ADOPTION TO CONSISTENT IMPLEMENTATION
 - APPLY LESSONS LEARNED TO IMPROVE CLARITY, COMPLIANCE, AND ENFORCEMENT

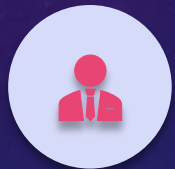
AUDIENCE POLLING



DarkSky International



Considering
Applying/Adopting



Currently
Applying/Adopting



Approved
Regulations/Certified
Community



WHY & WHAT IS DARKSKY

Reducing artificial light at night that causes light pollution

What is DarkSky International & what does it value?

Certification programs

Easy-to-understand principles & policies

General Goals of DarkSky Policies

- Provide a roadmap for Responsible Outdoor Lighting
- Prescribes light where and when needed
- Implemented through building codes
- Reduce energy waste & costs
- Increase safety

APPLICATION FRAMING & PROCESS FOR COMMUNITIES

- Certify incorporated or unincorporated communities, towns, municipalities, etc.
- Must be able to adopt and enforce an outdoor lighting policy
 - For unincorporated communities, the policy must be passed at the next level of authority...e.g. the county
- Must also
 - Conduct lighting audit or inventory of community-owned lighting (if utility managed but city-owned, still included)
 - Carry out education and outreach (in person, online, printed materials like mailers, flyers, etc.)
 - Sky quality measurement surveys
 - Gather community support



BUILDING AN APPLICATION

Category

Requirements

City code

- ✓ Lighting code meets minimum requirements
 - 3000K max CCT
 - Fully shielded (no light above 90 degrees)
 - Amortization period
 - Signs, outdoor recreation, etc.

City compliance plan

- ✓ Streetlights
 - City-owned
 - Utility-owned
- ✓ City properties
- ✓ Community outreach/incentive

Community support

- ✓ Nomination
- ✓ Letters of support

Education

- ✓ Two events annually
- ✓ Photos of events
- ✓ Documentation of outreach

Evidence of light pollution control

- ✓ Documentation of changes
 - City
 - Residential
 - Businesses

Measurement program

- ✓ Track sky quality
- ✓ Volunteer program



PUBLIC PROCESS & APPROVALS



Optics vs
Reality



Special
Provisions



Adoption &
Amortization



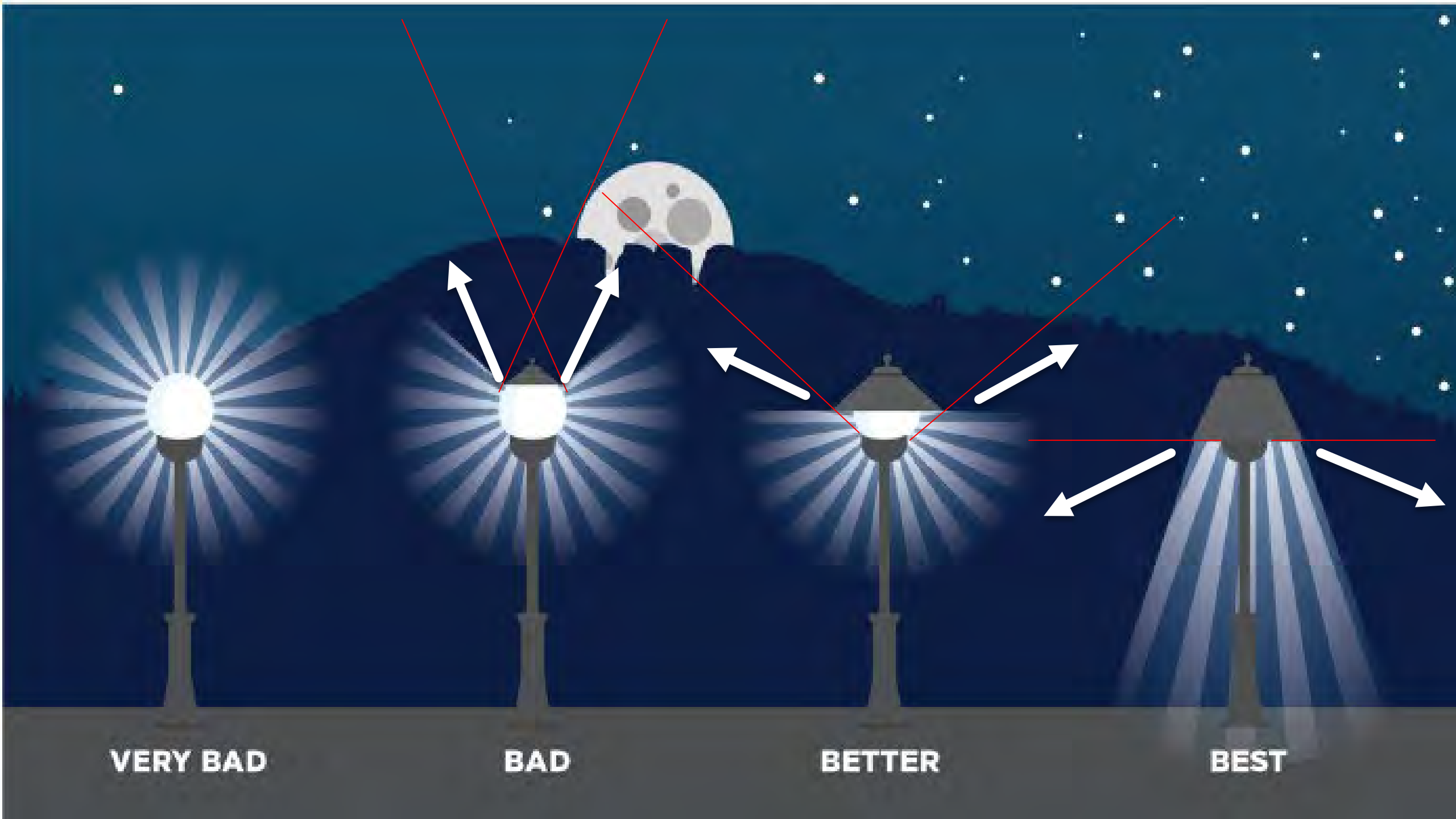


VERY BAD

BAD

BETTER

BEST



VERY BAD

BAD

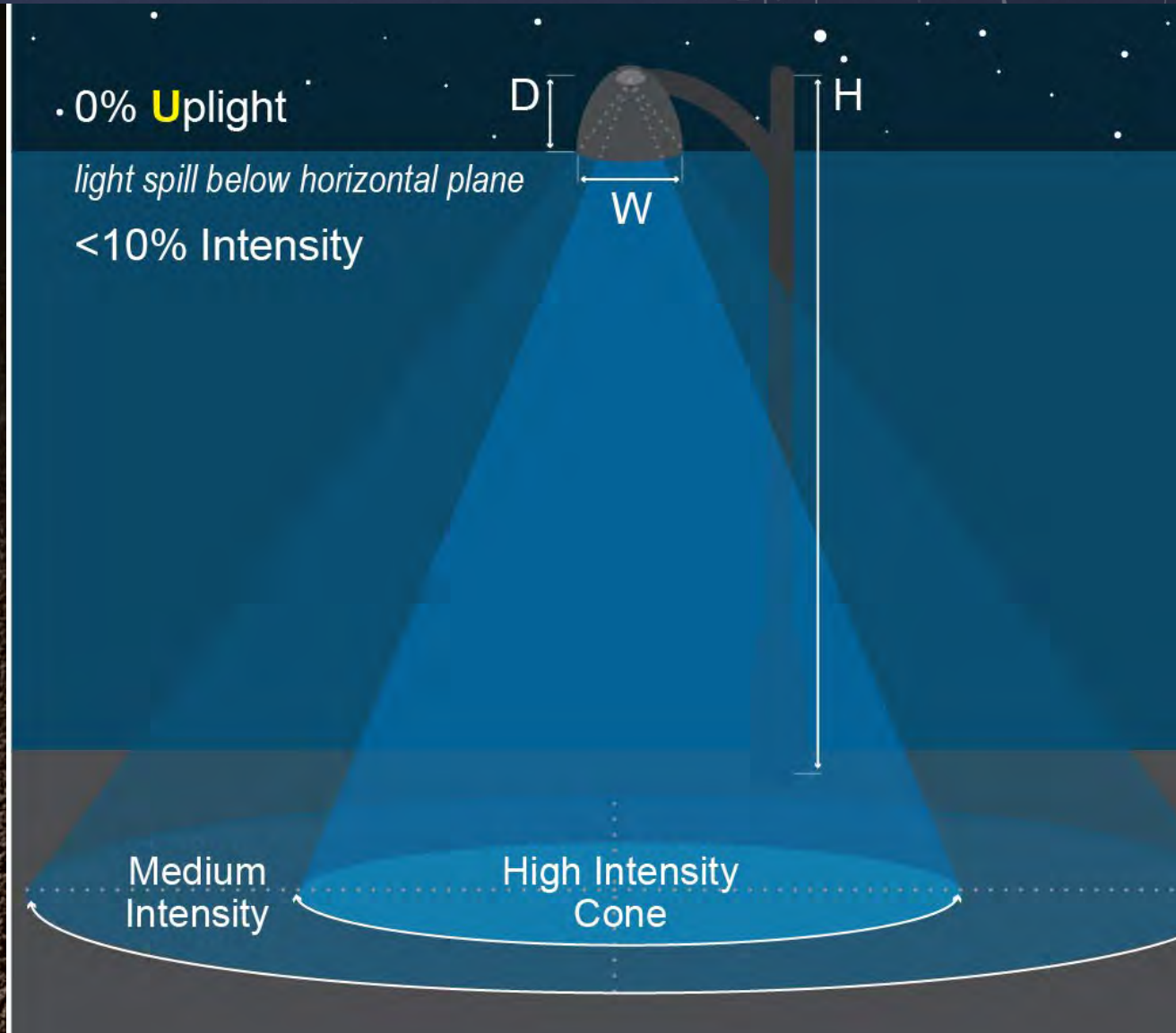
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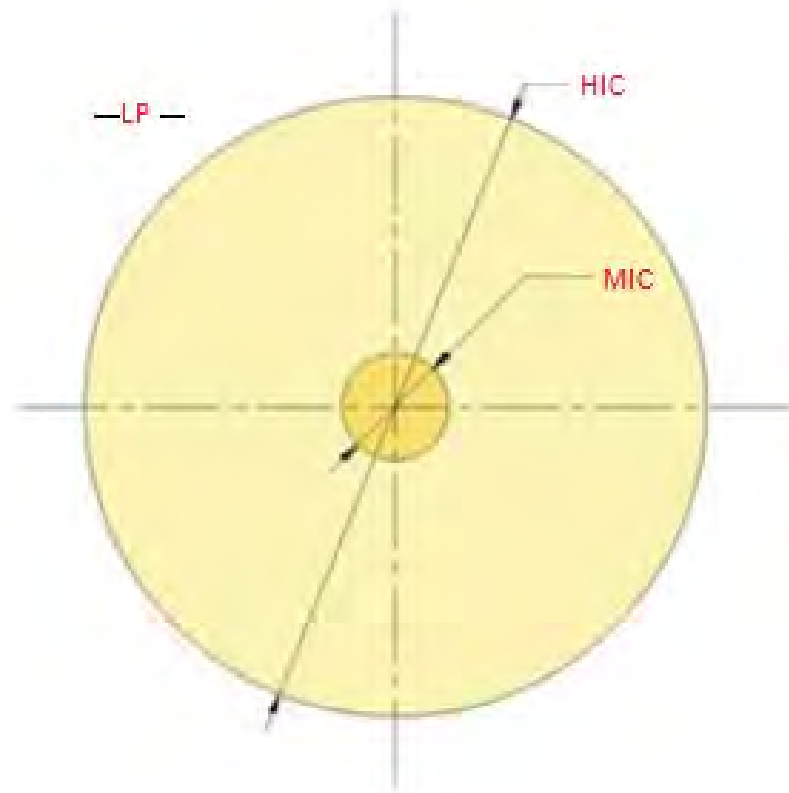
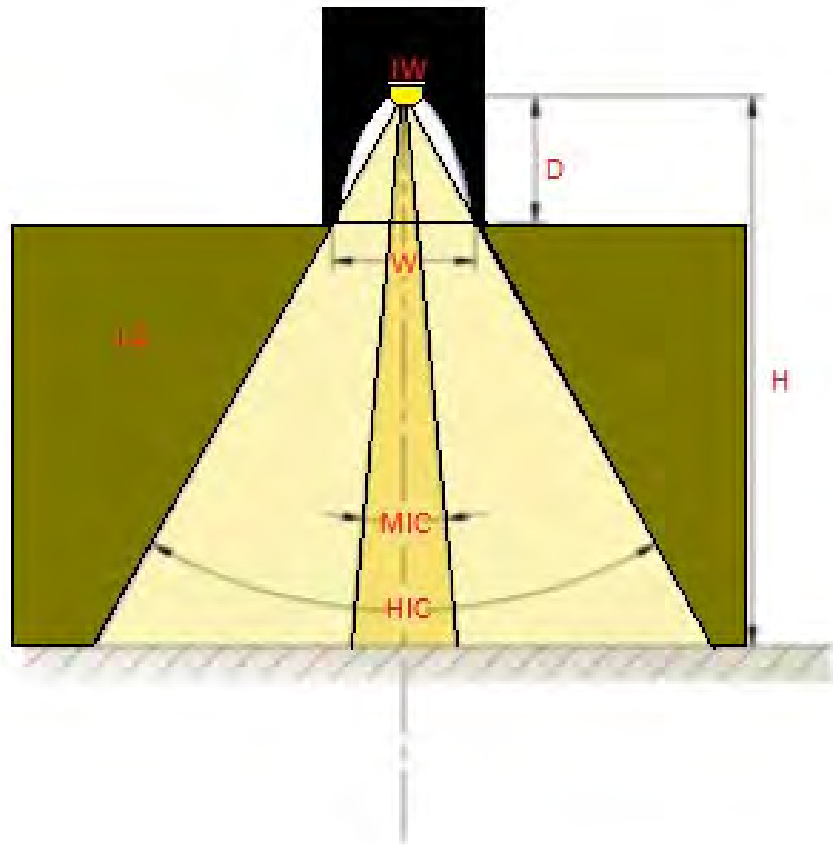
DIRECT ILLUMINATION



Photo credit: Cory Shurtleff



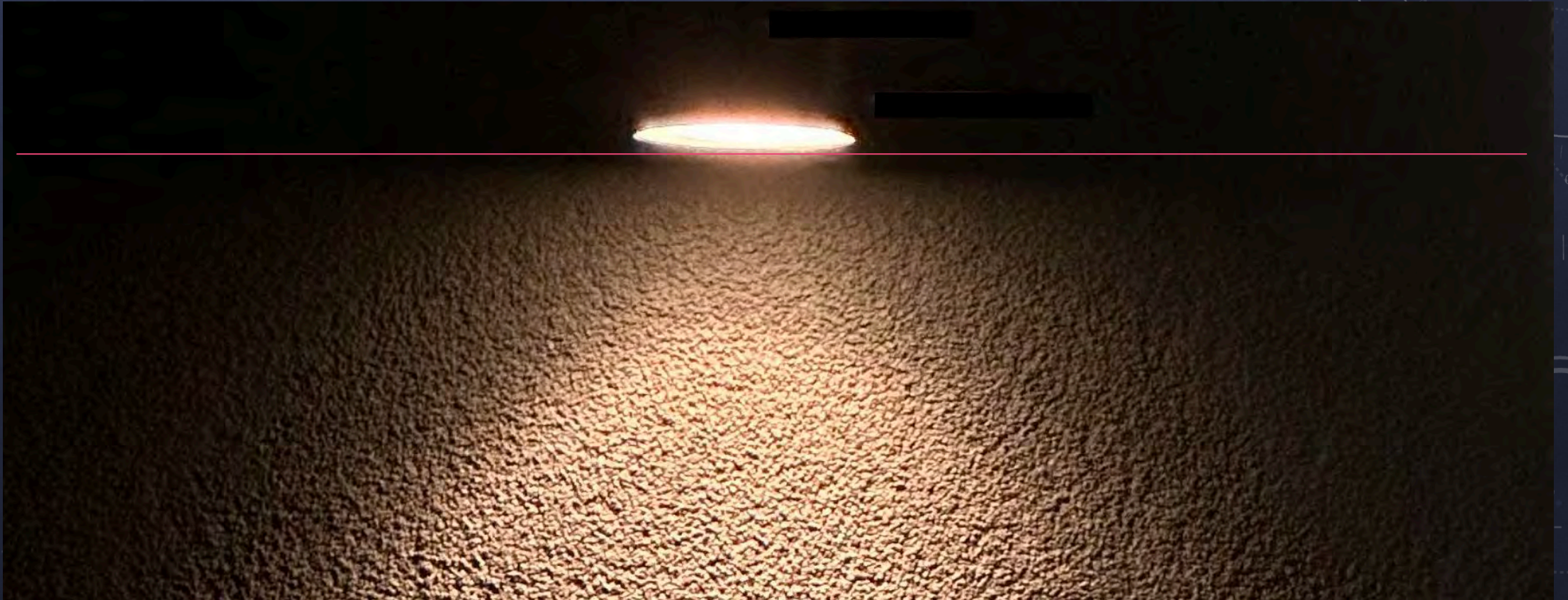
DIRECT ILLUMINATION



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DIRECT ILLUMINATION



TEMPORARY & STRING LIGHTING



SAFETY LIGHTING



Challenges

- Legal, Non-Conforming
 - Compliance Trigger
- New Construction
 - Education
- Nuisance Lighting
- Amortization
- + Staffing
- + Continued support

Better Night Light

Join the City of Moab with updated lights



1 Necessity— place light where it's needed

2 Amount— choose the right brightness

3 Direction— point light downward

4 Time— turn off non-conforming lights at 10 PM
and commercial light an hour after close

5 Color— embrace a warm white glow (3000 Kelvin or less)



Visit moabcity.org/sustainability
or see Moab Municipal Code 17.09.060-17.09.069 for details.

IMPLEMENTATION & ENFORCEMENT

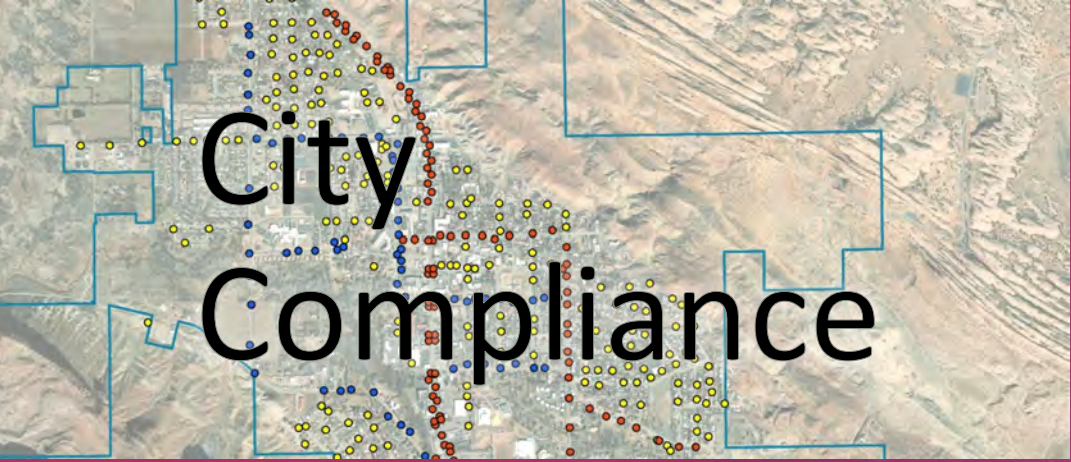
- Public Facilities & Land Use Code Regulations
- Residential
- Commercial
- Complaint vs Policing

Community Compliance

- Nuisance Lighting
 - Special Provisions
- Legal, Non-Conforming
 - Residential
 - Commercial
- Amortization
 - Immediate Termination vs Standard Zoning



Image: Ft. Collins



City Compliance

BEFORE

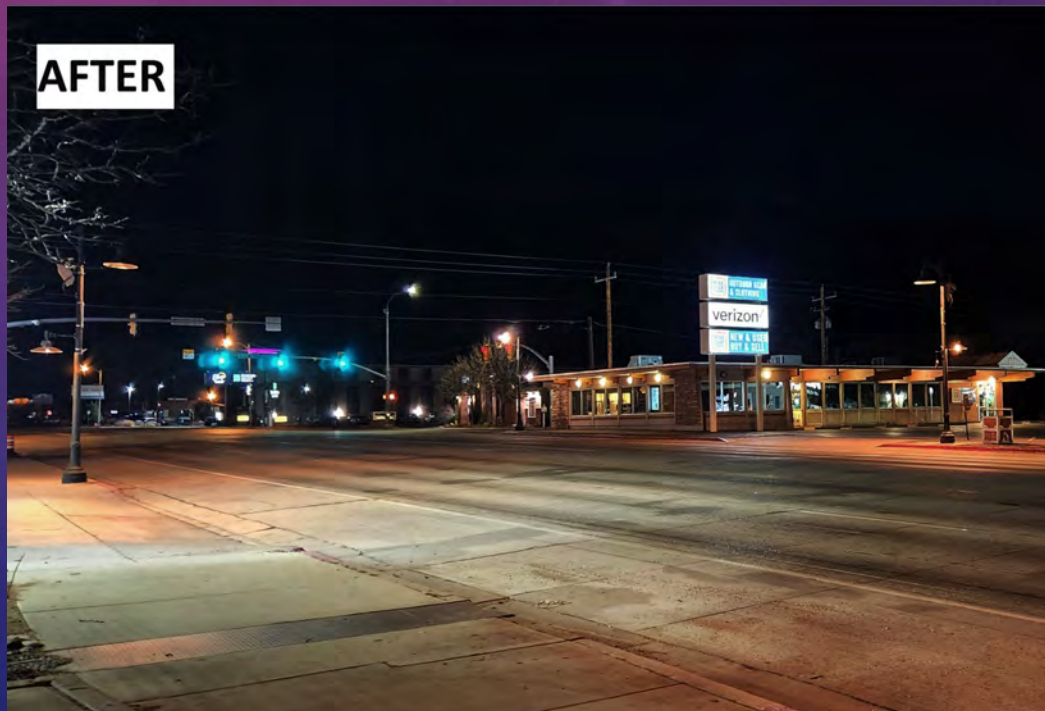


BEFORE



AFTER

AFTER



Commercial

- Total Light Output



50,000 LUMEN PERMITTED PER DEVELOPED ACRE -
REF 17.09.064

LOT SIZE	2.65 ACRES
PERMITTED	132,500 LUMENS
PROVIDED	114,810 LUMENS

	BOLLARDS	WALL SCONCE (TO REPLACE EXISTING LOCATIONS)	PORTE COCHERE PENDANT (TO REPLACE EXISTING LOCATIONS)	ENTRY DOWNLIGHTS	STRING LIGHTS
LUMEN	125	1,000	10,000	1,500	42
# FIXTURES ON SITE	10	60	4	4	180
LUMEN TOTAL	1,250 LUMENS	60,000 LUMENS	40,000 LUMENS	6,000 LUMENS	7,560 LUMENS (<13,250 LUMENS ALLOWED, COMPLIES)

Residential

- Complaint vs Policing





Q&A Session



THANK YOU!

MAY THE FORCE BE WITH YOU