

July 31, 2009

International Dark-Sky Association (IDA)
3225 North First Avenue
Tucson, Arizona 85719-2103

Subject: Goldendale Observatory State Park (GOSP) Application for Designation by IDA as
an International Dark Sky Park

To: The IDA Board of Directors

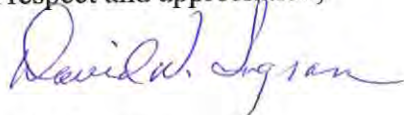
I am pleased to forward to the IDA for immediate consideration the Subject Application from
GOSP Interpretive Specialist, Steven R. Stout.

Steve's application is thorough, but brief. Please allow me add a few words in recognition of his efforts. Steve is a quiet man, not a self promoter. For decades he has been the sole paid employee at GOSP and his compensation has always been meager. Nevertheless, his work as the interpretive specialist at GOSP has been a demonstration of his dedication and professionalism. He has been the "face of the Goldendale Observatory" to all visitors, particularly well known and respected by those from the four-state area. He has been a passionate member of the IDA with a dream to be able to combine his job responsibilities with his passionate advocacy of IDA charter to preserve and protect the nighttime environment. Every working day, he teaches the public about star gazing and astronomy and he strives to inspire our young citizen-scientists to understand, to value and protect dark skies where ever they live. By his thousands of yearly contacts with visitors, educators and amateur astronomy clubs, he has truly been a champion of dark skies.

I know you will be very impressed with Steve's description of the Goldendale Observatory State Park and his and the state of Washington's achievements to date.

Don't hesitate to call if I can render assistance in your review of the Subject Application.

With respect and appreciation,



David W. Ingram
BEAS President &
Representative of IDA/Dark Skies - Northwest
Cell phone: 206-372-7292
E-mail: ingramdw@hotmail.com

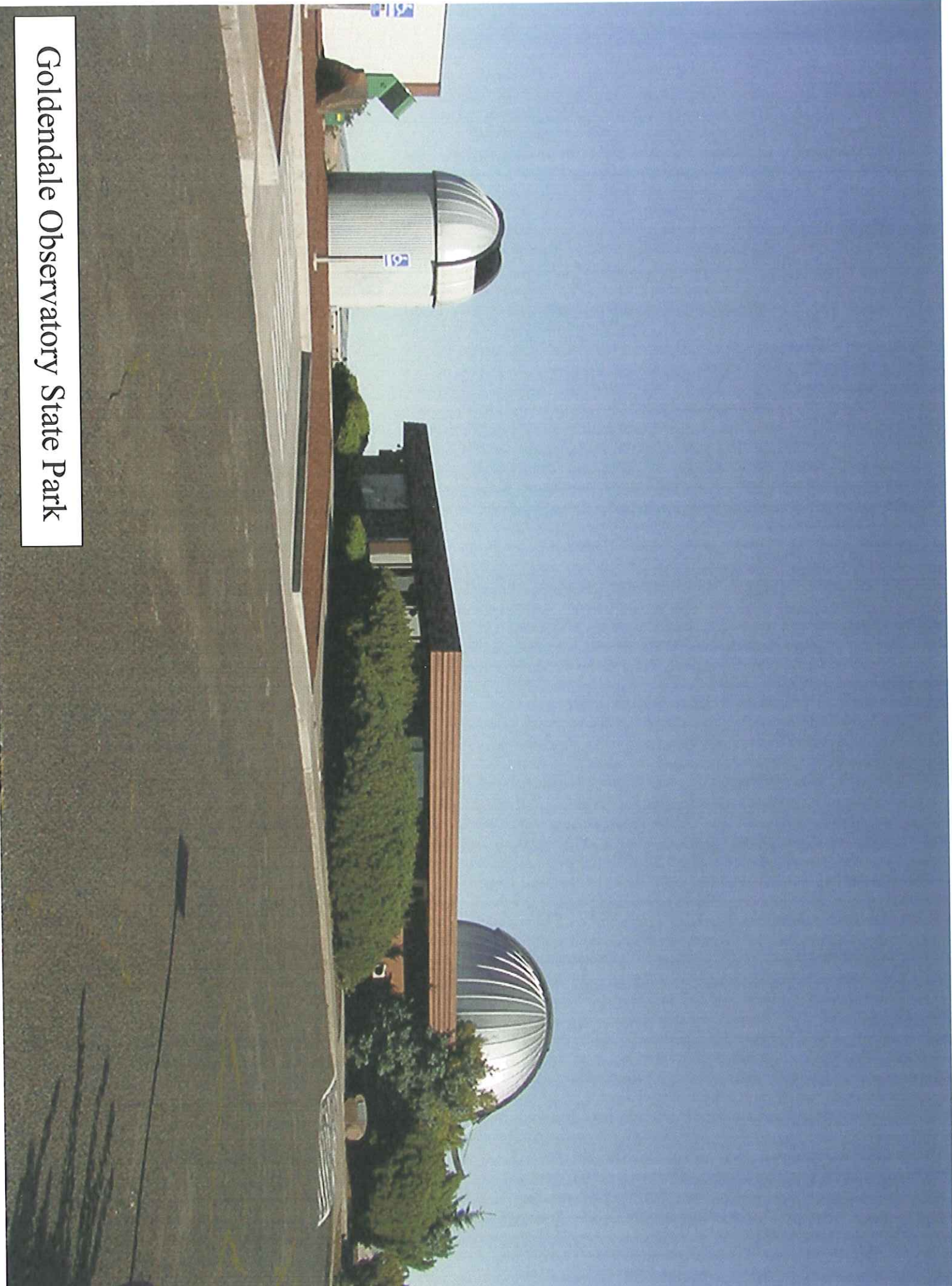
Dark Sky Park

Submission Package for

Goldendale Observatory State Park
1602 Observatory Drive
Goldendale, WA 98620

Stephen R. Stout, Interpretive Specialist
goldendale.observatory@parks.wa.gov
(509) 773-3141

Rich Davis, Goldendale Area Manager
(509) 767-1165



Goldendale Observatory State Park



Goldendale Observatory

Goldendale Observatory State Park Interpretive Center houses one of the nation's largest public telescopes. The Observatory is open to anyone who wants a chance to see the amazing views of the Moon, planets, binary stars, star clusters, nebulas and galaxies that can be seen through the main attraction--a 24½ inch reflecting telescope. Visitors may also get a glimpse of the fine views of Oregon's Mount Hood or Washington's Klickitat Valley from high upon the hilltop in Goldendale. Stop by for a chance to see the amazing sights of the universe such as the mountains and craters of the Moon, the rings of Saturn, or even the moons of Jupiter!

Historical Background

The Goldendale Observatory is the result of the dream of four Vancouver, Washington men—M.W. McConnell, O.W. VanderVeldon, John Marshall, and Don Connor. These four began constructing the 24½ inch reflecting Cassegrain telescope at Clark College in Vancouver. They ultimately erected it on a hilltop above Goldendale, where the city lights and cloudy skies would not interfere with viewing.

With the City of Goldendale's participation, funds for the modern building and the dome housing the telescope were provided by a federal grant, donations, and a bank loan.

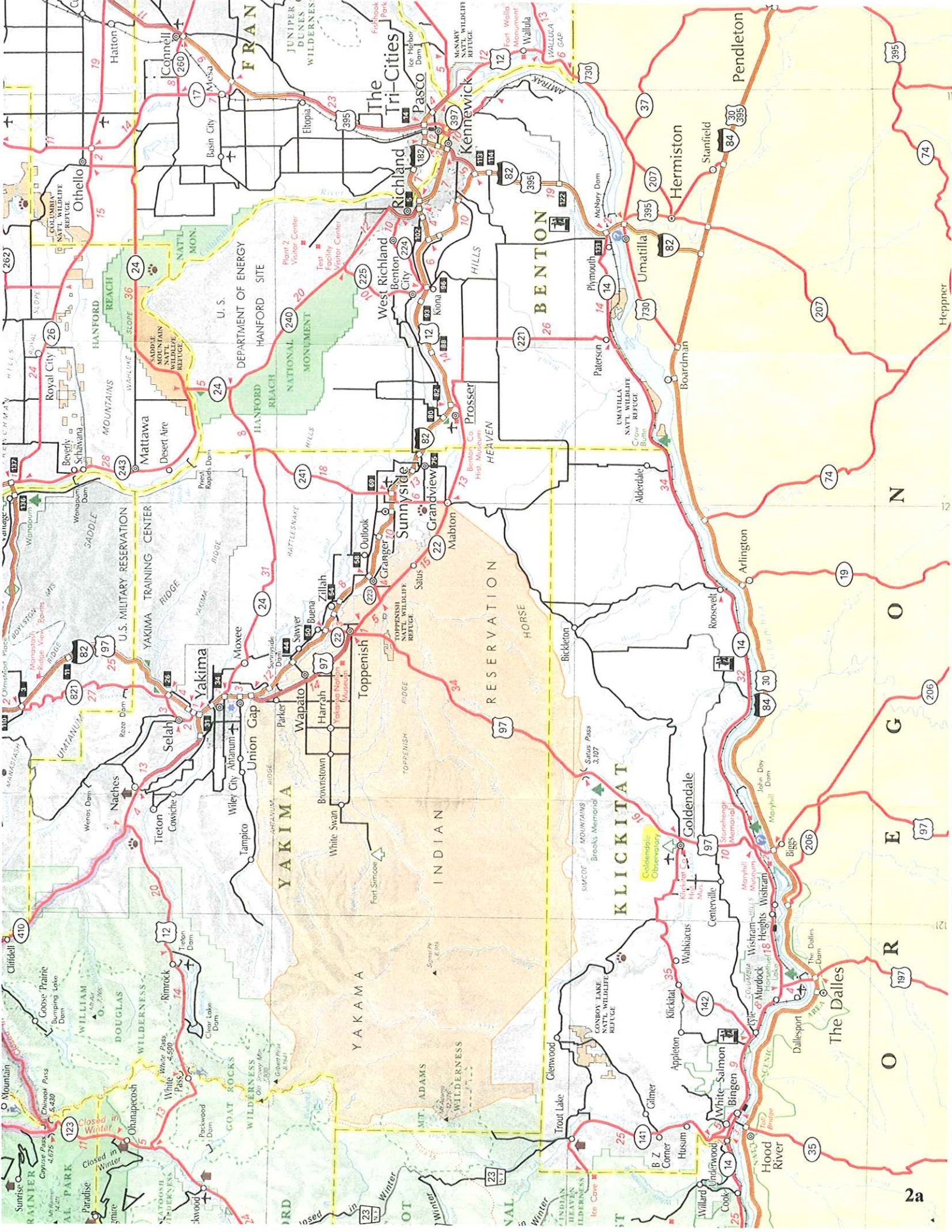
The facility was dedicated on October 13, 1973 and was operated successfully through 1980 by the Goldendale Observatory Corporation, a non-profit, volunteer organization. The Observatory was acquired by the Washington State Parks and Recreation Commission in December of 1980.

The Observatory was a major center for the 1979 eclipse. It was designated as the official headquarters of the National Astronomical League for eclipse observation. Thousands of scientists, students, tour groups, and other interested individuals converged upon the Observatory to catch a glimpse of this important astronomical event.

A once-in-a-lifetime glimpse of Halley's Comet from late 1985 to mid-1986 and the appearance of Comet Hale-Bopp in 1997 also drew thousands of visitors to the Observatory.

Goldendale Observatory State Park

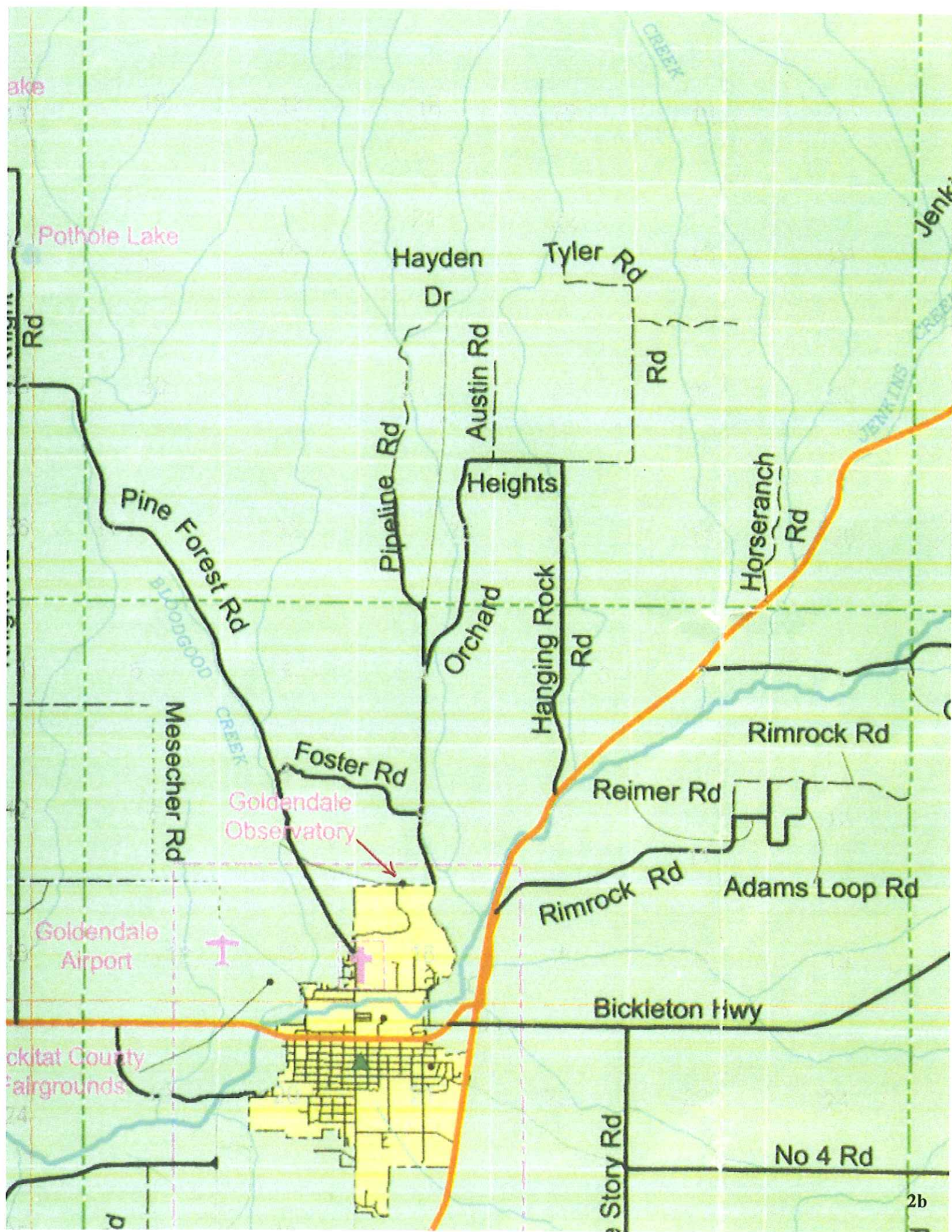
Map



N

E
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ake

Pothole Lake

Hayden Dr

Tyler Rd

Austin Rd

Rd

Pine Forest Rd

Pipeline Rd

Heights

Orchard

Hanging Rock Rd

Horseranch Rd

Mesecher Rd

Foster Rd

Goldendale Observatory

Rimrock Rd

Reimer Rd

Goldendale Airport

Rimrock Rd

Adams Loop Rd

okitat County Fairgrounds

Bickleton Hwy

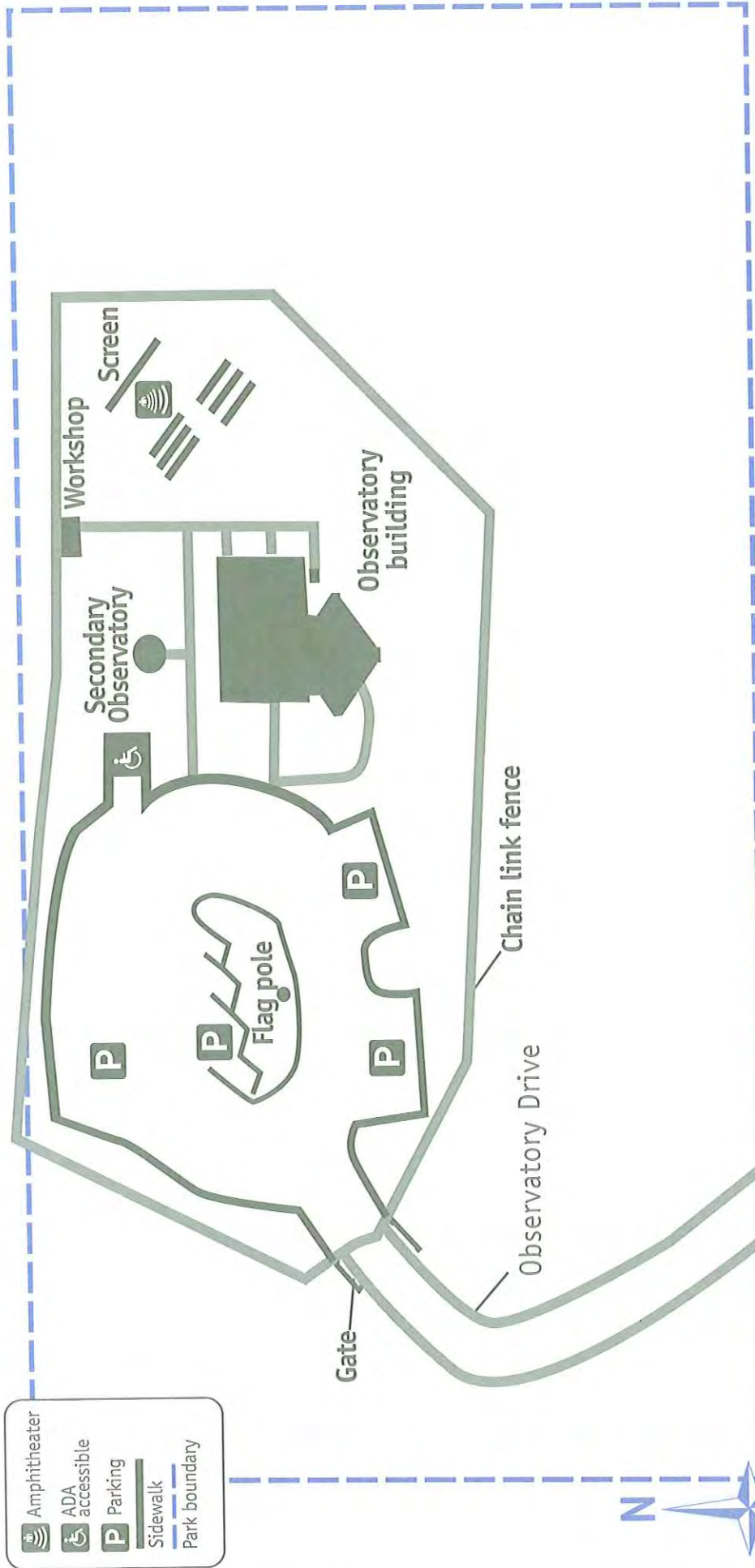
Story Rd

No 4 Rd

2b



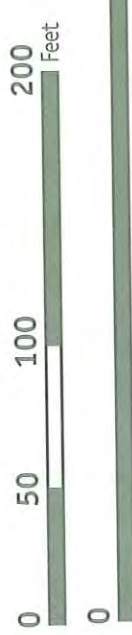
Goldendale Observatory State Park



- Amphitheater
- ADA accessible
- Parking
- Sidewalk
- Park boundary



This park map provided by donations made when renewing vehicle tabs.
Renew your tabs, renew your state parks.





Washington State Parks

Centennial 2013

Your Washington state park system will be 100 years old in 2013. The state park system includes 120 developed parks and more than 7,000 campsites. The system also includes ocean beaches, marine parks, land and water trails, historical sites and special vacation rentals. State parks offer recreational opportunities, interpretive programs, cultural events and gathering places for family and friends.

The Washington State Parks and Recreation Commission has a vision for the park system. The Centennial 2013 Vision and Plan focus staff, policy-makers and the public on a common goal: To prepare for a second century of excellent parks and recreation opportunities in Washington.

Centennial 2013 Vision

"In 2013, Washington's state parks will be premier destinations of uncommon quality, including state and regionally significant natural, historical and recreational resources that are outstanding for the experience, health, enjoyment and learning of all people."

Centennial 2013 Plan

The Centennial 2013 Plan leverages public money and private donations to create and care for a vital park system and provide a legacy of parks for the future. The total public cost in capital funding for the plan is \$250 million. Here are the plan's three priorities:

- Priority 1: Fix what we have.
- Priority 2: Expand existing parks, trails and services.
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Want to help?

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Things to remember

- Wildlife, plants and all park buildings, signs, tables and other structures are protected; removal or damage of any kind is prohibited. Hunting, feeding of wildlife and gathering firewood on state park property is prohibited.
- Pets must be on leash and under physical control at all times. This includes trail areas and campsites. Pet owners must clean up after pets on all state park lands.

Letters of Nomination Support

Rex Derr
Director



STATE OF WASHINGTON
WASHINGTON STATE PARKS AND RECREATION COMMISSION

7150 Cleanwater Drive S.W. • P.O. Box 42650 • Olympia, WA 98504-2650 • (360) 902-8500
TDD (Telecommunications Device for the Deaf): (360) 664-3133
www.parks.wa.gov

November 30, 2008

International Dark-Sky Association
3225 N First Ave
Tucson, AR 85719

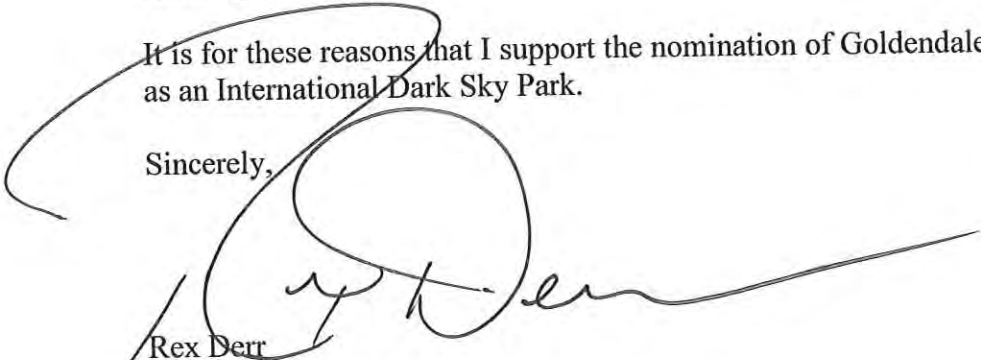
Greetings,

Goldendale Observatory State Park is one of 121 Washington State Parks. It provides free, guided tours of the universe. The Park Interpretive Specialist provides visitors the opportunity to learn about the Observatory and its history, the history of astronomy, telescopes and the space program. Under clear nighttime skies visitors are introduced to backyard stargazing and are led through a variety of viewing experiences from unaided eye identification of the constellations to direct viewing of celestial objects through park staff-operated telescopes, including what was once known as the largest amateur built telescope of its kind in the nation in a public observatory. During each session, as part of the standard presentation, people are encouraged to be aware of how to preserve the dark night sky environment.

In 2013, Washington State Parks and Recreation Commission will celebrate its centennial and has decreed that Washington's state parks will be premier destinations of uncommon quality, including state and regionally significant natural, cultural, historical and recreational resources that are outstanding for the experience, health, enjoyment and learning of all people.

It is for these reasons that I support the nomination of Goldendale Observatory State Park as an International Dark Sky Park.

Sincerely,


Rex Derr
Director



International Dark-Sky Association
Tucson, AZ

January 28, 2009

IDA Board of Directors:

Please accept this letter as a statement of support for the nomination of the Goldendale Observatory State Park as an International Dark-Sky Association Dark-Sky Park. As a resident of Goldendale, a volunteer at the Observatory, an avid stargazer, amateur astronomer and member of the IDA, I believe that the Dark-Sky Park designation for the Goldendale Observatory is not only well-deserved but it would go far to promote the objectives of the IDA.

When my wife and I moved to Goldendale with our nine month old son two years ago, major attractions to the area were its dark night skies and the Observatory. We previously lived on a rural farm approximately 30 miles north of Sacramento, California. In the 12 years that we lived there, we experienced a tragic brightening of the night sky due to increasing light pollution from Sacramento and surrounding communities. The Milky Way was reduced from a gloriously bright, distinct feature of the night sky to a barely visible, ghostly suggestion of its former manifestation. We mourned this loss and pledged to raise our son somewhere he could experience the wonders of dark-sky nights, learn the appreciation of celestial beauty, and share our enthusiasm for astronomy and the search for understanding of the universe in which we reside.

Goldendale's rural setting, fully-shielded street lights, and dark-sky friendly lighting ordinance go far towards ensuring the night time environment we seek for ourselves and for our son. The Goldendale Observatory State Park enhances this dramatically. A unique facility, open to the public for extensive regular hours, fitted with exceptional equipment and staffed by an Interpretive Specialist possessing an encyclopedic knowledge of the night sky acquired from many years under the stars, the Observatory provides us an excellent resource for expanding our knowledge and experience of astronomy. Better yet, the Observatory offers these benefits to visitors and gives us the opportunity to enjoy the pleasure of sharing our passion with others through volunteer service. For all of these reasons we believe the designation of the Goldendale Observatory State Park as an IDA Dark-Sky Park is one that has been earned and is appropriate.

This designation would serve a greater purpose than simple recognition, though. It would remind the local community of its commitment to preserving its natural resource of a dark night sky and underscore the importance of managing light pollution to the Observatory's visitors. In my role as a volunteer at the Observatory, I am frequently privileged with delivering the nightly presentation to visitors from all over the region, across the nation, and even from countries around the world. A significant part of the presentation focuses on the importance of protecting the night sky for future generations. The impact of this message would be considerably augmented by the Dark-Sky Park designation as conferred by the IDA's authority. Additionally, the designation would promote greater awareness of the commendable efforts of the IDA.

Having experienced first-hand the loss of a dark night sky to unchecked growth of light pollution, I do not wish to see this happen again – for myself, my family or anyone else. I believe that recognition of dark-sky preserves and preservation efforts are an excellent means to prevent this and to promote the kind of awareness necessary to perpetuate appreciation and protection of this resource. On behalf of my family, I wholeheartedly endorse the nomination of the Goldendale Observatory State Park as an IDA designated Dark-Sky Park, extend our thanks for the efforts of the IDA, and express our hope that you will find it appropriate to confer this designation.

Thank you for your time and consideration.

Best regards,


Evan Shipman
211 E. 21st St.
Goldendale, WA 98620
509-772-2527
evanshipman@gorge.net

January 26, 2009

International Dark Sky Association
3225 N. First Avenue
Tucson, AZ 85719

Subject: Nomination of Goldendale Observatory State Park as an International Dark Sky Park

On behalf of the Unitarian-Universalists of Goldendale and other friends of the Goldendale Observatory, I am writing in support of the nomination of the Goldendale Observatory State Park as an International Dark Sky Park.

The Goldendale Observatory was made a Washington State Park in 1981, with Steve Stout as Interpretive Specialist. It features an observatory with a 24.5-inch telescope, one of the largest in the United States dedicated exclusively to public use. Visitors, including local people, student groups, and amateur astronomers, come from many states and foreign countries for the opportunity to view celestial objects through the eyepiece of a large telescope. For most it is the only chance they will have to see the moon close up, view distant parts of the universe, or see the Milky Way. During their visit the Observatory staff and volunteers offer informative, interesting programs on astronomy and discuss dark sky issues.

In 1979 over 12,000 visitors showed up in this town of fewer than 4,000 residents to observe a complete solar eclipse. About 500 people come for the annual Fiddle Around the Stars Festival.

Our organization and other groups and individuals have partnered with the park in promoting the enforcement of local ordinances and in educating the public about proper lighting. Klickitat County Public Utility District, the electric utility, has installed fully shielded fixtures in its street lighting and helps publicize proper lighting fixtures. Observatory staff and community volunteers participate in public events, such as Earth Day and Community Days.

In late 2007 we wrote a series of six articles that were published by our local newspaper, The Goldendale Sentinel. We discussed the history of the observatory, its benefits to the community, and how sky glow affects it; the adverse effects of nocturnal light on birds, animals, and human health; the problems of glare resulting from unshielded security lighting; and how to preserve the night sky with properly shielded fixtures. We concluded: *For our health and safety, to protect the value of the Observatory, to enable our young people to experience the jaw-dropping wonder of a sky full of stars, and because we all want to be good neighbors, we must call a halt to improper outdoor lighting. Working together we can bring back the friendly dark skies to Goldendale.*

Designating Goldendale Observatory State Park an International Dark Sky Park will help raise awareness of the need for dark skies throughout the state and region, and will help protect the Observatory as a unique and valuable public resource. We hope you will agree.

Sincerely,



Mary Jean Lord, Secretary

Unitarian Universalists of Goldendale

P. O. Box 1579

Goldendale, WA 98620

Questions? 509-773-5179

Management Documents

Supporting Dark Skies

Integrated Sustainability Plan

Goldendale Observatory State Park



A Foundation for Change

This page from the Washington State Parks Sustainability Plan references a checklist item regarding outdoor lighting and shielding of the lights.

Energy, Heat, & Lighting Efficiency



Simple operational changes can make a big difference over time, saving money and decreasing energy waste.

We enact the following workplace guidelines for managing efficient use of energy, heat, and light:

- We use low-energy compact florescent bulbs whenever possible.
- We use low-or no-mercury florescent tubes where needed.
- Water heaters are wrapped in insulation or enclosed in a small insulated area.
- Solar domestic water heating and other passive-solar technologies are implemented where feasible.
- Hot water temperature controls are set to a reasonable, efficient level (~120°).
- Use setback thermostats, programmed to maintain a cooler temp at night or whenever a building is not in use. It takes less energy to warm a cool room than to maintain a warm temperature all day long. Properly using a setback thermostat can cut heating energy use by 20 to 75 percent.
- Heated buildings are well-insulated.
- Cover & insulate the windows of winterized buildings that must be kept warm. Cut-out Styrofoam blocks work.
- Check around doors and windows for leaks and drafts. Add weather-stripping, and caulk any holes you see that allow heat to escape. Make sure doors seal properly. Improperly sealed buildings can waste 10 to 15 percent of heat energy.
- Badly leaking windows are replaced with efficient ones.
- Ducts for wires, pipes, & vents, and wall plugs and switches are sealed with caulking, weather stripping, or pre-cut foam gaskets. All can leak cold air.
- Check & clean heating system air filters seasonally. The heating system will use less energy and last longer.
- Close dampers on any fireplaces when not in use.
- In larger rooms, install a ceiling fan where appropriate to circulate the air to be cooler in summer, warmer in winter.
- In the winter, reverse the switch on your ceiling fans so they draft upward, toward the ceiling. This is especially valuable in high-ceiling rooms, where heat that naturally rises is forced back down into the room more effectively.
- Time lights to shut off during daylight hours.
- Instead of bulb elements, use lighting technologies which utilize LEDs.
- For indoor lighting, implement natural alternatives like skylights or solar tubes.
- Prevent outdoor light pollution. All lights have covers over the top and the only illuminated area is below the light.**
- Employ solar-powered solutions. Photovoltaic panels may be connected to electrical systems, lighting, etc. where feasible and appropriate. Be creative!

Sky Quality Documents

Great World Wide Star Count Results

Satellite pictures

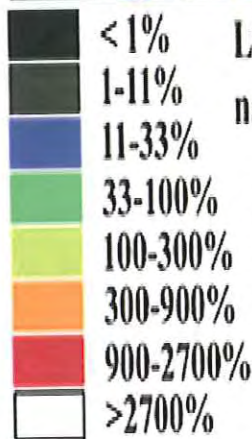
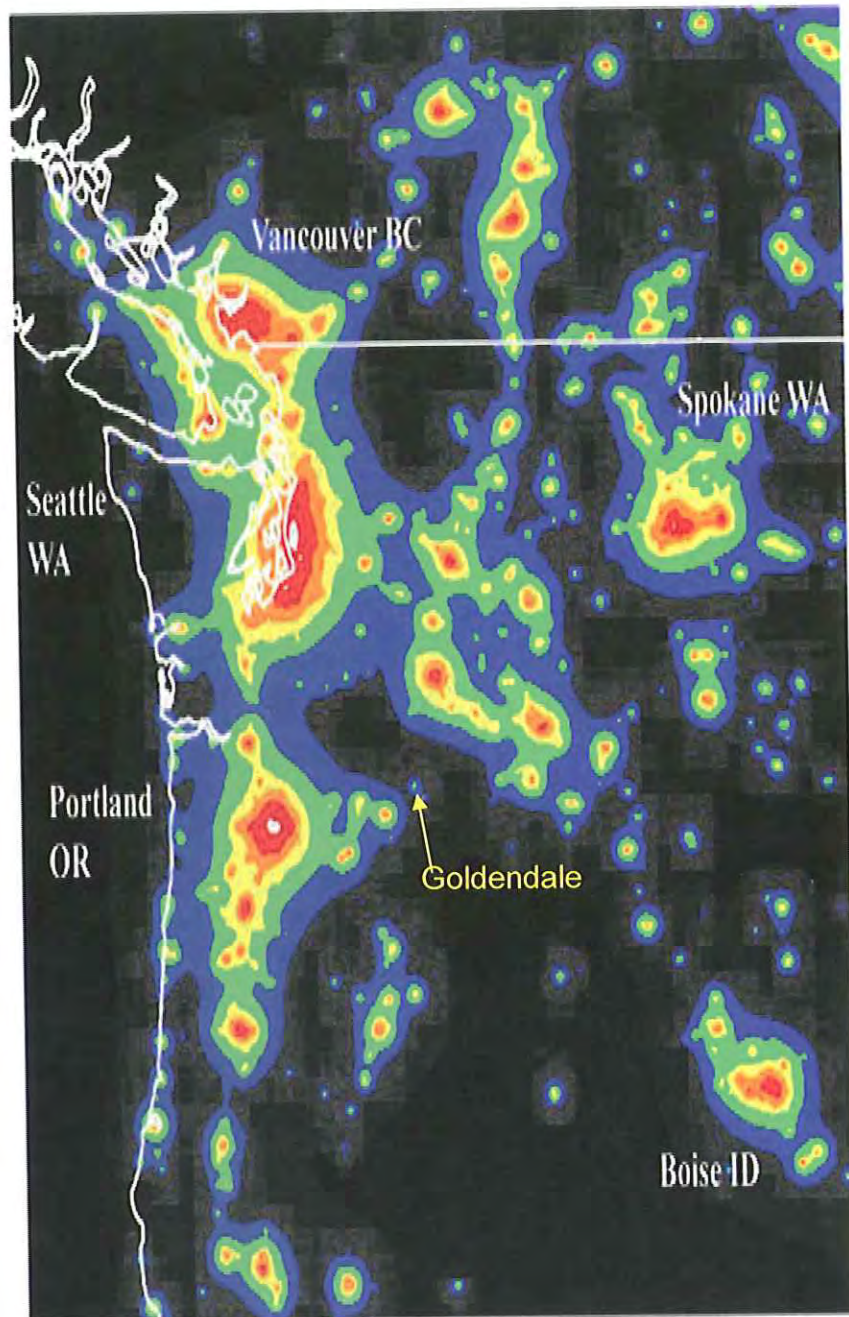
Northwest US light pollution map

Goldendale area light pollution map

Great World Wide Star Count Results

id	obs_date	hour	min	lat	lon	country	constellati	lim_mag
6277	3	8	30	36.3653	-79.0124	us	Cygnus	6
6278	16	6	45	32.42	-110.96	us	Cygnus	3
6279	4	7	45	36.3653	-79.0124	us	Cygnus	-99
6280	5	8	0	36.3653	-79.0124	us	Cygnus	-99
6281	10	8	45	33.43	-111.46	us	Cygnus	5
6282	7	7	30	36.3653	-79.0124	us	Cygnus	4
6283	8	7	45	36.3653	-79.0124	us	Cygnus	6
6284	9	7	45	36.3653	-79.0124	us	Cygnus	-99
6285	10	8	45	36.3653	-79.0124	us	Cygnus	7
6286	11	8	45	36.3653	-79.0124	us	Cygnus	6
6287	12	8	45	34.1121	-83.5801	us	Cygnus	4
6288	15	7	15	45.4255	-73.5994	ca	Cygnus	-99
6289	16	9	15	36.7922	-76.4384	us	Cygnus	3
6290	16	10	0	26.3375	-80.0878	us	Cygnus	1
6291	14	9	15	45.839	-120.814	us	Cygnus	5
6292	13	7	15	36.8356	-76.4291	us	Cygnus	4
6293	13	8	0	44.4133	-83.3245	us	Cygnus	5
6294	13	8	30	39.5319	-77.9813	us	Cygnus	4
6295	14	7	45	36.8013	-76.4113	us	Cygnus	6
6296	10	7	30	45.38	-75.7	ca	Cygnus	3
6297	15	8	45	27.9465	-82.4593	us	Cygnus	6
6298	15	9	0	36.8	-76.4	us	Cygnus	4
6299	12	9	0	40.65	-74.12	us	Cygnus	4
6300	4	9	0	40.84	-74.2	us	Cygnus	4
6301	12	9	0	40.84	-74.2	us	Cygnus	4
6302	14	8	30	40.84	-74.2	us	Cygnus	4
6303	7	9	0	41.15	-74.75	us	Cygnus	4
6304	16	8	0	42.7	-83.09	us	Cygnus	4

Sky quality data is found in the above list. Information for Goldendale Observatory State Park is found on line 6291.

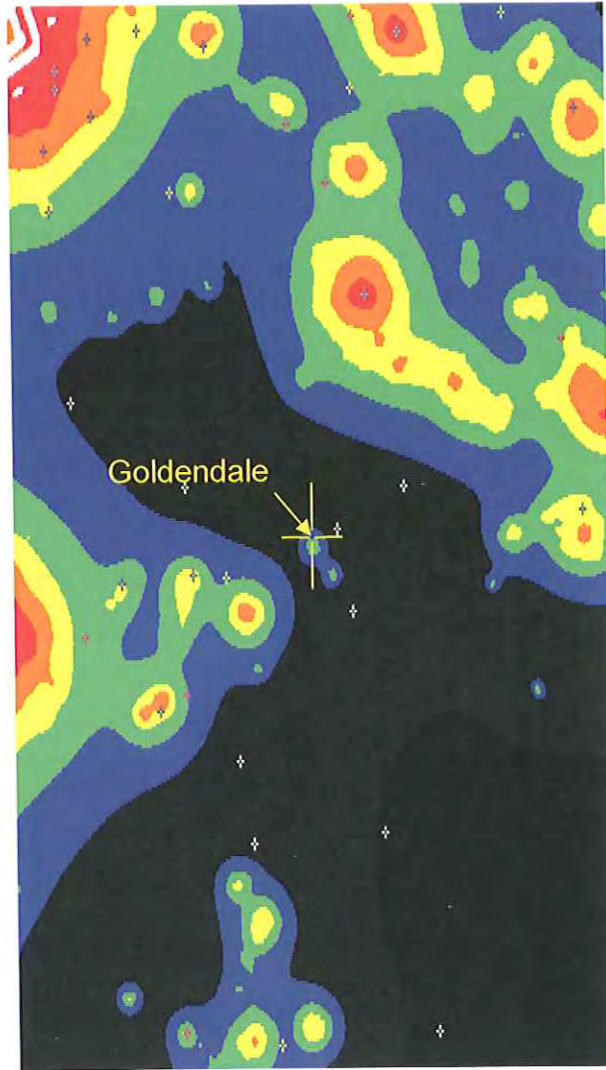


Light pollution as a percentage of natural sky brightness

Credit:
 P. Cinzano, F. Falchi (University of Padova),
 C. D. Elvidge (NOAA National Geophysical Data Center, Boulder).
 Copyright Royal Astronomical Society.

Reproduced from the Monthly Notices of the RAS
 by permission of Blackwell Science.
<http://www.lightpollution.it/dmsp>

Goldendale area light pollution map





Goldendale Observatory State Park

Lighting Inventory



This park map provided by donations made when renewing vehicle tabs.
Renew your tabs, renew your state parks.





Washington State Parks

Centennial 2013

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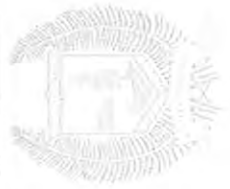
100 Connections: Another component of the Centennial 2013 Plan invites park users to adopt any of 100 improvement projects in parks across the state.

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Things to remember

- Wildlife, plants and all park buildings, signs, tables and other structures are protected; removal or damage of any kind is prohibited. Hunting, feeding of wildlife and gathering firewood on state park property is prohibited.
- Pets must be on leash and under physical control at all times. This includes trail areas and campsites. Pet owners must clean up after pets on all state park lands.



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Lighting Inventory

Goldendale Observatory

Lighting Inventory

#	Location	Fixture	Bulb type	Application
1	Parking lot	Fully Shielded	Mercury vapor	Illuminate parking area for visitor safety
2	Parking lot	Fully Shielded	Mercury vapor	Illuminate parking area for visitor safety
3	Telescope room door	Globe	Red incandescent	Illuminate waiting area outside telescope room
4	Telescope room door	Globe	Red incandescent	Illuminate waiting area outside telescope room
5	IC Front door	Fully Shielded Cylinder	White incandescent	Illuminate sidewalk near front entrance door
6	IC Front door	Fully Shielded/Recessed	White incandescent	Illuminate front door
7	IC Front door	Fully Shielded Cylinder	White incandescent	Illuminate sign showing visiting hours
8	Sidewalk	Two tier pagoda	Red incandescent	Illuminate sidewalk near amphitheater
9	Sidewalk	Two tier pagoda	Red incandescent	Illuminate sidewalk near amphitheater
10	Sidewalk	Two tier pagoda	Red incandescent	Illuminate sidewalk near amphitheater
11	NE corner of IC	Floodlight	Red incandescent	Illuminate amphitheater seating area
12	IC NE door	Recessed under eaves	Red incandescent	Illuminate door into storage room
13	IC East door	Recessed under eaves	Red incandescent	Illuminate door into IC hallway

Light numbers on left column refer to numbered locations on the map on the following page.

Goldendale Observatory

Lighting Inventory

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12	IC NE door	Recessed under eaves	Red incandescent	Illuminate door into storage room
13	IC East door	Recessed under eaves	Red incandescent	Illuminate door into IC hallway

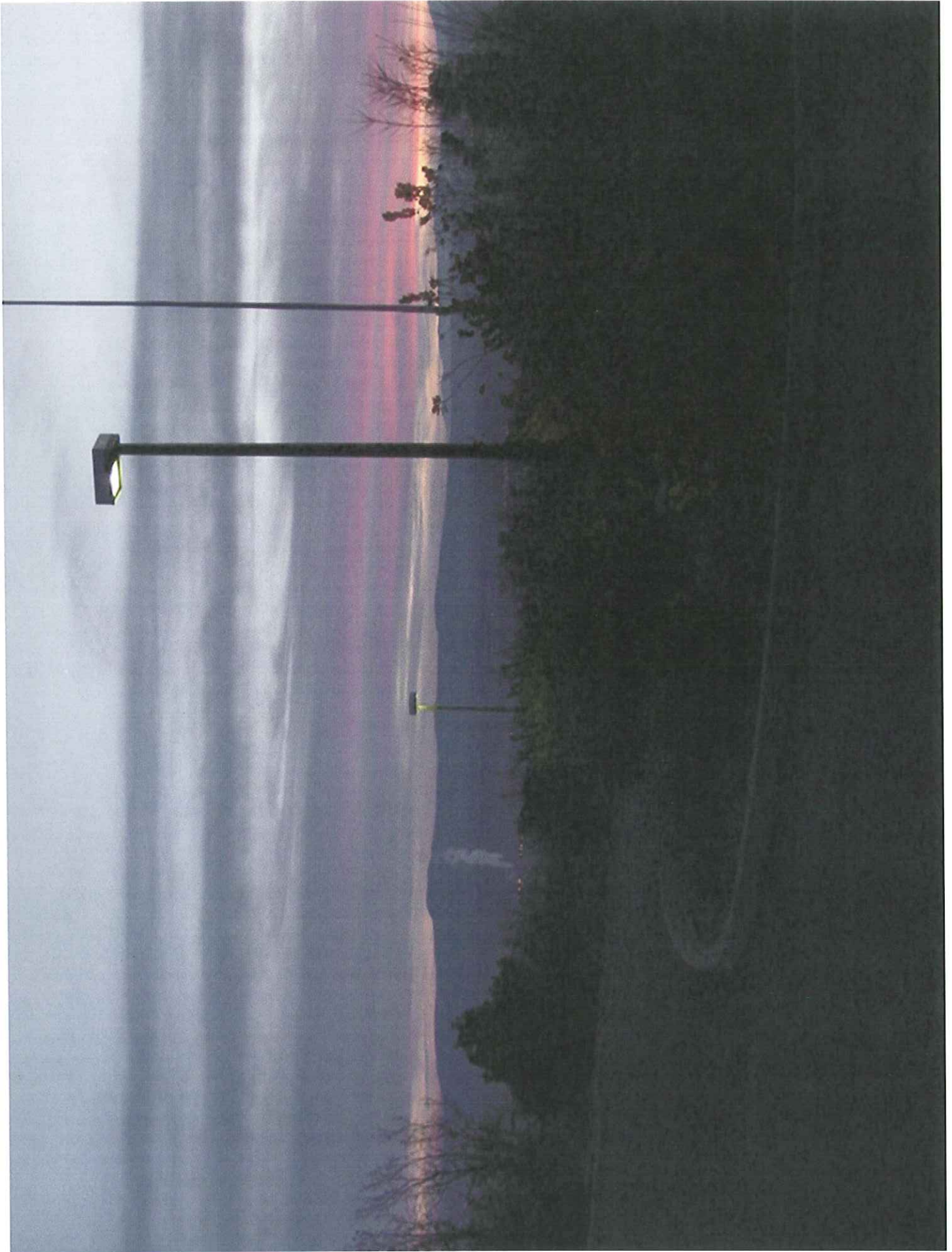
Light numbers on left column refer to numbered locations on the map on the following page.

Goldendale Observatory Lighting Inventory

The following pages are photos of
the Goldendale Observatory lights
cross-referenced to the
Lighting Inventory list and map.

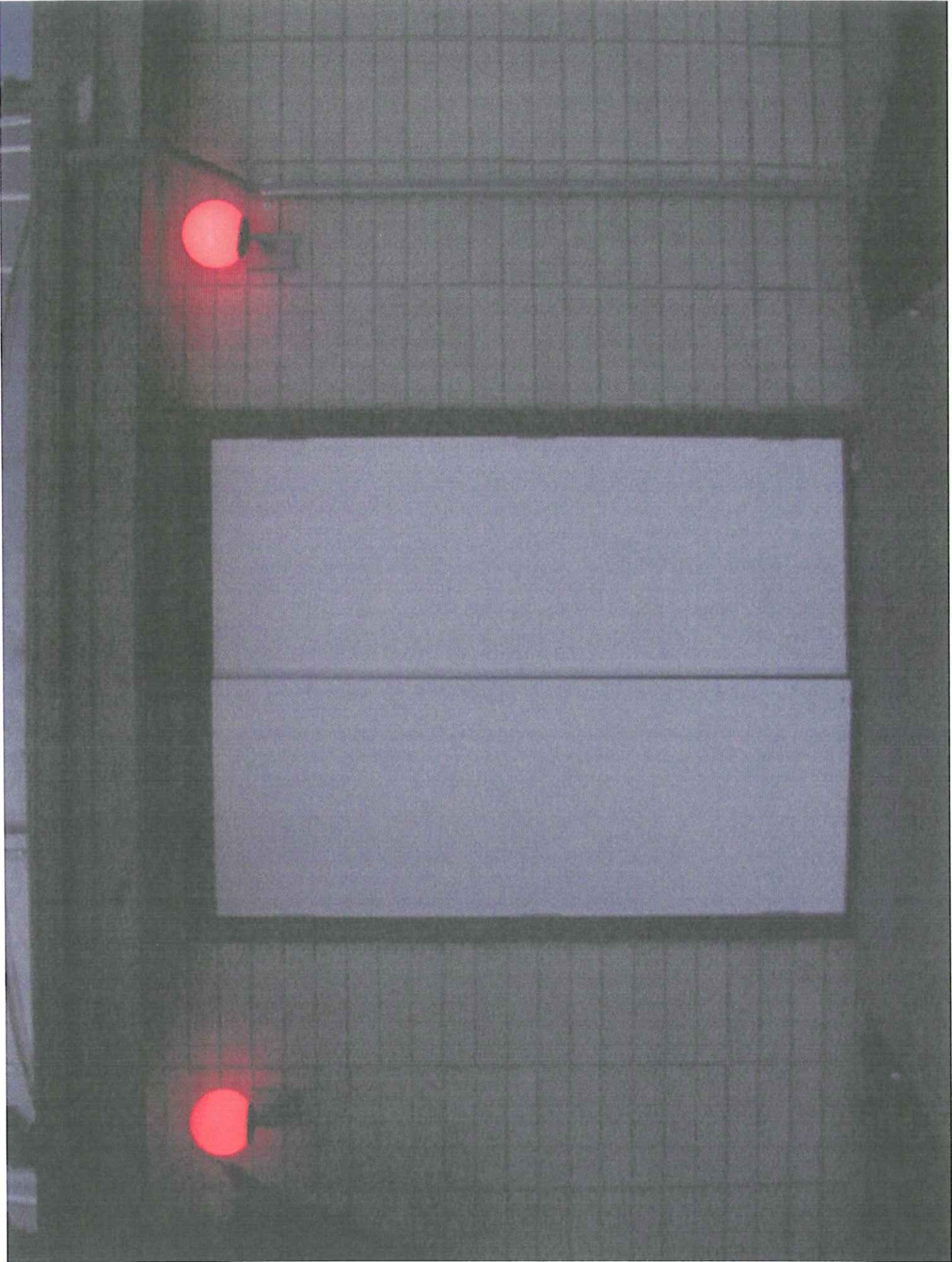
Parking Lot

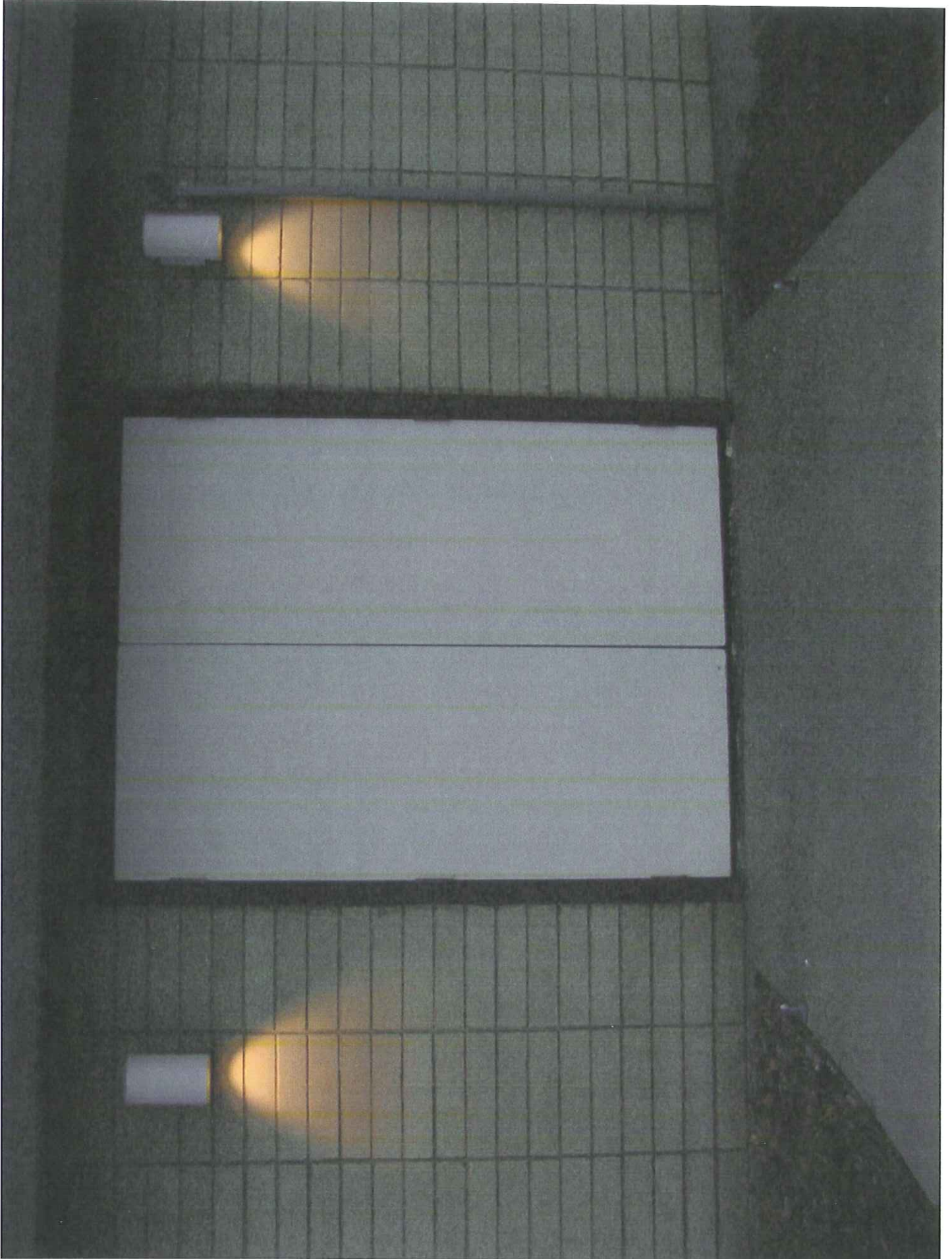
Lights #1 and #2



Telescope Room Door

Lights #3 & #4





IC Front door

Lights #5 & #6 & #7



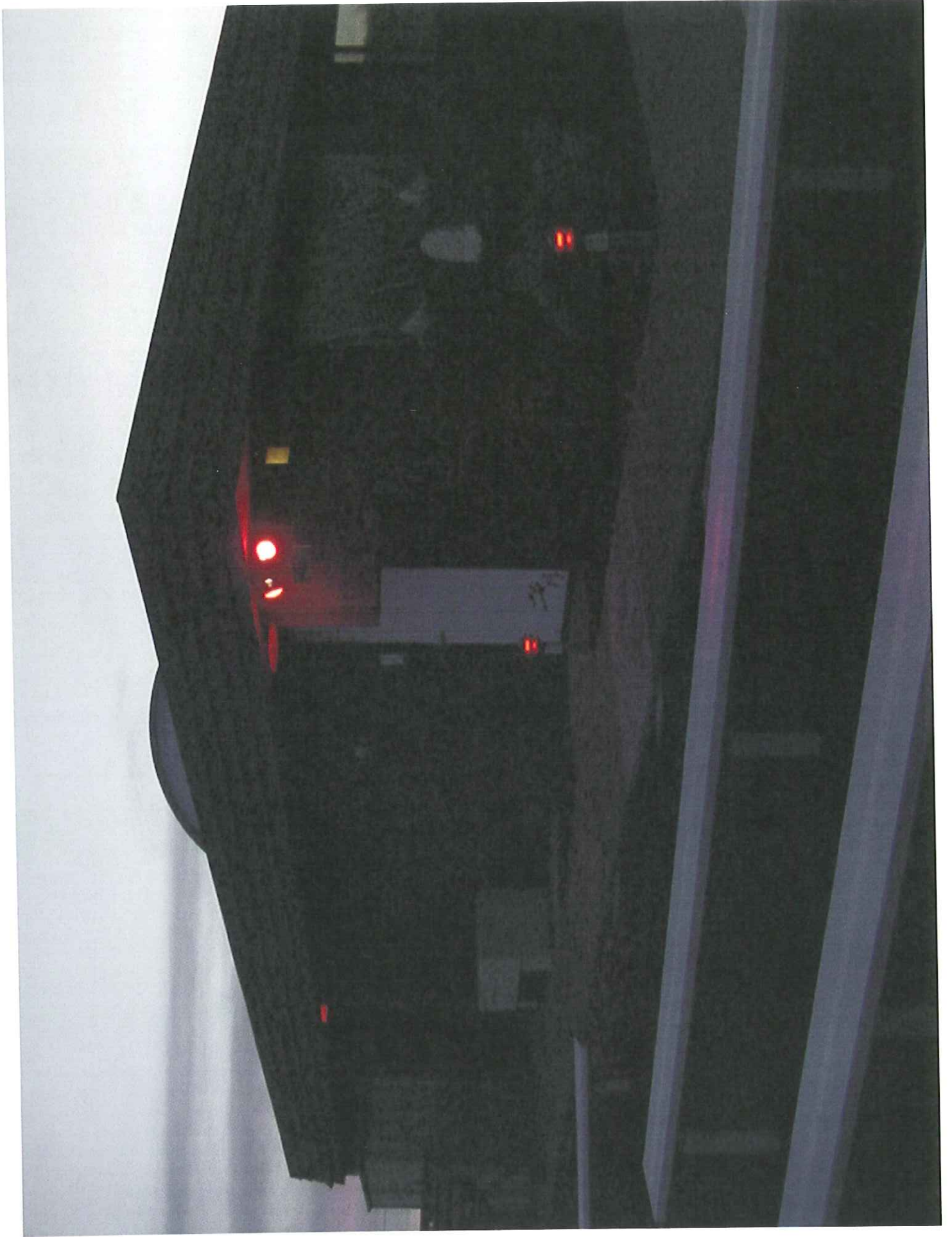
INTERPRETIVE
CENTER HOURS
FRI - SAT - SUN
2-5 PM & 7-10 PM

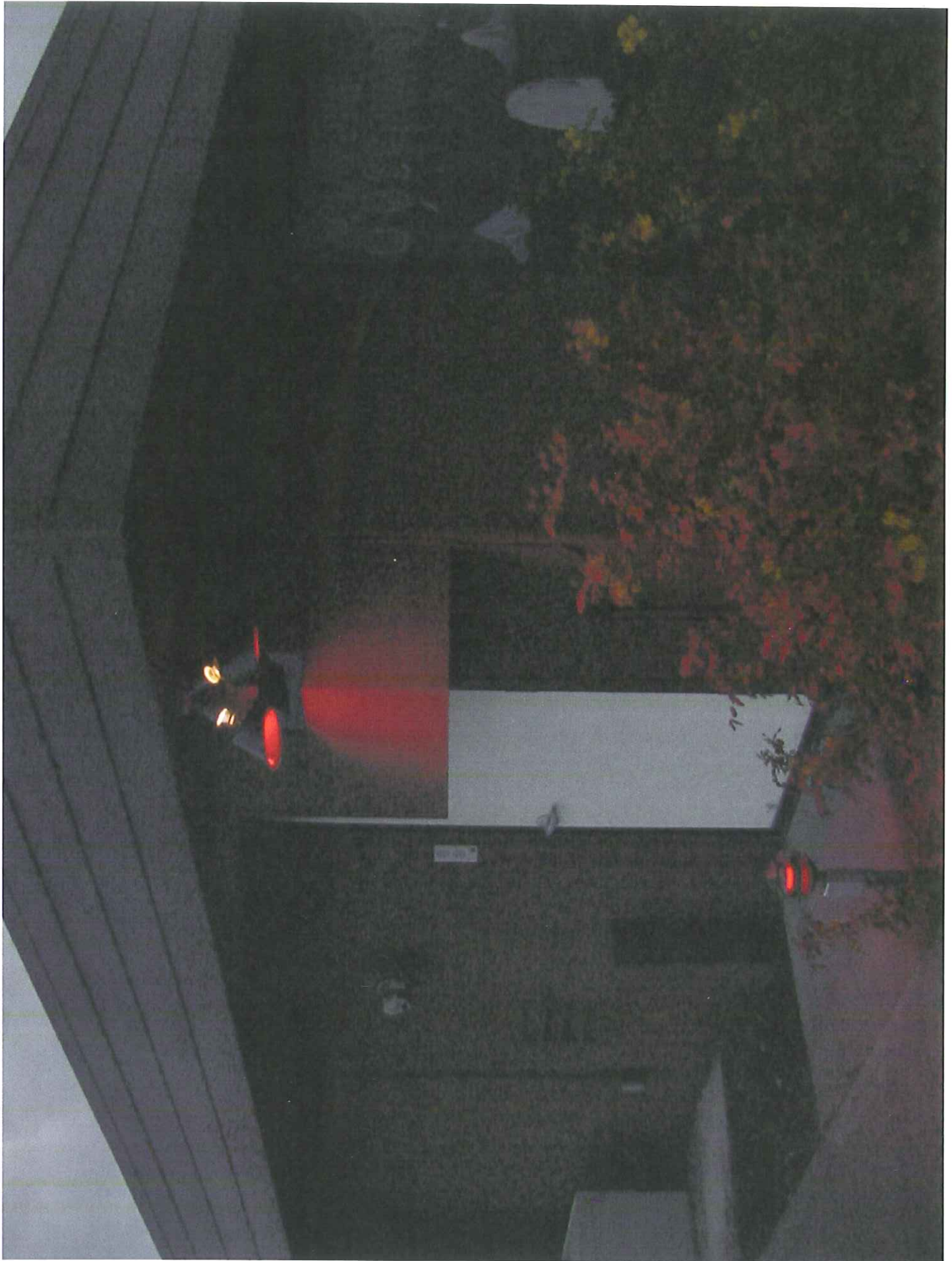
Sidewalk
Light # 8 & #9 & #10

NE corner of IC
Light #11

IC NE door
Light #12

IC East Door
Light #13





Lighting Plan

Goldendale Observatory

Lighting Inventory Plan

All outdoor lighting fixtures conform to lighting Guidelines because they are either shielded or contain red light bulbs.

All of the lighting is under control of Interpretive Specialist who turns lights on when needed and off to preserve the darkest night sky environment possible to support the sky viewing programs.

A handwritten signature in cursive script that reads "Stephen R. Stout". The signature is written in black ink and includes a long horizontal line extending to the right from the end of the name.

Stephen R. Stout
Interpretive Specialist
Goldendale Observatory State Park

Note: All fixtures are now fully shielded fixtures.

Dark Sky Interpretive Program

Goldendale Observatory

Interpretive programs/products about light pollution

1. Part of the daily tour of the observatory is a slide presentation which includes the history of Goldendale Observatory, its telescopes and how they work and how to prepare for backyard star gazing. The last section includes how to check the sky for darkness level using the stars of the constellation Ursa Minor and what light pollution is and what to do to prevent it.
2. A poster display showing the Earth at night is used to help interpret what light pollution is.
3. The International Dark Sky Association brochure is available to visitors in the Interpretive Center brochure rack.
4. The International Dark Sky Association brochure titled 'Light Pollution and Wildlife' is available to visitors in the Interpretive Center brochure rack.
5. Slide sets from the International Dark Sky Association are used for special light pollution presentations in the Interpretive Center.

Park Lighting Guidelines

Park Lighting Guidelines for Goldendale Observatory State Park

Outdoor lighting at Goldendale Observatory State Park shall conform to the local City of Goldendale lighting ordinance.

Lighting fixtures using white light bulbs shall be fully shielded so that the light emitted does not shine above a horizontal line.

Lighting fixtures using red light bulbs shall be controlled by park staff and only used when necessary for public safety.

Goldendale Observatory State Park

Lighting Management Plan

Goldendale Observatory State Park is in a relatively dark area of the Pacific Northwest of the United States. It is located in the northwest part of the naturally darkest area of the western part of the United States as evidenced by light pollution maps generated by the NOAA National Geophysical Data Center. The park is situated on the city limits of a small community in the middle of rural Klickitat County. On clear moonless nights the Milky Way is an impressive sight to the unaided eye. There is concern about many outdoor lights of private residences and businesses in the city of Goldendale and the Klickitat Valley affecting the dark sky environment.

The beauty of a naturally dark night sky is a resource to be preserved and protected. To protect the dark night sky environment over Goldendale Observatory State Park, park staff shall educate park visitors, local residents of the Klickitat Valley and local, county and state government officials about the night sky and the effects of light pollution. By implementing the following objectives, the natural dark starry night sky over Goldendale Observatory State Park can be preserved for future generations of the people of Washington State and all visitors who come from around the world to experience it.

Lighting Management Plan Objectives

Protect the dark night sky environment from light pollution generated from both inside and outside the park.

Measure and monitor the darkness of the night sky and assess the effects of local light pollution on this night sky environment.

Preserve and improve night sky darkness levels within the park by maintaining existing fully shielded light fixtures, replacing existing fixtures which are not fully shielded with fully shielded fixtures and using fully shielded fixtures for future lighting needs.

Maintain a park lighting fixture inventory. Inventory should include number, location, fixture style, lamp type and wattage and application.

Evaluate the need for each fixture in the lighting fixture inventory based on staff and visitor safety and facility security.

Restrict lighting to areas where it is needed. Meet these needs by using fixtures which conform to the local lighting ordinance. Use no more lighting than necessary to meet these needs.

Enhance the dark sky quality of the interpretive center telescope room, amphitheater and outdoor sky viewing area. This project will involve construction of a new parking lot to the west of the fenced area where the current parking lot is located. Only those who qualify for and display a disabled parking privilege placard or have a disabled parking privilege license plate tab will be allowed to park in the old parking lot. Layout of parking spaces and maintaining a vegetative buffer along the east side of this new parking lot will shield the park sky viewing areas from direct glare of vehicle lights.

Protect Goldendale Observatory State Park from light pollution sources outside the park. Park staff and volunteers shall use various communication techniques to educate the general public, park neighbors and local government officials about the importance of preserving, protecting and enhancing the dark night sky environment in the vicinity of the park. These techniques shall include writing newspaper articles, presenting specific educational programs at the interpretive center or at various civic meetings about protecting the dark night sky environment, and talking directly to people. Park staff will be a consultant for other Washington State Parks staff and advise them as they assess and adapt their park lighting to save energy and minimize light pollution.

Outdoor lighting guidelines

Goldendale Observatory State Park is a naturally dark place located on the outskirts of Goldendale, a small rural town in the center of sparsely populated Klickitat County in South Central Washington State. The main activity when the Park is open includes interpretive programs about telescopes with active participation by visitors in star gazing using telescopes or the unaided eye.

The lighting guidelines are for park staff to use in such a way that enables them to meet the lighting plan objectives as they pertain to permanently installed outdoor lighting. The guidelines address the main concerns of groups such as professional and amateur astronomers and the International Dark Sky Association which are sky glow, glare and night lighting clutter. These guidelines assist park staff in setting a good example for park visitors and citizens of nearby communities.

Lighting Fixtures

All permanent outdoor fixtures will prevent light pollution as follows:

- They shall conform to the City of Goldendale lighting ordinance
- They shall be fully shielded (no light emitted above the horizontal plane)
- They shall be turned on only when needed for park staff and public safety
- They shall use the minimum illumination level to accomplish the task
- They shall use red lamps except in parking area and main entrance to buildings
- They shall minimize light trespass
- They shall minimize light glare

Lighting controls

Lighting controls shall include manual switches, photo-switches, dimmers, timers, motion or presence detectors and other devices which may be used to control a lamp's operation or intensity. Photo-switches should be used in combination with manual switches so the light may be turned on/off as needed. Proper use of lighting controls will conserve energy and minimize light pollution.

Sign lighting

No internally illuminated signs are allowed. Externally illuminated signs should be lit from above with fully shielded fixtures. Sign lighting should only be used where it is necessary.

Interior light spillage through windows

Window coverings shall be used to minimize light escaping to the outside through windows.

Exemptions

Lighting for alarm systems, emergency egress and similar functions shall be exempt. Temporary lighting for park staff approved purposes such as maintenance is exempt.

GOLDENDALE LIGHTING ORDINANCE

Chapter 15.36

OUTDOOR LIGHTING FIXTURES

Sections:

- 15.36.010 Intent and purpose.
- 15.36.020 Definitions.
- 15.36.030 General requirements.
- 15.36.040 Acts declared unlawful
- 15.36.050 Conditional exemptions.
- 15.36.060 Exemptions.
- 15.36.070 Enforcement.
- 15.36.080 Violation--Penalty.

15.36.010 Intent and purpose. The purpose and intent of this chapter is to prevent excessive illumination, glare, and reflection in areas adjacent to astronomical research facilities, such as observatories, where such light intrusion would hinder use of sensitive optical devices. (Prior code §15.40.010)

15.36.020 Definitions. "Outdoor light fixtures" shall include, but are not limited to, lighting for billboards, streetlights, shopping center parking area lights, externally or internally illuminated on site or business advertising signs and area-type lighting. (Prior code §15.40.020)

15.36.030 General requirements. A. Shielding. All outdoor light fixtures, installed on or after the date of enactment of the ordinance codified in this chapter, shall be shielded from above in such a manner that the edge of the shield shall be level with or below the center of the light source, so that any direct light emitted above the horizontal is minimized. Light directing refractors shall be considered to be light sources.

B. Lighting Replacement. All replacements of existing mercury vapor lamps with other lighting sources shall meet the requirements of this section. (Prior code §15.40.030)

15.36.040 Acts declared unlawful. It is unlawful for any individual to engage in the following activities:

A. The operation of a searchlight for advertising purposes between midnight and sunrise;

B. The illumination after midnight of an outdoor public recreation facility unless a specific recreational activity is already in progress;

C. The outside illumination of any building, public or private, by floodlight projected above the horizontal, between midnight and sunrise; provided, that this prohibition shall not apply to any emergency lighting as may be required by any public agency engaged in the performance of their duties. This would include airport runway lighting;

D. The illumination of outdoor signs by floodlighting projected above the horizontal, between midnight and sunrise;

E. The use of quartz or metal halide lamps for outdoor illumination. (Prior code §15.40.040)

15.36.050 Conditional exemptions. A. Any individual as defined herein may submit a written request to the board of adjustment for a temporary exemption to the requirements of this chapter. The request for the exemption shall contain as a minimum the following information:

1. Type and use of outdoor light fixture involved;
2. Specific exemption requested;
3. Physical size of outdoor light fixture;
4. Total wattage of lamp or lamps;
5. Proposed location of outdoor light; and
6. Duration of use of outdoor light.

B. In addition to the above data, the board of adjustment may request any additional information which would enable the board to make a reasonable evaluation of the request for exemption. (Prior code §15.40.050)

15.36.060 Exemptions. Exemptions to the provisions of this chapter are as follows:

A. Outdoor light fixtures of all types within the zone limits existing prior to the effective date of the ordinance codified in this chapter;

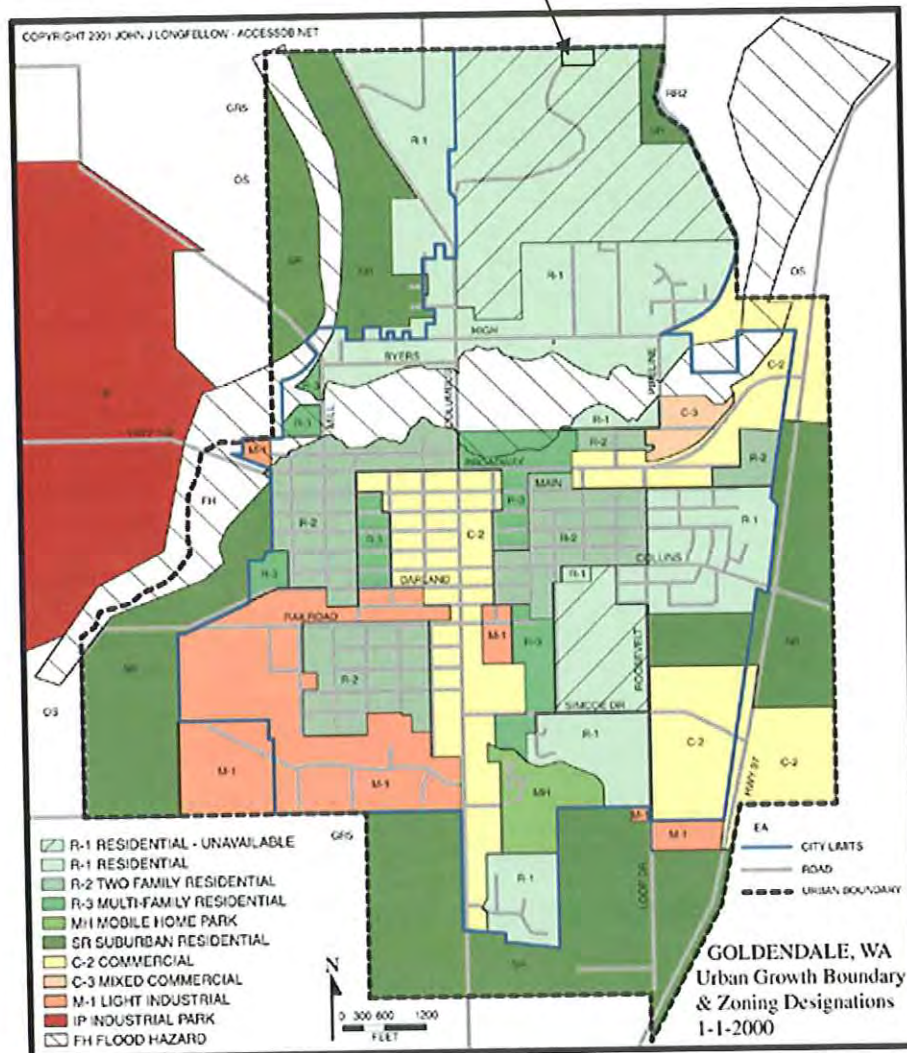
B. Private and commercial holiday lighting. (Prior code §15.40.060)

15.36.070 Enforcement. The city clerk-treasurer is authorized and directed to perform all acts necessary and appropriate to enforce and to give effect to this chapter. (Prior code §15.40.070)

15.36.080 Violation--Penalty. Any person, firm or corporation that fails to comply with, or violates any of the provisions of this chapter, is guilty of a misdemeanor and upon conviction thereof shall be punished as provided in Section 1.20.010. (Prior code §15.40.080)

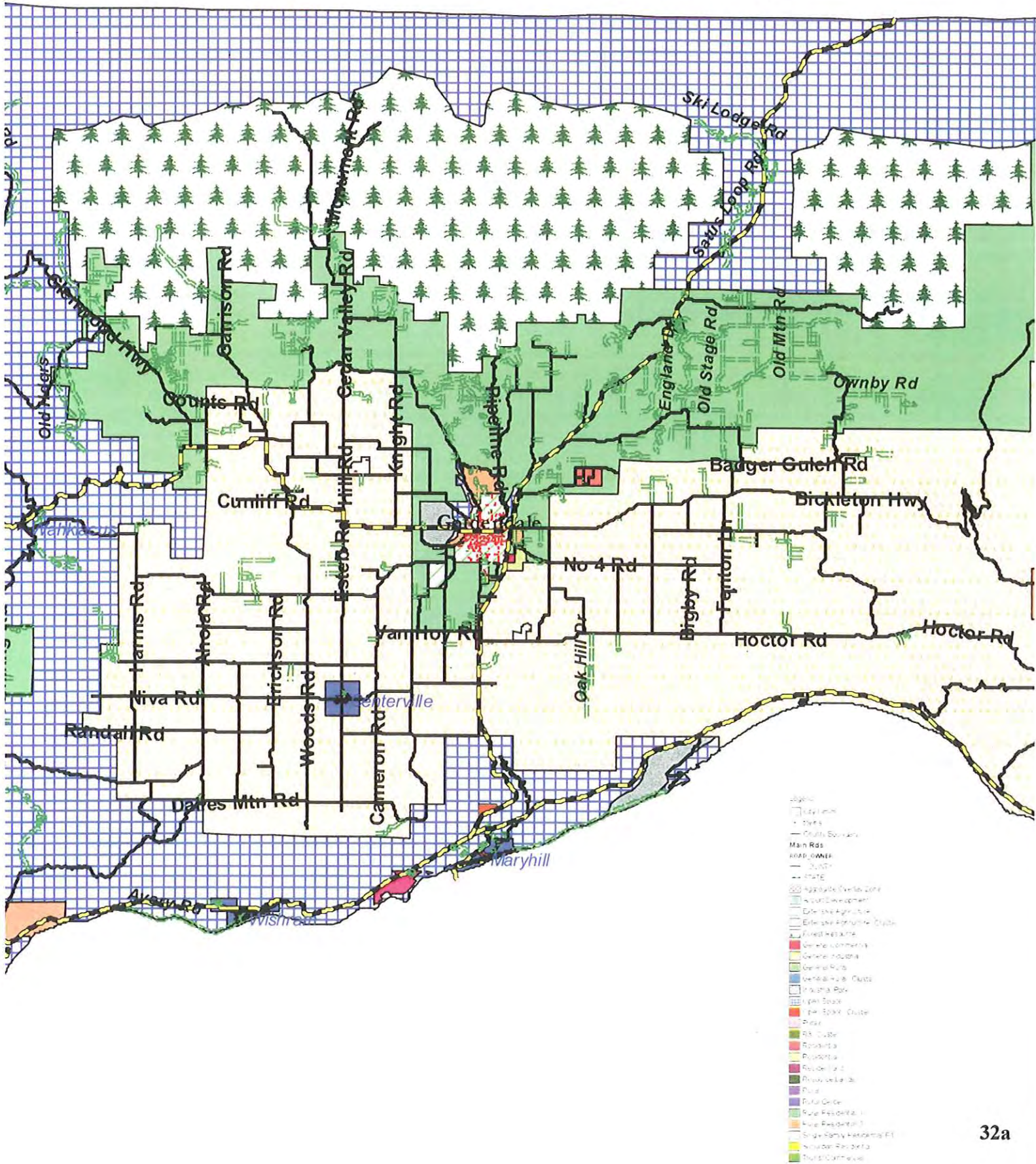
Map of City of Goldendale, WA

Goldendale Observatory State Park



The map above shows the Goldendale Observatory State Park location within the city limits of Goldendale, WA. Therefore, outdoor lighting in the park must conform to the city's lighting ordinance.

Klickitat County Zoning Map - Goldendale Vicinity



Community Outreach

Goldendale Observatory Light Pollution program outreach

Goldendale Observatory State Park staff hosts several community outreach programs each year under the topic of light pollution awareness.

During the spring season community visitors are invited to come to the park and participate in the Globe at Night program.

During the autumn season the community is invited to come to the park and participate in the Great World Wide Star Count.

The projects listed above have also been taken to local schools by the park interpretive specialist.

In March park staff encourages the community to participate in the Earth Hour project by turning off lights for one hour. Turning off outdoor lights is emphasized.

Goldendale Observatory State Park
TOURS OF THE UNIVERSE

Afternoon Tours (Free)
2-5 pm

Continuous tours of the Telescope Room and the Display areas followed by observation of sunspots, prominences, a bright planet (such as Venus), and possibly even one of the brightest stars. Programs include Observatory History, Introduction to Telescopes and Prepare for Stargazing. The afternoon tour concludes with an exploration of the various Sundials around the Observatory grounds.

Evening Tours (Free)

<u>Summer</u>	<u>Winter</u>	<u>Activity</u>
8:00 pm	7:00 pm	Gates Open
		Orientation
		Observatory History
		Introduction to Telescopes
		Prepare for Star Gazing
		Bright Star (Summer only)
		The Moon and/or Planets
		Binary Star
		The Stars Tonight
		Constellations
		Nebula
		Star Clusters
		Galaxy
Midnight	10:00 pm	Gates Close

Summer Schedule: Apr. 1 - Sept. 30

Afternoon and Evening tours available Wednesday - Sunday.

Winter Schedule: Oct. 1 - Mar. 31

Afternoon and Evening tours available Fridays through Sundays.