

Vision Statement

Mirador Astronomy Village will provide a community-oriented living and working environment for people of all ages with a casual, active, or professional interest in astronomy and the other natural sciences. Its wider mission will be to provide high quality educational programs in astronomy, the other natural sciences, environmental sustainability, and cooperative living.

Mirador Astronomy Village will be a rural community located in New Mexico, Arizona, or West Texas. There will be no dusk-to-dawn lighting at Mirador, and allowed lighting will be designed and installed so that it does not interfere with astronomical activities.

Everyone living at Mirador will rent their residence. There will be no up-front cost to live in the community except for a standard rental deposit. A variety of housing types will be available, including an RV park, sharehouse, apartments, and a cohousing community with separate single family houses. Observatories will be available to rent as well.

Mirador will have on-site businesses, including lodging for visitors. Mirador will operate an astronomy tourism and education center. Residents will have the opportunity to work part-time or full-time in exchange for a reduction in monthly rent and other living expenses.

Motivation

Despite our best efforts, light pollution is getting worse almost everywhere. Replacing bad lighting with good is not a problem of technology or even economics, but one of people and priorities. For the foreseeable future, most cities and towns will continue to be plagued by urban skyglow, overlighting, glare, and light trespass because there aren't enough of us who value the night sky and a natural nighttime environment to bring about meaningful change.

Mirador Astronomy Village will provide a place to live, work, and visit where the night sky will be valued and protected. Wouldn't you love to have neighbors who appreciate viewing the night sky as much as you do?

Astronomy-Oriented Retirement Community

Mirador Astronomy Village could be developed and marketed primarily as an astronomy-oriented retirement community. Retirees generally have more flexibility in where they can live, and younger retirees are generally more active and healthier.

Organizational Structure

Four different organizations, with possibly different organizational structures, will operate Mirador Astronomy Village.

1. Residential
2. Business
3. Education
4. Physical Plant

A Rent-and-Own Cooperative

Everyone living at Mirador Astronomy Village will be renting, but as a renter you will also be an owner. The organization that operates the Mirador residential community will be a cooperative, and as a renter you will be a member of that cooperative. Instead of paying your rent to a landlord or off-site corporation, you will pay your rent to the community. The renter-owners will not be building equity for themselves but rather equity for the community.

Astronomical observatories used by Mirador's residents will be built, owned, and maintained by the cooperative. Residents wanting their own private observatory (located with the other observatories on the observatory campus) will rent them and provide their own equipment.

To protect Mirador's residents from unreasonable increases in monthly rent, the cooperative will collectively decide upon and abide by a rent control agreement.

Decision Making

Though much of the day-to-day routine operations at Mirador Astronomy Village will be handled by paid staff and volunteers, all residents of Mirador will have the opportunity to be involved in important decisions. Ideally, some form of consensus or sociocracy will be used. Though less polarizing than voting, both consensus and sociocracy would require training since most people will not be familiar with these forms of self-governance.

Community Founders

Before Mirador Astronomy Village can be developed as a cooperative enterprise, a site must either be purchased or donated. Raising the capital needed to purchase land will require issuing shares. Those shares will make you a community founder. Some future residents of Mirador will have money to invest in shares prior to living at Mirador, and others would not be able to pay anything until they begin renting. Some

shareholders may not plan to live at Mirador, but will want to support the project. Some form of crowdfunding should also be considered.

What privileges will be afforded to community founders/shareholders? Will community founders/shareholders have any privileges that differ from the renter-owners after the community is established? These are questions that will need to be answered soon.

A partnership LLC could be created to acquire the land. A stipulation could be that if Mirador Astronomy Village is not established within five years, the partnership LLC will sell the land and the partnership dissolved.

Affordability

Unlike existing astronomy-friendly communities that cater to those having a higher income, families and individuals of modest income should be able to afford to live at Mirador. Affordability can best be accomplished in two ways: (1) some community activities must generate revenue from sources external to the community, and (2) though the cost to rent or lease at Mirador will be necessarily a little higher to support community infrastructure, this will be offset somewhat by shared community resources so that community members will not have to own and maintain everything they need or use.

Community Demographic Attributes

A concerted effort should be made to ensure that Mirador Astronomy Village is multi-generational (older folks, middle age, young adults, and children). In order to have that balance, employment opportunities must be available within and outside the community.

Broadening the Appeal

The appeal, viability, and vitality of the community will be greatly enhanced by accommodating and encouraging other lifestyle interests that are not incompatible with astronomy. For example, the community could be designed in such a way that makes it wonderfully bicycle friendly. Another example is amateur radio. Many enthusiasts have significant restrictions on radio antennas where they currently live, but perhaps the community could allow larger radio antennas and arrays that could be shared by interested members of the community, sited away from the living and observing areas.

Site Location

Mirador Astronomy Village should be located where there is an abundance of clear nights and where winters are mild. The night sky should not be significantly affected by light pollution, nor should there be any risk of significant light pollution

encroachment in the foreseeable future. Mirador should be located in Arizona, New Mexico, or West Texas.

High desert with an unobstructed view of the entire sky would be ideal. Proximity to a state or national park is likely to improve the economic viability and appeal of Mirador, even if the land costs more.

Astronomical seeing (i.e. the steadiness and sharpness of astronomical objects) needs to be considered and evaluated. If Mirador is to be located near a mountain, it needs to be on the nighttime prevailing wind side of that mountain (where the wind is coming from), because once the air goes up and over a mountain, it creates turbulent eddies on the downwind side of the mountain and would adversely affect astronomical seeing conditions.

Site Orientation

To facilitate the best, most natural orientation relative to the sky, the property and its buildings should be oriented along the four cardinal directions (north-south and east-west). Buildings should be solar oriented to maximize energy-efficiency. That generally means having windows facing south or southeast.

Site Characteristics

There would be advantages to acquiring a site for Mirador that has existing structures on it. For example, an existing home on the property might be used for the sharehouse with just a few modifications.

Protection from Natural Hazards

The site must be developed and maintained in such a way that it will be safe from wildfires and flash floods, both of which are an ever-present danger in the desert southwest. Also of concern are high winds a few times a year and the occasional dust storm.

Even with a low tornado risk, Mirador should have a tornado shelter. Earthquake risk must also be kept in mind as the community is developed.

General Site Layout

The developed areas of the property should include five distinct zones or “campuses”: residential campus, observatory campus, visitor campus, recreational vehicle (RV) campus, and energy campus. As much of the property as possible should be left undeveloped or minimally developed.

Residential Campus

The residential campus will be located further into the property, a reasonable distance from the visitor campus. This will be a cluster of houses and multi-unit dwellings where the residents of Mirador Astronomy Village live.

There will be three types of housing in the residential campus, all of it rental.

1. Cohousing
2. Apartments
3. Sharehouse

The cohousing community will be private homes clustered around a shared commons area and including a common house. The apartments will have most of the features of the private homes, although generally they will be smaller and located in an apartment building. The sharehouse will have a private room for each resident plus shared spaces including a parlor, kitchen, dining area, bathing rooms, bathrooms, and laundry facilities.

These, plus the RV park and traditional motel lodging for visitors and guests on the visitor campus will provide a total of five housing options for people at Mirador.

The campus approach lends itself well to private residences supplemented by nearby shared facilities and common areas. A key feature of Mirador will be clustered residences rather than the standard rural development approach of widely-separated residences on acreages.

The lease period for houses will be 1 year. The lease period for the apartments will be a minimum of 3 months up to 1 year. The lease period for the sharehouse will be a minimum of 1 month up to 1 year. For those wanting to live at Mirador for less than 1 month, there will be some extended-stay units on the visitor campus.

For those renting an observatory, the lease period will normally match their residential lease period.

The residential campus should include a multipurpose community center, also known as the common house, a coworking center, and an outdoor commons. The common house should include, among other things, a sitting room for visiting, a kitchen and dining area, a laundry room, a workshop, and a library. The workshop could be located in a separate building.

The coworking center will have partitions and cubicles (no open office!), plus at least

one meeting room and a studio for audio and video production. Another coworking center could be located on the visitor campus.

An innovative flex-space modular approach to housing could be used for the apartments and the sharehouse, where the number of modules rented depends upon the needs and financial resources of the family or individual. Each building could have several multipurpose housing modules (“rooms”) that could be configured in a number of different ways. All housing modules should have natural ventilation (with robust dust filtration) and daylighting in addition to air conditioning and heating, individually customizable.

More than one residential campus could eventually be developed.

Observatory Campus

The observatory campus will be the designated area set aside for astronomical observation. This will include observatories (individually or cooperatively rented), telescope pads, and a meteor watching deck. One observatory will be provided for the use of all residents of Mirador. The observatory campus will be located within easy walking distance of the residential campus.

A section of the observatory campus should be set aside for remote observatory hosting. Individual observatories would be leased by the hour or by the night to interested astronomers anywhere in the world. A larger structure with multiple telescopes inside could also be used for this purpose. High speed internet access is crucial, and must support remote interactive use. Remote observatory hosting will be another important source of income for the community.

Visitor Campus

The visitor campus will be located closest to the highway, and will include a public observatory, a science education center, public parking, and overnight lodging for our guests. Some extended-stay lodging units will be available for longer-term visitors not staying at the RV park, including those wanting to live at Mirador Astronomy Village for less than the 3-month minimum lease period of the residential campus.

On-site businesses, including a vehicle fueling/charging station and a restaurant, will be located in the visitor campus.

The visitor campus should include a multipurpose event center with a large (~40 x 70 ft.) community room and an attached commercial kitchen. The event center would be rented out for dance workshops, retreats, and other events.

Recreational Vehicle (RV) Campus

An area for RVs will be provided for “snowbirds” and visitors to Mirador year-round. Some RV sites will have full hookups but others will have just electricity and water at a reduced rate. Sewer hookups will be available for larger RVs that stay longer. Weekly and monthly rates will be less expensive per diem than nightly rates.

RVs will have a separate entrance and access road to and from Mirador. Having a parklike area for RVs and campers would be a benefit, as would shade structures. Shade structures could also be used for rainwater catchment and as a mounting point for solar panels.

After the land for Mirador Astronomy Village is purchased, the RV park should be developed first. It will be used to house builders on site while Mirador Astronomy Village is being constructed, as well as some residents while they are waiting for their homes in the residential campus to be built.

The RV campus should include toilet, shower, and laundry facilities.

Energy Campus

Most or all of the electrical power used by the community should be generated through photovoltaic solar cells and perhaps one modest-sized wind generator. Solar heat collectors could also be used to generate electricity or to provide hot water. Geothermal energy resources might also be utilized. The wind turbine should be located north of the solar panels so as to not cast a shadow on them. The energy campus must be sited so that the wind turbine does not obstruct the sky as seen from the observatory campus or the public observatory on the visitor campus.

Winter-Only Residents

Mirador should accommodate snowbirds who would like to stay at Mirador during the winter months. In addition to the RV park, the sharehouse and apartments will be available for partial-year rental.

Balance Between Permanent Residents and Visitors

Even though visitors will provide an important source of income for Mirador, reducing rent and providing income opportunities for permanent residents, the quality of life for permanent residents should not be adversely affected by the influx and presence of visitors.

Storage

Permanent on-site storage will be needed at Mirador. Secure storage of building materials will be needed by contractors as Mirador is being built. Residents

temporarily living in the RV park while their residence is being built will need storage. Permanent residents and on-site businesses will also need storage.

Shipping containers may be ideal for on-site storage. Shipping containers are modular (add more as you need them), completely self-contained, strong, secure, and waterproof. Shipping containers have tight seals around the doors to prevent rodents, insects, and other pests from entering. They have vents to dissipate heat and maintain an inside temperature close to ambient.

Shipping containers should be painted white to reflect away as much heat as possible during the day. For additional thermal control, at least some shipping containers should be placed under shade structures. Some shipping containers will need to have active climate control.

Lighting Restrictions

No dusk-to-dawn exterior lighting will be permitted at Mirador, and all exterior lighting will be fully shielded and must be approved by the Lighting Review Committee (LRC). Alternatives to lighting, such as reflective materials and personal lighting devices (PLDs), should be used wherever possible.

Personal Lighting Devices (PLDs) and Reflective Materials

Personal Lighting Devices (including, but not limited to, flashlights), are often a great alternative to fixed lighting, and their use should be encouraged.

Reflective materials are also a great alternative to lighting, or they can reduce the amount of lighting needed.

White rock or white asphalt walking paths will reflect starlight and moonlight at night and provide a cooler surface during the day. A white surface would make it easier to see a snake in your path at night even if you forgot your flashlight.

Phosphorescent materials could also be used. Light is absorbed into the material during the day, and slowly releases that absorbed energy by glowing at night.

Lighting on Towers Nearby

The community must work closely with local government agencies and legal resources to ensure that only red lights will be used at night on communication towers visible from the community. White lights must not be used on any of these towers at night.

Resource Extraction Nearby

The community must work closely with local government agencies and legal resources to ensure that any present or future resource extraction activities near the community will not employ any lighting at night that would jeopardize the dark skies and natural nighttime environment cherished by the community.

Night Sky Protection

The community will be deeply involved in protecting the night sky and nighttime environment in the areas surrounding the astronomy village. Alliances with other organizations such as nearby professional observatories and environmental groups will strengthen these efforts.

Airspace Restrictions

Aircraft flying over Mirador Astronomy Village at night should be kept to a minimum. An FAA-designated nighttime airspace restriction with a radius of 4 nautical miles and an altitude from the surface up to and including 4000 feet AGL should be approved if possible. Aircraft and drones would not normally be allowed to fly within this area centered on Mirador Astronomy Village at night.

Satellite Megaconstellations

Megaconstellations of satellites used for global broadband internet and other purposes represent a unique threat to astronomers everywhere on Earth. Mirador Astronomy Village will work closely with other organizations such as the International Astronomical Union (IAU) and the American Astronomical Society (AAS) to mitigate the negative impact of these thousands of satellites. These satellites should be built with minimally reflective materials and finishes. To the extent possible, colocation should be required so that multiple service providers utilize the same constellation of satellites, comparable to what is done with communication towers. This will reduce the space debris risk due to overcrowding, malfunction, or an act of war.

Roads and Trails

The roads into and within the community should be paved, smooth, well-constructed, and well-maintained. The community should be bicycle and pedestrian friendly. Some paved off-road trails should be provided for bicycle and pedestrian use. Primitive hiking trails should be plentiful on the property.

Road placement, berming, and natural landscape features should be used in such a way as to prevent vehicle headlights from shining onto the sections of the property used for astronomical observation.

Motor Vehicles

Implementing a carshare program and having a community-owned shuttle van would allow a family with two cars currently to get by with a single vehicle. Some individuals in the community might choose to not even own a car.

The community may decide to restrict motor vehicles with internal combustion engines to the visitor campus, RV campus, and adjacent areas nearest the highway. Residents would park their vehicles in a parking structure (the community garage), and use Neighborhood Electric Vehicles (NEVs) belonging to the community as needed to shuttle back and forth between the residential campus and the parking structure. This would eliminate the need for garages and car & truck parking on the residential campus.

The community garage could be located in the northwest corner of the residential campus, adjacent to both the visitor campus and the RV campus. The community garage would be used to store, service, and maintain privately-owned vehicles as well as those owned by the corporation operating Mirador.

The community garage provides another on-site business opportunity to provide vehicle service (including RVs) and transportation for the surrounding community.

Medical Care

Access to quality medical care for residents and visitors is an important consideration in choosing a location for Mirador Astronomy Village, especially given that there is likely to be a large population of older residents.

An on-site medical clinic, or at the very least, a first aid station, is necessary. Some members of the community should have medical training. An M.D. or D.O. would be ideal, but at the very least, a nurse practitioner (NP), physician assistant (PA), or nurse (RN). An onsite physical therapist would be a great asset to the community as well. A helipad or aircraft landing strip should be located on the property to allow quick transport to a hospital in the event of a medical emergency.

Given its presumed remote location, telehealth services (including, but not limited to, telemedicine) will be essential to the health and well-being of everyone at Mirador.

A full menu of assisted living and nursing care could be offered to allow residents to remain at home within the community and avoid nursing home placement.

Community Businesses

The day-to-day operation of the public observatory, science education center, RV park, and on-site lodging for visitors and guests will create employment opportunities for Mirador residents, and income for the community. Other business ventures should include a grocery store for basic consumables and a restaurant.

Some businesses at Mirador will be community-owned and others will be independent entities. Profit from the community-owned businesses will be reinvested back into the community. The independent businesses will pay rent and utilities, but Mirador will not have any other claim on the income made by those businesses.

Food Production

Some on-site food production will be an important component of food security. A greenhouse might even be located adjacent to the restaurant to provide fresh vegetables and fruit.

In a desert environment, food will need to be grown in greenhouses. “Smart” greenhouses--also known as solar greenhouses--should be constructed and oriented to minimize the cooling (and heating) required. In addition to growing food, these greenhouses could also generate some additional electricity for the community.

Telework Corporation

One idea for an on-site business is a “telework corporation”. Traditional teleworkers (telecommuters: contractors and consultants) work alone and independently, but a better approach for the community would be a collective effort where several people living at Mirador would go to an office on-site and work cooperatively on various telework projects. High-speed internet opens up many possibilities for non-urban employment.

The synergy of working with others in the same location for remote clients will generally be more satisfying than individuals having to secure all their own contracts and working in isolation.

Regional Synergy

Mirador Astronomy Village could provide some job opportunities for people living outside the community in the surrounding region. Likewise, some residents of Mirador might work or volunteer outside the community. The presence of Mirador could greatly enhance the local rural economy.

Educational Outreach

A key feature of Mirador is that it will operate a public observatory and science education center, providing regular astronomy programs and other science activities for community members, visitors, and guests. The community should engage in an ambitious educational outreach program, including operating a science resort and research station.

The science focus for these activities will include astronomy, biology, geology, meteorology, and the natural sciences in general. Other subject areas could be taught as well, for example workshops on agriculture, intentional community, and sustainable living.

It may be desirable for the educational activities at Mirador to be managed by a non-profit 501(c)(3) organization, independent from the Mirador management corporation. A new non-profit could be formed for this purpose, or a partnership with an existing non-profit organization could be developed.

Firsthand Astronomy

In an age of technological wonders such as digital imaging, remotely-controlled telescopes, and space-based astronomy, we recognize and celebrate the extraordinary value of “firsthand astronomy” both for ourselves and for our visitors and guests. To experience an unpolluted night sky and a natural nighttime environment, and to share eye-to-eyepiece telescope views, binocular views, and unaided-eye views (constellations, meteor showers, etc.), is a very important part of the “Mirador experience”.

Public Observatory and Science Education Center

The visitor campus will include a roll-off-roof public observatory, something like 24 x 24 ft. in size, housing an equatorially-mounted catadioptric telescope of at least 12-inch aperture. The science education center will house a classroom, restrooms, and, eventually, a small planetarium.

Public Astronomy Facility and Equipment Needs

A classroom will be available in the science education center for indoor presentations and be equipped with a projection screen, LCD projector, marker board, and comfortable seating. The science education center should be constructed so that a planetarium dome (the Star Theater) can be easily added when a high-quality used planetarium projector becomes available. In addition to the evening “Sky Tour” presentations, the classroom should also be used for a variety of daytime presentations and classes.

Green laser pointers will be needed for constellation identification and identifying other

objects in the night sky.

15 x 70 Fujinon binoculars or equivalent “big binoculars” will be mounted on a parallelogram binocular mount permanently attached to a pier. When not in use, the binoculars, mount, and pier will be enclosed in a removable weatherproof cover.

A roll-off-roof observatory will house a 12-inch to 16-inch catadioptric telescope on an equatorial fork mount. The telescope will be optimized for visual observing, have accurate go-to capability, and be mounted on a permanent pier.

Two additional structures would be very nice to have: an elevated deck for meteor watching (reclining lawn chairs included!), and a circular observing bench (see Figures 1a & 1b).

All these facilities must be accessible to all our visitors, residents, and guests.

Critter Deterrent

To keep rattlesnakes and other undesirable “critters” out of the public observing area, a rattlesnake-proof fence, at least three feet high, will be erected around the observing area. The science education center and planetarium will be located along the north side of the perimeter fence, with a door leading into the observing area. This will normally be the only way to enter and exit the observing area. An emergency exit on the south side of the perimeter fence will be installed.

Sky Tours

Sky Tours will be regularly scheduled for visitors, guests, and residents. Programs will generally begin indoors 30 minutes prior to the half-hour nearest the end of astronomical twilight. A 30-minute indoor presentation will be followed by 90 minutes of outdoor observing activities, weather permitting, for a total program duration of 2 hours. On cloudy nights, the indoor presentation will be lengthened from 30 minutes to 1 hour.

Outdoor observing activities will consist of unaided eye viewing (e.g. constellation, star, and planet identification using a green laser pointer), binocular viewing (e.g. 15 x 70 binoculars on a binocular mount), and telescopic viewing.

Advanced Public Observational Astronomy Activities

Advanced star tours could also be offered to small groups of 1-4 people at an additional cost. These hands-on astronomy sessions might include activities such as learning to use a Dobsonian telescope, CCD imaging, and advanced constellation identification, to name a few.

Pro-Am and Am-Am Collaborative Research

A favorable environment for collaborative astronomical research and data collection should be fostered, both within the community and with professional and amateur astronomers who live outside the community.

Astronomical Research: Stellar Occultations by Minor Planets

One community observatory should be dedicated to occultation work, in conjunction with the International Occultation Timing Association (IOTA), plus mobile deployments in the area to provide additional chords for important events.

Active occultation observers would have the opportunity to present a public astronomy program (if so desired) without having to miss an occultation event because all events would be covered by at least one occultation observer within the community.

Radio Astronomy

Mirador Astronomy Village's presumed remote location will also make it an attractive place for radio astronomy activities. If radio astronomy is going to be actively pursued at Mirador, then some radio-frequency interference (RFI) restrictions may be needed.

Scientific Sensors

Meteorological and geophysical sensors will be hosted and maintained by the community. Mirador Astronomy Village should be an official reporting station for the National Weather Service and the U.S. Geological Survey.

Natural World In and Around the Community

The natural world in and around the community will be rich in geology, flora, and fauna. To be family-and-visitor-friendly, the community should consider the kind of philosophy that the Children & Nature Network (<https://www.childrenandnature.org/>) advocates. See also Rich Louv's "Leave No Child Inside" in the March/April 2007 issue of Orion magazine (<https://orionmagazine.org/article/leave-no-child-inside/>). For the eight year old in all of us, there's always something to learn outdoors at any time of day or night.

Resources for Children

For our children and grandchildren, there should be a grassy area for them to play, a playground with swings, slides, and climbing structures. An indoor play area will be located in the community center. Some of the trails and places to explore on the Mirador property should be specially designed with children in mind.

Library

A community library will be conveniently located in the common house within the residential campus and will contain a wide variety of literature, both nonfiction and fiction, for adults and children.

A wide selection of astronomy books should be available. A number of residents will probably have astronomy books to lend or donate to the library.

Hunting

No hunting will be allowed at Mirador under normal circumstances. If the local population of deer, or some other species, becomes excessive and a nuisance, then the management of Mirador may decide to temporarily allow hunting to thin the herd.

Pets

Pets will be allowed though not necessarily encouraged. Under no circumstances will pets be allowed to roam free. Barking dogs that are a nuisance to other residents will not be allowed.

Other Restrictions

Other rules and restrictions deemed necessary for the mutual benefit of the community will be implemented by the management of Mirador. For example, sensible water use.

Water

A community water system will be developed and maintained.

Rainwater Harvesting

The community could supplement its available water resources by collecting and storing rainwater for later use. Shade structures in the RV park, storage area, and elsewhere could include rainwater catchment systems. Rooftop rainwater catchment could also be employed on homes, the common house, the apartment building, and sharehouse.

Rooftop Solar

The community could generate additional electricity through rooftop solar. Shade structures in the RV park, storage area, and elsewhere could include solar panels. Rooftop solar could also be employed on homes, the common house, the apartment building, and sharehouse.

Laundry

Community washers & dryers will be located on the residential campus for those who do not wish to own those appliances.

Shared Resources

To the greatest extent practicable, community members will have the opportunity to share equipment and other resources.

Utilities

High speed internet access will be provided to all residents, visitors, and guests. Running fiber is likely to be very expensive, so a more affordable option for high speed internet will be to utilize a global broadband satellite service such as Starlink.

All utility lines will be underground. Biological wastewater treatment and graywater recycling would be desirable.

Website

The website for Mirador Astronomy Village is miradorastrovillage.org.

Radio Station

Mirador Astronomy Village will have a low power FM (LPFM) broadcast radio station for local news, event information, weather, and music programs. Interested community members will be providing the content during the hours the radio station is on the air.

Predevelopment Phase

The first step is to find a suitable location for Mirador Astronomy Village. The land must either be purchased or donated. The project cannot move forward until a site is ready to be developed.

Of equal importance is deciding on the organizational structure for Mirador Astronomy Village. Will one corporation operate the entire community, or will a hybrid approach with more than one managing organization (perhaps even with different corporate structures) be used?

Initial Development Phase

The first development phase is to create the recreational vehicle (RV) campus, which

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will initially be used to house and support the construction crews that will be building Mirador. As part of this phase, septic, water, and electricity needs to be installed.

Septic: A permanent septic system should be installed at this early stage if possible. The septic field will eventually service the entire community. If the community septic system cannot be constructed until later, then an above-ground septic holding tank will be needed, with a septic service company hired to periodically empty it.

Water: A single well that will eventually service the entire community should be installed at this early stage if possible. A rainwater collection system may be desirable to install at this stage to provide an additional source of water. If the community water well cannot be constructed until later, then an above-ground water holding tank will be needed with water hauled in periodically.

Electricity: Depending on where Mirador is located, it may be inexpensive to tie into the existing electrical grid, and this should be done at this early stage. If access to the electrical grid is prohibitively expensive, then the community will have to rely completely on generating its own electricity with no access to the electrical grid as a backup supply. In any event, a backup generator will be needed. If grid electricity is not available, then part of the energy campus will need to be constructed during this phase, including some solar panels, possibly a wind generator, and a way to store electricity for later use.

A workshop building--the physical plant with equipment to service the RV park and secured storage for building materials--will also be needed during this phase. The workshop could be located on the north side of the visitor campus, and would be the first building to be constructed there. A rainwater collection system could be included in the construction of this building.

Roadways, landscaping, and other groundwork should also be completed during this initial development phase.

The property should begin producing income as soon as possible during this initial development phase. With that in mind, the RV campus could be developed in phases as follows:

- (1) Dirt to park on and places to pitch a tent - no services
- (2) Access to water at the site
- (3) Access to water at each RV site
- (4) Access to electricity at each RV site

(5) Access to septic system at each RV site

Emergency Preparedness

Built-in redundancy will be an important feature of Mirador Astronomy Village, especially considering its presumed remote location. There should be at least one backup for each critical system. A backup generator for electricity. A large holding tank for water. Possibly another source for internet access when satellite internet is affected by weather or solar storms. A ham radio operator in the community for emergency communication. And so on. What is “Plan B” if one of the key systems, such as electricity, goes offline for a prolonged period of time? The community should have an emergency preparedness coordinator, and that person should have a backup, too. Many in the community will be “preppers” in the best sense of that term.