

# **CITY OF ALAMOSA PLANNING COMMISSION**

January 24, 2024  
6:00 PM  
Council Chambers, 300 Hunt Avenue

***Mission Statement: We are committed to providing balanced, effective and efficient public services for our residents, visitors and businesses by cultivating a vibrant, resilient and livable city.***

Any person needing reasonable accommodation to attend or participate in a public meeting, please contact the Alamosa City Clerk's office by telephone (719) 589-2593, by email [cityclerk@ci.alamosa.co.us](mailto:cityclerk@ci.alamosa.co.us), in person at 300 Hunt Avenue, or by mail at POB 419, Alamosa, CO 81101.

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## **AGENDA**

### **I. Call to Order**

### **II. Roll Call**

### **III. Agenda Approval**

### **IV. Approval of Minutes**

A. Minutes from October 25, 2023

### **V. Public Comments**

### **VI. Regular Business**

Election of Chairperson & Vice Chair Person as required by City Charter Article XIV, Section 1.

2024 Three Mile Annexation Plan Adoption

First Session - Proposed Code Amendments for Dark Sky-Compliant Lighting

### **VII. Staff Updates**

### **VIII. Adjournment**

# ALAMOSA PLANNING COMMISSION COMMISSION COMMUNICATION

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**Subject/Title:**

Minutes from October 25, 2023

**ATTACHMENTS:**

Description		Type
▢	Minutes from October 25, 2023	Minutes

**Planning Commission**  
**October 25, 2023**  
**6:00 p.m.**  
**Minutes of the Meeting**

The regular meeting of the Planning Commission was called to order on October 25, 2023 at 6:01 p.m. by Chairman Mark Manzanares. Present were the following members: Mark Manzanares, John Adams, Kindra Lambert, Sandra Ortega and Ralph Symbleme. A quorum was declared. Excused was Reyna Martinez. Staff present: Deacon Aspinwall, Rachel Baird, Nicole Valdez.

**Agenda Approval: M/S/C.** Lambert/Symbleme Motion to approve agenda as presented. All in favor, none opposed.

**Approval of the Minutes: M/S/C.** Symbleme/Ortega Motion to approve minutes of the September 27, 2023 meeting as presented. All in favor, none opposed.

**Public Comments:**

Dani Robben, (SLV GO) 2906 Sarah Lane Alamosa. Speaking to the Planning Commission regarding Sangre de Cristo Dark Sky Reserve. Would like to speak more and be added to a future agenda.

Richard, (Alamosa County Land Use) Speaking on behalf of Sangre de Cristo Dark Sky Reserve.

**Regular Business:**

Fencing Height Proposed Changes

Staff Member, Aspinwall goes over the staff report.

Symbleme makes a motion, "For vacant lots, 6 foot fences can be allowed on all property lines. Must be moved when the front building lines are established." M/SC.Adams second. Five in favor, one sustained.

**Other Business:**

A. Staff Updates:

- 1) Combine November and December meetings due to the holidays. December 13, 2023 will be the next meeting.

- 2) Levee- Early stages of making changes.
- 3) Walsh Building demolished
- 4) Deacon attended training.
- 5) Rapid Flashing Beacons-CDOT

B. Code Enforcement Updates: Captain Maestas reports that the department is gearing up for winter.

After no further business, the meeting was adjourned at 7:00 p.m.

Respectfully Submitted,

Nicole Valdez  
Recording Secretary



**ALAMOSA PLANNING COMMISSION  
COMMISSION COMMUNICATION**

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**Subject/Title:**

Election of Chairperson & Vice Chair Person as required by City Charter Article XIV, Section 1.

**Relevant Code:**

**ARTICLE XIV. - PLANNING AND ZONING**

**Section 1. - City Planning Commission.**

There shall be a City Planning Commission which shall consist of five members appointed by the Council, one member chosen from among the residents of each of the four wards, and one member chosen at large. The members shall serve without compensation, shall hold no other municipal office, and shall have been residents of the City for at least two years prior to their appointment. The terms of the members shall be five years. The members serving on the Planning Commission at the time of the amendment of this section shall continue to serve until the expiration of their terms, excepting the Mayor, the City Manager and the two Council members designated by the Council whose terms of office as members of the Planning Commission shall terminate at the time of passage of the amendment. Any vacancies on the Commission shall be filled by the Council. The Planning Commission shall elect its chairman annually from among its members, and shall have authority to employ such assistance and technical advisors as it considers necessary within the limits of its budget authority. The City Manager or his designee shall act as the secretary of the Planning Commission.

# ALAMOSA PLANNING COMMISSION

## COMMISSION COMMUNICATION

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### **Subject/Title:**

2024 Three Mile Annexation Plan Adoption

### **Background:**

In 1987, the Colorado legislature made changes to annexation law limiting municipal annexations to no more than three miles beyond the current municipal boundary in any given year. Municipalities in Colorado are required to adopt a three-mile plan prior to annexing additional property into their territorial boundaries per C.R.S. 31-12-105 et. seq. The three-mile plan is a document that outlines where municipalities intend to annex property and describes how they will ensure the adequate provision of municipal services within the newly annexed territory and the remainder of the existing city.

State law provides municipalities with the ability to consider extraterritorial property up to three miles from the current municipal boundary for annexation. It has been the past practice of the of the City to focus on infill development and limit the consideration of annexation properties to no more than one mile beyond the existing boundary.

The three-mile plan is a long range planning opportunity for municipalities to consider where they want to annex, how they will provide service in the newly annexed areas, and how they will sustain adequate levels of service throughout the rest of the municipality. It ensures that the municipality will annex land only when it is consistent with pre-existing plans for the surrounding area. It also outlines any issues and conditions that may need to be addressed with future annexations.

The 2024 3-Mile plan is attached for reference. There are no changes between this year's plan and last year's, excepting for the date.

### **Analysis and Impact:**

The most important consideration for Planning Commission should be the zoning designation subsection for each annexation area. Since annexation applications are not required to go before Planning Commission, the envisioned zoning designations in the plan are the appropriate time for Planning Commission to pre-determine how future annexation will develop, and by extension, what uses will be allowed once annexed. Since most approvals are now handled administratively as opposed to going before Planning Commission, determining the zoning designations correctly is very important. In order to determine the zoning designations, staff used the following rationale:

1. Comprehensive Plan comments and visioning
2. Existing uses within the city and compatibility with adjacent uses
3. Targeted areas for future growth of Commercial, Residential, Industrial, and Agricultural uses
4. Hierarchy of needs of land uses (ex. Residential over Commercial)
5. Existing/required utility extensions and needs and capacity to serve future growth
6. Reducing conflicts with existing uses/zoning within the County

### **Recommended Action:**

Does Planning Commission wish to recommend that City Council approve the 2024 Three Mile Annexation Plan as presented?

**Alternatives:**

Planning Commission can recommend edits or revisions and give further direction to staff.

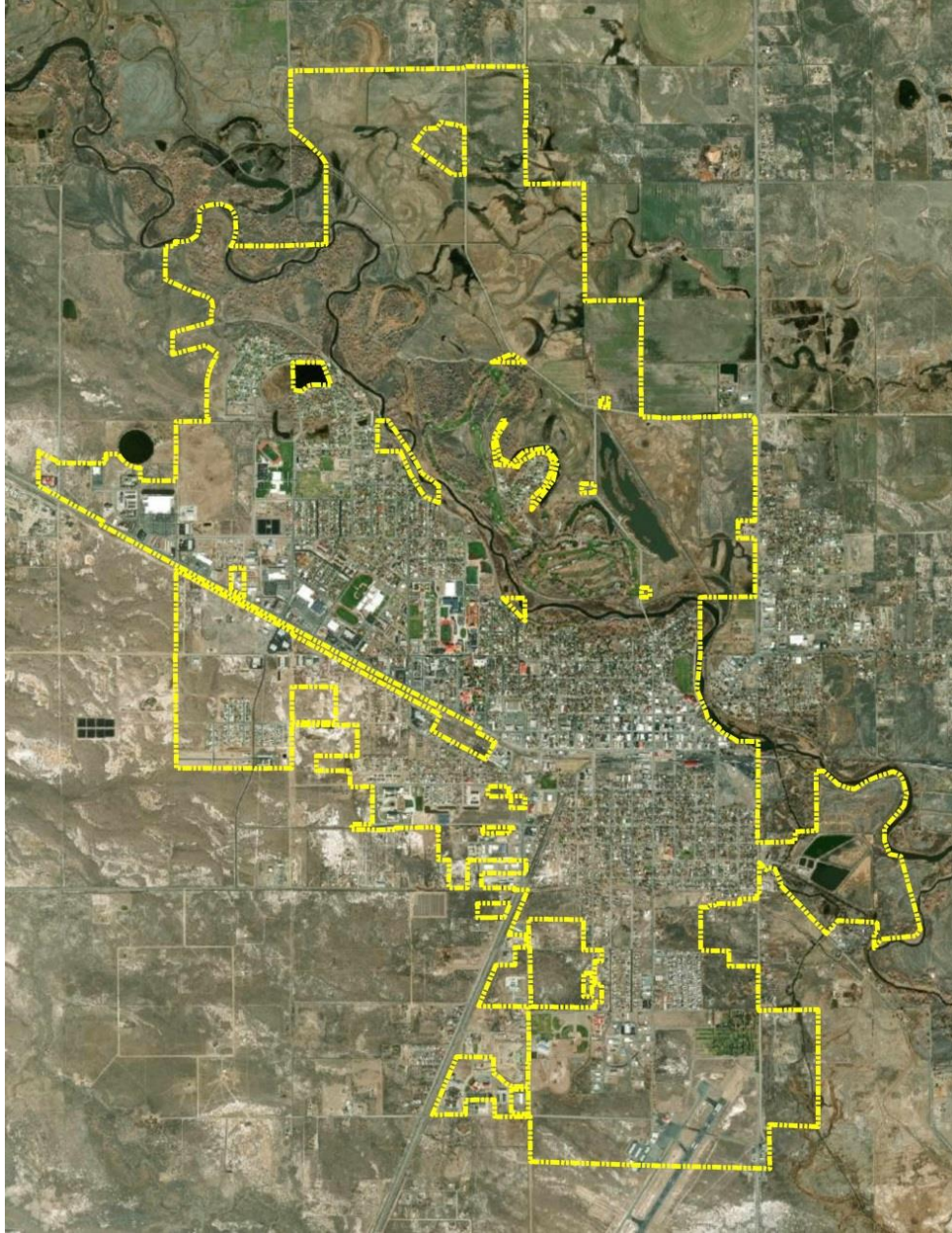
**Relevant Code:**

Municipalities in Colorado are required to adopt a three-mile plan prior to annexing additional property into their territorial boundaries per Colorado Revised Statutes 31-12-105 et. seq.

**ATTACHMENTS:**

Description		Type
▣	2023 Three Mile Annexation Plan	Backup Material
▣	DRAFT 2024 Three Mile Annexation Plan	Reports

## CITY OF ALAMOSA

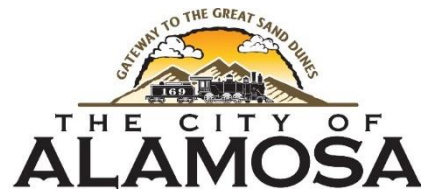


2023

THREE MILE ANNEXATION PLAN

# CITY OF ALAMOSA

## 2023 THREE MILE ANNEXATION PLAN



The City of Alamosa  
Department of Development Services  
P.O. Box 419  
300 Hunt Avenue  
Alamosa, Colorado 81101  
(719) 589-6631

Adopted 01 February 2023

## CONTENTS

<b>I. ADOPTION RESOLUTION .....</b>	<b>1</b>
<b>II. CITY OF ALAMOSA THREE MILE ANNEXATION PLAN .....</b>	<b>2</b>
Introduction and Purpose of the Three Mile Plan.....	2
Introduction .....	2
Purpose .....	2
Criteria for Annexations .....	3
Guiding Policy .....	3
Study Area .....	3
Discussion.....	4
<b>III. PLANNING AREAS .....</b>	<b>4</b>
Area 1 - NORTHWEST ALAMOSA.....	4
Area 2 - WEST ALAMOSA .....	6
Area 3 - SOUTHWEST ALAMOSA .....	7
Area 4 - SOUTH ALAMOSA INFILL AREAS.....	9
Area 5 - AREA ADJACENT TO THE SAN LUIS VALLEY REGIONAL AIRPORT .....	10
Area 6 – SOUTHEAST ALAMOSA .....	10
Area 7 – NORTHEAST ALAMOSA.....	11
EAST ALAMOSA (Area 8) .....	11

## LIST OF EXHIBITS

Exhibit A - 2023 Three Mile Plan Map .....	13
Exhibit B - 2023 Three Mile Plan Map with 1-Mile Area of Influence.....	13

# **THREE MILE ANNEXATION PLAN**

## **I. ADOPTION RESOLUTION**

## II. CITY OF ALAMOSA THREE MILE ANNEXATION PLAN

This document constitutes the Three Mile Plan for the City of Alamosa, Colorado, as required by and in conformance with Section 31-12-105(1)(e) of the Colorado Revised Statutes (CRS).

### Introduction and Purpose of the Three Mile Plan

#### Introduction

The three-mile plan is a long range planning opportunity for municipalities to consider where they want to annex, how they will provide service in the newly annexed areas, and how they will sustain adequate levels of service throughout the rest of the municipality. It ensures that the municipality will annex land only when it is consistent with pre-existing plans for the surrounding area.

The failure to plan for the physical growth of a municipality can result in haphazard annexations that prove expensive to the municipality annexing the land, the county in which the land is located and the neighboring communities.

The statute above requires a three-mile plan to generally describe the proposed location, character and extent of future public utilities and infrastructure (e.g., streets, bridges, parks, playgrounds, aviation fields, waterways, open spaces and other public grounds) as well as proposed land uses for the area. The comprehensive plan takes into account all land that is functionally related to the growth of the municipality, not just land within three miles of the municipal boundary. The City's comprehensive plan addresses these elements required for a three-mile plan. The City's three-mile plan is intended to be consistent with the comprehensive plan, and is reviewed and updated annually.

In contrast to an annexation impact report, which is site specific to individual annexations, the three-mile plan takes a broader approach to the annexation and development of land. A proposed annexation should be consistent with the municipality's master plan and three-mile plan, in addition to other policies, such as those outlined in the Annexation Handbook and the municipal Code.

#### Purpose

Colorado Revised Statutes Section 31-12-105(1)(e)(1) requires that each municipality have a plan that generally describes the proposed location, character, and extent of streets, subways, bridges, waterways, waterfronts, parkways, playgrounds, squares, parks, aviation fields, other public ways, grounds, open spaces, public utilities, and terminals for water, light, sanitation, transportation and power for any annexation within three (3) miles of the municipality. The statute requires that the plan be adopted prior to the annexation of any land into the municipality and that the three-mile plan be updated annually.



The Alamosa Three Mile Annexation Plan does not assume, propose, or guarantee that any property within the three-mile study area will be annexed into the city limits. This plan does not propose specific improvements or land uses for eligible properties. All properties considered for annexation are subject to the criteria of Division 8-4 Annexation and Disconnection of the Alamosa Unified Development Code (UDC, otherwise known as Chapter 21 of the *Alamosa Code of Ordinances*), in addition to the City of Alamosa Annexation Handbook.

## **Criteria for Annexations**

### **Guiding Policy**

The city shall not annex land unless that land is included with the City's Three Mile Plan for Annexation and the annexation occurs in a manner that is in conformity with the goals and policies of the Comprehensive Plan, Unified Development Code, and Annexation Handbook. The City will not approve annexations that cannot be served with all necessary utilities and facilities, nor will it approve annexations that have a significant, adverse impact on the City's infrastructure capacity or quality.

### **Study Area**

The Municipal Annexation Act permits local cities and towns to evaluate extraterritorial lands up to three miles from their current corporate limits for consideration of eligibility for annexation. Based on community growth rates and historical annexation requests, the City Council has determined that a one mile limit better suits the development needs of the community. Therefore, the current study area is limited to one mile from the existing corporate limits of Alamosa. However, the City Council reserves the right to expand the study limit up to three miles if community need warrants such analysis.

The seven areas adjacent to the city are identified for inclusion in the City's future growth boundary make up the parcels that are included in the City's Three Mile Plan for Annexation. In addition, while not specifically identified, any existing enclaves are also included in this plan as appropriate for annexation. The Three Mile Plan for Annexation is intended to meet the requirement of C.R.S. Section 31-12-105(1) (e), which requires that all municipalities have a plan in place for annexations prior to annexing any property into the city. This plan generally describes the proposed location, character, and extent of land uses, access, public facilities and other community attributes associated with the area proposed for annexation. Whether these parcels are annexed, when they are annexed, and their proposed use are all critical to the future of the community and no annexation should be allowed that is in conflict with the provision of this plan, unless the plan is modified or conditions in the area or community change in such a way as to warrant such a decision. As per state statutes, the Three Mile Plan for Annexation must be updated at least annually.

## Discussion

Seven areas that may be considered for annexation are discussed in detail here, as well as appropriate zoning, timing, and other related issues. Taken together, the recommendations and accompanying map form the City's Three Mile Plan for Annexation. This plan is updated on a yearly basis to reflect annexations that have taken place during the year, any changes in community goals concerning the annexation of additional areas or changes in suggested land uses, and any additional information relevant to annexation issues.

The plan identifies issues that should be addressed prior to any parcel of land being annexed into the City of Alamosa, but does not itself propose the annexation of any lands near the city. Annexation of any land into the city remains an individual landowner decision, unless Council chooses to force an annexation for a property that is eligible. Successful annexation applications to the City should focus on how any particular annexation will meet the goals of the community as identified in the Comprehensive Plan. Annexation is a discretionary act by the City of Alamosa; the submittal of an annexation petition that is consistent with this plan and the City's comprehensive plan is no guarantee that the subject property will be annexed.

The annexation conditions and implementation actions for each area outlined in this plan are based on an area-wide, broad-level understanding of the needs of the area. These conditions may be modified based on each annexation, and additional conditions are set forth in Section 21-8-402(b) of the UDC. Such conditions are in the discretion of City Council and are memorialized in a written annexation agreement to be executed by the land owner and developer (if applicable) prior to final City Council action on the annexation. Should the annexation be approved, the agreement, annexation ordinance, and plat will be recorded in the office of the Alamosa County Clerk and Recorder.

## III. PLANNING AREAS

### Area 1 - NORTHWEST ALAMOSA

**Description.** This area is generally west and north of the Wal-Mart development and south of the Rio Grande. The southern boundary of the area follows the projected Kathleen Lane extension west of County Road 107 S. The property north of the Wal-Mart site traditionally has been used for agricultural and residential purposes, although most agricultural uses lapsed in the early 1980's. The area north and west of Cielo Azul and River Trece continues to develop with the latter phases of these subdivisions. River Trece Three annexed additional property for its next development phase, and in 2020 the City annexed approximately 200 acres of floodplain and riparian habitat along the Rio Grande it acquired in September 2019 for recreational use as the Alamosa Riparian Park.

**Zoning Designation:** This property is most suitable for low density residential uses and open space uses. Upon annexation the land should be zoned for low density residential and agriculture (such as for RV parks or open space). Residential density should increase approaching the highway. Areas closer to the US HWY 160 corridor may warrant consideration for commercial or mixed use zoning.

**Annexation Timing:** With the 2020 annexation of the Alamosa Riparian Park, additional remaining land within this area is privately held, so that annexation is contingent upon the goals and desires of the landowners and not up to the City. Annexation requests are appropriate for any of the land within this area at the present time, based on statutory requirements of the State of Colorado. The City has absorbed several major tracts of land in the past few years. These tracts are developing at a steady pace and it may be appropriate to consider annexations of parcels that fulfill the growth objectives of the City.

**Annexation Issues:** There are four significant issues related to the annexation of this area:

- This area has developed into one of the more popular residential neighborhoods in the city. As new development parcels are annexed into the city, there should be a conceptual development plan prepared that allows the City to evaluate the impacts of new development on the streets and utilities and emergency services. Until that time, the City is working on the Master Utility Plan (MUP) to evaluate the condition and capacity of the existing utilities downstream. The sanitary sewer phase of the MUP was completed in May of 2022, and the water distribution phase is scheduled for completion in May of 2023. Any additional impact may trigger upgrades to sanitary sewer lines and lift stations to accommodate the additional loading.
- The property owner historically responsible for the majority of the development in the area is transitioning his interests to his children and it is uncertain if or to what extent this area will continue to develop.
- Some properties may be outside of the protection of the levee system and within the floodplain. If this is the case, adequate plans must be made to either extend the levee or to develop in a manner that minimizes flood hazards.
- Stormwater continues to be a problem in this area as most stormwater lines are at or over capacity.

**Annexation Conditions and Implementation Actions:** Annexations in this area should be conditioned upon the following specific requirements:

- All annexations and future development must be designed in a manner that contributes to the future collector road system by dedicating all street rights of way necessary for the continuation of the proposed collector road(s).
- Require the annexing parties to provide an estimate of the utility demands to support the property and propose a means of meeting that anticipated demand. This must be addressed as part of the annexation agreement. The mitigation of adverse impacts to downstream sanitary lines and lift stations should likewise be addressed in the annexation agreement consistent with the requirements in the UDC. Additional fees should be

considered to offset the sanitary sewer upgrades necessary to serve this area and/or adopting a tap fee zone which charges users in this area a higher rate.

- Development in this area shall be done in such a way to support existing and proposed recreational facilities to include parks, trails, and bicycle paths.

## **Area 2 - WEST ALAMOSA**

**Description:** This area is generally west of the Wal-Mart development along the Highway 160 corridor, bound on the north by the Kathleen Lane extension and on the south (south of US 160/285) by West First Street/County Road 7 S. The property west of the Wal-Mart site traditionally has been used for agricultural and high-density residential purposes, although the agricultural uses lapsed in the early 1980's. The area already within city limits west of Cielo Azul that bisects Area 2 and extending to County Road 107 S reflects the property currently occupied by the Ski-Hi 6, annexed in March 2010. In 2019, the City annexed The Comfort Inn hotel on the west side of County Road 107 S. This area also includes contiguous tracts south of US 160/285 extends south to County Road 7 S.

**Zoning Designation:** This property will be most conducive to commercial uses and should be zoned as such upon annexation.

**Annexation Timing:** Since this area is owned by private landowners, the annexation is contingent to a great extent upon the goals and desires of the landowners first. Annexation requests are appropriate for any of the land within this area at the present time based on statutory requirements of the State of Colorado. The City has absorbed several major tracts of land in the past few years, and it may be appropriate to see these recent annexations further developed before annexing additional tracts. More focus should be given to developing commercial lots already within city limits.

**Annexation Issues:** There are two significant issues related to the annexation of this area:

- The Carroll Property west of Wal-Mart has been platted as Carroll Business Park. The property has been developed with hotels and financial institutions. There are only a few remaining parcels ready for development. There are many undeveloped commercial and industrial parcels along the Highway 160 corridor. Rather than annex more undeveloped commercial or industrial property at this location, it may be more appropriate to wait until more of the existing property is developed. There appears to be sufficient commercially zoned property in the city at this time, but we lack residential lots that are ready for development. Unless a proposal is put forward for development with clear benefits to the City and its citizens, the City should not proceed with annexation.
- Adjacent properties, other than the Wal-Mart tracts, have been slow to develop. Large investments in infrastructure have been made and should be utilized before extending the infrastructure further.

**Annexation Conditions and Implementation Actions:** Annexations in this area should be conditioned upon the following specific requirements:

- All annexations and future development must be designed in a manner that contributes to the future collector road system by dedicating all street rights of way necessary for the continuation of the proposed collector road(s).
- Require the annexing parties to provide an estimate of the utility demands to support the property and propose a means of meeting that anticipated demand. This must be addressed as part of the annexation agreement. The mitigation of adverse impacts to downstream sanitary lines and lift stations should likewise be addressed in the annexation agreement consistent with the requirements in the UDC. Additional fees should be considered to offset the sanitary sewer upgrades necessary to serve this area and/or adopting a tap fee zone which charges users in this area a higher rate.
- Development in this area shall be done in such a way to support pedestrian accessibility to businesses in the area, particularly to the north.
- Large-scale annexation should be accompanied with a preliminary development plan conducted in accordance with the Unified Development Code.

### **Area 3 - SOUTHWEST ALAMOSA**

**Description.** This portion of Alamosa is a large area composed of three distinct annexation subareas, listed from north to south:

1. Subarea A consists primarily of those un-annexed portions of the Stockton and Washington Additions as well as the area north of W Tenth Street and its projected extension. Craft Drive extends south to the Co-op Road (County Road 8 S) and W Tenth St from Highway 285 to S Craft Drive. These streets provide the necessary primary transportation routes in the area. Water and sewer lines have been extended south on Foster Drive (formerly County Road 108) from First Street to Tremont and west on Tremont to S Craft Drive. A major farm worker housing project was completed south of Tremont and east of Craft and single family dwelling units are being developed in this same area. A new major residential development is proposed adjacent to the W Eighth Street extension. Additions east of Foster Drive are not currently within the city limits. These properties are primarily residential in nature.
2. Subarea B is that area between W Tenth St (and its projected extension) and the Co-op Road (County Road 8 S), as well as that area south of the Co-op Road between Highway 285 and the Washington Ave extension (west of the photovoltaic site).
3. Subarea C consists of the area south of the Co-op Road west of the Washington Ave extension.

#### **Zoning Designation:**

1. Subarea A. Proximity to the residential development on Craft Drive south of Tremont St leads this area to be a mix of residential zoning and land uses.
2. Subarea B. Existing development patterns and land uses established in the county are primarily heavy commercial and/or industrial in nature, while current and foreseen

development pressure from Subarea A consists of residential uses. This creates potential incompatibilities between the two. Those areas nearer to Highway 285 provide more viable commercial sites and should be zoned as such. Those portions of Subarea B along S Craft Drive, Foster Avenue, and the Co-op Road should accommodate those market pressures with residential or mixed use zoning. Better coordination with the County is necessary to ensure land use buffers remain intact and to limit further incompatibilities between uses.

3. Subarea C. Existing development patterns dictate that the primary zoning for this area should be mixed residential with a gradation to mixed use to the east in anticipation of future solar development.

***Annexation Timing:***

1. Subarea A – The Craft Drive access and ongoing development make this a good candidate for annexation. The ongoing development of homes by CRHDC makes this area desirable as the most recent phase approaches build-out.
2. Subarea B - This property is held by several different individuals and the annexation timing will probably be driven by the need for commercial and industrial uses that utilize City resources. Subarea B should only be annexed after Subarea A.
3. Subarea C - This property is held by several different individuals and will only be annexed after Subareas A and B.

***Annexation Issues:*** There are four significant issues related to the annexation of this area:

- A method or methods of financing extension of sewer and water service to these properties must be agreed upon prior to accepting them for annexation.
- Storm water drainage for this area is problematic. Design of an adequate system as well as financing mechanism for implementing it must be in place prior to annexation. If discharge into the ditch is unfeasible at time of annexation, then maintenance responsibilities of large detention or retention areas must be clarified.
- Adequate traffic collector and pedestrian routes must be identified and rights of way obtained as part of the annexation process.
- There are multiple potential zoning conflicts between the City's desired growth patterns and the County's existing zoning and development. Buffers or other land use solutions must be considered to reduce land use conflicts.

***Annexation Conditions and Implementation Actions:*** Annexations in this area should be conditioned upon the following specific requirements:

- Long-term solutions for storm water impacts must be considered. The past practice of large storm water retention ponds is problematic. Large detention areas waste otherwise developable land and can become maintenance headaches down the road. Future development must provide for adequate storm water management with the most viable option being evacuation via the Alamosa (Hickory Jackson) Ditch.

- Require the annexing parties to provide an estimate of the utility demands to support the property and propose a means of meeting that anticipated demand. This must be addressed as part of the annexation agreement. The mitigation of adverse impacts to downstream sanitary lines and lift stations as described in the 2022 Master Utility Plan should likewise be addressed in the annexation agreement.
- While completion of West Tenth Street and S Craft Drive provide a good collector system, mutually supporting local streets must complement rather than conflict with these corridors.
- Adequate recreational facilities or the upgrades of existing facilities must be incorporated into the development plans and annexation process for this area.
- In areas where there may be incompatibilities between uses, such as with industrial uses and housing developments, provisions for adequate buffering and buffer yards should be considered.

## Area 4 - SOUTH ALAMOSA INFILL AREAS

**Description:** This portion of the community that should be considered for annexation is an area located generally between the McClain Fink Subdivision and Highway 285 south. It is made up of a combination of single-family homes, vacant lots, and some existing commercial and governmental uses.

### **Zoning Designation:**

The proper zoning designation upon annexation should be residential for that property in and adjacent to the McClain Fink Subdivision and Industrial or Commercial for the properties adjacent to Highway 285. The large, vacant properties are ideal for mixed residential infill development.

**Annexation Timing:** The timing of the annexation of this portion of the community is dependent upon the desires of the existing landowners, but in general, the City would encourage the annexation of that portion immediately adjacent to the existing city limits to the east first, so that the current infrastructure can be extended in a logical fashion to best serve the entire area.

**Annexation Issues:** Provisions must be made for storm water drainage, and existing roads must be upgraded to urban standards. Some streets only have borrow ditches for storm water detention, which occupy the areas typically intended for sidewalks.

**Annexation Conditions and Implementation Actions:** A storm water drainage system must be designed and implemented before any further annexations take place in this area. Property owners must present a method to finance all required water, sewer and storm improvements. The City's stormwater drainage easement in the Alamosa Ditch may provide relief for storm water discharge.

## Area 5 - AREA ADJACENT TO THE SAN LUIS VALLEY REGIONAL AIRPORT

**Description.** This is an area of vacant and low density housing located along the south side of Airport Road, west and south of the San Luis Valley Regional Airport, and east of Highway 285.

**Zoning Designation:** This area should be zoned Industrial or Agricultural in order to encourage additional industrial and service commercial uses to be located in the community and as a tool to help protect the airport from incompatible encroachments.

**Annexation Timing:** There is no pressing need to drive annexation of this area. However, the area immediately south of Airport Road could be ripe for industrial development. Since other areas extend well south of existing infrastructure, such extended southward property in this area should be considered for annexation only upon presentation of a pressing public interest in doing so, or the proven ability of the developer to install these services at their cost with no impact to the existing systems.

**Annexation Issues:** Provision of storm and sanitary sewers may be difficult. Undersized and outdated sanitary lines and lift stations need to be upgraded.

**Annexation Conditions and Implementation Actions:** Development plans must be in accordance with flight clearance requirements for the airport prior to annexation. The developer must install the necessary utilities to service this area and demonstrate that the existing municipal services will not be adversely impacted.

## Area 6 – SOUTHEAST ALAMOSA

**Description.** This annexation area has two subareas. Subarea A consists of mixed residential and industrial properties south of the railroad tracks and northeast of the City's wastewater treatment plant. Subarea B consists of properties along South River Road and Old Airport Road, which are primarily residential and agricultural uses.

### **Zoning Designation:**

1. Subarea A should be zoned commercial in order to tie the Central Business District with the river as envisioned in the Downtown Design Plan. Mixed Use zoning may be appropriate for parcels adjacent to residential uses, and higher-end housing near the river may revitalize the area. Neighborhood commercial uses could support the residential development within walking distance of the property.
2. Subarea B should be zoned residential, giving the city an additional area to grow for much-needed housing that carries fewer infrastructure challenges than other growth areas.

**Annexation Timing:** There is no pressing need to drive annexation of this area. Commercial and residential redevelopment could inject some vibrancy into the area and remove the existing blight.

**Annexation Issues:** Some of the properties in the area have been previously developed with businesses that that sell or process petroleum products. Some parcels have already undergone



remediation for on-site hazardous materials. Properties that develop in this area may be outside of the protection of the Alamosa levee system. Future growth here will need to be able to demonstrate that it can be developed safely out of the floodplain or that the levee system can be extended.

**Annexation Conditions and Implementation Actions:** Properties considered for annexation that were previously used for petroleum processing should undergo a Phase I Environmental Analysis prior to annexation. This may prove to be a barrier for revitalization. On the other hand, its proximity to the river and the wastewater treatment plant make stormwater and sanitary sewer service less problematic.

## Area 7 – NORTHEAST ALAMOSA

**Description.** This area consists of remnant ranch parcels with historic residential homes. These parcels lie between the Alamosa City Ranch boundary on the west and US Highway 17 on the east.

**Zoning Designation:** Parcels along Highway 17 are suitable for a variety of different uses. The proximity to the highway tends to allow consideration for more intensive economic development. As the property transitions to the west, less intensive uses such as residential estate lots, recreation and riparian habitat should be considered. Assigning specific zoning districts should be delayed until the City completes an economic analysis of the properties or receives a specific proposal from a land owner.

**Annexation Timing:** There is no pressing need to drive annexation of this area at this time. The City may wish to wait until a suitable economic development plan is presented.

**Annexation Issues:** The current open space character of this property creates a bucolic gateway to the city from the north and any future development should enhance the gateway experience. Additionally, the distance between these properties and existing utilities is problematic. Extending utilities will come at great cost, and the City should have a clear understanding of the impacts this would have on the existing system.

**Annexation Conditions and Implementation Actions:** Annexation should be accompanied by a preliminary development plan conducted in accordance with the Unified Development Code. This should also include a plan for extending services and how this is to be financed, with documentation demonstrating that the existing system will not be adversely impacted.

## EAST ALAMOSA (Area 8)

**Description.** East Alamosa is an existing developed area east of the city, across the Rio Grande, that is composed of a combination of uses, including residential, commercial, and some limited agricultural activities. This tract has shown up on several iterations of the City's Three Mile Plan. After careful study, the city staff has determined that the City cannot efficiently serve this area

with municipal services in a cost effective manner. The aging infrastructure requires significant repair and maintenance that could become a financial burden if taken on by the City.

The City of Alamosa should concentrate its development efforts west of the Rio Grande. Any development east of the river should have enough positive economic benefit to justify the cost of providing municipal services.

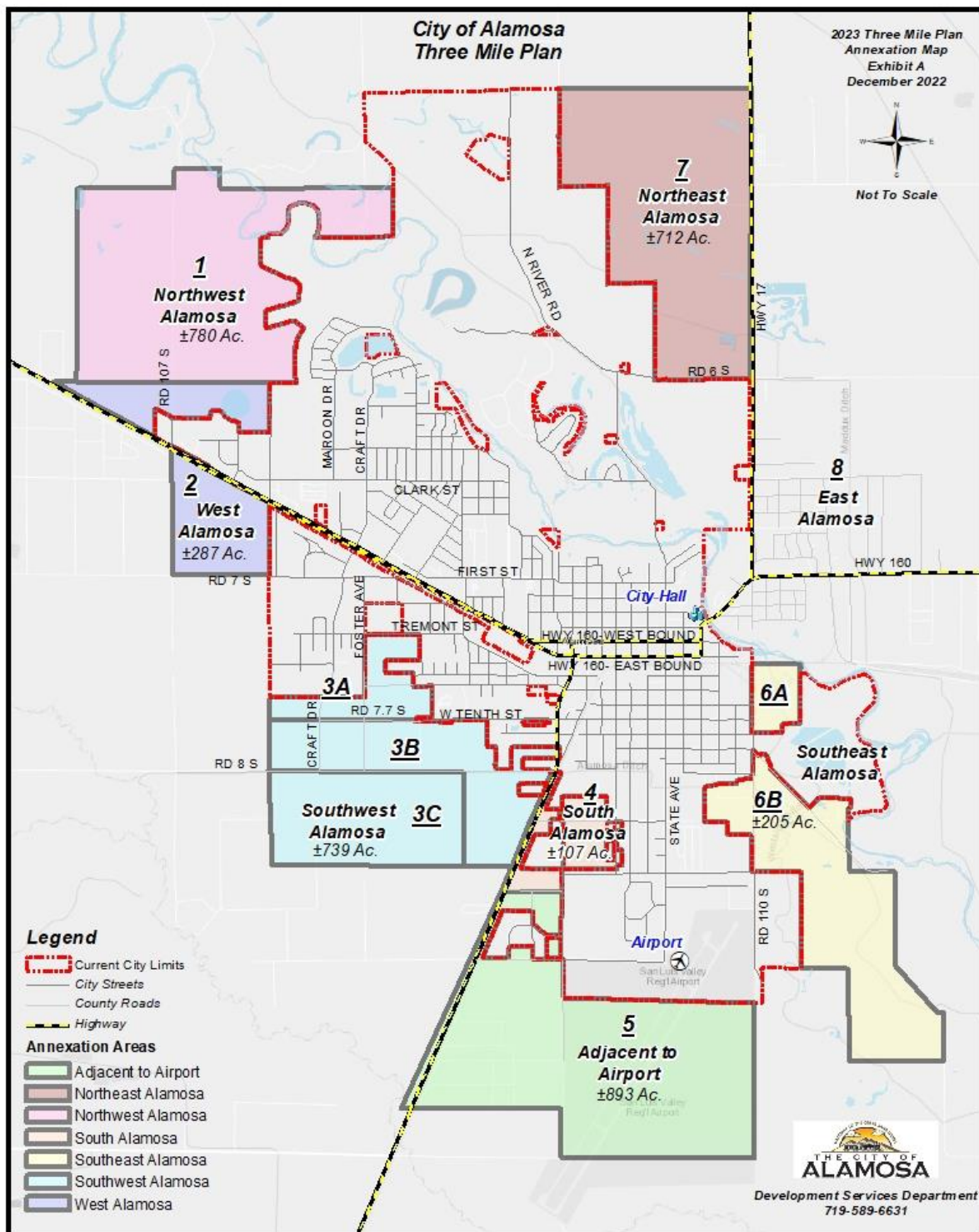


Exhibit A - 2023 Three Mile Plan Map

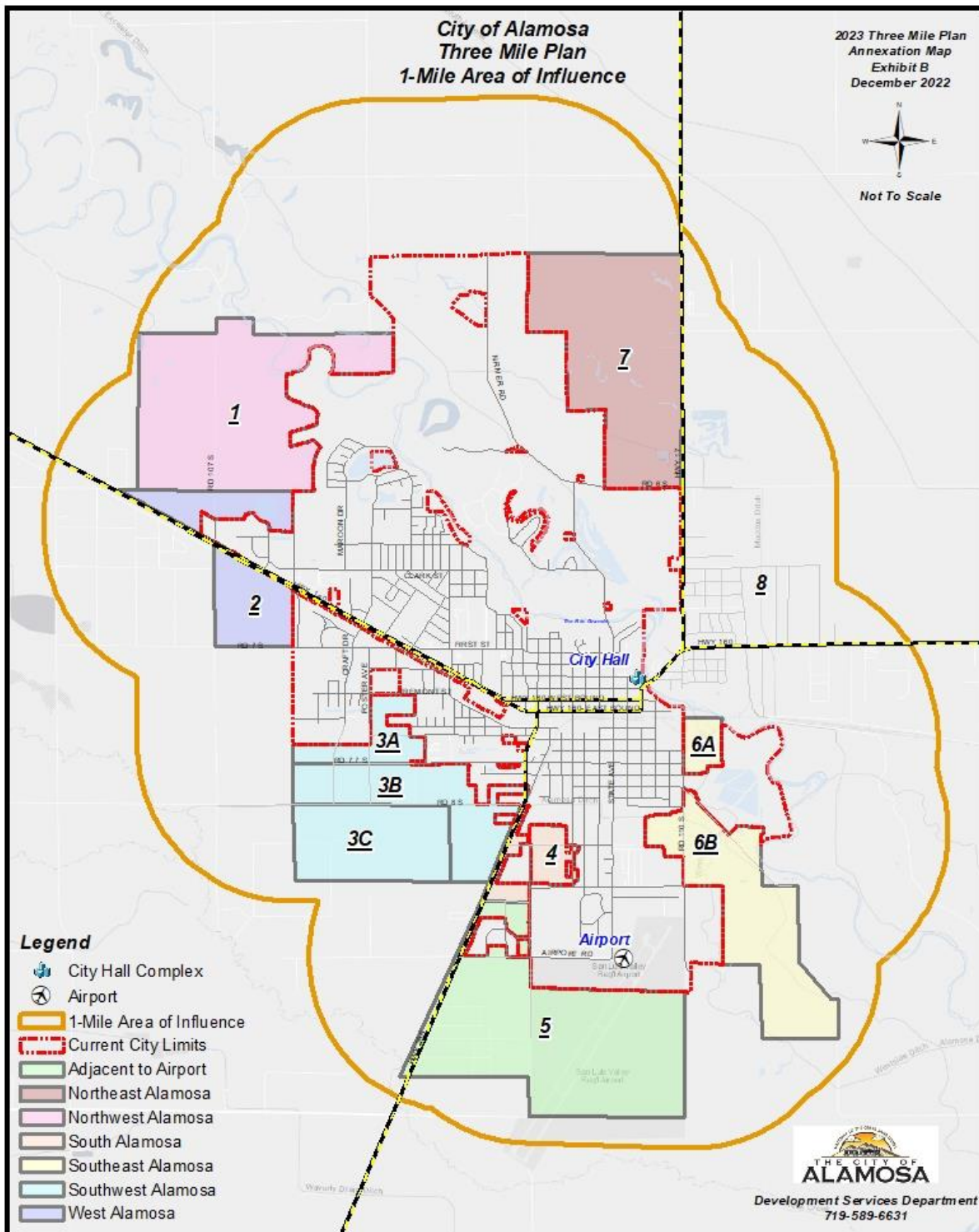
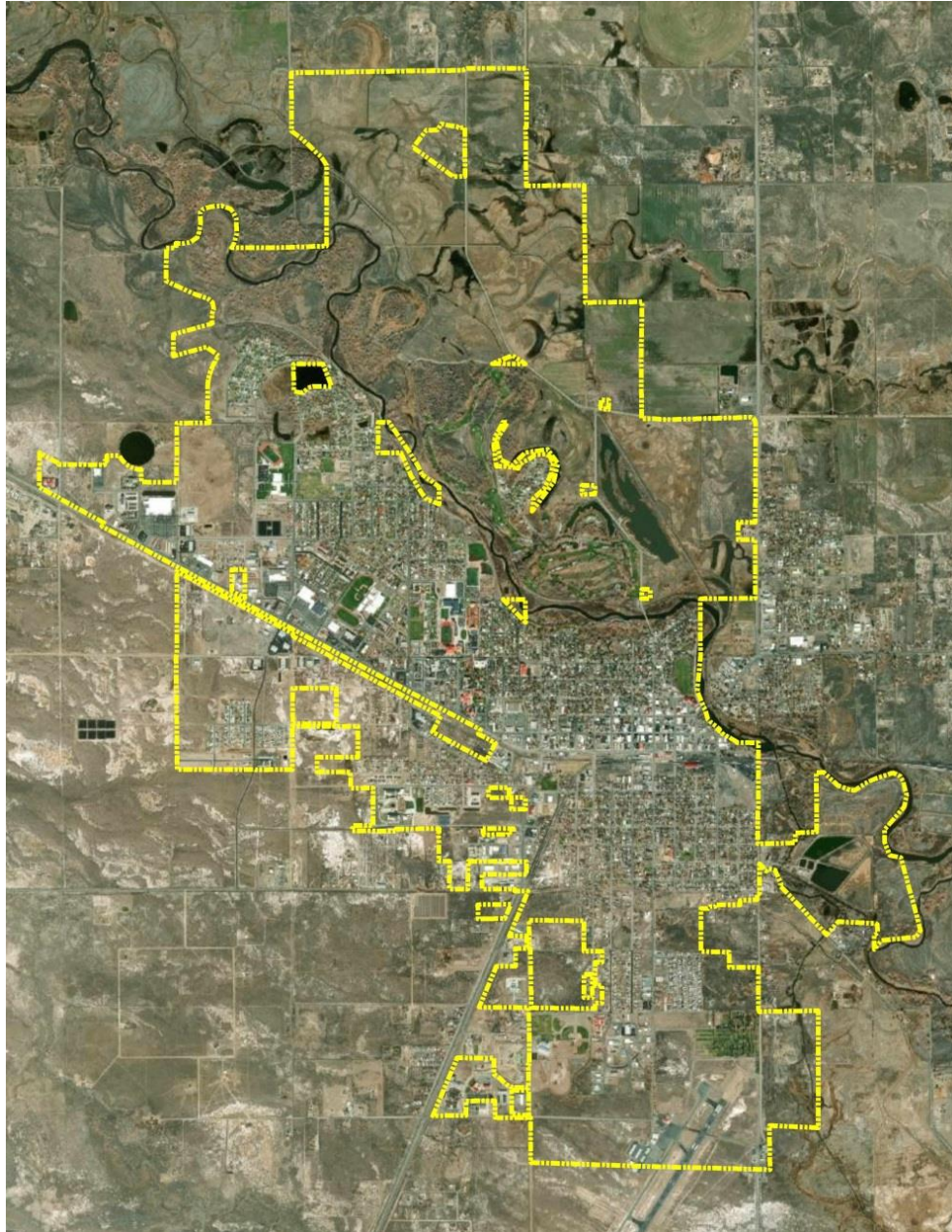


Exhibit B- 2023 Three Mile Plan Map with 1-Mile Area of Influence



CITY OF ALAMOSA

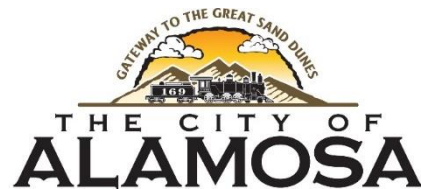


2024

THREE MILE ANNEXATION PLAN

# CITY OF ALAMOSA

## 2024 THREE MILE ANNEXATION PLAN



The City of Alamosa  
Department of Development Services  
P.O. Box 419  
300 Hunt Avenue  
Alamosa, Colorado 81101  
(719) 589-6631

Adopted XX XXXXXX 2024

## CONTENTS

<b>I. ADOPTION RESOLUTION .....</b>	<b>1</b>
<b>II. CITY OF ALAMOSA THREE MILE ANNEXATION PLAN .....</b>	<b>2</b>
Introduction and Purpose of the Three Mile Plan.....	2
Introduction .....	2
Purpose .....	2
Criteria for Annexations .....	3
Guiding Policy .....	3
Study Area .....	3
Discussion.....	4
<b>III. PLANNING AREAS .....</b>	<b>4</b>
Area 1 - NORTHWEST ALAMOSA.....	4
Area 2 - WEST ALAMOSA .....	6
Area 3 - SOUTHWEST ALAMOSA .....	7
Area 4 - SOUTH ALAMOSA INFILL AREAS.....	9
Area 5 - AREA ADJACENT TO THE SAN LUIS VALLEY REGIONAL AIRPORT .....	10
Area 6 – SOUTHEAST ALAMOSA .....	10
Area 7 – NORTHEAST ALAMOSA.....	11
EAST ALAMOSA (Area 8) .....	11

## LIST OF EXHIBITS

Exhibit A - 2024 Three Mile Plan Map .....	13
Exhibit B - 2024 Three Mile Plan Map with 1-Mile Area of Influence.....	13

# THREE MILE ANNEXATION PLAN

## I. ADOPTION RESOLUTION

DRAFT



## II. CITY OF ALAMOSA THREE MILE ANNEXATION PLAN

This document constitutes the Three Mile Plan for the City of Alamosa, Colorado, as required by and in conformance with Section 31-12-105(1)(e) of the Colorado Revised Statutes (CRS).

### Introduction and Purpose of the Three Mile Plan

#### Introduction

The three-mile plan is a long range planning opportunity for municipalities to consider where they want to annex, how they will provide service in the newly annexed areas, and how they will sustain adequate levels of service throughout the rest of the municipality. It ensures that the municipality will annex land only when it is consistent with pre-existing plans for the surrounding area.

The failure to plan for the physical growth of a municipality can result in haphazard annexations that prove expensive to the municipality annexing the land, the county in which the land is located and the neighboring communities.

The statute above requires a three-mile plan to generally describe the proposed location, character and extent of future public utilities and infrastructure (e.g., streets, bridges, parks, playgrounds, aviation fields, waterways, open spaces and other public grounds) as well as proposed land uses for the area. The comprehensive plan takes into account all land that is functionally related to the growth of the municipality, not just land within three miles of the municipal boundary. The City's comprehensive plan addresses these elements required for a three-mile plan. The City's three-mile plan is intended to be consistent with the comprehensive plan, and is reviewed and updated annually.

In contrast to an annexation impact report, which is site specific to individual annexations, the three-mile plan takes a broader approach to the annexation and development of land. A proposed annexation should be consistent with the municipality's master plan and three-mile plan, in addition to other policies, such as those outlined in the Annexation Handbook and the municipal Code.

#### Purpose

Colorado Revised Statutes Section 31-12-105(1)(e)(1) requires that each municipality have a plan that generally describes the proposed location, character, and extent of streets, subways, bridges, waterways, waterfronts, parkways, playgrounds, squares, parks, aviation fields, other public ways, grounds, open spaces, public utilities, and terminals for water, light, sanitation, transportation and power for any annexation within three (3) miles of the municipality. The statute requires that the plan be adopted prior to the annexation of any land into the municipality and that the three-mile plan be updated annually.

The Alamosa Three Mile Annexation Plan does not assume, propose, or guarantee that any property within the three-mile study area will be annexed into the city limits. This plan does not propose specific improvements or land uses for eligible properties. All properties considered for annexation are subject to the criteria of Division 8-4 Annexation and Disconnection of the Alamosa Unified Development Code (UDC, otherwise known as Chapter 21 of the *Alamosa Code of Ordinances*), in addition to the City of Alamosa Annexation Handbook.

## **Criteria for Annexations**

### **Guiding Policy**

The city shall not annex land unless that land is included with the City's Three Mile Plan for Annexation and the annexation occurs in a manner that is in conformity with the goals and policies of the Comprehensive Plan, Unified Development Code, and Annexation Handbook. The City will not approve annexations that cannot be served with all necessary utilities and facilities, nor will it approve annexations that have a significant, adverse impact on the City's infrastructure capacity or quality.

### **Study Area**

The Municipal Annexation Act permits local cities and towns to evaluate extraterritorial lands up to three miles from their current corporate limits for consideration of eligibility for annexation. Based on community growth rates and historical annexation requests, the City Council has determined that a one mile limit better suits the development needs of the community. Therefore, the current study area is limited to one mile from the existing corporate limits of Alamosa. However, the City Council reserves the right to expand the study limit up to three miles if community need warrants such analysis.

The seven areas adjacent to the city are identified for inclusion in the City's future growth boundary make up the parcels that are included in the City's Three Mile Plan for Annexation. In addition, while not specifically identified, any existing enclaves are also included in this plan as appropriate for annexation. The Three Mile Plan for Annexation is intended to meet the requirement of C.R.S. Section 31-12-105(1) (e), which requires that all municipalities have a plan in place for annexations prior to annexing any property into the city. This plan generally describes the proposed location, character, and extent of land uses, access, public facilities and other community attributes associated with the area proposed for annexation. Whether these parcels are annexed, when they are annexed, and their proposed use are all critical to the future of the community and no annexation should be allowed that is in conflict with the provision of this plan, unless the plan is modified or conditions in the area or community change in such a way as to warrant such a decision. As per state statutes, the Three Mile Plan for Annexation must be updated at least annually.

## Discussion

Seven areas that may be considered for annexation are discussed in detail here, as well as appropriate zoning, timing, and other related issues. Taken together, the recommendations and accompanying map form the City's Three Mile Plan for Annexation. This plan is updated on a yearly basis to reflect annexations that have taken place during the year, any changes in community goals concerning the annexation of additional areas or changes in suggested land uses, and any additional information relevant to annexation issues.

The plan identifies issues that should be addressed prior to any parcel of land being annexed into the City of Alamosa, but does not itself propose the annexation of any lands near the city. Annexation of any land into the city remains an individual landowner decision, unless Council chooses to force an annexation for a property that is eligible. Successful annexation applications to the City should focus on how any particular annexation will meet the goals of the community as identified in the Comprehensive Plan. Annexation is a discretionary act by the City of Alamosa; the submittal of an annexation petition that is consistent with this plan and the City's comprehensive plan is no guarantee that the subject property will be annexed.

The annexation conditions and implementation actions for each area outlined in this plan are based on an area-wide, broad-level understanding of the needs of the area. These conditions may be modified based on each annexation, and additional conditions are set forth in Section 21-8-402(b) of the UDC. Such conditions are in the discretion of City Council and are memorialized in a written annexation agreement to be executed by the land owner and developer (if applicable) prior to final City Council action on the annexation. Should the annexation be approved, the agreement, annexation ordinance, and plat will be recorded in the office of the Alamosa County Clerk and Recorder.

## III. PLANNING AREAS

### Area 1 - NORTHWEST ALAMOSA

**Description.** This area is generally west and north of the Wal-Mart development and south of the Rio Grande. The southern boundary of the area follows the projected Kathleen Lane extension west of County Road 107 S. The property north of the Wal-Mart site traditionally has been used for agricultural and residential purposes, although most agricultural uses lapsed in the early 1980's. The area north and west of Cielo Azul and River Trece continues to develop with the latter phases of these subdivisions. River Trece Three annexed additional property for its next development phase, and in 2020 the City annexed approximately 200 acres of floodplain and riparian habitat along the Rio Grande it acquired in September 2019 for recreational use as the Alamosa Riparian Park.

**Zoning Designation:** This property is most suitable for low density residential uses and open space uses. Upon annexation the land should be zoned for low density residential and agriculture (such as for RV parks or open space). Residential density should increase approaching the highway. Areas closer to the US HWY 160 corridor may warrant consideration for commercial or mixed use zoning.

**Annexation Timing:** With the 2020 annexation of the Alamosa Riparian Park, additional remaining land within this area is privately held, so that annexation is contingent upon the goals and desires of the landowners and not up to the City. Annexation requests are appropriate for any of the land within this area at the present time, based on statutory requirements of the State of Colorado. The City has absorbed several major tracts of land in the past few years. These tracts are developing at a steady pace and it may be appropriate to consider annexations of parcels that fulfill the growth objectives of the City.

**Annexation Issues:** There are four significant issues related to the annexation of this area:

- This area has developed into one of the more popular residential neighborhoods in the city. As new development parcels are annexed into the city, there should be a conceptual development plan prepared that allows the City to evaluate the impacts of new development on the streets and utilities and emergency services. Until that time, the City is working on the Master Utility Plan (MUP) to evaluate the condition and capacity of the existing utilities downstream. The sanitary sewer phase of the MUP was completed in May of 2022, and the water distribution phase was completed in May of 2023. Any additional impact may trigger upgrades to sanitary sewer lines and lift stations to accommodate the additional loading.
- The property owner historically responsible for the majority of the development in the area is transitioning his interests to his children and it is uncertain if or to what extent this area will continue to develop.
- Some properties may be outside of the protection of the levee system and within the floodplain. If this is the case, adequate plans must be made to either extend the levee or to develop in a manner that minimizes flood hazards.
- Stormwater continues to be a problem in this area as most stormwater lines are at or over capacity.

**Annexation Conditions and Implementation Actions:** Annexations in this area should be conditioned upon the following specific requirements:

- All annexations and future development must be designed in a manner that contributes to the future collector road system by dedicating all street rights of way necessary for the continuation of the proposed collector road(s).
- Require the annexing parties to provide an estimate of the utility demands to support the property and propose a means of meeting that anticipated demand. This must be addressed as part of the annexation agreement. The mitigation of adverse impacts to downstream sanitary lines and lift stations should likewise be addressed in the annexation agreement consistent with the requirements in the UDC. Additional fees should be

considered to offset the sanitary sewer upgrades necessary to serve this area and/or adopting a tap fee zone which charges users in this area a higher rate.

- Development in this area shall be done in such a way to support existing and proposed recreational facilities to include parks, trails, and bicycle paths.

## **Area 2 - WEST ALAMOSA**

**Description:** This area is generally west of the Wal-Mart development along the Highway 160 corridor, bound on the north by the Kathleen Lane extension and on the south (south of US 160/285) by West First Street/County Road 7 S. The property west of the Wal-Mart site traditionally has been used for agricultural and high-density residential purposes, although the agricultural uses lapsed in the early 1980's. The area already within city limits west of Cielo Azul that bisects Area 2 and extending to County Road 107 S reflects the property currently occupied by the Ski-Hi 6, annexed in March 2010. In 2019, the City annexed The Comfort Inn hotel on the west side of County Road 107 S. This area also includes contiguous tracts south of US 160/285 extends south to County Road 7 S.

**Zoning Designation:** This property will be most conducive to commercial uses and should be zoned as such upon annexation.

**Annexation Timing:** Since this area is owned by private landowners, the annexation is contingent to a great extent upon the goals and desires of the landowners first. Annexation requests are appropriate for any of the land within this area at the present time based on statutory requirements of the State of Colorado. The City has absorbed several major tracts of land in the past few years, and it may be appropriate to see these recent annexations further developed before annexing additional tracts. More focus should be given to developing commercial lots already within city limits.

**Annexation Issues:** There are two significant issues related to the annexation of this area:

- The Carroll Property west of Wal-Mart has been platted as Carroll Business Park. The property has been developed with hotels and financial institutions. There are only a few remaining parcels ready for development. There are many undeveloped commercial and industrial parcels along the Highway 160 corridor. Rather than annex more undeveloped commercial or industrial property at this location, it may be more appropriate to wait until more of the existing property is developed. There appears to be sufficient commercially zoned property in the city at this time, but we lack residential lots that are ready for development. Unless a proposal is put forward for development with clear benefits to the City and its citizens, the City should not proceed with annexation.
- Adjacent properties, other than the Wal-Mart tracts, have been slow to develop. Large investments in infrastructure have been made and should be utilized before extending the infrastructure further.

**Annexation Conditions and Implementation Actions:** Annexations in this area should be conditioned upon the following specific requirements:

- All annexations and future development must be designed in a manner that contributes to the future collector road system by dedicating all street rights of way necessary for the continuation of the proposed collector road(s).
- Require the annexing parties to provide an estimate of the utility demands to support the property and propose a means of meeting that anticipated demand. This must be addressed as part of the annexation agreement. The mitigation of adverse impacts to downstream sanitary lines and lift stations should likewise be addressed in the annexation agreement consistent with the requirements in the UDC. Additional fees should be considered to offset the sanitary sewer upgrades necessary to serve this area and/or adopting a tap fee zone which charges users in this area a higher rate.
- Development in this area shall be done in such a way to support pedestrian accessibility to businesses in the area, particularly to the north.
- Large-scale annexation should be accompanied with a preliminary development plan conducted in accordance with the Unified Development Code.

### **Area 3 - SOUTHWEST ALAMOSA**

**Description.** This portion of Alamosa is a large area composed of three distinct annexation subareas, listed from north to south:

1. Subarea A consists primarily of those un-annexed portions of the Stockton and Washington Additions as well as the area north of W Tenth Street and its projected extension. Craft Drive extends south to the Co-op Road (County Road 8 S) and W Tenth St from Highway 285 to S Craft Drive. These streets provide the necessary primary transportation routes in the area. Water and sewer lines have been extended south on Foster Drive (formerly County Road 108) from First Street to Tremont and west on Tremont to S Craft Drive. A major farm worker housing project was completed south of Tremont and east of Craft and single family dwelling units are being developed in this same area. A new major residential development is proposed adjacent to the W Eighth Street extension. Additions east of Foster Drive are not currently within the city limits. These properties are primarily residential in nature.
2. Subarea B is that area between W Tenth St (and its projected extension) and the Co-op Road (County Road 8 S), as well as that area south of the Co-op Road between Highway 285 and the Washington Ave extension (west of the photovoltaic site).
3. Subarea C consists of the area south of the Co-op Road west of the Washington Ave extension.

#### **Zoning Designation:**

1. Subarea A. Proximity to the residential development on Craft Drive south of Tremont St leads this area to be a mix of residential zoning and land uses.
2. Subarea B. Existing development patterns and land uses established in the county are primarily heavy commercial and/or industrial in nature, while current and foreseen

development pressure from Subarea A consists of residential uses. This creates potential incompatibilities between the two. Those areas nearer to Highway 285 provide more viable commercial sites and should be zoned as such. Those portions of Subarea B along S Craft Drive, Foster Avenue, and the Co-op Road should accommodate those market pressures with residential or mixed use zoning. Better coordination with the County is necessary to ensure land use buffers remain intact and to limit further incompatibilities between uses.

3. Subarea C. Existing development patterns dictate that the primary zoning for this area should be mixed residential with a gradation to mixed use to the east in anticipation of future solar development.

***Annexation Timing:***

1. Subarea A – The Craft Drive access and ongoing development make this a good candidate for annexation. The ongoing development of homes by CRHDC makes this area desirable as the most recent phase approaches build-out.
2. Subarea B - This property is held by several different individuals and the annexation timing will probably be driven by the need for commercial and industrial uses that utilize City resources. Subarea B should only be annexed after Subarea A.
3. Subarea C - This property is held by several different individuals and will only be annexed after Subareas A and B.

***Annexation Issues:*** There are four significant issues related to the annexation of this area:

- A method or methods of financing extension of sewer and water service to these properties must be agreed upon prior to accepting them for annexation.
- Storm water drainage for this area is problematic. Design of an adequate system as well as financing mechanism for implementing it must be in place prior to annexation. If discharge into the ditch is unfeasible at time of annexation, then maintenance responsibilities of large detention or retention areas must be clarified.
- Adequate traffic collector and pedestrian routes must be identified and rights of way obtained as part of the annexation process.
- There are multiple potential zoning conflicts between the City's desired growth patterns and the County's existing zoning and development. Buffers or other land use solutions must be considered to reduce land use conflicts.

***Annexation Conditions and Implementation Actions:*** Annexations in this area should be conditioned upon the following specific requirements:

- Long-term solutions for storm water impacts must be considered. The past practice of large storm water retention ponds is problematic. Large detention areas waste otherwise developable land and can become maintenance headaches down the road. Future development must provide for adequate storm water management with the most viable option being evacuation via the Alamosa (Hickory Jackson) Ditch.

- Require the annexing parties to provide an estimate of the utility demands to support the property and propose a means of meeting that anticipated demand. This must be addressed as part of the annexation agreement. The mitigation of adverse impacts to downstream sanitary lines and lift stations as described in the 2022 Master Utility Plan should likewise be addressed in the annexation agreement.
- While completion of West Tenth Street and S Craft Drive provide a good collector system, mutually supporting local streets must complement rather than conflict with these corridors.
- Adequate recreational facilities or the upgrades of existing facilities must be incorporated into the development plans and annexation process for this area.
- In areas where there may be incompatibilities between uses, such as with industrial uses and housing developments, provisions for adequate buffering and buffer yards should be considered.

## Area 4 - SOUTH ALAMOSA INFILL AREAS

**Description:** This portion of the community that should be considered for annexation is an area located generally between the McClain Fink Subdivision and Highway 285 south. It is made up of a combination of single-family homes, vacant lots, and some existing commercial and governmental uses.

### **Zoning Designation:**

The proper zoning designation upon annexation should be residential for that property in and adjacent to the McClain Fink Subdivision and Industrial or Commercial for the properties adjacent to Highway 285. The large, vacant properties are ideal for mixed residential infill development.

**Annexation Timing:** The timing of the annexation of this portion of the community is dependent upon the desires of the existing landowners, but in general, the City would encourage the annexation of that portion immediately adjacent to the existing city limits to the east first, so that the current infrastructure can be extended in a logical fashion to best serve the entire area.

**Annexation Issues:** Provisions must be made for storm water drainage, and existing roads must be upgraded to urban standards. Some streets only have borrow ditches for storm water detention, which occupy the areas typically intended for sidewalks.

**Annexation Conditions and Implementation Actions:** A storm water drainage system must be designed and implemented before any further annexations take place in this area. Property owners must present a method to finance all required water, sewer and storm improvements. The City's stormwater drainage easement in the Alamosa Ditch may provide relief for storm water discharge.



## Area 5 - AREA ADJACENT TO THE SAN LUIS VALLEY REGIONAL AIRPORT

**Description.** This is an area of vacant and low density housing located along the south side of Airport Road, west and south of the San Luis Valley Regional Airport, and east of Highway 285.

**Zoning Designation:** This area should be zoned Industrial or Agricultural in order to encourage additional industrial and service commercial uses to be located in the community and as a tool to help protect the airport from incompatible encroachments.

**Annexation Timing:** There is no pressing need to drive annexation of this area. However, the area immediately south of Airport Road could be ripe for industrial development. Since other areas extend well south of existing infrastructure, such extended southward property in this area should be considered for annexation only upon presentation of a pressing public interest in doing so, or the proven ability of the developer to install these services at their cost with no impact to the existing systems.

**Annexation Issues:** Provision of storm and sanitary sewers may be difficult. Undersized and outdated sanitary lines and lift stations need to be upgraded.

**Annexation Conditions and Implementation Actions:** Development plans must be in accordance with flight clearance requirements for the airport prior to annexation. The developer must install the necessary utilities to service this area and demonstrate that the existing municipal services will not be adversely impacted.

## Area 6 – SOUTHEAST ALAMOSA

**Description.** This annexation area has two subareas. Subarea A consists of mixed residential and industrial properties south of the railroad tracks and northeast of the City's wastewater treatment plant. Subarea B consists of properties along South River Road and Old Airport Road, which are primarily residential and agricultural uses.

### **Zoning Designation:**

1. Subarea A should be zoned commercial in order to tie the Central Business District with the river as envisioned in the Downtown Design Plan. Mixed Use zoning may be appropriate for parcels adjacent to residential uses, and higher-end housing near the river may revitalize the area. Neighborhood commercial uses could support the residential development within walking distance of the property.
2. Subarea B should be zoned residential, giving the city an additional area to grow for much-needed housing that carries fewer infrastructure challenges than other growth areas.

**Annexation Timing:** There is no pressing need to drive annexation of this area. Commercial and residential redevelopment could inject some vibrancy into the area and remove the existing blight.

**Annexation Issues:** Some of the properties in the area have been previously developed with businesses that that sell or process petroleum products. Some parcels have already undergone

remediation for on-site hazardous materials. Properties that develop in this area may be outside of the protection of the Alamosa levee system. Future growth here will need to be able to demonstrate that it can be developed safely out of the floodplain or that the levee system can be extended.

**Annexation Conditions and Implementation Actions:** Properties considered for annexation that were previously used for petroleum processing should undergo a Phase I Environmental Analysis prior to annexation. This may prove to be a barrier for revitalization. On the other hand, its proximity to the river and the wastewater treatment plant make stormwater and sanitary sewer service less problematic.

## Area 7 – NORTHEAST ALAMOSA

**Description.** This area consists of remnant ranch parcels with historic residential homes. These parcels lie between the Alamosa City Ranch boundary on the west and US Highway 17 on the east.

**Zoning Designation:** Parcels along Highway 17 are suitable for a variety of different uses. The proximity to the highway tends to allow consideration for more intensive economic development. As the property transitions to the west, less intensive uses such as residential estate lots, recreation and riparian habitat should be considered. Assigning specific zoning districts should be delayed until the City completes an economic analysis of the properties or receives a specific proposal from a land owner.

**Annexation Timing:** There is no pressing need to drive annexation of this area at this time. The City may wish to wait until a suitable economic development plan is presented.

**Annexation Issues:** The current open space character of this property creates a bucolic gateway to the city from the north and any future development should enhance the gateway experience. Additionally, the distance between these properties and existing utilities is problematic. Extending utilities will come at great cost, and the City should have a clear understanding of the impacts this would have on the existing system.

**Annexation Conditions and Implementation Actions:** Annexation should be accompanied by a preliminary development plan conducted in accordance with the Unified Development Code. This should also include a plan for extending services and how this is to be financed, with documentation demonstrating that the existing system will not be adversely impacted.

## EAST ALAMOSA (Area 8)

**Description.** East Alamosa is an existing developed area east of the city, across the Rio Grande, that is composed of a combination of uses, including residential, commercial, and some limited agricultural activities. This tract has shown up on several iterations of the City's Three Mile Plan. After careful study, the city staff has determined that the City cannot efficiently serve this area

with municipal services in a cost effective manner. The aging infrastructure requires significant repair and maintenance that could become a financial burden if taken on by the City.

The City of Alamosa should concentrate its development efforts west of the Rio Grande. Any development east of the river should have enough positive economic benefit to justify the cost of providing municipal services.

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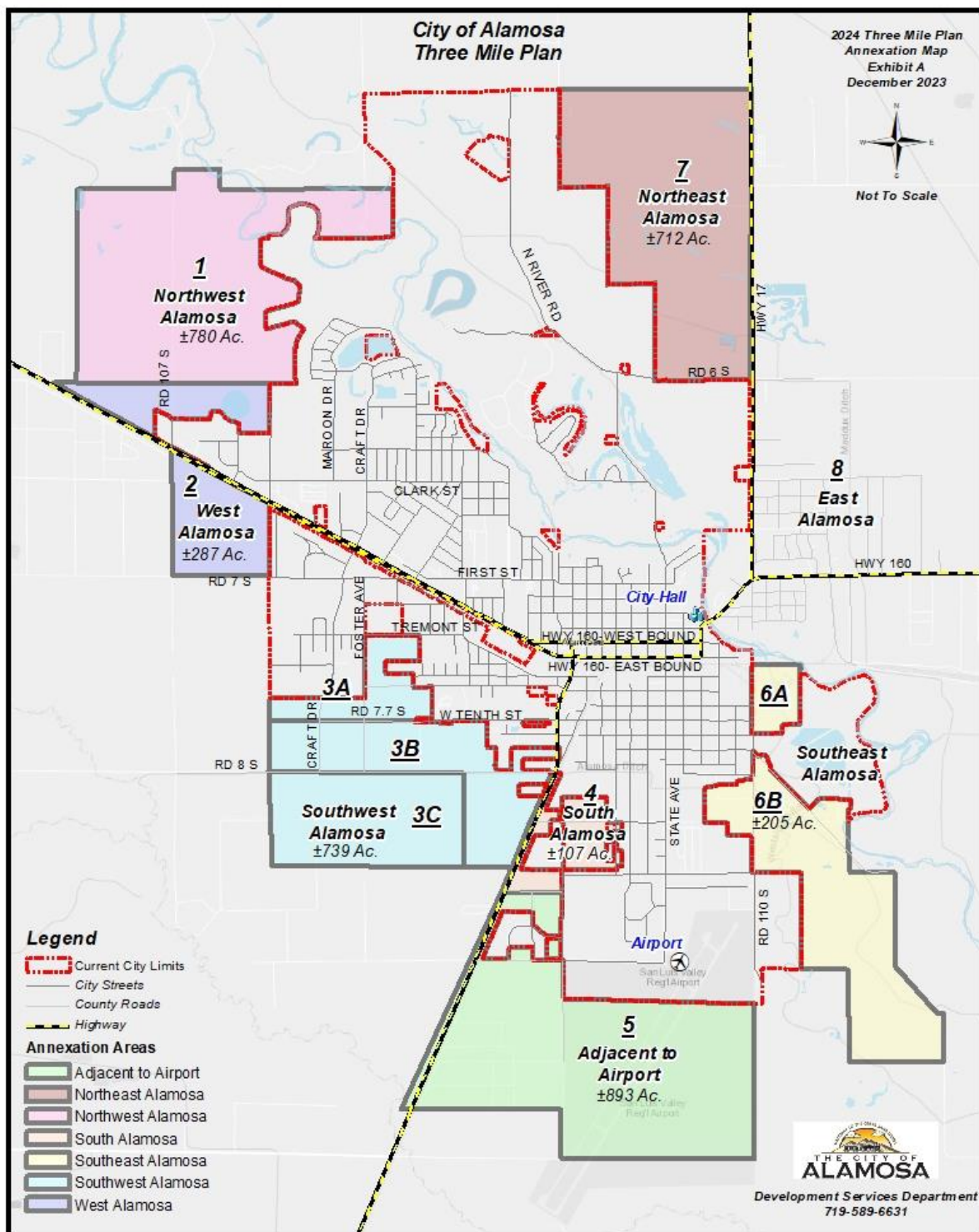


Exhibit A - 2024 Three Mile Plan Map

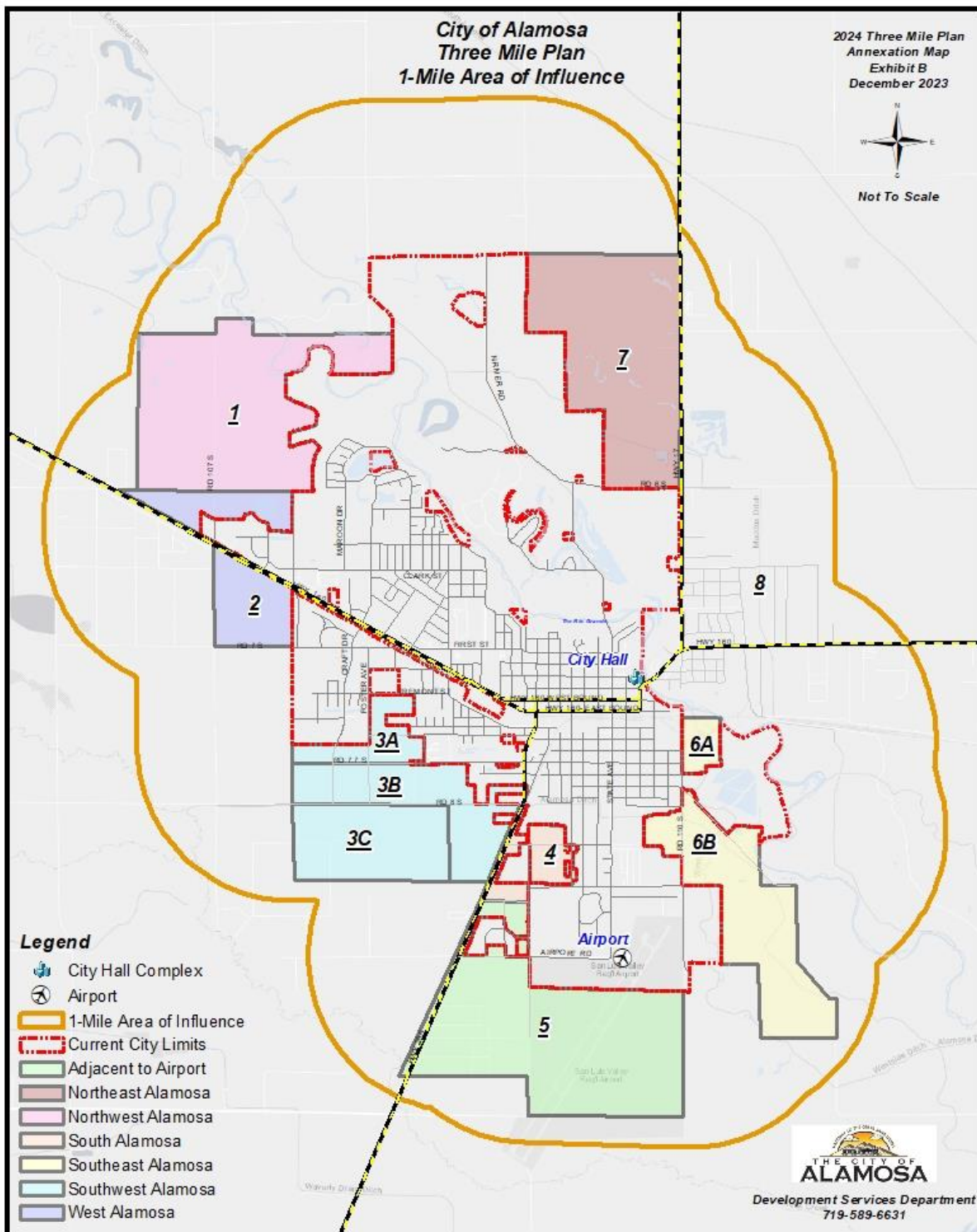


Exhibit B- 2024 Three Mile Plan Map with 1-Mile Area of Influence

## ALAMOSA PLANNING COMMISSION COMMISSION COMMUNICATION

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### **Subject/Title:**

First Session - Proposed Code Amendments for Dark Sky-Compliant Lighting

### **Background:**

**Note** - Due to the complexity of this request, staff and SLVGO! will introduce the proposed changes with Planning Commission, but will continue the discussion and seek a recommendation at a following meeting. These proposed amendments are subject to change.

This follows a request a long time in the making by SLV Great Outdoors as part of the broader effort for the creation of the Sangre de Cristo Dark Sky Reserve. The original ordinance language proposed is attached, as well as the request letter, proposed light management plan, and additional background material.

In order to achieve the reserve designation, the areas of the periphery (which include Alamosa), must include at least 80% of the population. This means that Alamosa is the lynchpin for the success of the Dark Sky Reserve.

### **Analysis and Impact:**

When considering changes to the code, there are three principles we ask ourselves. 1) Is it enforceable (both hypothetically and with existing staff resources and expertise)? 2) Is it achievable (will we get to/near the desired end result)? 3) Does it further legitimate governmental and community interests?

Staff reviewed the proposed ordinance language and modified it to the extent that staff believes is achievable from an enforcement and adoption perspective. There are a handful of sticking points left to resolve that Planning Commission should discuss, such as the signage design requirements.

The intention of what is written is to 1) ensure that future installations comply with these regulations without being overly burdensome, and 2) set manageable thresholds for when non-conforming lighting is to be upgraded.

This will still be a big leap for the community. Only 4 of the 42 dark sky communities are about the same population as Alamosa. Hawthorn Woods, IL has a median household income of \$132k. Fredericksburg, TX Cottonwood, AZ, and Camp Verde, AZ are a closer to our incomes (but not poverty levels), but have an average home value of \$548k, \$425K, and \$412k, respectively, vs \$284k for Alamosa. Other communities are smaller or less developed, which makes implementation easier. This will doubtless have an impact on development. Additionally, the City does not currently have the funding dedicated towards retrofitting and updating existing municipal fixtures. This will be very expensive, and something staff will discuss with City Council at a future work session.

The feasibility question is always at the forefront of our minds when considering code changes. Most often, we are trying to remove barriers that make it difficult or infeasible for the average person to enhance their life and property in ways that do not perpetuate systemic inequality in our



community. In other words, will these new regulations disproportionately target or penalize members of our community with less socioeconomic means?

Another important area to consider is how we can address and mitigate the biggest light emitters and polluters, such as Wal-Mart, the Alamosa School District, and Adams State University.

Finally, the intersection of lighting and crime is a highly debated one, though most police/criminology related studies do find that adequate lighting decreases crime. Other studies have concluded that lighting aids criminal activity, as it enables criminals to better identify targets. Still more studies demonstrate that patchy lighting makes potential crime victims more vulnerable, as it creates shadows for potential perpetrators to lurk in. According to the DarkSky website, "dark sky does not necessarily mean a dark ground. Smart lighting that directs light where it is needed creates a balance between safety and starlight."

It is also very important to acknowledge that this is the continuation of a community-led, grassroots priority, rather than a city-led staff-initiated effort.

#### **Recommended Action:**

Staff believes most of this is achievable, but also fully recognizes this will be difficult. Alamosa does not readily have the expertise, staffing, or funding (both at the municipal level and the community level at large) to make this happen overnight. Education will be key, and SLVGO! already has that initiative well underway.

The crucial question before Planning Commission is whether the will of the community is sufficient enough to to enact this change. Staff believes that nearly everyone in our community wants darker skies. Does that desire translate into a willingness to be further regulated in order to achieve that goal? If Planning Commission believes there is sufficient community support, staff endorses the city-proposed lighting ordinance.

#### **Alternatives:**

Planning Commission may choose to recommend the city-presented version, the SLVGO! version, or recommend potential changes to either version.

Planning Commission may choose to deny recommendation to City Council.

#### **ATTACHMENTS:**

Description	Type
▣ Request from SLV GO! and submitted language	Backup Material
▣ Sangre de Cristo Dark Sky Reserve Lighting Management Plan	Backup Material
▣ International Dark Sky Reserve Program Guidelines	Backup Material
▣ City-modified Revisions SUBJECT TO CHANGE	Backup Material



# Sangre de Cristo Dark Sky Reserve

## PROPOSED BY

San Luis Valley Great Outdoors

## PROPOSED TO

City of Alamosa





Dani Robben  
610 State St.  
San Luis Valley Great Outdoors  
Alamosa, CO 81101

September 7, 2023

Dear Planning Committee Members,

My name is Dani Robben and I am the Community Connections Coordinator with San Luis Valley Great Outdoors (SLV GO!) in Alamosa, CO. I am writing to gain the City of Alamosa's support and engagement in a region-wide effort to protect our night skies. SLV GO! is currently spearheading a dark sky initiative in hopes to create one of the world's largest dark sky reserves that will be recognized by DarkSky International (DSI) as the "Sangre de Cristo Dark Sky Reserve." The purpose of this project is to protect one of the region's most valuable natural assets: our dark skies. Dark skies are not only valuable for astronomers, but benefits human health and safety, wildlife and ecosystems, local tourism, energy efficiency, and preserves the rural character of the SLV.

Research shows that artificial light at night can negatively affect human health by increasing risks for obesity, depression, sleep disorders, diabetes, breast cancer, and more. In addition, there is no clear scientific evidence that outdoor lighting deters crime. In fact, outdoor lighting that is too bright, can actually be a detriment to our safety because it causes glare and interferes with our vision. Artificial light also disrupts the way that plants and animals reproduce, obtain nourishment, sleep, and protect themselves because of light alteration at night. Another major drawback is the waste of energy and money when lighting emits too much light or shines when and where it is not needed. DSI estimates that 30% of all outdoor lighting in the U.S. alone is wasted. Lastly, the night sky has been the inspiration for incredible manifestations, including navigation of the globe and learning about our expanding universe. To not reveal a night sky to future generations is to damper creativity and innovation in our society.

Did you know that four out of five Americans live in places where they can no longer see the Milky Way? As major cities and their associated light pollution take away our dark skies, small communities like Westcliffe and Silver Cliff in the Wet Mountain Valley and Crestone in the SLV, have seized the opportunity to conserve it. In the past several years these towns have become designated Dark Sky Communities. In 2019, Great Sand Dunes National Park became a certified Dark Sky Park. With community collaboration we can protect our night sky asset while we have it, and mitigate any future lighting that could harm it. The San Luis Valley is fortunate enough to have starry, night skies. Together, we can set an example for the world to see.

Sincerely,

Dani Robben

# PROJECT PROPOSAL

## SANGRE DE CRISTO DARK SKY RESERVE

The San Luis Valley has the potential to become part of one of the largest dark sky areas in the United States. The area's extensive public lands, dry climate, low population density, and high altitude are conducive to natural darkness and exceptional starry night skies. Today, 80% of Americans can no longer see the Milky Way, and the San Luis Valley still contains one of the darkest skies in the country. The citizens of Alamosa enjoy all the benefits of being a rural community: less noise and air pollution, a stronger sense of community, less traffic, and more open spaces. Dark skies are another less commonly talked-about advantage of living in rural America. As a naturally darker and less-populated place, the City of Alamosa has an opportunity to preserve a highly sought-after, rapidly disappearing natural resource – dark skies. As Alamosa continues to plan for expansion and development in its Comprehensive Plan, the City has the unique opportunity to prevent an increase in light pollution and remain one of the darkest parts of Colorado for generations to come. The City of Alamosa could become a leader among neighboring communities in protecting dark skies by passing a dark sky exterior lighting ordinance. This proposed ordinance would limit light pollution, thus saving the City money, reducing energy usage, promoting dark sky tourism, protecting human and environmental health, and reducing the strain on wildlife.

## THE ASK

SLV GO! is requesting that the City of Alamosa adopt the Reserve's Lighting Management Plan by updating its exterior lighting standards to meet the minimum requirements of DarkSky International's (DSI) International Dark Sky Places Program. This will help facilitate the process of establishing the Sangre de Cristo Dark Sky Reserve by helping meet DSI's requirement that "a quality comprehensive Lighting Management Plan (LMP) should be adopted by a sufficient number of communities within the entire Reserve (core and periphery) corresponding to at least 80% of the population AND 80% of the designated area of protection."

## DARK SKY ENGAGEMENT

01

### REVISE

The Unified Development Code to abide by the dark sky standards set by DSI.

03

### SUPPORT

Public education of dark skies, natural nighttime darkness, and the benefits of quality lighting.

02

### ENCOURAGE

All new outdoor lighting to conform to the relevant regulations for night sky friendly lighting.

04

### ACKNOWLEDGE

The value of dark skies as shown by the inclusion of appropriate language in official documents for long term planning.

# Unified Development Code Revisions

To facilitate the designation of the Sangre de Cristo Dark Sky Reserve and to achieve DSI's 5 Principles of Responsible Outdoor Lighting within the City of Alamosa's Unified Development Code, SLV GO! is proposing the following amendments to the Code. Please note these amendments may not be entirely complete, and refer to the attached Lighting Management Plan to revise accordingly.

- Provisions that are being deleted are in black strikethrough text.
- Provisions that are being added are shown in red text.

## DIVISION 4-7. - SIGNS

### Sec. 21-4-703. - Design characteristics.

...

- (e) Illumination. ~~Internal and external illumination of permanent signs~~ All permanent signs may be non-illuminated, illuminated by internal, internal indirect (halo), or lit by external indirect illumination is allowed in all nonresidential and mixed-use zones, and for multifamily and nonresidential uses in residential zones, as follows:
- (1) All illumination shall comply with the standards set out in division 5-4, Lighting.
  - (2) External lights, electrical equipment, and wiring shall be concealed from view.
  - (3) Flashing, blinking, or chasing lights are not allowed.
  - (4) Lighted signs in residential zones shall be turned off by 10:00 p.m. All illuminated signs in nonresidential and mixed-use zones shall be distinguished by 11:00 p.m. or within one (1) hour of the end of normal business hours, whichever occurs later (unless required for wayfinding or the business is open 24 hours).
  - (5) Top-down lighting. Externally illuminated signs shall be lit only from the top of the sign, with fully shielded luminaires designed and installed to prevent light from spilling beyond the physical edges of the sign.
  - (6) Internally illuminated signs (whether free standing or building mounted) shall be subject to all of the following requirements:
    - a. The sign must be constructed with an opaque background and translucent letters and symbols or with a dark colored background and lighter letters and symbols.
    - b. The luminous surface of an individual sign shall not exceed 200 square feet (18.6 square meters).
    - c. The internal illumination, between sunrise and sunset, is to be the lowest intensity needed to allow the sign to be visible for up to 1/2 mile from its installation and shall not exceed 100 nits (100 candela per square meter).
    - d. The luminous surface area of an individual sign shall not exceed 200 square feet.
- (f) Electronic Message Centers. Electronic message centers are allowed on freestanding permanent signs in the CB and CBD zones, as follows:
- (1) Electronic message centers are subject to the requirements of division 5-4, Lighting.
  - (2) Electronic message centers shall appear to be integrated into a permanent freestanding sign, and shall not comprise more than 35 percent of the sign area of sign to which they are attached.
  - (3) Not more than one electronic message center is allowed per subject property.

- (4) Electronic message centers are not allowed if a changeable copy panel is present on the subject property.
- (5) Electronic message centers that are both visible from, and located within 100 feet from, a residential zone shall be turned off by 10:00 p.m.
- (6) Messages appearing on electronic displays shall not be displayed for less than thirty (30) seconds and shall require no longer than 0.25 seconds to transition from one message to another. Moving and/or flashing text or images are prohibited.
- (7) Display brightness, between sunrise and sunset, is to be the lowest intensity needed to allow the sign to be visible for up to 1/2 mile from its installation and shall not exceed 100 nits (100 candela per square meter).
- (8) The luminous surface area of an individual sign shall not exceed 200 square feet.

## **DIVISION 4-8. - DESIGN STANDARDS**

### **Sec. 21-4-805. - Manufactured home park and manufactured home subdivision design standards.**

- (f) Lighting. All interior streets and sidewalks shall be lighted for safe movement of vehicles and pedestrians at night. Such lights shall be fully shielded to prevent glare on adjacent properties and external streets, and to avoid sky glow. All outdoor lighting shall adhere to division 5-4. Lighting.

## **DIVISION 5-4. - LIGHTING**

### **~~Sec. 21-5-401. - Single family detached, duplex, and townhome lighting standards.~~**

~~Exterior lighting on single family detached, duplex, and townhome lots shall either be provided with fixtures that emit 1,500 lumens or less, or be configured so that lights do not cause glare that is visible outside of the property lines of the subject property. All exterior lighting on single family, duplex, or townhome lots is subject to Sec. 21-5-404, Public Safety and Public Nuisance. exterior lighting shall comply with the standards of Section 5-402.~~

### **Sec. 21-5-401. - Purpose and intent.**

The purpose of this section is to provide standards for outdoor lighting design that preserves, protects, and enhances the City's night sky while conserving energy, permitting reasonable and safe nighttime use of properties, minimizing glare and obtrusive light, and helping to protect the natural environment and wildlife from the impacts of night lighting. These standards are based on the requirements of DarkSky International's (DSI) 2018 International Dark Sky Reserve guidelines.

### **~~Sec. 21-5-402. - Multifamily, nonresidential, and mixed-use lighting standards.~~**

### **Sec. 21-5-402. - Scope and applicability.**

- (a) Compliance. All exterior outdoor light luminaires that are replaced or newly installed after the effective date hereof in all zones in the city shall conform to the requirements established by this division.
- (b) Nonconforming Uses: All existing outdoor lighting that does not meet the requirements of this division and is not exempted by this division shall be considered a nonconforming use. The City will encourage property owners to voluntarily bring nonconforming exterior lighting into compliance with this division. Where appropriate, the City may also provide assistance and expertise to homeowners in bringing their exterior lighting fixtures into compliance with this division. Refer to Sec. 21-7-404. - Nonconforming Lighting.

- (c) Modifications; Compliance Through Building Permit Process. The City shall require an exterior lighting fixture to be brought into compliance, through the building permit process, if substantial modifications are made to the exterior of the building or if the footprint of the structure is enlarged.
- (d) Change of Ownership: Properties that change ownership, whether residential or commercial, must bring exterior lighting into compliance with this division.

#### **Sec. 21-5-403. - Application and Review Procedure.**

- (a) Lighting Plans Required. All site or design related and modification permit applications shall include a lighting plan that shows evidence that the proposed lighting fixtures and light sources will comply with this division and shall include the following:
  - (1) Plans or drawings indicating the proposed location of lighting fixtures, height of lighting fixtures on the premises, and type of illumination devices, lamps, supports, shielding and reflectors used.
  - (2) Illustrations, such as contained in a manufacturer's catalog cuts, of all proposed lighting fixtures. For commercial uses, photometric diagrams of proposed lighting fixtures are also required. In the event photometric diagrams are not available, the applicant must provide sufficient information regarding the light fixture, initial lumen rating, wattage of each lamp source, and shielding mechanisms for the planning commission to be able to determine compliance with the provisions of this chapter.
  - (3) A table showing the total amount of proposed exterior lights, by fixture type, wattage, lumens, lamp type, and control descriptions including type of controls (timer, motion sensor, time clock, etc.)
  - (4) Aiming angles and diagrams for recreational lighting fixtures.
- (b) The lighting plan for all new development and major modifications shall be submitted for approval concurrent with the associate application process pursuant in division 8-2. - Permits and Approvals.

#### **Sec. 21-5-404. - Outdoor lighting standards.**

- (a) ~~Generally. Exterior lighting on multifamily, nonresidential, and mixed-use sites in all zones shall conform to the requirements of this Section. Exterior lighting that does not produce glare or sky glow and is not visible from outside of the subject property is exempt from the provisions of this section.~~
- (b) Fixture Types.
  - (1) ~~Generally, light fixtures (wherever mounted) All outdoor lighting subject to this Code shall be "cut-off" fully shielded fixtures that are oriented to limit illumination that is visible or measurable at the property line. as described by Dark Sky International (DSI) and directed toward the ground or downward, shielded by roof elements, or effectively recessed to minimize light trespass, glare, and skyglow.~~
  - (2) ~~"No cut-off"~~ **Unshielded or partially shielded** fixtures may be used only for decorative purposes, provided:
    - a. ~~Their~~ **They are** luminaires that produce no more than ~~1,500~~ **500** lumens (approximately equal to a traditional ~~100W~~ **60W** incandescent bulb); and
    - b. They are not installed above a height of eight (8) feet.
- (c) Maximum Freestanding Fixture Height. No freestanding light fixture shall be greater than twenty-five (25) feet in height, except that greater heights may be approved by the Administrator if it is demonstrated that the greater height improves site lighting compared to fixtures that are

twenty five 25 feet in height or less.

(d) Maximum Illumination Levels.

(1) Brightness of outdoor lighting should be no more than necessary for the task at hand as defined by the Illuminating Engineering Society (IES RP-33-14 & RP-43). For nonresidential developments, a maximum of 50,000 lumens per net acre is permitted; and 25,000 lumens per net acre for residential.

(+)(2) Outdoor lighting shall be deflected, shaded and focused away from adjacent properties, and shall not be a nuisance to such adjacent properties.

(-)(3) Outdoor lighting shall be designed so that any overspill of lighting onto adjacent properties shall not exceed three-tenths of a foot-candle, measured vertically, and three-tenths of a foot-candle, measured horizontally, on adjacent properties.

(e) Canopy Lighting. Canopy lighting for uses that have sheltered outside work or service areas or porte-cocheres, shall meet the standards of this Section. All lighting fixtures shall be recessed into the canopy so that they cannot be viewed from off-site from an eye height of four feet.

(f) Color Temperature. Outdoor lighting fixtures will be chosen to minimize the amount of short-wavelength light emitted into the nighttime environment. The City will prefer amber, yellow, and similar colors for lighting, and avoid bright white light wherever practically possible unless a demonstrated need for color rendition exists. In no case shall the correlated color temperature exceed 3000 K (Kelvins). Luminaires rated 2700K or below are encouraged for better nighttime visibility.

(g) Adaptive Controls. The use of adaptive controls such as half-night photocells, timers, and motion sensors is encouraged so that light fixtures are not on when no one is there to use them. Lighting controlled by motion-activated sensors that limit the duration of illumination to less than five (5) minutes after activation are exempt from this Section, but it is strongly encouraged to use the appropriate color temperature and other dark sky friendly lighting practices.

(h) General Curfew.

(1) In all nonresidential zones,

a. All privately owned outdoor lighting not adaptively controlled shall be extinguished by 11:00 pm or within one (1) hour of the end of normal business hours, whichever occurs later.

b. Outdoor lighting with adaptive controls shall reduce lighting to 25% or less of the total outdoor lighting output allowed by 11:00 p.m. or within one (1) hour of the end of normal business hours, whichever occurs later.

c. Businesses whose normal operating hours are (24) twenty-four hours a day are exempt from this provision.

d. All publically owned lighting not adaptively controlled must be fully extinguished by 11:00 pm, or within one (1) hour of the end of occupancy of the structure or area to be lit, whichever is later.

e. All outdoor lighting is encouraged to be turned off when no one is present to use the light.

(i) Flagpole Lighting.

(1) Property owners are encouraged to not light flagpoles at night, but rather to hoist flags after dawn and lower flags after sunset.

(2) If flags are illuminated at night, lighting is permitted with the following conditions:

a. Flagpoles with a height greater than twenty (20) feet above ground level shall be illuminated only from above. The total light output from any luminaire mounted on top or above the flagpole shall not exceed 800 lumens.

b. Flagpoles with a height equal to or less than twenty feet above ground level may be illuminated from below with up to two (2) spotlight type luminaires emitting no more than 1,000 lumens, utilizing shields to reduce glare and prevent excessive light from shining around the intended target of illumination (the flag).

c. Luminaires are to be mounted so that their lenses are perpendicular to the flagpole and the light output points directly to the flag.



~~Sec. 21-5-403.~~ **Sec. 21-5-405 - Exterior lighting for outdoor recreation.**

- (a) Generally. Ball diamonds, playing fields, driving ranges, tennis courts, and similar amusement or recreation uses have unique requirements for nighttime visibility and, generally, have limited hours of operation. The standards of this section, and not section ~~21-5-402~~ **21-5-404**, apply to outdoor recreation uses.
- (b) Fixture type. Light fixtures for illumination of playing courts and athletic fields shall be "cut-off" fixtures that are oriented to limit sky glow and direct lighting that is visible or measurable at the property line.
- (c) Maximum freestanding fixture height. No freestanding light fixture shall be greater than forty (40) feet in height, except that greater heights may be approved by the administrator if it is demonstrated that the greater height improves site lighting compared to fixtures that are forty (40) feet in height or less.
- (d) Maximum illumination.
  - (1) Field and court lighting shall be deflected, shaded and focused away from adjacent properties and shall not be a nuisance to adjacent properties.
  - (2) Field and court lighting shall be designed so that any overspill of lighting onto adjacent properties shall not exceed one-half foot-candle, measured vertically, and one-half foot-candle, measured horizontally, at the property line.
  - (3) Buffering may be used to reduce impacts of outdoor recreation lighting in order to achieve compliance with the requirements of this subsection (d).
  - (4) Lighting will provide levels of illuminance that are adjustable according to the task, allowing for illuminating levels not to exceed nationally recognized Illuminated Engineering Society standards according to the appropriate class of play, as well as for lower output during other times, such as when field maintenance is being actively performed.
- (e) Curfew. Lighting must be extinguished within one (1) hour of the end of active play. New installations of outdoor sports facility lighting shall be fitted with mechanical or electronic timers to prevent lights from being left on accidentally overnight.

**Sec. 21-5-406. - Greenhouse lighting.**

Wholesale nurseries or greenhouses are allowed in MU or CB Zones and must follow the following provisions in addition to Sec. 21-5-404. - Outdoor lighting standards.

- (a) One-hundred (100%) of the greenhouse facility is required to be screened if indoor lighting is used during nighttime hours, which is between sunset to sunrise.
- (b) No artificial lighting for cultivation or agricultural purposes shall be visible from outside. Black out curtains or another type of light obstruction must be used.

~~Sec. 21-5-404.~~ **Sec. 21-5-407. - Public safety and public nuisance.**

...

**Sec. 21-5-408. - Exemptions.**

The following are exempt from the requirements herein:

- (a) Existing lighting that remains unchanged (including ongoing standard maintenance such as bulb replacement and/or painting of existing poles and fixtures) shall be exempt from the requirements herein unless altered to meet the criteria of Section 21-5-404. Outdoor Lighting Standards.
- (b) Lighting that is not permanently installed and of a temporary nature such as that needed for construction or by law enforcement or emergency services personnel to protect life or property.

Such lighting shall be discontinued upon completion of the work for the day or resolution of the emergency necessitating its usage. Where safety is a concern, this lighting may be allowed to remain in operation after operations are complete, with City approval.

- (c) Official traffic control devices and lights owned and operated by or pursuant to proper authority of the United States of America, the State of Colorado or any of their agencies, and such other lights as are specifically required by federal or state law.
- (d) Alamosa Municipal Airport Lighting. Required navigational lighting systems at public airports for the safe and efficient movement of aircraft during flight, take off, landing, and taxiing are exempt from the provisions of this division.
- (e) String, bistro, and similar lighting provided that the emission of no individual lamp exceeds fifty (50) lumens, and no installation of such lighting exceeds, in the aggregate, six thousand (6,000) lumens. These lights must be rated at or below 3000K.
- (f) Low voltage LED lights and solar lights used to illuminate pathways in residential areas, provided the lights are installed no more than eighteen inches (18") above the adjacent ground level and have caps that direct the light downward.
- (g) Holiday lighting. Unshielded, winter holiday lighting including but not limited to lighting in outdoor trees, shall be illuminated only between November 15 and January 30. All other lighting associated with any national, local or religious holiday or celebration may be illuminated two weeks prior to the holiday and extinguished within two days after the holiday. The light intensity of all holiday lighting shall not exceed one-half (1/2) of a foot candle at the property line.

#### **Sec. 21-5-409. - Prohibited Outdoor Lighting.**

The following types of outdoor lighting are prohibited:

- (a) Outdoor floodlighting by flood light projection above the horizontal plan.
- (b) Search lights, flood lights, laser source lights, or any similar high intensity light, except in emergencies by police, fire or medical personnel or at their direction.
- (c) Flashing or blinking lights, or lighting with changing intensity except for seasonal holiday lighting.
- (d) Any light that could be construed as a traffic control device and which has not been authorized by a state, federal or city government.

#### **Sec. 21-5-410. - Nonconforming Outdoor Lighting.**

Section 21-7-404, Nonconforming Lighting, provides the standards and regulations for nonconforming outdoor lighting.

#### **Sec. 21-5-411. - Violations and Enforcement.**

[This section is paraphrased from the corresponding section in the Tucson & Pima County Lighting Ordinance. This must be adapted to City of Alamosa standards.]

- (a) Any violation of this ordinance shall be considered a civil infraction and is subject to penalties not to exceed the amount of the maximum fine for a class 2 misdemeanor in accordance with State law. Each day of continuance of the violation constitutes a separate violation. Maximum fines are \$750 for individuals and \$10,000 for corporations, associations, or other legal entities. Enforcement procedures shall be pursuant to those established by the City of Alamosa.
- (b) The requirements of this division shall be enforced in compliance with the enforcement provisions of Division 9-2., Enforcement Procedures.



## DIVISION 11-2. - RULES OF CONSTRUCTION, ACRONYMS, AND DEFINITIONS

...

Please see pages 17 and 18 of the Sangre de Cristo Dark Sky Reserve Lighting Management Plan to consider lighting definitions to accompany the aforementioned amendments.

Additional items needed if considering International Dark Sky Community Certification  
(As stated in IDSC 2018 Program Guidelines):

...

*E) Regulations of new installations of publicly-owned outdoor lighting:*

- i) A provision that clearly indicates where, when, and under what circumstances new publicly owned outdoor lighting, including street lighting, is warranted and will be permitted; AND*
- ii) A provision that requires that adaptive controls and/or curfews be employed in all future installations of public outdoor lighting.*

*H) Affects an amortization period, applicable to ALL publicly AND privately owned lighting, to end not more than ten (10) years from the effective date of the outdoor lighting policy, after which all non-conforming lighting extant at the time of enactment must be brought into compliance with the policy.*

Sample Language (adapted from Paonia ordinance):

New public lighting, owned and operated by the City of Alamosa, either streetlights, walkway lights, or external building lighting shall be allowed as recommended by the City Administrator in situations where a public health hazard exists which can only be mitigated by artificial light at night and shall be in compliance with Sec. 5.4 Lighting. Adaptive controls or curfews shall be employed in all new public outdoor lighting installations.

Amortization period. The City adopts ordinance XX-XXXX requiring all existing outdoor lighting in Alamosa to meet these Code standards within a period of ten (10) years. After the effective date hereof, this section shall apply to all exterior outdoor lighting city-wide, including existing residential lighting and illumination from existing outdoor signs. After this date, no person shall install or maintain any light fixture or illuminated sign unless such light fixture meets the requirements of this section. The City plans to update all City owned exterior lighting to meet the standards outlined in this code within a ten (10) year period.

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## Questions?

If you have any questions or concerns, please contact Dani Robben,  
Community Connections Coordinator at [danirobben@slvgo.com](mailto:danirobben@slvgo.com) or 218.407.0399.

# Sangre de Cristo Dark Sky Reserve

## Lighting Management Plan

### 1. Purpose

The provision of an outdoor Lighting Management Plan (LMP), and its continued implementation, is an essential requirement of DarkSky International (DSI) when considering the initial merits of an application for a Dark Sky Place Certification. The principal goal of the LMP is to ensure that the already naturally dark sky in this region is not only protected, but also further enhanced, through various measures, such as dark sky education programs and the adoption of responsible lighting practices. The Sangre de Cristo Dark Sky Reserve is a community project driven by the Sangre de Cristo Dark Sky Coalition (Coalition), which includes representatives from public land management agencies, land trusts, private ranches, educational institutions, astronomy clubs, municipalities, counties, and more. Coalition partners will continue the decades-long campaign of education and awareness to encourage visitors to, residents of, and businesses in the Reserve to adopt night-sky friendly lighting practices for the protection of the night sky and benefits to the end user.

DSI summarizes the many reasons why controlling light pollution is important:<sup>1</sup>

1. *Energy Waste and Carbon Emissions.* In an average year in the U.S. alone, outdoor lighting uses about 120 terawatt-hours of energy, enough energy to meet New York City's total electricity needs for two years. That adds up to \$3.3 billion and the release of 21 million tons of carbon dioxide per year. This is mostly from high intensity lights (high lumens and correlated color temperatures) used to illuminate streets and parking lots. Additionally, at least 30 percent of all outdoor lighting in the U.S. alone is wasted, mostly by lights that aren't shielded. To reduce energy consumption, many municipalities are replacing older, conventional, lighting systems with new, energy efficient, light emitting diodes (LEDs). However, when designing dark sky friendly outdoor lighting, one must consider more than just energy efficiency when addressing the numerous impacts from light pollution.
2. *Negative Effects on Wildlife and Human Health.* Numerous studies have shown that artificial light at night, especially with excessive brightness and color temperature, has numerous negative and deadly effects on many types of wildlife including birds, amphibians, insects and mammals. These lights also affect human health by disrupting sleep and causing mood disorders.
3. *Crime and Safety.* There is no clear scientific evidence showing that increased outdoor lighting deters crime. While brighter lighting may make us feel safer, poor outdoor lighting can actually reduce our personal safety. Studies have found a correlation between increased crime and brightly lit alleyways. In fact, glare from bright lights

creates shadows where criminals can hide and some crimes like vandalism and graffiti thrive on lighting. Glare can also be dangerous to pedestrians and drivers. It shines into our eyes and constricts our pupils, which diminishes our ability to adapt to low-light conditions.

Alamosa County's Code of the West best states why a lighting management plan is vital to protecting our night skies and community health and well-being.<sup>2</sup>

"When well designed and properly installed, outdoor lighting can be very useful in improving visibility and safety and creating a sense of security, while at the same time minimizing energy use and operating costs. If outdoor lighting is not well designed and properly installed, it can be costly, inefficient, glaring and harmful to the nighttime environment. Poorly designed or poorly installed lighting can cause a great deal of glare that can severely hamper the vision of pedestrians, cyclists, and drivers, creating a hazard rather than increasing safety. Glare occurs when you can see light directly from the fixture (or bulb). Unshielded and over-lamped outdoor lighting shines onto neighborhood properties and into bedroom windows, reducing privacy, hindering sleep, and creating an unattractive look to the area. Much of our outdoor lighting wastes energy because it is not well designed. This waste results in high operating costs and increased environmental pollution from the extra power generation needs. We waste over a billion dollars a year in the United States alone lighting up the sky at night. A large fraction of poor lighting shines directly upwards, creating the adverse sky glow above our cities that washed out our view of the dark night sky, taking away an important natural resource. In addition to the cost savings, less sky glow will allow future generations to enjoy the beauty of the stars, and children will be inspired to learn and perhaps to enter the field of science."

A well-written ordinance, with proper lighting installed, will save the public money and increase safety. DSI, in collaboration with the Illuminating Engineering Society (IES), created the *Model Lighting Ordinance* (MLO) to make it easier for municipalities to adopt good lighting plans. This LMP is derived from the MLO and is intended to guide the selection, placement, installation, and operation of all new and replacement lighting in the Sangre de Cristo Dark Sky Reserve (called Reserve in this document), as well as provide guidelines for municipalities, counties, and public and private entities that choose to participate in this dark sky initiative. Outdoor lighting within the Reserve will be managed and regulated by a host of jurisdictions and entities involved in the Reserve project: municipalities, counties, homeowners or property owners associations, public land management agencies, and utility companies. Although lighting policies will likely differ amongst regulatory agencies in some respects, the common goal is to achieve at least the minimum requirements for the DSI's Dark Sky Places Program through a set of unified guidelines.

This LMP's function is to regulate the use of artificial light at night (ALAN) in the Reserve in a way that prioritizes the safety of people and property while minimizing the impact of such light on protected outdoor spaces, viewsheds and wildlife. Therefore, all instances of the use of ALAN in the Reserve will adhere to the *Five Principles for Responsible Outdoor Lighting* (Figure 1).<sup>3</sup> Figure 2 helps illustrate these principles.<sup>4</sup>

## LIGHT TO PROTECT THE NIGHT

### Five Principles for Responsible Outdoor Lighting



**Illuminating**  
ENGINEERING SOCIETY



#### USEFUL



##### ALL LIGHT SHOULD HAVE A CLEAR PURPOSE

Before installing or replacing a light, determine if light is needed. Consider how the use of light will impact the area, including wildlife and the environment. Consider using reflective paints or self-luminous markers for signs, curbs, and steps to reduce the need for permanently installed outdoor lighting.

#### TARGETED



##### LIGHT SHOULD BE DIRECTED ONLY TO WHERE NEEDED

Use shielding and careful aiming to target the direction of the light beam so that it points downward and does not spill beyond where it is needed.

#### LOW LIGHT LEVELS



##### LIGHT SHOULD BE NO BRIGHTER THAN NECESSARY

Use the lowest light level required. Be mindful of surface conditions as some surfaces may reflect more light into the night sky than intended.

#### CONTROLLED



##### LIGHT SHOULD BE USED ONLY WHEN IT IS USEFUL

Use controls such as timers or motion detectors to ensure that light is available when it is needed, dimmed when possible, and turned off when not needed.

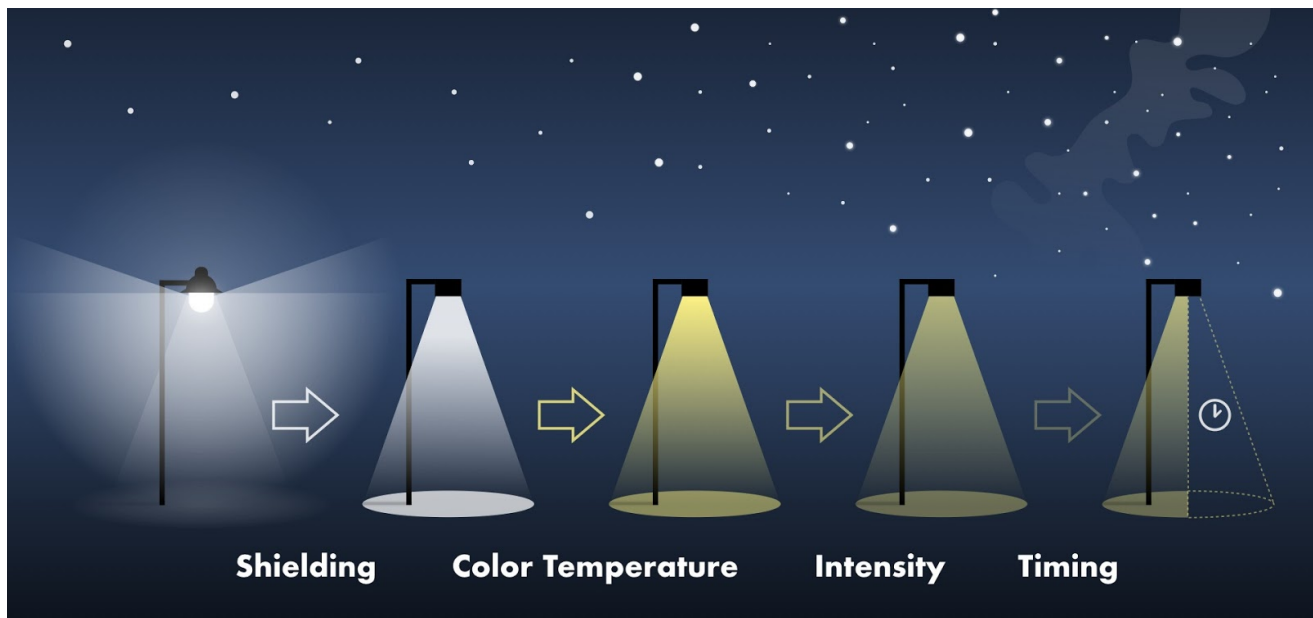
#### COLOR



##### USE WARMER COLOR LIGHTS WHERE POSSIBLE

Limit the amount of shorter wavelength (blue-violet) light to the least amount needed.

**Figure 1.** The Five Principles for Responsible Outdoor Lighting.

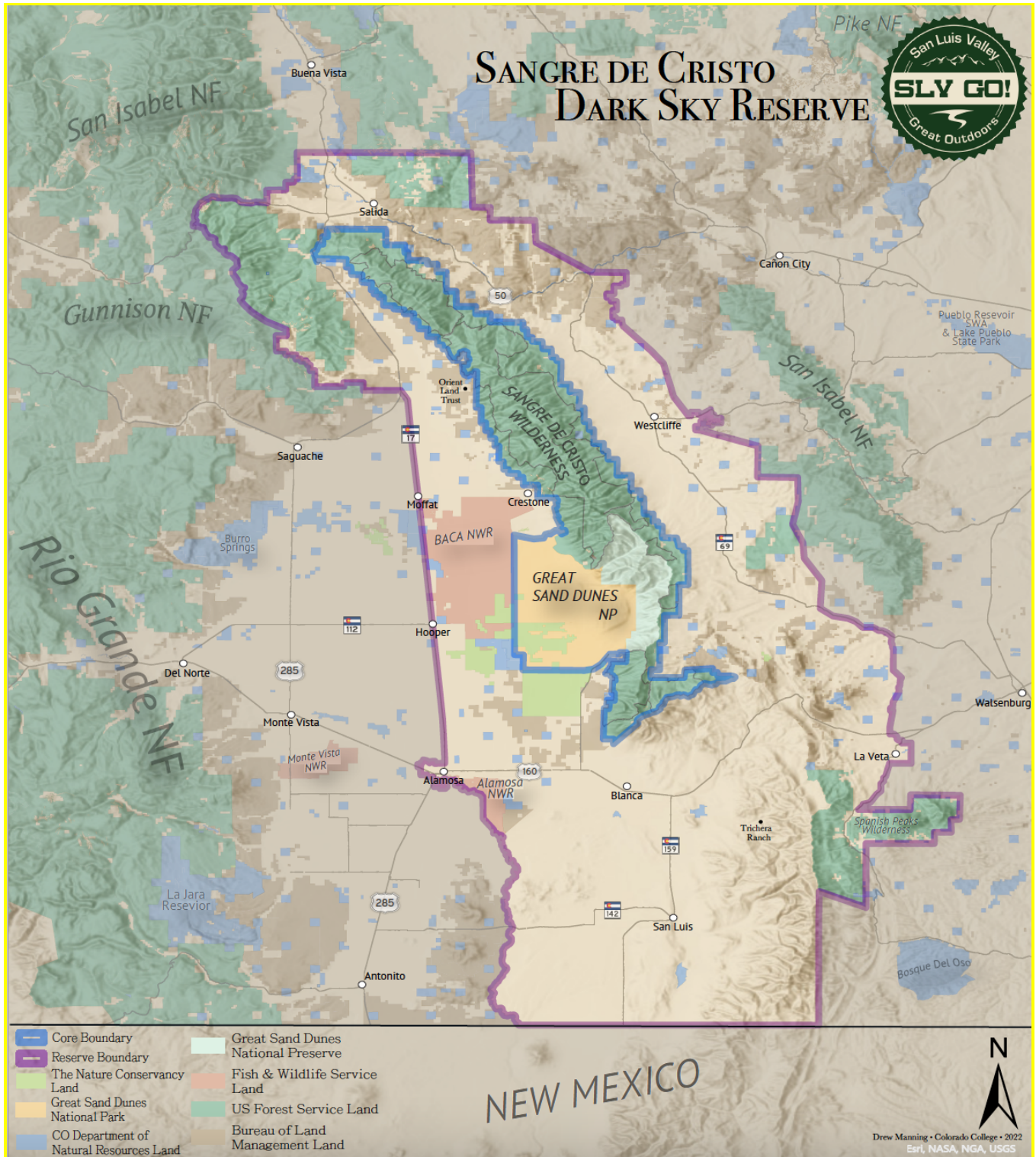


**Figure 2.** Illustration of principles for responsible outdoor lighting.



## 1.1 LMP Region of Focus

In the rest of this document, we will refer to two different zones within the Reserve as shown in the map below: the “**core area**” of the Reserve and the “**periphery area**.” Different rules may apply to these two different zones.



**Figure 3.** Map of the Sangre de Cristo Dark Sky Reserve.<sup>5</sup>

The LMP applies to the entire Reserve although some provisions are particular to the core and periphery area exclusively as defined below.

### ***Core Area***

The LMP applies to the core of the Reserve, which is located within the Sangre de Cristo Mountain Range and includes:

- a. Great Sand Dunes National Park and Preserve (GRSA), International Dark Sky Park - designated in May of 2019
- b. Great Sand Dunes Wilderness
- c. Sangre de Cristo Wilderness
- d. Rio Grande National Forest
- e. San Isabel National Forest

As the core consists of federal lands that are exempt from local regulation, the United States Department of Agriculture, United States Forest Service, Conejos Peak, Saguache, Salida, and San Carlos Ranger Districts, as well as the United States Department of the Interior, National Park Service, Great Sand Dunes National Park and Preserve, have the responsibility for adhering to this LMP and have additionally committed to honoring local outdoor lighting regulations as closely as possible.

### ***Periphery Area***

The periphery area includes part of the following eight counties and numerous communities, who individually bear responsibility for regulations that support this LMP: Alamosa, Chaffee, Costilla, Custer, Fremont, Huerfano, Las Animas, and Saguache Counties. Several of the counties and municipalities in the periphery area have recently updated or adopted lighting regulations that meet or exceed the LMP provisions, and many other communities in the periphery have committed to the Reserve LMP and will ensure that any new or retrofitted lighting will comply with the LMP.

## **1.2 LMP Provisions**

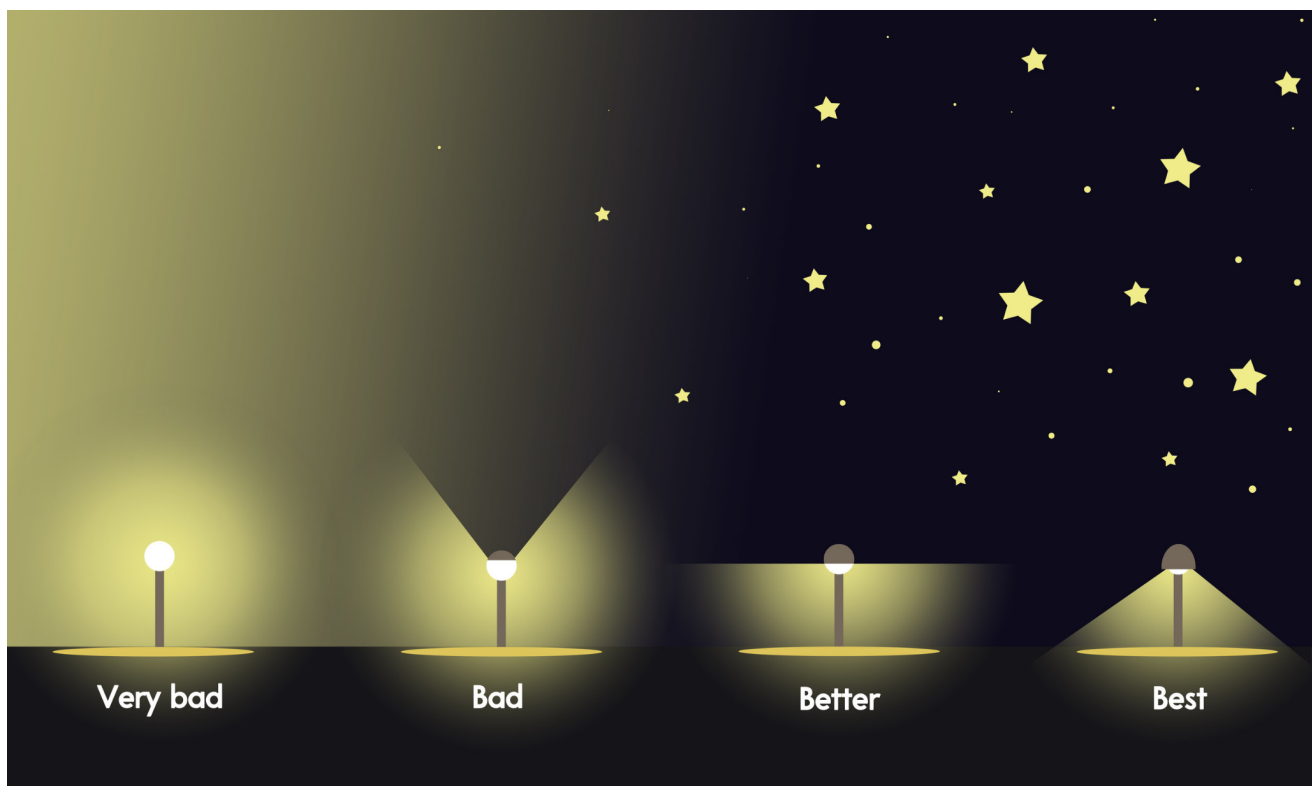
The following provisions shall apply throughout the entire Reserve except when specific to the core or periphery area as defined. Definitions of terms used are found at the end of this document.

### 1.2.1 Light Fixture Shielding

A fully shielded light fixture has a solid barrier (cap) at the top of the fixture in which the lamp (bulb) is located. The fixture is angled so the lamp is not visible below the barrier (no light visible below the horizontal angle).

The goal of fully shielded light fixtures is to prevent the following:

1. Light trespass, which adversely affects neighboring and distant properties.  
Unshielded light travels much farther than people realize.
2. Glare, which can cause discomfort or temporary blindness.
3. Sky glow, which keeps all of us from enjoying the splendor of the night sky.



**Figure 4.** Degrees of light shielding and their impacts on dark sky visibility.

All outdoor light sources shall be fully shielded such that the cut-off angle of all lighting devices (future or replaced) inside of the Reserve must be strictly less than 90° from vertical so no light rays are emitted at or above the horizontal plane (see better and best categories in Figure 4).<sup>6</sup>

The only exceptions are:

- Light sources of 500 lumens or less that may be left unshielded in core areas only for special purposes such as historical preservation (see 1.2.7 Heritage, Architectural, Landscape, and String Lighting).
- Light sources of 500 lumens or less may be left unshielded in the periphery area for purposes such as historical preservation, architectural lighting, or landscape lighting so long as the lighting is in accordance with the appropriate jurisdiction's outdoor lighting requirements.

These lights should not be exempt from other LMP requirements and should be designed to minimize the impact on the night environment.

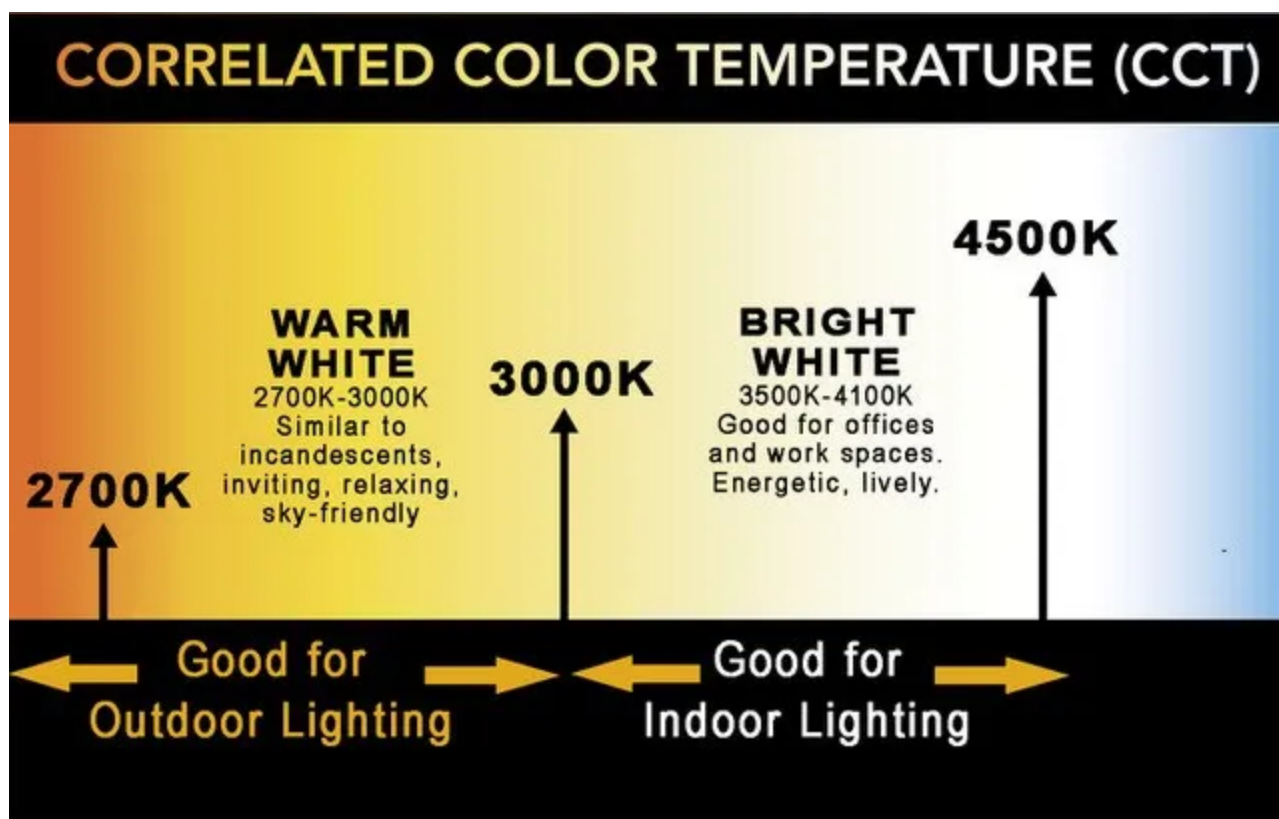
Further, to the greatest possible extent, the Reserve will endeavor to limit the inadvertent or incidental emission of light from indoor spaces to the outdoors through the use of curtains, indoor lighting timers/switches, and other appropriate measures.

	Core Area	Periphery Area
Light Fixture Shielding	All outdoor lighting must be fully shielded, except for light sources of 500 lumens or less for special purposes such as historical preservation	All outdoor lighting must be fully shielded, except for light sources of 500 lumens or less for special purposes such as historical preservation, architectural lighting, or landscape lighting so long as they are in accordance with local outdoor lighting requirements

1.2.2 Spectral Quality of Lighting

Spectral quality is a complex term that mainly refers to how warm or cool a light appears (correlated color temperature of light, CCT). Cool, blue light brightens the night sky more than any other color of light because blue light is preferentially scattered by air molecules. Thus, warm white light sources are preferred, because it results in less sky glow. In addition, exposure to blue light at night has also been shown to harm human health and endanger wildlife.





**Figure 5.** Appropriate uses of correlated color temperature lighting.<sup>7</sup>

Outdoor lighting fixtures in the Reserve will be chosen to minimize the amount of short-wavelength light emitted into the nighttime environment. The Reserve will prefer amber, yellow, and similar colors for lighting, and avoid bright white light wherever practically possible unless a demonstrated need for color rendition exists (Figure 5). In no case shall the correlated color temperature exceed 3000 K (Kelvins).

	Core Area	Periphery Area
Light Fixture Correlated Color Temperature (CCT)	$\leq 3000\text{ K}$ Recommended: $\leq 2400\text{ K}$	$\leq 3000\text{ K}$ Recommended: $\leq 2700\text{ K}$

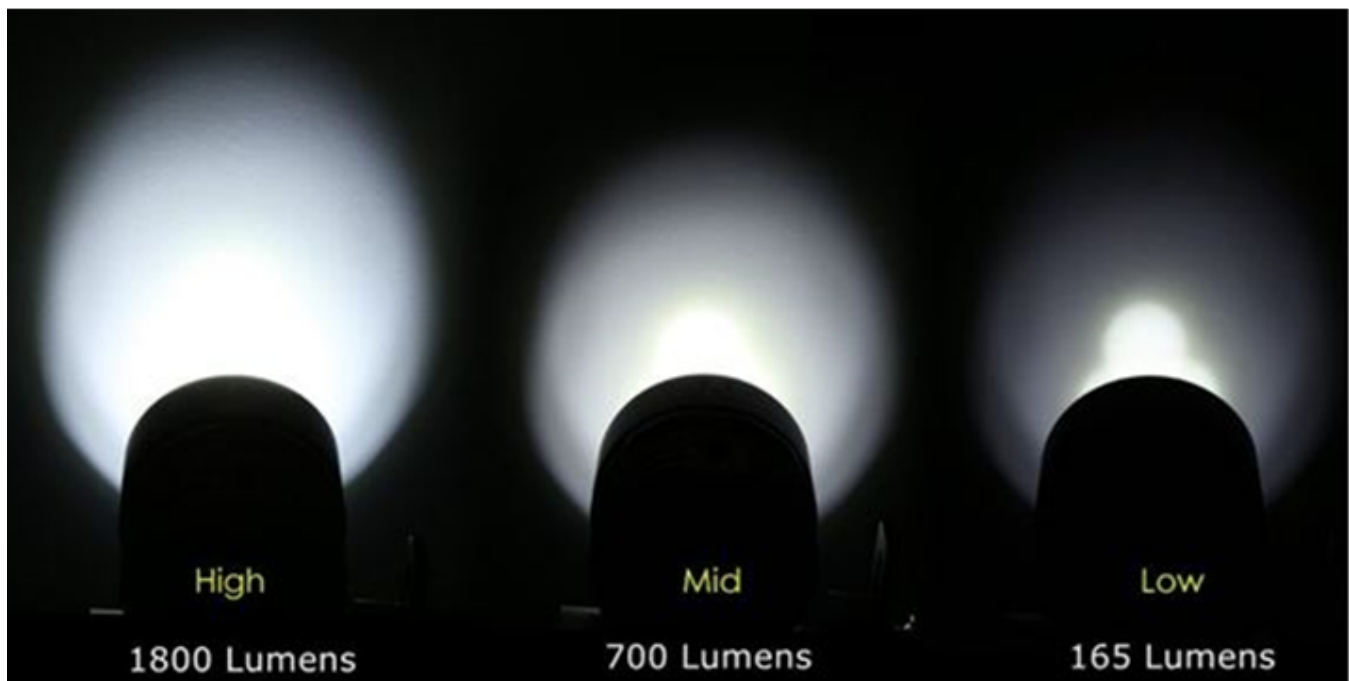
### 1.2.3 Lumens per Net Acre Caps

Limiting the amount of lumens ensures light is no brighter than necessary for the purpose at hand. High output levels waste energy and money. In addition, our eyes are incredibly versatile in detecting various levels of light. And while no one can see in complete darkness, it is amazing how little light is needed for our eyes to find their focus.

Brightness of outdoor lighting should be no more than necessary for the task at hand as defined by the Illuminating Engineering Society (IES RP-33-14 & RP-43). The lumens caps

apply only for the **periphery area**. For nonresidential developments, a maximum of 50,000 lumens per net acre is permitted; and 25,000 lumens per net acre for residential. Individual counties, municipalities, or community HOAs are encouraged to set stricter standards, depending on the population density of their respective areas, as long as they do not exceed the above lumens per net acre cap.

	Residential	Nonresidential
Lumens per Net Acre Caps	25,000 lumens per net acre	50,000 lumens per net acre



**Figure 6.** Lights with lower lumens are better at exclusively illuminating the target object or area.<sup>8</sup>

#### 1.2.4 Sign Illumination

Signage illumination should provide proper legibility and reading sight distances for drivers without any significant impact on environmental light trespass or sky glow. Illuminated signs in the **core area** are prohibited. The following standards apply to the **periphery area**:

- a. All permanent signs may be non-illuminated, illuminated by internal, internal indirect (halo), or lit by external indirect illumination. DSI requires that counties and municipalities within the Reserve adopt a curfew for the operation of illuminated signs to be prohibited from one hour after local sunset to one hour before local sunrise (unless strictly required for wayfinding or identification of a business during normal business hours). A jurisdiction may propose an alternative curfew to the SdCDSR Coalition and to DSI as long as it is reasonable and effectively mitigates artificial light at night. Alternatively, lighting zones can

be delineated, which makes it possible to establish different standards according to the nature of the activities related to certain areas, while also reflecting the ambient light levels desired by a community. This allows for greater flexibility in setting curfew hours based on community input.

- i. Exceptions to 1.2.4.a. Lighting curfews are not required for any of the following:
    - 1. Code required lighting for steps, stairs, walkways, and building entrances.
    - 2. Businesses that operate on a 24 hour basis.
- b. Externally illuminated signs shall be lit only from the top of the sign, with fully shielded luminaires designed and installed to prevent light from spilling beyond the physical edges of the sign.
- c. Internally illuminated signs (whether free standing or building mounted) shall be subject to all the following requirements:
  - i. The sign must be constructed with an opaque background and translucent letters and symbols or with a dark colored background and lighter letters and symbols.
  - ii. The luminous surface of an individual sign shall not exceed 200 square feet (18.6 square meters).
  - iii. Sign brightness shall not exceed 100 nits (100 candela per square meter).
- d. Electronic message displays are prohibited in core areas of the Reserve and discouraged in the periphery area. If operated in the periphery area, electronic message displays must comply with the following provisions:
  - i. It is strongly recommended that counties and municipalities within the Reserve adopt a curfew for the operation of electronic message displays to be prohibited from one hour after local sunset to one hour before local sunrise.
  - ii. Messages appearing on electronic displays shall not be displayed for less than (30) seconds and shall require no longer than 0.25 seconds to transition from one message to another. Moving and/or flashing text or images are prohibited.
  - iii. The luminous surface area of an individual sign shall not exceed 200 square feet (18.6 square meters).
  - iv. Display brightness shall not exceed 100 nits (100 candela per square meter).

	Core Area	Periphery Area
Extinction of Illuminated Signs	NA	Extinction of illuminated signs is required between 1 hour after local sunset to 1 hour before local sunrise (unless required for wayfinding or during normal business hours), or other curfew approved by authorized jurisdiction according to established lighting zones
Internal Illumination	NA	<p>Opaque background and translucent letters and symbols or with a dark colored background and lighter letters and symbols.</p> <p>Luminous surface area shall not exceed 200 square feet (18.6 square meters)</p> <p>Sign brightness shall not exceed 100 nits</p>
External Illumination	NA	Externally illuminated signs shall be lit only from the top of the sign, with fully shielded luminaires
Electronic Message Displays	NA	<p>Messages shall not be displayed for less than (30) seconds and shall require no longer than 0.25 seconds to transition from one message to another, moving and/or flashing text or images are prohibited.</p> <p>Luminous surface area shall not exceed 200 square feet (18.6 square meters)</p> <p>Display brightness shall not exceed 100 nits</p>

### 1.2.5 Adaptive Controls

The use of adaptive controls such as half-night photocells, timers, and motion sensors is encouraged so that light fixtures are not on when no one is there to use them. Lighting controlled by motion-activated sensors that limit the duration of illumination to less than five (5) minutes after activation are exempt from this LMP, but it is strongly encouraged to use the appropriate color temperature and other dark sky friendly lighting practices.

	Core Area	Periphery Area
Lighting Adaptive Control	Mandatory adaptive controls to limit the duration and intensity of outdoor lighting	Recommended adaptive controls to limit the duration and intensity of outdoor lighting

### 1.2.6 Temporary Lighting

All temporary lighting must follow the principles of dark sky friendly outdoor lighting: be strictly used when and where needed; be no brighter than necessary for a specific task; minimize blue light emissions; and eliminate upward directed light.

Within the **core area**, lighting installations required temporarily for the safe performance of nighttime tasks, such as construction, species inventory and survey, conservation related, or cultural events must be limited in extent and duration. Unshielded, low-intensity seasonal lighting whose use is specific to events or time periods is not allowed within the **core area**.

In the **periphery area**, temporary lighting installations for construction purposes or community events or other purposes must be limited in extent and to the minimum number of nights required to complete the task that the lighting illuminates, while considering lighting impacts on traffic, safety, and the surrounding environment. Unshielded, low-intensity seasonal lighting whose use is specific to events or time periods must also be limited in extent and duration and comply with the policies of the local jurisdiction.

	Core Area	Periphery Area
Construction or Survey Lighting	Limited in extent and duration	Limited in extent and duration
Event Lighting	Limited in extent and duration	Limited in extent and duration
Seasonal Lighting	NA	Limited in extent and duration

### 1.2.7 Heritage, Architectural, Landscape, and String Lighting

Lighting of monuments and historical buildings, architectural, and landscape lighting is prohibited in the **core area** of the Reserve.

In the **periphery area**, the highlighting of historical buildings, architecture, and landscaping must be done with a moderate usage of light in order to reveal the subject with minimal impact to the surrounding environment. All lighting must have a luminous flux below 500 lumens and a CCT no greater than 3000 K (preferably  $\leq 2700$  K). If used, spotlights embedded in the ground must be designed in such a way that their resulting lighting cones are contained within the monuments they are aimed at highlighting, i.e. there should be no significant fraction of the flux that escapes to the sky.

	Core Area	Periphery Area
Heritage Lighting	Not allowed	Must be $\leq 500$ lumens  Must be $\leq 3000$ K  Recommended extinction of lighting between 12:00 am and 6:00 am
Architectural Lighting	Not allowed	Must be $\leq 500$ lumens  Must be $\leq 3000$ K  Recommended extinction of lighting between 12:00 am and 6:00 am
Landscape Lighting	Not allowed	Must be $\leq 500$ lumens  Must be $\leq 3000$ K  Recommended extinction of lighting between 12:00 am and 6:00 am
String Lighting	Not allowed	Must be no brighter than 50 lumens per linear foot  OR

		2,000 lumens in residential areas and 4,000 lumens in commercial areas in aggregate.
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### 1.2.8 Outdoor Sports Lighting

Outdoor sports lighting is not allowed in the **core area** of the Reserve.

In the **periphery area**, outdoor sports lighting must be done with best management practices to limit the amount of skyglow, prevent light trespass to neighboring properties, and to limit the impact of lighting on the nighttime environment. The following requirements must be respected by outdoor sport lighting installations within the **periphery area**:

- a. Lighting at public and private outdoor sports facilities, including but not limited to playing fields, arenas, tracks and swimming pools will be shielded to the greatest practical extent to reduce glare, safety hazards, light trespass, and light pollution.
- b. Lighting will provide levels of illuminance that are adjustable according to the task, allowing for illuminating levels not to exceed nationally recognized Illuminated Engineering Society standards according to the appropriate class of play, as well as for lower output during other times, such as when field maintenance is being actively performed.
- c. Lighting shall be provided exclusively for illumination of the surface of play and adjacent viewing stands, and not for any other application.
- d. Lighting must be extinguished within one (1) hour of the end of active play. The outdoor sports facility lighting shall be fitted with mechanical or electronic timers to prevent lights from being left on accidentally overnight.

	Core Area	Periphery Area
Shielding	NA	Lighting will be shielded to the greatest practical extent
Illuminance	NA	Illumination levels will not exceed nationally recognized IES standards according to the appropriate class of play
Extinction Time	NA	Within one (1) hour of the end of active play

Adaptive Controls	NA	All new outdoor sports facilities will be fitted with mechanical or electronic timers
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### 1.2.9 Agricultural Lighting

Agricultural practices are not allowed in the **core area**, thus these standards do not apply to the core.

In the **periphery area**, outdoor lighting associated with discrete farming practices and agricultural use that is a generally accepted, reasonable and prudent method for the operation of the farm or ranch is allowed. Farmers and ranchers should be encouraged to follow the dark sky friendly lighting principles of the LMP, and only use lighting that is limited in extent and duration: it is strictly used when and where needed, be no brighter than necessary for a specific task, minimizes blue light emissions; and eliminates upward directed light.

To prevent excessive lighting and to prevent glare from the public roadway, on other public ways and onto adjoining property, and to reduce atmospheric light pollution, all structures with translucent panels/roofing (including buildings, greenhouses, and hoop houses) requiring artificial lighting at night for indoor cultivation shall either turn off lights once plant light requirements are met, and/or have internal shielding (such as blackout curtains) to prevent glare and light escape from the structure's wall and/or roof.

	Core Area	Periphery Area
Discrete Farming Practices	NA	Harvesting, spotlighting, and other temporary farming practices are allowed, with lighting limited in extent and duration
Greenhouses and Buildings	NA	<p>All structures with translucent panels/roofing (including buildings, greenhouses, and hoop houses) used for indoor cultivation shall have internal shielding (such as blackout curtains)</p> <p>Duration of internal shielding and extent (percent</p>



		coverage) must be determined by appropriate jurisdiction
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1.2.10 Visitor Lighting in the Core Area

Lighting produced by the Reserve visitors within the **core area** shall be limited in such a way as to provide for reasonable use while maintaining the natural character of the park, national forest, and wilderness areas, while avoiding the creation of nuisance for other visitors. All lighting shall be restricted in intensity and extent to provide for the legitimate needs of visitors. Inappropriate, high-intensity light painting of the Reserve landscapes, the use of searchlights, and similar uses of outdoor lighting by visitors is prohibited. In the core area, the usage of red light is recommended.

1.2.11 Exemptions

The following types of outdoor lighting installations shall be permitted in the **core and periphery areas** and are not subject to the other provisions of this LMP:

- Lighting installations required by the relevant local, regional or national jurisdictions.
- Lighting installations required temporarily for the safe performance of nighttime tasks, such as for emergency conditions.
- Outdoor lighting controlled with motion-activated switches limiting the duration of illumination to less than five (5) minutes after activation.
- Outdoor lighting fixtures existing or legally installed prior to the adoption of the Lighting Management Plan and standard repairs, however, new lighting and replacement lighting will be subject to the provisions within the LMP or applicable municipal or county ordinance.

## Definitions

(Derived from the 2011 Joint IDA - IES Model Lighting Ordinance (MLO))<sup>9</sup>

<i>Architectural Lighting</i>	Lighting designed to reveal architectural beauty, shape and/or form and for which lighting for any other purpose is incidental.
<i>Curfew</i>	A time defined by the authority when outdoor lighting is reduced or extinguished.
<i>DSI</i>	Dark Sky International.
<i>Emergency conditions</i>	Generally, lighting that is only energized during an emergency; lighting fed from a backup power source; or lighting for illuminating the path of egress solely during a fire or other emergency situation; or, lighting for security purposes used solely during an alarm.
<i>Fully Shielded Luminaire</i>	A luminaire constructed and installed in such a manner that all light emitted by the luminaire, either directly from the lamp or a diffusing element, or indirectly by reflection or refraction from any part of the luminaire, is projected below the horizontal plane through the luminaire's lowest light-emitting part.
<i>Glare</i>	Lighting entering the eye directly from luminaires or indirectly from reflective surfaces that causes visual discomfort or reduced visibility.
<i>IESNA</i>	Illuminating Engineering Society of North America.
<i>Lamp</i>	A generic term for a source of optical radiation (i.e. "light"), often called a "bulb" or "tube". Examples include incandescent, fluorescent, high-intensity discharge (HID) lamps, and low pressure sodium (LPS) lamps, as well as light-emitting diode (LED) modules and arrays.
<i>Landscape Lighting</i>	Lighting of trees, shrubs, or other plant material as well as ponds and other landscape features.
<i>Light Pollution</i>	Any adverse effect of artificial light including, but not limited to, glare, light trespass, sky- glow, energy waste, compromised safety and security, and impacts on the nocturnal environment.
<i>Light Trespass</i>	Light that falls beyond the property it is intended to illuminate.
<i>Lighting</i>	"Electric" or "man-made" or "artificial" lighting.
<i>Lighting Zone</i>	An overlay zoning system establishing legal limits for lighting for particular parcels, areas, or districts in a community.
<i>Lumen</i>	The unit of measure used to quantify the amount of light produced by a lamp or emitted from a luminaire (as distinct from "watt," a measure of power consumption). There are approximately 10 lumens per footcandle.
<i>Luminaire</i>	The complete lighting unit (fixture), consisting of a lamp, or lamps and ballast(s) (when applicable), together with the parts designed to distribute the light (reflector, lens, diffuser), to position and protect the lamps, and to connect the lamps to the power supply.
<i>New lighting</i>	Lighting for areas not previously illuminated; newly installed lighting of any type except for replacement lighting or lighting repairs.

<i>Nit</i>	A unit of measurement that describes how bright a television, smartphone, computer monitor, laptop screen, or another type of display is. The higher the number of nits, the brighter the display. One nit is equal to one candela (one candlepower) per square meter (1cd/m <sup>2</sup> ).
<i>Outdoor Lighting</i>	Lighting equipment installed within the property line and outside the building envelopes, whether attached to poles, building structures, the earth, or any other location; and any associated lighting control equipment.
<i>Partly shielded luminaire</i>	A luminaire with opaque top and translucent or perforated sides, designed to emit most light downward.
<i>Repair(s)</i>	The reconstruction or renewal of any part of an existing luminaire for the purpose of its on-going operation, other than relamping or replacement of components including capacitor, ballast or photocell. Note that retrofitting a luminaire with new lamp and/or ballast technology is not considered a repair and for the purposes of this ordinance the luminaire shall be treated as if new. "Repair" does not include normal relamping or replacement of components including capacitor, ballast or photocell.
<i>Replacement Lighting</i>	Lighting installed specifically to replace existing lighting that is sufficiently broken to be beyond repair.
<i>Seasonal lighting</i>	Temporary lighting installed and operated in connection with holidays or traditions.
<i>Sign</i>	Advertising, directional or other outdoor promotional display of art, words and/or pictures.
<i>Sky Glow</i>	The brightening of the nighttime sky that results from scattering and reflection of artificial light by moisture and dust particles in the atmosphere. Skyglow is caused by light directed or reflected upwards or sideways and reduces one's ability to view the night sky.
<i>Temporary lighting</i>	Lighting installed and operated for a short period of time.
<i>Translucent</i>	Allowing light to pass through, diffusing it so that objects beyond cannot be seen clearly (not transparent or clear).
<i>Unshielded Luminaire</i>	A luminaire capable of emitting light in any direction including downwards.

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# INTERNATIONAL DARK-SKY ASSOCIATION

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*TO PRESERVE AND PROTECT THE NIGHTTIME ENVIRONMENT AND OUR HERITAGE OF DARK SKIES THROUGH  
ENVIRONMENTALLY RESPONSIBLE OUTDOOR LIGHTING*

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INTERNATIONAL DARK SKY RESERVES

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## International Dark Sky Reserve Program Guidelines

June 2018

## TABLE OF CONTENTS

<b>DEFINITION OF AN INTERNATIONAL DARK SKY RESERVE.....</b>	<b>3</b>
<b>GOALS OF DARK SKY RESERVE CREATION.....</b>	<b>3</b>
<b>DESIGNATION BENEFITS .....</b>	<b>3</b>
<b>ELIGIBILITY.....</b>	<b>4</b>
<b>MINIMUM REQUIREMENTS FOR ALL RESERVES.....</b>	<b>6</b>
<b>LIGHTING MANAGEMENT PLAN.....</b>	<b>9</b>
<b>LIGHTING INVENTORY .....</b>	<b>11</b>
<b>PROVISIONAL STATUS.....</b>	<b>12</b>
<b>IDSR APPLICATION PROCESS.....</b>	<b>13</b>
NOMINATION.....	13
LETTERS OF SUPPORT.....	14
STEPS FOR APPLICANT .....	14
TO BE INCLUDED IN AN IDSR SUBMISSION .....	15
<b>IDA REVIEW PROCESS.....</b>	<b>16</b>
<b>POST-DESIGNATION REVIEW AND MAINTENANCE.....</b>	<b>17</b>
<b>REASSESSMENT OF IDSR DESIGNATIONS.....</b>	<b>18</b>
INVESTIGATION AND DUE PROCESS .....	18
REINSTATEMENT FOLLOWING SUSPENSION.....	18
SALE OR TRANSFER OF LAND OWNERSHIP .....	19

## **DEFINITION OF AN INTERNATIONAL DARK SKY RESERVE**

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An International Dark Sky Reserve (IDSR) is a public or private land of substantial size (at least 700 km<sup>2</sup>, or about 173,000 acres) possessing an exceptional or distinguished quality of starry nights and nocturnal environment, and that is specifically protected for its scientific, natural, educational, cultural heritage, and/or public enjoyment.

The IDSR consists of two regions:

- 1) A “core” area meeting the minimum criteria for sky quality and natural darkness, and
- 2) A “peripheral” or “buffer” area that supports dark sky values in the core and receives similar benefits.

The IDSR is formed through a partnership of landowners and/or administrators that recognize the value of the natural nighttime environment through regulations, formal agreements, and long term planning. The core and the peripheral zone together are referred to collectively as the “Reserve” and “IDSR” in this document.

## **GOALS OF DARK SKY RESERVE CREATION**

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- To identify and honor public or private lands and their surrounding communities for exceptional commitment to and success in implementing the ideals of dark sky preservation
- To promote eco- and astro-tourism
- To promote protection of nocturnal habitats, public enjoyment of the night sky and its heritage, and/or areas ideal for professional and/or amateur astronomy
- To encourage land administrators, surrounding communities and private interests to identify dark skies as a valuable resource in need of proactive protection
- To provide international recognition for such sites
- To encourage other locations to become environmental leaders on dark sky issues by communicating the importance of dark skies and by providing an example of what is possible with proper stewardship

## **DESIGNATION BENEFITS**

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Achieving an IDSR designation brings recognition of the efforts made by any public and/or private organizations protecting the night skies of the identified Reserve area. It



encourages and ensures the sustainability of dark skies conservation actions already undertaken in the area; moreover, it enhances resident and visitor awareness of environmental stewardship and responsibility.

Designation as an IDSR entitles the core and its surrounding communities to display the IDA logo in official publications and promotions and retain the use of this logo by other groups within the community when identifying the area itself<sup>1</sup>. IDA will promote and highlight ongoing Reserve efforts to protect night skies and maintain pages on its website identifying and describing all IDSRs.

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## ELIGIBILITY

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To be eligible for consideration as an IDSR, a candidate site must meet all of the following requirements:

- 1) The core of the proposed IDSR must be a public or private land protected for scientific, natural, educational, cultural, heritage and/or public enjoyment.
- 2) Private inholdings and lands similarly situated within the core zones of Reserves are formally exempt from regulation under the terms of this document, but applicants are encouraged to obtain voluntary compliance from private landowners.
- 3) The core zone boundaries must be drawn according to, and consistent with, the following principles:
  - A) A core area does not have a minimum area requirement but must provide sufficient area to meet the outreach and public access requirements described in this document.
  - B) The proposed core ~~area~~ boundary may take any shape and may follow logical or natural geographic features.
  - C) The core need not be a single, contiguous land; multiple cores may be defined, but this approach must be justified in the application document.

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<sup>1</sup> For example, an organization or community can refer to itself “located in Grand View Dark Sky Reserve”.

- D) If the core includes a publicly protected area, such as a national or regional park, it must strive to fully encompass the boundaries of that area.
- 4) The peripheral zone boundaries must be drawn according to, and consistent with, the following principles:
  - A) The proposed peripheral zone boundary must be singular, contiguous, and completely enclose the core zone. It may take any shape and may follow logical or natural geographic features.
  - B) The peripheral area must encompass a minimum of 700 km<sup>2</sup> (270 mi<sup>2</sup> or 173,000 acres) around the core, roughly equivalent to a circle of 15-km/9.3-mile radius, **OR** a land area sufficient to mitigate 80% of current and expected future light pollution threats to the core.
  - C) Large areas of open water, such as oceans, bays, and larger lakes, do not count toward the 700 km<sup>2</sup> / 80% requirement.

The actual area of the peripheral, or buffer zone, may be reduced or increased by the IDA Dark Sky Places Committee (DSPC) on a case-by-case basis to ensure future protection of the core.

- 5) The boundaries of neither core nor periphery must not be arbitrarily drawn to omit areas that would increase the difficulty of achieving IDSR status, but must instead embrace these areas as an opportunity for improvement. If an irregular shape for either is chosen, it must be justified in the text of the application.
- 6) The core must provide an opportunity for regular public nighttime access, with or without supervision. A portion of designated land may meet this requirement, or access must be available for a fraction of the length of the night. In some cases, such as when working with areas that protect endangered wildlife, archeological sites, or other sensitive resources, this requirement may be adjusted.
- 7) The core must provide an exceptional dark sky resource, relative to the communities and cities that surround it.

## MINIMUM REQUIREMENTS FOR ALL RESERVES

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- 1) A quality comprehensive Lighting Management Plan (LMP) should be adopted by a sufficient number of communities within the entire IDSR (core and periphery) corresponding to at least 80% of population **AND** 80% of designated area of protection. The regulations contained in the LMP must apply to all private **AND** public land-owners within the area of protection. Some exceptions may apply but are individually subject to IDA approval. Minimum standards are described below in the section titled “Lighting Management Plan Guidelines”.<sup>2</sup>
- 2) Typical nighttime conditions characterizing the core must be consistent with or exceed the following criteria:
  - A) The Milky Way is readily visible to the unaided eye;
  - B) There are no nearby artificial light sources yielding significant glare; and
  - C) Any light domes present are dim, restricted in extent, and close to the horizon. These conditions correspond approximately to a visual-band zenith luminance of 21.2 magnitudes per square arcsecond (0.4 mcd/m<sup>2</sup>) and a naked-eye limiting magnitude (NELM) of +6.

In order to substantiate the sky quality, measurements of the night sky brightness at the zenith must be made with suitable instruments, or the NELM must be estimated by a qualified observer. Further, panoramic nighttime photography of the horizon must be included in order to substantiate the number and extent of light domes visible from the site. Measurements of night sky brightness must be distributed over a sufficiently long enough period of time in order to average out fluctuations over timescales ranging from hours to seasons in length.

Applicants should discuss their measurement protocol with the International Dark Sky Places Program Manager and submit all data necessary to substantiate these conditions.

Any designated IDSP that no longer meets these conditions but documents a visual-band zenith luminance from 20.0 to 21.19 magnitudes per square arcsecond or a naked-eye limiting magnitude (NELM) no higher than +5 will be included in a List of Endangered IDSP Sites published on the IDA website. IDA reserves the right to duly

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<sup>2</sup> Lighting required by law under the authority of any entity having higher legal jurisdiction over either the core or peripheral zones may be formally exempted from the requirements of this section.

suspend or revoke the IDSR designation of a Reserve with night sky quality that falls below a visual-band zenith luminance from 20.0 to 21.19 magnitudes per square arcsecond or a naked-eye limiting magnitude (NELM) of +5.

- 3) Evidence of community commitment to dark skies and quality outdoor lighting, as shown by at least two-thirds (67%) of existing outdoor lighting fixtures within the core conforming to the LMP at the time of application (or an alternative fraction approved by the DSPC).
- 4) A lighting inventory and a plan to bring 90% of outdoor lighting in the core into compliance with the Reserve's LMP within five (5) years of receiving an IDSP designation, as well as a written commitment to bring the core into 100% compliance within ten (10) years of designation.
- 5) A measurement program must be maintained either by the core managing agency, communities, private landowners or other public or private organization to follow the evolution of light pollution in the core and assure that the night sky quality does not degrade. Applicants are encouraged, but not required, to submit their measurements to the citizen science projects such as My Sky At Night ([myskyatnight.com](http://myskyatnight.com)) and Globe At Night ([globeatnight.org](http://globeatnight.org)).
- 6) A description of current and suspected future threats to dark skies over the core zone, and a plan to address these threats.
- 7) Communities must have a number of examples of conforming lighting installations proportional to the size of the population they serve, both on roadways **AND** on different private sites (industries, stores, public services, etc.):
  - A) Each participating municipality (excluding businesses, residences, and partners without installed lighting) should have completed **at least one** highly visible demonstration project with night sky friendly lighting consisting of at least 10 lighting fixtures for each 5000 residents; **AND/OR**
  - B) Approximately 10% of fixtures outside of the core must be retrofitted or brought into compliance with the appropriate regulation. This percentage does not include fixtures that were compliant upon the initial lighting survey, but rather must show active motivation of the community to make changes through the form of retrofits and/or appropriate physical changes to the current fixtures' form. Such changes may include, but are not limited to, installation of adaptive controls such as dimmers and motion sensors.

- 8) Participating communities must have a program, either through education, economic incentives, permitting or regulation, to encourage all new outdoor lighting fixtures to conform to the relevant regulation or guidelines for night sky friendly lighting.
- 9) The Reserve's commitment to public education is demonstrated by all of the following:
  - A) The importance of dark skies, natural nighttime darkness, and the benefits of quality lighting should be part of Reserve interpretation/outreach programs. If the Reserve typically provides interpretive programs, then dark skies must be one of the central themes communicated through on-site interpretation<sup>3</sup>. If interpretive programs are not typically offered, then publications, flyers, press releases, media, or other outreach are appropriate substitutes.
  - B) Dedicated dark skies programming must occur at least four times per year; however, more frequent events are preferable. These events may highlight the value of natural nighttime darkness in any appropriate way<sup>4</sup>.
- 10) Acknowledgement of the protected area by government or regulatory agencies situated higher than community level (county/province/etc.) with the perspective that dark skies are an important scientific, natural, cultural, and/or scenic resource value as shown by the inclusion of appropriate language in official documents for long term planning<sup>5</sup>. Communities within the IDSR will receive a certificate verifying the community as a part of the IDSR upon request. Those who wish to erect a sign must address a letter to IDA referring to the community as a part of the IDSR and giving specific examples of their engagement (lighting fixture replacement, outreach program, etc.).
- 11) Once established, the Reserve must erect and maintain appropriate signage indicating the International Dark Sky Reserve designation along a roadway entrance, along a footpath entrance if no roadway exists, or a visitor contact center. If approved by IDA, language as an alternative to "International Dark Sky Reserve" may

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<sup>3</sup> 'Dark skies education' refers not only to astronomy education but also education about wildlife, energy efficiency, safety, and human health. Astronomy education events such as star parties only count as 'dark skies education' if they prominently feature material about dark skies and outdoor lighting.

<sup>4</sup> Examples include cultural or historic value, importance to wildlife, astronomical or stargazing events.

<sup>5</sup> Examples of such documents include General Management Plans, Resource Management Plans, and Facility Development Plans. Consult IDA staff as to whether a particular type of management document meets this requirement.

appear on the signage and in Reserve communications regarding the IDSR status. Once the sign is erected a photograph documenting it must be taken and sent to IDA for records along with a description of its location.

- 12) The Reserve will submit an annual report to IDA by 1 October of each year detailing activities and progress towards fulfilling IDA IDSR goals during the previous year. The report serves to document that the Reserve continues to meet minimum program requirements; sustains partnership, outreach, and interpretive efforts; and makes adequate progress toward at least 90% compliance with LMPs. The report should include dates and brief descriptions of interpretive events, lighting retrofit projects, community outreach, etc. New measurements of the night sky brightness in the core must be obtained and included in the report. It should also provide information on any new lands acquired since designation and/or the most recent prior report, as well as any potential future sale of land that may result in reassessment of IDSR status (see “Sale or Transfer of Land Ownership,” below). Samples of printed materials and press articles should also be included.

Electronic submission of these documents is required in Microsoft Word or PDF format. If the annual report is not sent in a timely fashion, IDA may suspend the IDSR status until the annual reporting requirements have been met.

A Reserve is exempt from the annual reporting requirement in the calendar year in which the IDA designation was awarded. If the designation is received after 1 October of a given calendar year, the Reserve’s first annual report to IDA will be due on 1 October of the following calendar year.

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## **LIGHTING MANAGEMENT PLAN**

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The LMP must contain at least the following minimum provisions:

- 1) The written policy meets or exceeds applicable agency or departmental policies regarding outdoor lighting and conforms to all local, regional, and national laws.
- 2) The use of outdoor light at night is only prescribed when it is strictly needed, where it is needed, and in the appropriate amount for a specific task. The purpose of outdoor light that is allowed under the policy should be specifically to ensure public safety.

- 3) All outdoor lighting fixtures >500 initial lamp lumens<sup>6</sup> must be fully shielded<sup>7</sup> and make appropriate use of timers and motion sensors. Lighting of ≤500 initial lamp lumens may be left unshielded for special purposes, such as historical preservation. The approved special uses must be stated in the LMP. IDA will scrutinize these uses to ensure that core lighting is a suitable example of quality lighting for the public and protects the nighttime environment to the maximum practical extent. IDA may request additional descriptions, photographs, or drawings of these lights. These lights are not exempt from the other lighting guidelines, and must still be designed in such a way to minimize impact to the nighttime environment. Lighting controlled by motion-activated sensors and which limit the duration of illumination to less than five (5) minutes after activation is exempt from regulation by the LMP.
- 4) Lighting must be chosen to minimize the amount of short-wavelength light emitted into the nighttime environment. The lighting policy must restrict lighting in this respect according to one of the following prescriptions:
  - A) The correlated color temperature (CCT) of lamps must not exceed 3000 Kelvins;  
**OR**
  - B) Allowed lighting must not emit more than 25% of its total spectral power at wavelengths < 550 nanometers; **OR**
  - C) The scotopic-to-photopic (S/P) ratio of allowed lighting must not exceed 1.3.These metrics may be found in manufacturer data sheets for lighting products.
- 5) Visitor activities with respect to the introduction of unnecessary artificial light at night into the core environment must be regulated. This must include reasonable limits on the lighting of camping equipment and recreational vehicles, as well as a general prohibition of inappropriate “light painting,” the use of searchlights, and similar activities. Note that this requirement is in no way intended to compromise visitor safety; lighting required in emergency situations may be exempted from compliance.

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<sup>6</sup> “Initial lamp lumens” is defined as the number of lumens of light emitted by a lamp when new and not counting any depreciation of output due to the age of the lamp. This information can be found in manufacturer data sheets.

<sup>7</sup> “Fully shielded” is defined such that the light source is screened and its light directed in such a way that none is emitted above the horizontal plane passing through the lowest light-emitting portion of a fixture.



- 6) Illuminated signs<sup>8</sup> must be regulated as follows:
  - A) Operation is prohibited from one hour after local sunset to one hour before local sunrise (unless strictly required for wayfinding or identification of concessions in the Park during normal business hours); **AND**
  - B) Displays must be single-color on a black background; **AND**
  - C) Luminance must not exceed 100 nits (100 candela per square meter); **AND**
  - D) The luminous/illuminated surface area of an individual sign must not exceed 200 square feet (18.6 square meters).
- 7) A policy governing the installation of temporary lighting in the core requiring that any such installation will adhere to the LMP to the greatest possible extent and whose duration will be limited to the shortest possible time.

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## LIGHTING INVENTORY

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A lighting inventory is a formal audit of outdoor lighting. It is used to determine rates of compliance with the LMP within the IDSR core and to identify lighting equipment in need of rehabilitation through retrofitting or replacement. A complete inventory of outdoor lighting in the core is a requirement for IDSR status, and it must be accompanied by a plan under which lighting in the core will be brought into compliance with the LMP under the terms specified in “Minimum Requirements for All Reserves” (above).

The following must be taken into consideration when collecting and reporting lighting inventory data:

- 1) When there are numerous outdoor lights it is acceptable to group lights by facility or area. Whether the fixtures are fully shielded, are special purpose fixtures under 500 initial lamp lumens, and the intended lighting application must be noted for each fixture or group of fixtures.
- 2) Daytime photographs or manufacturer diagrams of each fixture type should also accompany the inventory.

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<sup>8</sup> “Illuminated sign” is defined as any informational or advertising sign that is illuminated by either internal or external means. Descriptive terms are adjusted here according to the type of illumination.

- 3) Inoperable fixtures, including those physically disconnected from power supplies, must be inventoried. Only those physically disconnected from power supplies may be counted as compliant for the purpose of determining the rate of LMP compliance.

The following is a sample table from portion of a lighting inventory:

Location	Fixture	Fully-Shielded?	Operable?	Special Purpose <500 lumens	Application	Conformity with LMP
Visitor Center	12 fixtures on 14' pole, 70 W HPS	YES	YES	NO	Parking log, timer off at 10pm	YES
	2 door lights, 100 W MH	YES	NO	NO	Building egress	YES
	6 bollard (post) lights, 32 W CFL	NO	YES	NO	Walkway	NO – see plan
Restrooms	2 carriage style lights at doorways, 40 W incandescent	NO	YES	YES	Historic Preservation, egress	YES
Maintenance Yard	6 wall packs, 250 W MH	NO	YES	NO	Occasional night operations	NO – see plan

## PROVISIONAL STATUS

In some cases, a location interested in becoming an International Dark Sky Reserve may lack the resources to make a successful application. Provisional status recognizes the location's ongoing work to become an IDSR and is intended to be used as leverage to enable the necessary lighting upgrades or retrofits.

Provisional status expires after three (3) years. At any time before the end of its Provisional status, a Reserve may reapply for full status. Material submitted for the removal of Provisional status may be an addendum to the initial application as long as the material includes a current assessment of night sky quality, goals, outreach, and programs listed in the original application.

A Reserve may apply for Provisional status if all of the following conditions are met:

- 1) A Lighting Management Plan has been approved by the core zone managing agency;
- 2) Minimum sky quality criteria are satisfied;
- 3) An inventory of outdoor lighting in the core; and
- 4) Appropriate outreach efforts have been undertaken.

Applicants requesting Provisional status should send a nomination package to IDA that contains at least the following information:

- Initial sky quality measurements
- Documented intent to create and support creation of an IDSR
- Three partners (municipalities, parks, organizations, etc.) have documented intent to support an IDSR
- A Lighting Management Plan
- An action plan describing how the aspiring Reserve will meet minimum requirements

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## **IDSR APPLICATION PROCESS**

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### **NOMINATION**

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The nomination may be initiated by a qualified IDA member nominator<sup>9</sup>. Alternately, the Reserve may join IDA as an organizational member and self-nominate. Nominators are encouraged to correspond with IDA staff and the Reserve throughout this process.

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<sup>9</sup> A qualified IDA member nominator is an IDA member in good standing who has personally reviewed a Reserve's outdoor lighting and its commitment to the protection of dark night skies.

## LETTERS OF SUPPORT

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An official letter must be sent to IDA consenting to the IDSR nomination from the core administrator or manager. Official letters of support from the communities, counties, provinces or other jurisdictions to which the lands within the IDSR are subject that confirming their long-term engagement and commitment towards the creation of the IDSR must also be included with the nomination.

## STEPS FOR APPLICANT

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- 1) Make initial contact with IDA by phone or email to discuss the process and receive recommendations, followed by continued communications to update IDA staff on progress and receive additional recommendations.
- 2) Designate a formal point of contact (POC) person, such as a project manager, and provide their telephone number, address and email information to IDA staff. Before and after designation, any changes to this POC, or their information, must be transmitted to IDA immediately in order to ensure continuous communication at all times.
- 3) Obtain a letter of nomination from a qualified IDA member nominator, as well as a supporting letter from the core zone leadership, such as a park superintendent or administrator. Solicit additional letters of support from communities in the peripheral zone.
- 4) Upon completion, sends the application to IDA staff for review of the document at least one month before the chosen submission deadline date. The application must be transmitted electronically to IDA in PDF and/or Microsoft Word format. IDA staff will confirm that the application is complete and ready for submission or return it with specific suggestions for improvements.
- 5) Submit in plenty of time for IDA staff to review and prepare your application to make the bi-monthly deadline that you prefer, as found on the IDA website. Requests to rush applications will **NOT** be honored; planning ahead is essential if the Reserve wishes to meet a specific deadline.

TO BE INCLUDED IN AN IDSR SUBMISSION

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- 1) Map(s) of the area to be designated clearly showing the core and periphery as well as locations of communities within the Reserve. The map must indicate the legal boundaries of the protected land forming the core zone.
- 2) Letter of nomination from a qualified IDA member nominator.
- 3) Letter of nomination consent from the core managing agency.
- 4) Any core zone management documents supporting dark skies and/or the natural nighttime environment as a valued resource.
- 5) Documentation of sky quality, light pollution measures, satellite images, maps, photographs, or other evidence that demonstrates the noteworthiness of the core's dark-sky resource. Measurements of night sky brightness must be obtained using IDA-approved night sky brightness measuring equipment. A sufficient number of sites within the core must be measured to clearly establish the significance of the resource with emphasis on the areas of highest visitation. Data included in the application must contain an updated night sky brightness survey of the core completed no more than two years before the application's submission along with any other relevant information.
- 6) Lighting Management Plan.
- 7) Documentation signed by core administrator showing a lighting inventory of the core and a plan to bring 90% of outdoor lighting into compliance with the Reserve's LMP within five years; as well as a signed commitment to bring the core into 100% compliance within ten (10) years.
- 8) Any documentation of the significance of the core beyond its dark night skies<sup>10</sup>.
- 9) Documentation or description of restoration projects (e.g. community outreach, lighting retrofits, etc.) currently in action.
- 10) Description of interpretive programming or interpretive products related to dark skies/natural darkness, and any related examples of successful education efforts (photos, documentation of student projects, etc.)
- 11) A description of future plans related to the Dark Sky Reserve.
- 12) Proposed alternative wording for IDSR (e.g. Dark Sky Wilderness, Dark Sky Refuge,

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<sup>10</sup> Examples include site historical research, importance to indigenous nocturnal wildlife, cultural significance, etc.

etc.), if desired, along with a justification for the request.

Examples of successful past applications are available on the IDA website.

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## IDA REVIEW PROCESS

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Six (6) application submission deadlines occur in each calendar year, commencing in January and continuing every other month. Before the final application is submitted, it is strongly recommended that the Reserve be in regular communication with the International Dark Sky Places Program Manager to perfect the application before the next application deadline.

IDA staff regularly forwards applications to the DSPC for review. Endorsement of applications by the DSPC is by a 2/3 supermajority vote; otherwise, the DSPC will return applications with reasons for denial of an endorsement and specific recommendations for improvement.

If endorsed, the applicants will be notified and the International Dark Sky Places Program Manager will present the application to the IDA Board of Directors (BOD). A ten (10)-calendar-day waiting period then commences during which the BOD has the right to deny IDSP status should it determine that any problems with the application exist.

If the BOD registers no objection within the ten-calendar-day waiting period, the IDSP designation is considered immediately awarded by IDA. The Reserve has the right to choose when the designation is made public, but it must organize the announcement to be made at the same time as the IDA public notice unless otherwise agreed by both parties. Along with the announcement notice, IDA will publish the Reserve's application on its website; by submitting the application, the Reserve agrees in advance that the application will be made publicly available.

If an application is denied final approval by the IDA BOD, a letter will be sent to the applicant outlining elements of the application that need improvement, along with specific recommendations for ways to remedy any problems the BOD identifies. Applications may be resubmitted for future consideration after remediation is complete. Resubmitted applications will be considered without prejudice.

IDA realizes that certain circumstances surrounding an IDSR application may cause some potential authors of letters of support (or opposition) to feel uneasy about publicly declaring their opinions about the IDA designation. In the interest of providing the Dark Sky Places Committee with as full a picture of community sentiment about applications as possible, it is possible for some letters to be suppressed from online publication if it is felt that making the letters publicly available will subject their authors to

retaliation or harassment. A prospective IDSR seeking this protection for letter writers must make a formal written request. The International Dark Sky Places Program Manager must approve suppression of publication of any part of an application. Note that suppression of online publication does not prevent either the DSPC or the BOD from reading all submitted letters.

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## POST-DESIGNATION REVIEW AND MAINTENANCE

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**The IDSR designation is not awarded in perpetuity.** Rather, it is subject to regular review by IDA and possible revocation if the minimum program requirements are not maintained. More details may be found in the “Reassessment of IDSR Designations” section below.

To ensure that Reserves remain exemplary in their protection and restoration of the natural nighttime environment, IDA will periodically reevaluate each site in the International Dark Sky Places Program. This is done to confirm that the Reserve continues to meet the minimum requirements and is making adequate progress toward LMP compliance goals outlined in this document.

Each designated IDSR must submit to IDA a written report of its activities related to the maintenance of its designation on or before 1 October of each calendar year. The report is a short (typically less than ten-page) synopsis of the Reserve’s activities and initiatives during the intervening year<sup>11</sup>. The report should include dates and brief descriptions of any interpretive events, lighting retrofit projects, outreach efforts, etc. Samples of printed materials and press articles should also be included.

Annual reports should not be burdensome to produce, as they are intended as a compilation of information accumulated throughout the year. Annual reports and supporting documentation must be submitted electronically to the International Dark Sky Places Program Manager in either PDF or Microsoft Word format. If the annual report is not received by IDA in a timely fashion, IDA may suspend the site’s IDSR status until the annual reporting requirement has been met (see the following section). On or about 1 August and 1 September of each year, the International Dark Sky Places Program Manager will remind local contacts at each IDSR of the pending 1 October annual report submission deadline.

A designated IDSR is exempt from the annual reporting requirement in the calendar year in which the IDA designation was awarded. If the designation is received after 1

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<sup>11</sup> Examples of acceptable annual reports are available on the individual IDSR pages on the IDA website.



October of a given calendar year, the IDSR's first annual report to IDA will be due on 1 October of the following calendar year.

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## **REASSESSMENT OF IDSR DESIGNATIONS**

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An IDSR designation is intended to represent the beginning of an ongoing relationship between the Reserve and IDA to our mutual benefit. IDA will periodically review the nature of that relationship in the required annual reports. From time to time, IDA also receives comments from visitors to Reserves that raise concerns about the veracity and timeliness of information provided to IDA by IDSRs. IDA may, at its discretion, investigate claims in which it is alleged that IDSRs are not adhering to commitments made to IDA and the public in their applications to the Program. This section details the IDA procedure for carrying out such investigations, and the rights of IDSRs in such matters.

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### **INVESTIGATION AND DUE PROCESS**

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An allegation of impropriety concerning any of the elements of participation in the Program outlined in this document is subject to IDA investigation and potential disciplinary action including temporary suspension and/or permanent revocation of the IDSR designation. IDA staff shall perform due diligence in gathering facts concerning such allegations it deems credible, and will prepare a report of its findings for consideration by the DSPC. The DSPC commits to weighing the evidence fairly and impartially, and to seek to resolve disputes whenever possible through dialog. A IDSR subject to an investigation shall be notified in a timely manner and solicited for evidence contrary to the specifics of the allegation at hand. The IDSR will be given an opportunity to correct any deficiencies with regard to the Program guidelines established by the IDA investigation within a reasonable time period to be prescribed by the DSPC.

Failure to achieve consensus through these means risks a DSPC recommendation for suspension or revocation of the IDSR designation. If made, such a recommendation will be forwarded to the BOD for formal ratification before coming into force. The BOD decision on any disciplinary matters involving a IDSR shall be considered definitive and binding.

Any IDSR so investigated has the right to review the allegations against it and all factual information collected by IDA pertinent to the allegations.

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### **REINSTATEMENT FOLLOWING SUSPENSION**

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If the DSPC recommends a suspension of an IDSR designation, and the BOD ratifies

the suspension, the IDSR shall be immediately notified. The status of a suspended IDSR shall be changed to “Provisional” in all IDA communications until the designation is reinstated or revoked; however, the process of obtaining reinstatement of a designation is not the same as that outlined in the “Provisional Status” section of these guidelines.

To obtain reinstatement of a suspended designation, the IDSR must provide evidence to the DSPC’s satisfaction that the specific issues identified by the DSPC as grounds for the suspension have been corrected and that all Program guidelines are once again met. The DSPC will consider the evidence presented by the IDSR and render a judgment to either

- Accept the reinstatement petition, **OR**
- Reject the petition and recommend revocation, **OR**
- Return the petition with further instructions and a defined deadline for a IDSR response.

A suspension left unresolved after one (1) year from the date of the BOD’s assent to the suspension automatically becomes a permanent revocation. Revocation entails removal of the IDSR from IDA’s roll of approved International Dark Sky Places, and from mention on the IDA website and in member and external communications. IDA reserves the right to take legal action against any former IDSR whose designation is duly revoked but continues to use the IDA name/logo in advertising, communications, and/or signage.

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## SALE OR TRANSFER OF LAND OWNERSHIP

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IDA considers the rights and privileges outlined here in association with IDSR status to be simultaneously permanent and revocable. Furthermore, IDA requires that the responsibilities and obligations of the landowner(s) at the time IDSR status is achieved are incumbent upon all future landowner(s) if the core zone(s) of a participating Reserve is/are sold or its/their title is otherwise transferred to any other public or private owner. A new owner or owners may unilaterally withdraw from participation in the program at any time by indicating these wishes in writing; otherwise, IDA will hold a new owner or owners accountable to the provisions of these guidelines in perpetuity. Any failure of new ownership to abide by the conditions for continued participation in the program laid out in this document, whether indicated by withdrawal or abandonment of responsibilities, will cause IDA to take action as described above (‘Investigation and Due Process’) which may result in the permanent revocation of IDSR status.

# Unified Development Code Revisions

To facilitate the designation of the Sangre de Cristo Dark Sky Reserve and to achieve DSI's 5 Principles of Responsible Outdoor Lighting within the City of Alamosa's Unified Development Code, SLV GO! is proposing the following amendments to the Code. Please note these amendments may not be entirely complete, and refer to the attached Lighting Management Plan to revise accordingly.

- Provisions that are being added are shown in colored text.


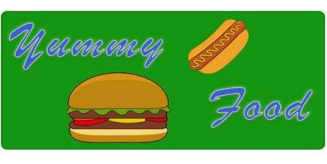




## DIVISION 4-7. - SIGNS

### Sec. 21-4-703. - Design characteristics.

- ...
- (e) **Illumination.** Internal and external illumination of permanent signs-is allowed in all nonresidential and mixed-use zones, and for multifamily and nonresidential uses in residential zones, as follows:
- (1) All illumination shall comply with the standards set out in division 5-4, Lighting.
  - (2) External lights, electrical equipment, and wiring shall be concealed from view.
  - (3) Flashing, blinking, or chasing lights are not allowed.
  - (4) Lighted signs in residential zones shall be turned off by 10:00 p.m. *All illuminated signs in nonresidential and mixed-use zones shall be turned off by 11:00 p.m. or within one (1) hour of the end of normal business hours, whichever occurs later, unless required for wayfinding or the business is open 24 hours.*
  - (5) *Top-down lighting. Externally illuminated signs shall be lit only from the top of the sign, with fully shielded fixtures designed and installed to prevent light from spilling beyond the physical edges of the sign.*
  - (6) Internally illuminated signs shall be subject to all of the following requirements:
    - a. *The sign must be constructed with an opaque background and translucent letters and symbols or with a dark-colored background and lighter letters and symbols. See Figure 21-4-703 Internally Illuminated Signs.*
    - b. *The luminous surface of an individual sign shall not exceed 80 square feet per face.*
    - c. *The internal illumination, between sunrise and sunset, shall be the lowest intensity needed to allow the sign to be visible for up to 1/2 mile and shall in no event exceed 100 nits.*
- (f) **Electronic Message Centers.** Electronic message centers are allowed on freestanding permanent signs in the CB and CBD zones, as follows:
- (1) Electronic message centers are subject to the requirements of division 5-4, Lighting.

- (2) Electronic message centers shall appear to be integrated into a permanent freestanding sign, and shall not comprise more than 35 percent of the sign area of the sign to which they are attached.
- (3) Not more than one electronic message center is allowed per subject property.
- (4) Electronic message centers are not allowed if a changeable copy panel is present on the subject property.
- (5) Electronic message centers that are both visible from, and located within one hundred (100) feet from, a residential zone shall be turned off by 10:00 p.m.
- (6) Messages appearing on electronic displays shall not be displayed for less than thirty (30) seconds and shall require no longer than 0.25 seconds to transition from one message to another. Moving and/or flashing text or images are prohibited.
- (7) Display brightness, between sunrise and sunset, is to be the lowest intensity needed to allow the sign to be visible for up to 1/2 mile from its installation and shall not exceed 100 nits.
- (8) The luminous surface area of an individual sign shall not exceed 80 square feet per face.

**Figure 21-5-703E6**  
**Internally Illuminated Signs**

Light Background <input checked="" type="checkbox"/>	Colored Background <input checked="" type="checkbox"/>	Opaque Background <input checked="" type="checkbox"/>
		
		

## DIVISION 4-8. - DESIGN STANDARDS

**Sec. 21-4-805. - Manufactured home park and manufactured home subdivision design standards.**

...

(f) **Lighting.** All interior streets and sidewalks shall be lighted for safe movement of vehicles and pedestrians at night. Such lights shall be fully shielded to prevent glare on adjacent properties and external streets, and to avoid sky glow. All outdoor lighting shall adhere to division 5-4. Lighting.

...

**DIVISION 5-4. - LIGHTING**

**Sec. 21-5-401. - Purpose and intent.**

The purpose of this section is to provide standards for outdoor lighting design that preserve, protect, and enhance the City's night sky while conserving energy, permitting reasonable and safe nighttime use of properties, minimizing glare and obtrusive light, and helping to protect the natural environment and wildlife from the impacts of night lighting. These standards are based on the provisions of DarkSky International's (DSI) 2018 International Dark Sky Reserve guidelines.

**Sec. 21-5-402. - Scope and applicability.**

- (a) **Compliance.** All outdoor lighting that is replaced or newly installed after the effective date of this ordinance shall conform to the requirements established by this division. Existing lighting that remains unchanged (including ongoing standard maintenance such as bulb replacement and/or painting of existing poles and fixtures) shall be exempt from the requirements herein,
- (b) **Exemptions.** The following are exempt from the requirements of this division.
  - (1) Lighting that is not permanently installed and of a temporary nature, such as lighting needed for construction. Such lighting shall be discontinued upon completion of the work for the day or resolution of the situation necessitating its usage.
  - (2) Lighting of any type that is installed or (or required to be installed) by the federal government, the State of Colorado, Alamosa County, the city, or the school district, on property owned or controlled by the governmental entity. Such lights include but are not limited to traffic control devices, temporary lights that are used in conjunction with traffic control, and other lights that said entities display, require, or license to be displayed upon property that they own or control.
  - (3) String, bistro, and similar lighting provided that the emission of no individual lamp exceeds fifty (50) lumens, and no installation of such lighting exceeds six thousand (6,000) lumens in aggregate. These lights must be rated at or below 3000 Kelvins.

- (4) Low voltage landscape lighting used to illuminate pathways and landscape features in residential areas, provided the lights are installed no more than eighteen inches (18") above the adjacent ground level and have caps that direct the light downward.
- (5) Lighting that is clearly incidental, customary, and commonly associated with a holiday. The light intensity of all holiday lighting shall not exceed one-half (1/2) of a foot-candle, measured both horizontally and vertically, at the property line.
- (c) **Nonconforming Lighting.** All existing outdoor lighting that does not meet the requirements of this division and is not exempted by this division shall be brought into compliance pursuant to the standards set forth in Sec. 21-7-404. - Nonconforming Lighting.

#### **Sec. 21-5-403. - Prohibited Outdoor Lighting.**

The following types of outdoor lighting sources, fixtures, and installations shall be prohibited in the City of Alamosa:

- (a) Outdoor floodlighting by floodlight projection above the horizontal plane.
- (b) Searchlights, flood lights, laser source lights, or any similar high-intensity light, except in emergencies by police, fire, or medical personnel or at their direction.
- (c) Flashing or blinking lights, or lighting with changing intensity except for seasonal holiday lighting.
- (d) Any light that could be construed as a traffic control device and which has not been authorized by a state, federal, or local government.
- (e) Mercury vapor lighting.

**Sec. 21-5-404. - Lighting Information Required.** All site or design-related and modification permit applications shall include sufficient information that the proposed lighting complies with this division, and shall include illustrations, such as those contained in a manufacturer's catalog cuts, of all proposed lighting fixtures. The Administrator may require information regarding the light fixture, initial lumen rating, wattage of each lamp source, and shielding mechanisms.

#### **Sec. 21-5-405. - Outdoor Lighting Standards.**

(a) **Generally.** Exterior lighting in all zones, except for outdoor recreation lighting, shall conform to the requirements of this Section.

(b) **Fixture Types.**

- (1) All outdoor lighting subject to this Code shall be fully shielded and directed toward the ground or downward, shielded by roof elements, or effectively recessed to minimize light trespass, glare, and skyglow.
- (2) Unshielded or partially shielded fixtures may be used only for decorative purposes, provided:

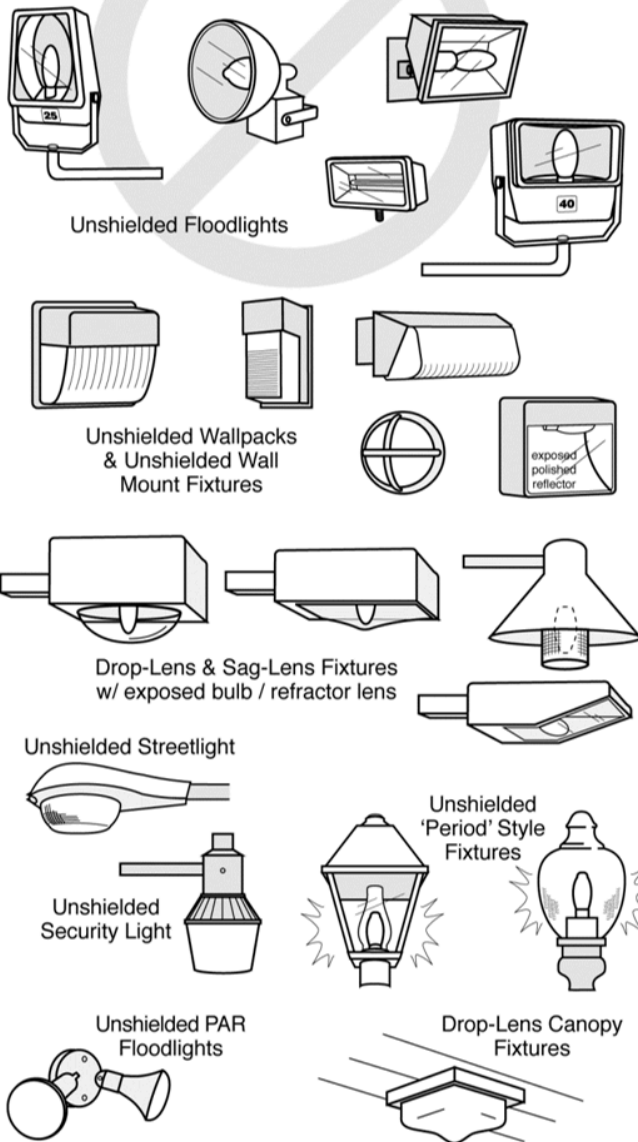
- a. They are fixtures that produce no more than 500 lumens (approximately equal to a traditional 60W incandescent bulb); and
- b. They are not installed above a height of eight (8) feet.

Figure 21-5-405B

## Illustrative Examples of Acceptable and Unacceptable Light Fixtures

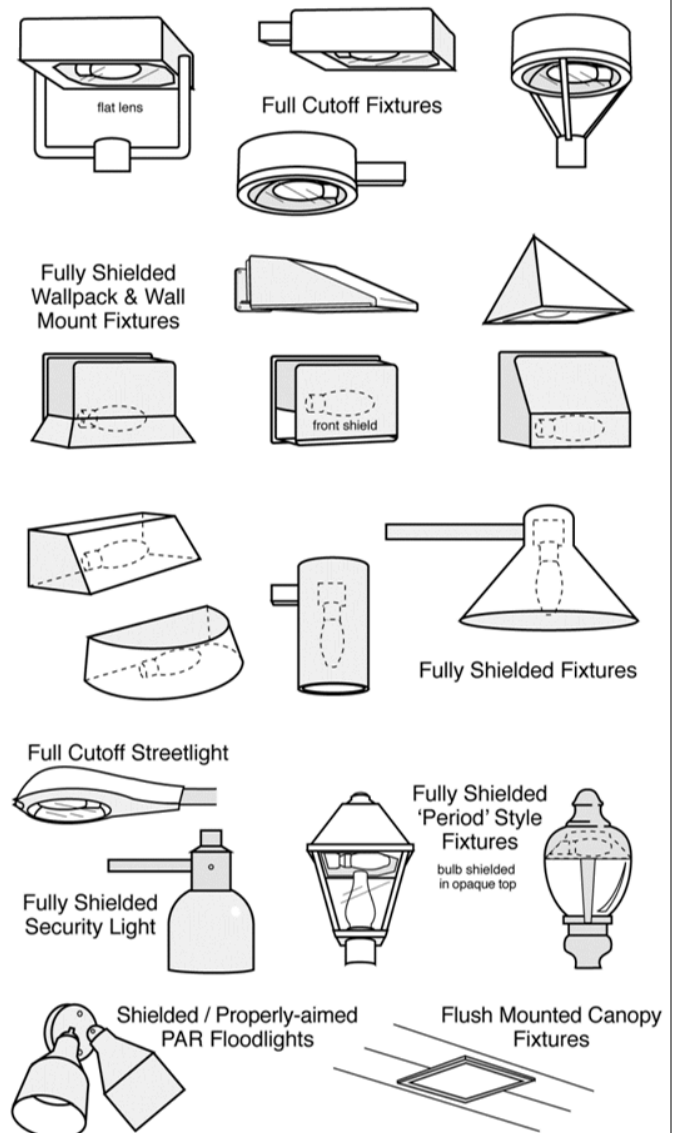
### Unacceptable / Discouraged

Fixtures that produce glare and light trespass



### Acceptable

Fixtures that shield the light source to minimize glare and light trespass and to facilitate better vision at night





(c) **Maximum Freestanding Fixture Height.** No freestanding light fixture shall be greater than twenty-five (25) feet in height for non-residential and mixed uses and fifteen (15) feet in height for residential uses, except that greater heights may be approved by the Administrator if it is demonstrated that the greater height improves site lighting in a manner consistent with this Division.

(d) **Maximum Illumination Levels.**

(1) Brightness of outdoor lighting should be no more than necessary for the task at hand as defined by the Illuminating Engineering Society (IES RP-33-14 & RP-43). The maximum illumination for nonresidential and multifamily uses shall be 50,000 lumens per acre, and 25,000 lumens per acre for residential uses.

(2) Outdoor lighting shall be deflected, shaded, and focused away from adjacent properties, and shall not be a nuisance to such adjacent properties.

(3) Outdoor lighting shall be designed so that any overspill of lighting onto adjacent properties shall not exceed three-tenths of a foot-candle, measured vertically, and three-tenths of a foot-candle, measured horizontally, on adjacent properties.

(e) **Canopy Lighting.** Canopy lighting for uses that have sheltered outside work or service areas or porte-cocheres, shall meet the standards of this Section. All lighting fixtures shall be recessed into the canopy so that they cannot be viewed from off-site from an eye height of four feet.

(f) **Color Temperature.** Outdoor lighting fixtures shall be chosen to minimize the amount of short-wavelength light emitted into the nighttime environment, such as amber, yellow, and similar colors for lighting, and avoid bright white light wherever practically possible unless a demonstrated need for color rendition exists. In no case shall the correlated color temperature exceed 3000 Kelvins.

(g) **General Curfew.**

(1) In all nonresidential zones,

a. All privately owned outdoor lighting not adaptively controlled shall be extinguished by 11:00 pm or within one (1) hour of the end of normal business hours, whichever occurs later.

b. Outdoor lighting with adaptive controls shall reduce lighting to 25% or less of the total outdoor lighting output allowed by 11:00 p.m. or within one hour of the end of normal business hours, whichever occurs later.

c. Businesses whose normal operating hours are (24) twenty-four hours per day are exempt from this provision.

(h) **Use of Adaptive Controls.** All outdoor lighting fixtures greater than 500 initial lamp lumens shall make appropriate use of timers and motion sensors.

(i) **Flagpole Lighting.**

Nighttime flag illumination shall conform to the following standards:

- a. Flagpoles with a height greater than twenty (20) feet above ground level shall be illuminated only from above. The total light output from any fixture mounted on top or above the flagpole shall not exceed 800 lumens.
- b. Flagpoles with a height equal to or less than twenty feet above ground level may be illuminated from below with up to two (2) spotlight-type fixtures, each emitting no more than 1,000 lumens, utilizing shields to reduce glare and prevent excessive light from shining around the intended target of illumination (i.e. the flag).
- c. Fixtures are to be mounted so that the light output points directly to the flag.

**Sec. 21-5-406 - Exterior lighting for outdoor recreation.**

- (a) **Generally.** Ball diamonds, playing fields, driving ranges, tennis courts, and similar amusement or recreation uses have unique requirements for nighttime visibility and, generally, have limited hours of operation.
- (b) **Fixture type.** Light fixtures for illumination of playing courts and athletic fields shall be fully-shielded fixtures that are oriented to limit sky glow and direct lighting that is visible or measurable at the property line.
- (c) **Maximum freestanding fixture height.** No freestanding light fixture shall be greater than forty (40) feet in height, except that greater heights may be approved by the administrator if it is demonstrated that the greater height improves site lighting compared to fixtures that are forty (40) feet in height or less.
- (d) **Maximum illumination.**
  - (1) Field and court lighting shall be deflected, shaded and focused away from adjacent properties and shall not be a nuisance to adjacent properties.
  - (2) Field and court lighting shall be designed so that any overspill of lighting onto adjacent properties shall not exceed one-half foot-candle, measured vertically, and one-half foot-candle, measured horizontally, at the property line.
  - (3) Buffering may be used to reduce impacts of outdoor recreation lighting in order to achieve compliance with the requirements of this subsection (d).
  - (4) Lighting shall provide levels of illumination that are adjustable according to the task, allowing for illumination levels not to exceed nationally recognized Illuminated Engineering Society standards according to the appropriate class of play, as well as for lower output during other times, such as when field maintenance is being actively performed.
- (e) **Curfew.** Lighting shall be extinguished within one (1) hour of the end of active play. New installations of outdoor sports facility lighting shall be fitted with mechanical or electronic timers to prevent lights from being left on accidentally overnight.

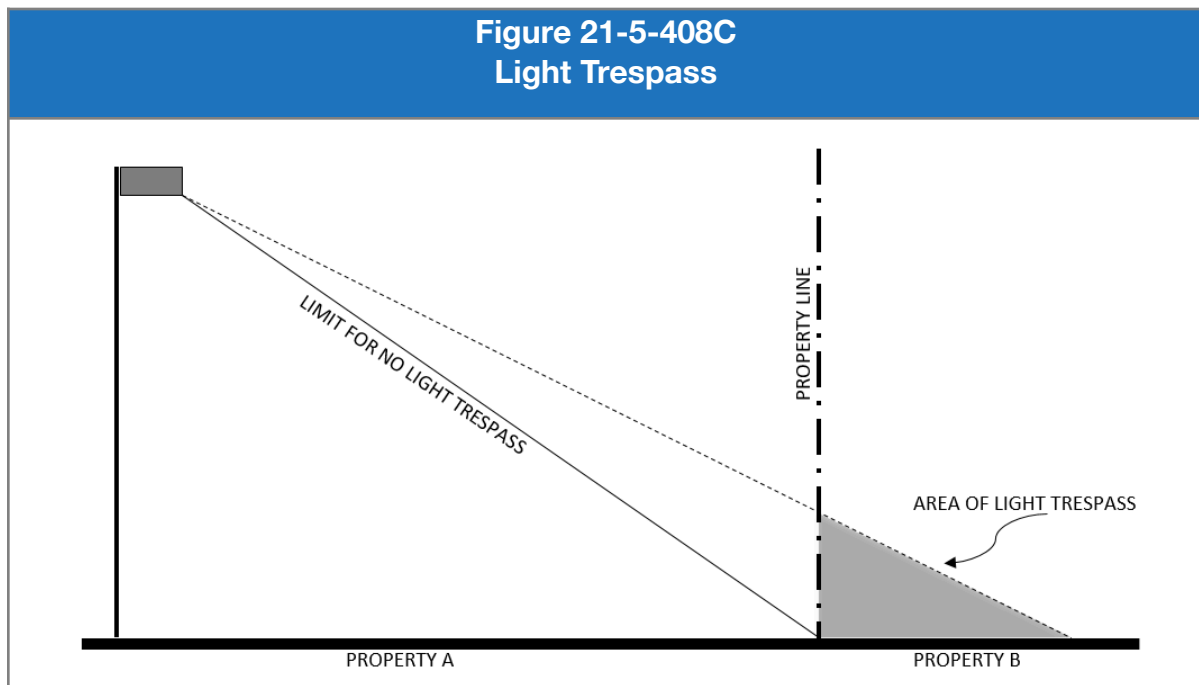
**Sec. 21-5-407. - Greenhouse lighting.**

If indoor lighting is used during nighttime hours, which is between sunset to sunrise,

for cultivation or agricultural purposes, whether as a principal or accessory use, it shall not be visible from outdoors. Black-out curtains or other kinds of light obstruction may be used.

**Sec. 21-5-408. - Public safety and public nuisance.**

- (a) Generally. The city may require the modification or removal or limited operation of existing or new lighting fixtures if they are found to be a public hazard or public nuisance according to the criteria of this section.
- (b) Hazards. Criteria for finding illumination to be a public hazard are as follows:
- (1) Light trespass or glare which is sufficiently intense or contrasts excessively with surrounding illumination, regardless of the intensity of the surrounding illumination, in a manner to cause impairment of visual performance or to distract from or impair the safe operation of a vehicle.
  - (2) Light trespass or glare that impairs a person's visual performance or ability to avoid obstacles in their path.
- (c) Nuisance. Criteria for finding illumination to be a public nuisance are as follows:
- (1) Light trespass or glare that deprives an owner or occupant of usual and reasonable use and enjoyment of their property.
  - (2) A high frequency or duration of periods when light trespass or glare is sufficient to interrupt or interfere with usual and reasonable use and enjoyment of property other than the subject property.
  - (3) Light trespass or glare that causes visual discomfort or impairment of visual performance in a manner that deprives the average person from the usual and reasonable enjoyment of the public streets and properties of the city.



**Sec. 21-7-404. - Nonconforming Lighting.** All existing outdoor lighting that does not meet the requirements or exemptions in Division 5-4 shall be considered a nonconforming use.

**(a) Residential Uses.** Nonconforming outdoor lighting for residential uses shall be brought into conformance when:

- (1) An existing building is expanded or improved, all new or relocated lighting shall be required to meet the provisions of article V, division 4, lighting.
- (2) All existing lighting shall be brought into compliance with this UDC when:
  - a. A building is expanded such that its floor area grows by **twenty (20)** percent or more;
  - b. The value of proposed new, expanded, or upgraded buildings or improvements (collectively "new construction") on the subject property exceeds ~~two (2) times~~ the value of the buildings and improvements on the subject property before the new construction.

**(b) Nonresidential, multifamily, and vertically-mixed uses.** Nonconforming outdoor lighting for nonresidential, multifamily, and vertically-mixed uses shall be brought into conformance when:

- (1) A building, parking lot, or use is expanded such that its floor area grows by **ten (10)** percent or more;
- (2) The value of proposed new, expanded, or upgraded buildings or improvements (collectively "new construction") on the subject property exceeds ~~two (2) times~~ **fifty (50) percent of** the value of the buildings and improvements on the subject property before the new construction.

**(c) Change of use.** Modifications to nonconforming lighting are not required if the use of a building changes from one (1) use to another without further changes to the site or the exterior of the building, unless:

- (1) A change of use requires additional parking, in which case the parking that is provided to meet that requirement must also comply with the standards in div. 5-4, lighting.
- (2) A change of use requires limited or conditional use approval, in which case the conditions for approval may include requirements for additional lighting upgrades.

**(d) Redevelopment.** If the subject property is redeveloped, lighting shall be provided as required by div. 5-4, lighting.

=====Original=====

**Sec. 21-7-404. - Nonconforming Lighting.** All existing outdoor lighting that does not meet the requirements or exemptions in Division 5-4 shall be considered a nonconforming use.

**(e) Building expansions, parking lot improvements, and expansions of existing uses.**

- (1) If an existing building, parking lot, or use is expanded or improved, all new or relocated lighting shall be required to meet the provisions of article V, division 4, lighting.
  - (2) Existing lighting shall be brought into compliance with this UDC when:
    - a. A building is expanded such that its floor area grows by twenty-five (25) percent or more;
    - b. The land area occupied by an outdoor land use increases by more than thirty-five (35) percent;
    - c. The value of proposed new, expanded, or upgraded buildings or improvements (collectively "new construction") on the subject property exceeds two (2) times the value of the buildings and improvements on the subject property before the new construction; or
    - d. With respect to parking lot lighting, the land area occupied by a parking lot increases by more than ten (10) percent.
- (f) **Change of use.** Modifications to nonconforming lighting are not required if the use of a building changes from one (1) use to another without further changes to the site or the exterior of the building, unless:
- (1) A change of use requires additional parking, in which case the parking that is provided to meet that requirement must also comply with the standards in div. 5-4, lighting.
  - (2) A change of use requires limited or conditional use approval, in which case the conditions for approval may include requirements for additional lighting upgrades.
- (g) **Redevelopment.** If the subject property is redeveloped, lighting shall be provided as required by div. 5-4, lighting.

**Sec. 21-11-102. - Calculations.**

- (a) *Building coverage ratio.* Building coverage ratio is calculated as building coverage divided by lot area.
- (b) *Density.* Density is calculated as the number of dwelling units per acre of land of a lot or subject property, as applicable to the circumstances of the calculation.
- (c) *Open space ratio.* Open space ratio is calculated as the total area of open space on a subject property divided by the total area of the subject property.
- (d) *Luminance.* One Nit is equal to one candela per square meter, or 3.426 lumens.

**Definitions to add**

**Light, fully shielded** means a fixture that allows no emission above a horizontal plane passing through the lowest light-emitting part of the fixture.

**Lighting** means any source of light that does not include natural light emitted from celestial objects or fire. The term includes any type of lighting, fixed or movable, designed or used for outdoor illumination of buildings or homes, including lighting for billboards, streetlights, canopies, gasoline station islands, searchlights used for advertising purposes, externally or internally illuminated on- or off-premises advertising signs, and area-type lighting. The term includes luminous elements or lighting attached to structures, poles, the earth, or any other location.

**Adaptive Lighting Controls** means a device or devices such as motion sensors, timers, and dimmers used in concert with outdoor lighting equipment to vary the intensity or duration of operation of lighting.