INSTRUCTIONS FOR
PETITION TO NOMINATE TRUST LAND AS SUITABLE
FOR CONSERVATION PURPOSES
(Please read instructions carefully before filing)

FILING: A bond must be submitted with the petition: **$1,000**

(Note: The bond covers the minimum cost of planning, notice, advertisement and public hearing pursuant to A.R.S. 37-312(D). **Additional bonding amounts may be assessed by the State Land Commissioner pursuant to A.R.S. § 37-312(D) and Rule R12-5-2503 depending on the size and complexity of the proposed reclassification project.** The bond is forfeited to the State if reclassification is approved.)

LANDS SUITABLE FOR PETITION:

1. Lands must be eligible for classification under A.R.S. § 37-312 and located within:
   a. One mile of the corporate boundaries of an incorporated city or town having a population of less than ten thousand people according to the most recent United States decennial census;
   b. Three miles of the corporate boundaries of an incorporated city or town having a population of ten thousand people or more according to the most recent United States decennial census;
   c. Ten miles of the boundaries established in 1a or 1b above, located within counties with a population greater than seven hundred thousand people according to the most recent United States decennial census and adjacent to lands that are eligible for conservation, sharing with them a specific physical characteristic such as a reach of a river, a mountain slope or an archaeological feature;
   d. The portion of Tortolita Mountain Park in Pinal County located within T10S, R12E and T10S, R13E;
   e. The vicinity of the Superstition Mountains in Pinal County located within T1N, R9E; T1N R10E; T1S, R9E; T1S, R10E.
   f. The vicinity of the San Tan Mountains in Pinal County located with T3S, R7E, Sec. 10.
   g. Land located in Coconino County within T19N, R5E; T19N, R6E; and T21N, R6E.

Land **may not** be nominated or classified as Trust land suitable for conservation purposes if the land has a **development plan** approved by the Land Commissioner prior to July 26, 1996, processed under the Urban Lands Development statutes (A.R.S. § 37-331, et. seq.)

WHO MAY PETITION:

1. A State agency that leases land or intends to lease or purchase the land.

2. The Board of Supervisors of the county in which the land is located.

3. The governing body of a city or town if the land is located within:
   a. The corporate boundaries of the city or town.
   b. One mile outside the corporate boundaries and the city or town has a population of less than ten thousand persons.
   c. Three miles outside the corporate boundaries and the city or town has a population of ten thousand persons or more.

4. Ten or more private individuals who:
   a. Reside in the county in which the land is located.
   b. Have the financial capability to lease or purchase the land.

5. A nonprofit corporation or trust, the purpose or powers of which include conservation of natural, scenic, open space or other conservation values.

6. The current lessee of the land.

7. A business or corporation that is legally empowered to own or manage real property in this State and that intends to lease or purchase the land.

LEGAL DESCRIPTION:

The petition must contain the township, range, section, description, acreage and county where the land is located. (Example: T1N, R3E, Section 17, SWNW, 40 acres, Maricopa County) Maps must be attached that outline the area of proposed classification.

PROCESSING STEPS:

If the Commissioner designates the Trust land as being under consideration for classification as suitable for conservation purposes, the Commissioner shall:

1. Mail notice of intent ("the notice") to classify lands as Trust lands suitable for conservation purposes and notice of public hearing to existing lessees, local planning authorities, the appropriate regional planning authorities and owners of property located within three hundred feet of the trust land.

2. Within thirty days after giving the notice:
   a. Publish the notice stating a date, time and place of public hearing for six publications in a newspaper of general circulation in the county in which the designated lands are located.
   b. Mail the notice to any person who has requested notice of any proposed classification for conservation purposes.
   c. Mail the notice to the Arizona Game and Fish Department, the Arizona Department of Agriculture, the Arizona State Parks Board, the Arizona Department of Transportation and any other affected state agency.

3. Within sixty days after the last date of publication of the notice, conduct a public hearing in a location as close as conveniently possible to the Trust land to receive and record oral and written testimony concerning the proposed classification.

4. Determine whether reclassification is in the best interest of the Trust by:
   a. Consulting with the governing body of each city or town in which the land proposed for reclassification is located or to which the land is contiguous, the county board of supervisors of each county in which the land is located if the land is not located within the boundaries of a city or town, and the local planning and zoning authorities, including the affected regional planning authorities.
   b. Considering recommendations of the Conservation Advisory Committee.
   c. Considering all evidence and testimony submitted at the public hearing.
   d. Considering the physical and economic impacts that the reclassification would have on other lands owned or controlled by the current lessee and the physical and economic impacts on the local community.
   e. Considering the existence of any holding lease on the lands.
   f. Considering the existence of any planning permit issued under the Urban Lands Act by the Commissioner for the lands.
   g. Considering the amount of progress on any development plans being completed under the Urban Lands Act for the lands.
   h. Evaluating the mineral potential of the land.
   i. Considering any other factors which, under the Enabling Act, Constitution, statutes or legal precedent are relevant to the decision.

5. Make a written determination whether the reclassification of the proposed lands is or is not in the best interest of the Trust. A person who is adversely affected by the decision may appeal the decision to the Board of Appeals pursuant to A.R.S. § 37-215.

6. If the Trust land is classified as suitable for conservation purposes, the Commissioner may require a party to submit a management plan to allow existing and conservation uses to be coordinated in a manner that will protect both existing uses and conservation and open space values.

FOR ARIZONA PRESERVE INITIATIVE PROGRAM INFORMATION CALL: (602) 542-4621
FOR INFORMATION REGARDING THE PETITION CALL: (602) 542-4602

Submit Petition To:	Departmental Use Only: Titles & Contracts	Rolodex #_____ Recommendation/Initials Date
Arizona State Land Department Public Records 1616 W. Adams Phoenix, AZ 85007	Exam: _____ Exam #: _____ Int Title: _____	Approve _____ _____ Deny _____ _____ Reject _____ _____
Bond Required: $1,000*	App Entry _____	Withdrawn _____ _____

* Additional bonding amounts may be assessed by the State Land Commissioner pursuant to A.R.S. § 37-312(D) and R12-5-2503 depending on the size and complexity of the proposed reclassification project.

PETITION TO NOMINATE TRUST LAND AS SUITABLE FOR CONSERVATION PURPOSES

Type or print in ink.

PETITION NO. _____ **OBSERVATORY MESA**

1. PETITIONER (see Certification, page 6):

City of Flagstaff

Name(s)

211 West Aspen Avenue

Mailing Address

Flagstaff **AZ** **86001**

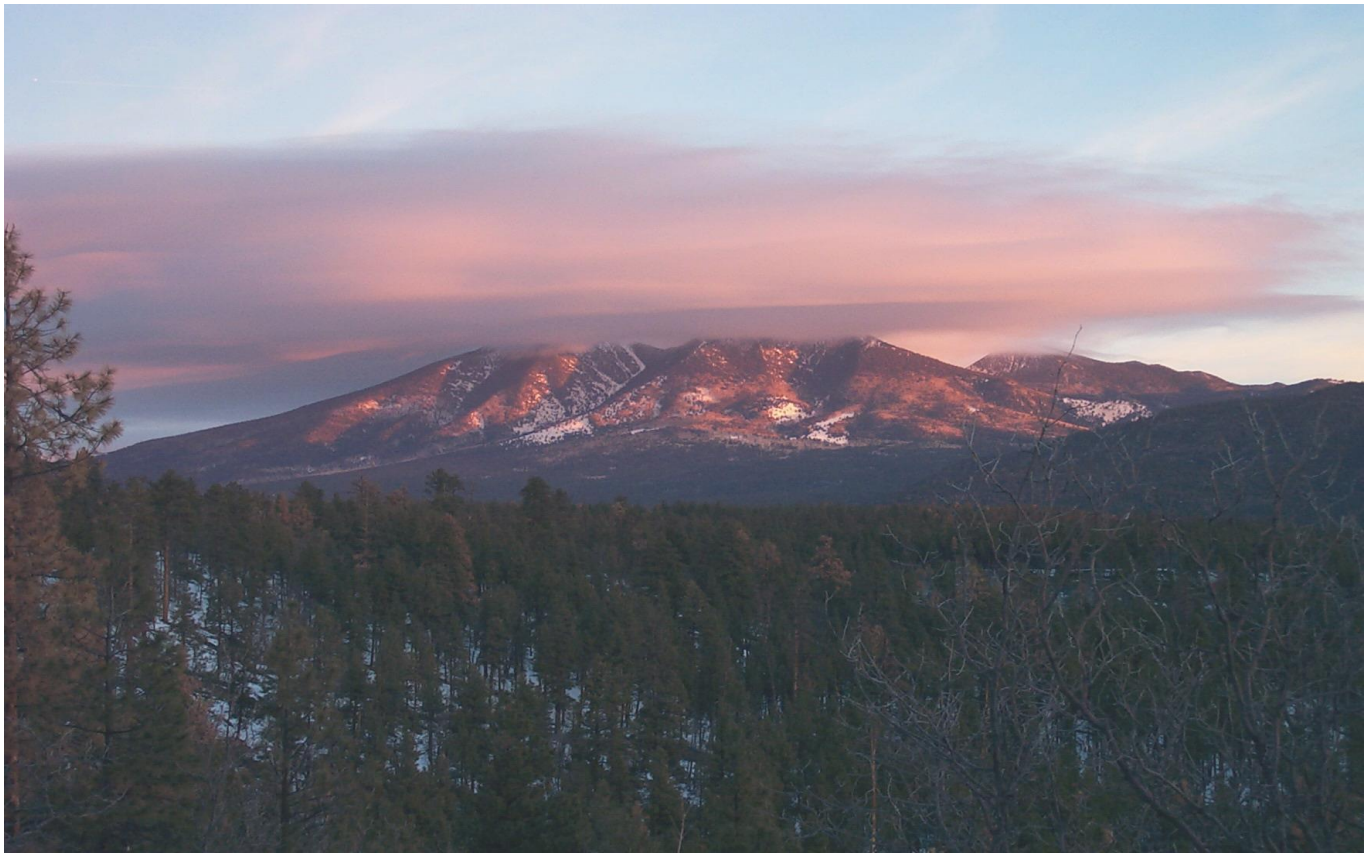
City/Town State Zip

Ursula Montaño **928/779-7685 Ex 7255**

Contact Person Phone

2. LEGAL DESCRIPTION: Complete legal description below and attach map(s) outlining area.

TWN.	RNG.	SEC	LEGAL DESCRIPTION	ACRES	COUNTY	SLD USE ONLY CITY	GRT	PARCEL
T21N	R7E	6	W2W2E2	480	Coconino.			
T21N	R7E	8	W2W2E2	480	Coconino			
T21N	R6E	12	Full Section	640	Coconino			
T21N	R7E	18	W2 NE W2SE N2E2SE That portion of S2E2SE which lies north and west of the Atchison, Topeka, and Santa Fe Railroad tracks.	617	Coconino			
T21N	R7E	19	That portion of NWNW which lies north and west of Atchison, Topeka, and Santa Fe Railroad tracks. That portion of N2N2NE which lies north of the Atchison, Topeka and Santa Fe Railroad tracks.	43	Coconino			



San Francisco Peaks from eastern edge of Observatory Mesa *Photo: Nat White, Lowell Observatory*

Observatory Mesa is an elongated, flat topped, volcanic feature lying along a northwest to southeast line just west of Flagstaff and south southwest of the San Francisco Peaks. It is generally 200 to 400 feet higher than the adjacent land with a slope to the south. A-1 Mountain is at the higher, northwest end of the Mesa. This 8300-foot cinder cone complex was the source of a 300,000-year-old volcanic flow that formed Observatory Mesa. The Burlington and Santa Fe railroad grade follows the contour at the base of the steep, southerly edge of the Mesa. Three drainage systems, the Rio de Flag to the north and east, the Clay Avenue Wash to the south, and Volunteer Wash to the west follow the base of the Mesa.

Observatory Mesa is a southerly facing mesa that is an integral part of the ecology centered on the San Francisco Peaks. Elevation, creviced drainages, and sloping terrain support a diversity of plants and wildlife. Its location, just west and 300 feet above Flagstaff, provides wildlife grazing between the Peaks and lower elevations. Its proximity to Flagstaff, and yet topographically separated by elevation, in addition to its ecological significance, make it ideal to maintain for environmental, recreational, educational, and research purposes. Designating these Mesa top State Trust lands for conservation will allow consolidation of the checkerboard state and federal ownership to be under one well-defined management goal.

Observatory Mesa encompasses nearly 7,600 acres, of which state lands comprise approximately 2,260 acres in a checkerboard fashion, along with approximately 4,400 acres of U.S. Forest Service land. The largest single ownership of private land is the Lowell Observatory, which has approximately 760

acres on the southeast edge of the Mesa. Other private ownerships, approximately 220 acres, exist discontinuously around the perimeter. Forest Service and State Trust lands occupy nearly all of the top of the Mesa 9 (see Map: Lands Proposed for API Reclassification in the Oberservatory Mesa Area).

In rough percentages, 58 percent is Forest Service land, 30 percent is State Trust land, and 12 percent is private land. Private land exists mostly on the

Dome of the U.S. Naval Observatory's 60-inch telescope
Photo: Nat White, Lowell Observatory

southerly, eastern, and northern slopes and flat areas at the base of the Mesa. The 88 percent of the Mesa under the authority of either the State Land Department or the U.S. Forest Service (U.S.F.S.) forms one contiguous unit without islands of private land with the exception of the Lowell Observatory ownership which consists of about 80 percent of the privately held lands at the edge of the Mesa on Section 17.

State sections described herein surround U.S.F.S. Section 7, at the center of Observatory Mesa. Each section can be characterized as consisting, in part, of gently sloping volcanic tableland bounded by steeper slopes incised with deep ravines. Springs and seeps are scattered about this landscape, usually near the base of the Mesa, but in one case near the Mesa top of Section 7 bordering on Section 6.

The vegetation throughout is primarily ponderosa pine and Gambel oak forest, with open sections atop the mesa supporting extensive grassland tracts and shrub steppe.

Portions of the forests in these sections have received restorative thinning over the last 30 years and are considered healthier than the surrounding forested lands.

Photos: Nat White, Lowell Observatory

Wilson Mountain on Mogollon Rim
Photo: Nat White, Lowell Observatory

Orientation to the State sections of this petition is as follows (beginning in the south and moving in a clockwise direction). State Section 18 and the portion of 19 described in this petition contain part of the southern edge of Observatory Mesa and are bounded by USFS land to the north, the Burlington Northern and Santa Fe railroad right-of-way to the south, and the lands of Lowell Observatory to the east. To the west are the deeply incised slopes of the southwestern portion of the Mesa. State Section 12 lies mostly atop the western portion of the Mesa, with its northwestern half being grassland and shrub steppe extending towards A-1 Mountain. State Section 6 contains part of the north edge of the mesa and features a prominent ravine that drains into the Rio de Flag. State Section 8 contains part of the eastern edge of the Mesa and is incised by two steep ravines on its northern and southern edges. To the south is Lowell Observatory property.

3. **What are the proposed conservation uses of the land? (Use separate sheet if necessary)**

The primary conservation uses of these sections will be to protect renewable and non-renewable resources and scenic viewsheds, at the same time providing for compatible recreational uses. All the sections of Trust land on Observatory Mesa individually provide wildlife habitat, but together with the majority of U.S. Forest Service lands, they would protect the ecological integrity of the Mesa top. By conserving the Trust lands, the Mesa top will keep its ecological wholeness. Other proposed conservation uses include recreational bird watching as well as Flagstaff Urban Trail System trail extension.

The Mesa is home to a variety of wildlife as listed in attached Appendix A. The Mesa top is a seasonal grazing for elk, deer, mountain lion, and antelope. Fox, porcupines, skunks, Abert squirrels, song birds of the open grasslands, pine forest and oaks, and birds of prey like the goshawk and great horned owl call the Mesa home. This diversity is in part due to the mixture of grassland, forests, canyons and slopes, and in part due to the location of the Mesa between the San Francisco Peaks and the lower lands to the south. All sections protect important wildlife habitat. These sections have resident wildlife, including black bear, elk, deer, pronghorn antelope**,** pine oak songbirds, and northern goshawk (see Maps: Pronghorn Antelope, Black Bear Movement Corridors, Turkey, and Northern Goshawk). Because of the pine oak in Sections 6, 8 and 18, these areas are rich in small mammals and birds. The habitat for these wildlife will be conserved and protected should the lands be reclassified.

4. **Referencing the criteria identified in Rule R12-5-2502(A), identify why the land is suitable for conservation purposes. (attach additional sheets if necessary):**

History

Pioneer history is captured by the two names associated with the Mesa: A-1 Mountain and Observatory Mesa. A-1 Mountain took the name from the A-1 Bar brand of the Arizona Cattle Company whose ranch headquarters was located just north of the Mesa. The ranch was established in the early 1880s. At one time the company ran over sixteen thousand cattle on eight hundred and seventy-five square miles of range land. A system of water holes on Observatory Mesa called the A-1 tanks is a remnant of the ranch operations. (Source: *They Came to the Mountain*, Platt Cline, Northland Press, Flagstaff, AZ 1976.)

Before cattle ranching, sheep was the stock of choice in the region. Between 1870 and 1890, the number of sheep in the northland increased from a few hundred to nearly seven hundred thousand. It

was reported in 1887 that one hundred and fifty thousand sheep were on the San Francisco Peaks alone. (Source: *They Came to the Mountain*, Platt Cline, Northland Press, Flagstaff, AZ 1976.)

Observatory Mesa was the primary sheepherder route to the Peaks for summer grazing. There are several old sandstone tunnels under the railroad tracks along the southern edge of the Mesa to allow for safe crossing. Even as recently as the construction of I-40 and I-17, this route was considered important enough to construct special underpasses for the sheep to cross the interstate. Open grasslands, a large seep, and several watering holes made this route particularly suited for the seasonal trek. Historic carvings on the trunks of aspen trees by the Basque sheepherders commemorate that time. (Source: *They Came to the Mountain*, Platt Cline, Northland Press, Flagstaff, AZ 1976.)

Even before 1870, Observatory Mesa influenced the great migration west that occurred immediately after the Civil War. For a few years the Beale Wagon Road was traveled by more pioneers than the Oregon Trail. The Mesa was an impediment to the pioneers and their wagons on the westward trek so the trail had to swing to the north or south around the Mesa. (Source: *They Came to the Mountain*, Platt Cline, Northland Press, Flagstaff, AZ 1976.)

In 1892, the Lowell Observatory was established on the edge of the Mesa overlooking Flagstaff. In order to protect the site from development that would adversely affect its research, by an act of Congress in 1910, the Observatory received Section 17 on the southeasterly end of the Mesa for astronomical purposes.

Open Space

The landscapes of this petition are located west and northwest of Flagstaff. Each section described in the Legal Description section of this petition forms a part of Observatory Mesa. This Mesa overlooks Flagstaff and much of the surrounding countryside, with unobstructed views extending north to the San Francisco Peaks and south to the Mogollon Rim. The expansive viewshed of Observatory Mesa enticed the founders of Lowell Observatory to locate here near the turn of the century. Yet development on the Mesa is now seen as a particular threat to this and other nearby astronomical research facilities. Light pollution from Flagstaff has already substantially impacted the operations at Lowell Observatory. Additional development on Observatory Mesa could further impact Lowell, as well as U.S. Naval Observatory facilities south of nearby I-40. Protecting the upper portion of the sections of land on the Mesa contributes to the preservation of the night skies for both the Naval and Lowell Observatories.

Photo: Nat White, Lowell Observatory

The proposed sections have excellent, open views of the San Francisco Peaks, Woody Mountain, and Dry Lake. The existing Flagstaff Urban Trail System (FUTS) skirts the southern portion of Section 8, and there are proposals to extend it through sections 18 and 19. This open space is also home to vitally important seeps and springs. In addition to these values, Observatory Mesa provides a place where the residents of Flagstaff and tourists can recreate in the natural environment. If Sections 6 and 8 were to be developed it would disrupt viewsheds.

The *Flagstaff Area Open Spaces and Greenways Plan*, which was a collaborative effort completed in 1998 by the U.S. Forest Service, National Park Service, Arizona Game & Fish Department, Arizona State Land Department, Coconino County, and the City of Flagstaff, designates the subject lands on Observatory Mesa as high priority for retention as open space (see Map: Land Retention Priorities).

Following on the heels of the adoption of the *Flagstaff Area Open Spaces and Greenways Plan,* the City Council and Coconino County Board of Supervisors undertook the preparation of a joint regional general/comprehensive plan for the greater Flagstaff area. In November 2001, the Flagstaff Area Regional Land Use and Transportation Plan was adopted by the City and County, and later ratified in May 2002 by city voters. The Regional Plan designates the subject lands on Observatory Mesa as Public Multiple-Use (see Map 4: City Land Use Plan).

Unique Scenic Beauty

The special scenic beauty of Observatory Mesa is related to its location between the San Francisco Peaks and the Mogollon Rim. Its elevation provides 360 degrees of panoramic views unaffected by the development that lies just below its edges. The side canyons, the forest and grasslands, and pockets of different vegetation fostered by the varied soils, exposure, and underground moisture, produce seasonal changes of scenic beauty that enhance the panorama.

Photo: Nat White, Lowell Observatory

All the sections have spectacular views of the San Francisco Peaks, Mount Elden, and Dry Lake Hills. There are excellent open space views to the west and south as well.

Section 18 is a flat, thin forest that defines the edge of Observatory Mesa on the south. This section has a mile and a half of steep slopes that provide excellent views of Woody Mountain, Mormon Mountain, and Anderson Mesa. Section 18 is critical because it creates contiguousness for wildlife corridors, drainage, and scenic views. Section 18 has a more open and natural forest due to restorative thinning 10 to 15 years ago, making it an excellent area for abundant wildflowers.

Section 12 offers a 360-degree view of Mount Elden/Dry Lake Hills, A-1 Mountain, Wing Mountain, Sitgreaves Mountain, Bill Williams Mountain, Woody Mountain, Mormon Mountain, the San Francisco Peaks, as well as views of Dry Lake. It is in direct line of sight of the Naval Observatory.

The upper portion of Section 6 offers unique views of both Mount Elden and the San Francisco Peaks.

Mt. Elden and Dry Lake Hills from Section 12

Photo: Nat White, Lowell Observatory

Section 8 has a steep tree-covered canyon on its east side, providing a backdrop to the city's regional park, Thorpe Park. There is a bowl-shaped canyon in Section 8 that is unique because it does not have a wide assortment of rock outcroppings, providing favorable conditions for a variety of wild flowers and grasses.

Views of Woody Mountain, overlooks of Dry Lake, and the San Francisco Peaks through the meadow in Section 7 are magnificent.

Wildlife and Vegetation

The sections described herein contain a variety of native vegetation communities supporting diverse animal assemblages (see attached species lists Appendix "A"). Large ungulate species, including elk, pronghorn and mule deer, forage here on numerous species of native grasses, forbs, and shrubs. Other resident mammal species include turkey, grey fox, coyote, porcupine, and raccoon, as well as several squirrel, chipmunk, and diminutive rodent species

Late fall migration across Section 12 *Photo: Nat White, Lowell Observatory*

The native plant species, including some old growth Ponderosa pine, four genera of native grass species, and a variety of other tree and shrub species (see Map: TES Vegetation), support substantial resident populations of bats, squirrels, and forest and grassland songbirds. Notable among these are six species of woodpecker, five of thrush, five of finch, and five corvid species. Among the numerous migratory species that breed on the Mesa are western tanager, Grace's warbler, black-throated gray warbler, and vesper sparrow. Large raptors, including four hawk and four owl species, frequent the mature pine forest that covers much of Sections 6, 8, and 18, and the shrub-steppe community in the western part of Section 12. Northern goshawks, classified as a Forest Service sensitive species, have nested in old growth ponderosa pine immediately adjacent to and in Section 18. (See Appendices "A" and "C".)

Maps indicating pronghorn antelope, turkey, northern goshawk, and black bear movement are attached.

Photo: Nat White, Lowell Observatory

Although ponderosa pine is the dominant woody species over most of the Mesa, there are abundant warm-loving woody species on south or west-facing rock exposures (especially in Sections 12, 18, and 19) that are indicative of increased habitat diversity. Some of these species also provide important wildlife forage. Among these are New Mexico locust (*Robinia neomexicana*), mountain mahogany (*Cercocarpus montanus*), juniper (*Juniperus* spp.), Gambel oak (*Quercus gambelii*), smooth sumac (*Rhus glabra*), Apache plume (*Fallugia paradoxa*), wild rose (*Rosa woodsii*) and wax currant (*Ribes cereum*).

An abundance of forb species, many of them long-blooming wildflowers such as Arizona gilia (*Ipomopsis aggregata* var. *arizonica*) and golden-beard penstemon (*Penstemon barbatus*), provide nectar for several species of hummingbirds and such showy invertebrate species as the tiger swallowtail butterfly.

An important habitat feature is the large meadow associated with Section 12. Grasslands, particularly of this size, are relatively rare across the landscape due to growth in the Flagstaff community, tree encroachment, high road densities or high human use. Large meadows provide feeding areas for elk and pronghorn and habitat for grassland-dependent species such as small rodents, open area hawks, small predators, such as coyotes and fox, and ground nesting birds (see Appendix "A").

One of the most important structural or habitat features in these parcels is the drainages, which support a higher vegetative and structural diversity for wildlife than surrounding areas. Additional species diversity is facilitated by the presence of several tanks and seeps, especially in Sections 8, 12, and 18. These water sources support small patches of wetland vegetation that attracts additional wildlife species such as great blue heron, several duck species, chorus frog, and tiger salamander. (see Appendix "A"). Attached Map Terrestrial Ecosystem Survey Vegetation indicates vegetation types on Observatory Mesa.

Cultural Resources

Observatory Mesa played a part in pioneer history and Native American history, but there is little physical evidence. There has not been an intense archeological study of the Mesa as a unit. There are, however, several old roadbeds up the sides of canyons that are supported by hand-built rock walls. In addition, several of the tanks are vestiges of watering holes built over one hundred years ago.

The current railroad bed runs along the southern border of portions of Sections 18 and 19. The old sandstone railroad bridge abutments found just south of the current tracks are the oldest in Flagstaff. These are remnants of the Atlantic and Pacific Railroad line, which came to Flagstaff in 1881, providing the economic stimulation that turned Flagstaff from a settlement to a town. In one sense, these old railroad segments symbolize the beginning of Flagstaff's growth as a town. Protecting the areas to the north of the railroad tracks (parts of Sections 18 and 19) would preserve the integrity and natural setting of these historic sites and provide public access to these locations.

No archaeological surveys have been done in Sections 6, 8, or 12. Section 18 has had some archaeological surveys due to an interest in road construction. (Arizona State Museum survey projects 1993-51; 1998-31; 1998-154). Site AZ I:14:332 (ASM) is a small prehistoric rock shelter, AZ I:14:333 (ASM) is a prehistoric and historic artifact scatter, and AZ I:14:342 (ASM) is an historic trash scatter with rock features (see Appendix "D".)

Minor archaeological surveys have been done in the Observatory Mesa sections. The prehistoric site density is probably light with less then 3 or 4 small sites per square mile. Closer to downtown Flagstaff it is likely that historic features and artifacts will be prevalent on undeveloped lands (source: John H. Madsen, Antiquity Permits Administrator, Arizona State Museum.)

A review of Forest Service records has identified eight sites in close proximity to the State Trust Lands. These sites include prehistoric structures and lithic scatters, historic ranching and trash scatter sites, and Lowell Observatory. Two of these sites are known to be eligible for the National Register, and others have the potential to be, but have not yet been evaluated (source: Coconino National Forest)

Wildlife Habitat

These Trust lands, together with the U.S. Forest Service lands on top of the Mesa, contain an unusually diverse range of habitat (see Appendix "B"). All sections contain diverse native vegetation and animal communities, as well as important wildlife movement corridors. Elk herds graze and follow the drainage along the western border of Section 18. Section 6 feeds Section 7 that holds Matson Tank.

Elk on northwest corner of Section 12 with San Francisco Peaks in background
Photo: Nat White, Lowell Observatory

Matson Tank is located in the northeast corner of Section 7 (on USFS land) and is fed by a unique fifty-acre seep. Animals migrate through these sections between the San Francisco Peaks and the Mogollon Rim. A series of tanks down in the canyon of Section 12 hold water for long periods of time that are valuable to wildlife. Elk and deer graze on the tall grass in all of the petition sections.

A tank on Section 18 (Nov 2002)
Photo: Nat White, Lowell Observatory

Other features (including whether, and for what reasons, reclassification is in the best interest of the State Land Trust):

Geologic and topographic features:

Sections 6, 8, and 12 are part of the Observatory Mesa lava flow. Chiefly, the rock is andesite, one of the major lava types produced by San Francisco volcanic field activity. This flow occurred fairly recently, some 300,000 years ago. Along the northern borders of Sections 6 and 8 the Mesa begins to drop into drainages. These sections form part of the northeastern border of Observatory Mesa. Section 12 is to the west and has a large drainage in its eastern half that leads to the southern border of the Mesa. (Source: *Stone Landmarks*, Marie Jackson, Piedra Azul Press, 1999.)

Section 18 is also part of the Observatory Mesa lava flow, with colluvial deposits along the southern edge. The southern edge of Section 18 is a segment of the southern border of Observatory Mesa. Its southeast corner holds one of the larger drainages running off of Observatory Mesa, and its grades and fluctuations would provide problems for development. (Source: *Stone Landmarks*, Marie Jackson, Piedra Azul Press, 1999.)

The proposed portions of Section 19 are part of the Observatory Mesa lava flow. These segments form part of the hill descending from Observatory Mesa.

Watershed integrity:

Each section within this petition contains an intermittent stream. There are two in Section 6 that are tributaries of the Rio de Flag. Another intermittent stream is in the northeast quarter of Section 8 that flows to the east into the Rio de Flag. Section 12 has three intermittent streams, one of which feeds into Belle Spring in an adjacent section. There is a significant drainage in the northeast portion of Section 12 that has a broad influence on adjacent Sections 7 and 8.

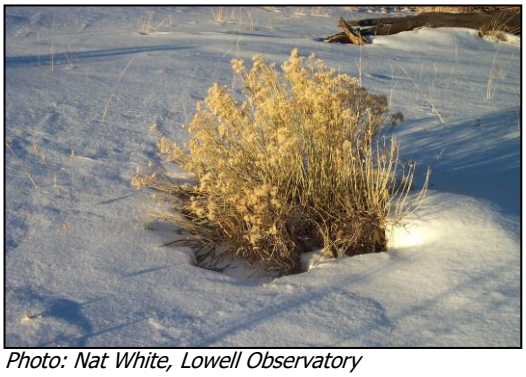


Photo: Nat White, Lowell Observatory

Sections 18 and 19 have intermittent streams that originate from Tunnel Spring. The conservation designation of these lands would lend to the overall integrity of the Rio de Flag watershed.

Floodplain management:

The 100-year flood plain only affects the southeast corner of Section 18 in the Clay Avenue Wash area. The other sections within this petition are unaffected by the 100-year floodplain.

Surface and groundwater:

There are several water tanks in this petition area including, Matson, Truck Tank, and Lang. Perennial water in the form of a seep that feeds Matson tank lies within Trust Sections 8 and 6 and Forest Service Section 7. There are three unnamed tanks that are considered "live tanks" because they still hold water after several dry years. Tunnel Springs, which is in Section 18, was continually full of water until approximately 1995. One thought is that this spring was fed by the perched aquifer in the Baderville areas. New development and greater use of this aquifer may be what has stopped the flow. Tunnel Springs was developed by the railroad to provide water for its steam engines. Old Town Springs, located in Section 16 at the southeastern edge of the Mesa, is part of the Mesa's system of springs (see Map: Tanks & Spring Locations.)

These sections are a part of the Little Colorado River Plateau Basin (groundwater). Excerpts from Arizona Department of Water Resources' website (2000) on this groundwater basin provide perspective about how these sections are tied together (see Appendix "G").

Observatory Mesa is located in the Rio de Flag watershed and the Clay Avenue Wash drainage basin (the Clay Avenue Wash being a tributary of the Rio de Flag). The Rio de Flag is a tributary of the San Francisco Wash, which is in turn a tributary of the Little Colorado River

According to the Army Corps of Engineers, the permeability range for this area is 0.2" to 0.8" per hour.

Long-term viability of the land for conservation management:

The size, configuration, and location of the parcels contribute to their conservation value and viability. The sheer amount of acreage these parcels cover results in the inclusion of a significant variety of

habitats, with its associated plant and animal species and a variety of geologic and geographic features. These petition lands are in a checkerboard pattern with Forest Service land. The protection of the State Land sections, in addition to the already protected Forest Service wildlands, will allow for large contiguous varied habitats for wildlife.

There have been few surveys conducted on the State Trust Lands. However, based on surveys on adjacent National Forest lands, it is likely that additional archaeological resources will occur on the State Land areas in question. Development of these State Trust Lands would cause concerns because of the possibility of site damage (either intentionally or inadvertently).

The Mesa top contains about 7,500 acres, of which Trust lands make up about 2,300 acres. Because of their checkerboard location, if development at any level were to occur on the Trust lands, the diversity of wildlife habitat of the entire Mesa would be impacted adversely by isolation. The diversity of the habitat is a characteristic of the Mesa with its open grasslands, secluded canyons, old and new growth forests, and systems of tanks fed by natural seeps or drainage systems. If the diversity of wild life habitat is to be preserved, then it is essential that the Trust lands be used for conservation purposes.

Typical State Trust lands landscape and ravine
Photos: Nat White, Lowell Observatory

Preserving these Trust lands for open space at the western edge of the city for conservation purposes has many benefits, including ecological, economical, and recreational. The elevation and shallow soils on thick basalt bedrock would be costly to develop and to provide and maintain service if developed at high densities. Even at low densities, estate-type development would disrupt the Mesa's ecological integrity by isolating sections of Forest Service and Trust lands.

Local, regional or other planning considerations:

This proposal for conserving state land parcels is in accord with the *Open Space and Greenways Plan* (*OSGP*) and the *Regional Land Use and Transportation Plan* (*Regional Plan*). The petition lands are in a checkerboard pattern with U.S. Forest Service lands. Conservation of the larger whole of Observatory Mesa would form a large, contiguous wildlife habitat, as well as, a natural area for recreation. The protection of the State lands adds additional emphasis to maintaining the Forest Service lands wildland character, meaning the Forest Service would be less likely to seriously consider land exchanges.

Historically, the Forest Service has excluded Section 7, centrally located on the Mesa, from its list of tradable lands in order to help protect the observatories. The State Trust lands that are the subject of this petition completely surround Section 7 and comprise some thirty percent of the top of the Mesa. The petitioned lands also are adjacent to the west and north of Section 17, the Lowell Observatory preserve provided by an Act of Congress referred to elsewhere in this petition.

Development of the Arizona State lands may result in the destruction or deterioration of archaeological properties on adjacent Forest Service lands. With an increase in use by area residents, the possibility

increases that archaeological sites and artifacts will be vandalized either intentionally or inadvertently If development occurs, it may be necessary to create some form of monitoring, protection or mitigation plan for the National Register eligible sites in the area.

Recreation:

Observatory Mesa, at the western edge of Flagstaff, is attractive as a recreational area for both residents and visitors. Camping, biking, hiking, running, snowshoeing, and cross country skiing are just a few of the uses. However, Observatory Mesa is showing the effects of unmanaged recreation. The area is showing visible signs of deterioration and degradation. This land can sustain recreational uses without major damage to the land and wildlife ecology with appropriate management. Consolidating a multi-agency management plan with a goal of conservation would allow this to happen.

The potential to continue the Flagstaff Urban Trail System (FUTS) through the eastern part of Section 18 is core to the FUTS. The presence of a trail system through these conserved lands will enhance their accessibility for recreational use, while directing recreational use away from critical wildlife habitat features. The attached Recreational Uses Map from the Flagstaff Area Open Spaces and Greenways Plan shows existing and proposed FUTS and Forest Service trails on Observatory Mesa.

Observatory Mesa is a popular destination for bicyclists, hikers, and runners from Flagstaff. The existing Observatory Mesa Urban Trail extends west from Thorpe Park through Section 17 of the astronomical preserve, is adjacent to Section 8 and ends near the northeast corner of Section 18. The following plans, FUTS, the *Greater Flagstaff Area Open Spaces and Greenways Plan*, and *Flagstaff Area Regional Land Use and Transportation Plan* propose a network of trails that cross Sections 6, 12, and 18, and connect several urban trails within the city to nearby Forest Service lands.

The future FUTS system would establish a trail along the southern border of Section 18, and another trail going right through the eastern third of Section 18, running from the south border, up towards the middle, and then towards the northeast corner. The protection of Section 18 would maintain the integrity of the FUTS trail plan.

Several important factors of land use and recreation should be considered relative to Sections 6, 8, 12, 18, and 19. The Forest Service lands on Observatory Mesa have been managed by the Forest Service based on long-term commitments by Congress to Lowell Observatory for astronomical purposes. In addition the area is heavily used and valued for recreational purposes. Development of these sections would remove these lands as places to enjoy outdoor recreation. In addition, development of the State Trust lands will affect the wildland character of the surrounding Mesa area. When development expands adjacent to National Forest lands, there are increased levels of recreation use that dilute the wildland character. More effort is then required to provide wildland settings in keeping with Forest Service missions and public demands. One example is the Forest Service's ability to maintain semi-primitive motorized or non-motorized Recreational Opportunity Spectrum (ROS) settings. It takes more active management to maintain these settings when there is a significant increase in the amount of recreation use. If this scenario takes place in other areas of the Forest as well, the overall amount of semi-primitive ROS settings the Forest is able to provide decreases. Through its most recent plan, the Amendment to the Coconino Forest Plan for the Flagstaff/Lake Mary Ecosystem Analysis Area Environmental Impact Statement, the Forest Service is working to maintain semi-primitive areas in this and other areas surrounding the City of Flagstaff and Coconino County residential areas.

Also, development of the State Trust Lands would not allow for the consolidation of land ownerships. Because of the impacts described above, it is very valuable to the Forest Service to maintain un-fragmented blocks of National Forest lands. The checkerboard landownership pattern that exists for these State Trust lands detracts from this goal. The Forest Service has considerable investment in urban interface wildlands in facilities, signing, roads, and trails. The Forest Service has coordinated

extensively with the City and County and other agencies through several planning processes, including the *Coconino Forest Land Management Plan, the Greater Flagstaff Area Open Spaces and Greenways Plan, the Flagstaff Area Regional Land Use and Transportation Plan*, the Mars Hill and Kachina Fuels Reduction Projects; and developed long-term recreational transportation management strategies for Observatory Mesa. Some of these efforts include developed camping and day use opportunities, and semi-primitive and roaded natural wildland recreational experiences (ROS settings).

Accessibility:

Parcels under consideration in this proposal are currently accessible by graded and unimproved roads on adjacent Forest Service lands, making the parcels accessible to hikers and bikers directly from Flagstaff's residential areas.

Northwest corner of Section 12 *Photo: Nat White, Lowell Observatory*

Scientific education:

The night sky of this region provides ample opportunity for education, primarily through the observatories. If these petition sections were to be developed, light pollution would take its toll on the ability of the area's astronomers to study the night sky. The Naval Observatory stands to be affected directly if the Observatory Mesa sections are not designated for conservation purposes. Because of its elevation being similar to that of Observatory Mesa, development and outdoor lighting on the Mesa would be in a direct line of sight of the Observatory.

Scientific research:

Northern Arizona University professors have conducted biological studies of the wildlife on the Mesa, most notably studies of the Abert squirrel by retired NAU professor Dr. Jack States.

Lowell Observatory and Flagstaff have grown up together. The Observatory has been a significant and stalwart Flagstaff economic factor for over 100 years. In particular, its reputation attracted the Flagstaff Station of the U.S. Naval Observatory to locate here more than forty years ago, and later, the Astrogeological branch of the U.S. Geological Survey. Currently, the two observatories employ nearly 100 people in research and support positions which are all supported by funds from outside the community.

Photo: Nat White, Lowell Observatory

Economic Consequences:
Astronomy has flourished in Flagstaff for over a century. Lowell Observatory came first, in 1894. Northern Arizona University, the U.S. Naval Observatory, and the U.S. Astrogeologic Center followed. The dark, clear skies attracted world-class astronomers—and they, in turn, supported Flagstaff's economy.

Light pollution is a constant threat to the continued presence of research observatories. Portions of Sections 12 and 18 lie within the Naval Observatory's "Zone 1": a disk of radius 2.5 miles centered on the observatory. Any new development within Zone 1 may, through its light pollution, seriously degrade the "seeing" at the Observatory and hence the potential for research. Because of the location and elevation of Observatory Mesa, despite any lighting restrictions, development would seriously degrade the dark skies required by the observatories. It would particularly affect the U.S. Naval Observatory because of its direct line of sight from southwest of Observatory Mesa and comparable elevation to the Naval Observatory. The extent of the potential degradation would not only reduce the likelihood of further investments in the Naval Observatory, but reduce its research capabilities with existing equipment. Dark skies are essential to its continued presence. Conservation status for the sections in this petition would be a major step toward ensuring that the Naval Observatory remains in Flagstaff.

The other State lands in this petition are just outside Zone 1. Light from development on these lands would also be harmful, merely not in the same extreme degree.

The Naval Observatory has a staff of approximately 40 people, most of them Ph.D.'s. It contributes vitally to the synergy among the three astronomical centers: Lowell, NAU, and the Naval Observatory. Moreover, the Naval Observatory is a growing operation and wants to remain in Flagstaff indefinitely. For both intellectual and economic reasons, Flagstaff wants to retain the Naval Observatory.

Types of multiple-use:
The petition lands are currently used for grazing, recreation, apiculture, astronomy, wildlife habitat, and historical preservation.

Resource production preservation:
Grazing in all sections. Apiculture production occurs in Section 12.

Preexisting protection:
Suitable habitat exists in Section 8 for the goshawk—designated a sensitive species. The goshawk is managed by the U.S. Forest Service under the "Management Guidelines for the Northern Goshawk in the Southwestern United States."

Tourism:
Tourism and its related service sector are important components of Flagstaff's economic base. The natural environment and outdoor recreational opportunities are extremely important to the tourism trade in Flagstaff. This area provides additional tourist opportunities and protects important scenic beauty.

Lowell Observatory was the first astronomical observatory in Arizona. In 1894, Dr. Percival Lowell, a mathematician and amateur astronomer from Massachusetts, was one of several astronomers in search

of clear skies to facilitate observation of the planets and stars. Flagstaff, with its dark skies and high elevation was an ideal location. To aid his research, Lowell installed the specially designed 24-inch Alvan Clark refracting telescope. Lowell was able to observe Mars through the telescope which resulted in many drawings of "Mars Globe" that today are considered a piece of history. The Clark Telescope is still in use today as part of the observatory's education outreach program for the general public. Because it was one of the first telescopes of its kind in the late 1800s and early 1900s, it is considered a National Historic Landmark.

Although Percival Lowell founded the Observatory primarily to observe Mars, The Observatory's research quickly expanded into other areas, resulting in one of its most important discoveries by V.M. Slipher: first evidence that the universe is expanding (1912-1917). In addition, in 1930, Clyde Tombaugh, an amateur astronomer from Kansas, completed a search started by Lowell some 25 years prior: the search for the ninth planet. Cylde Tombaugh's discovery of the planet, later to be named Pluto by a young English girl, took place on February 18, 1930. It is the only planet to be discovered in the United States and North America. Other noteworthy discoveries that have taken place at Lowell Observatory include the discovery of the rings of Uranus, and the continuing search and discovery of numerous asteroids, near earth asteroids, comets, Kuiper Belt Objects, and extra-solar planets.

Although research is Lowell Observatory's primary work, educational outreach has become an important non-profit effort. Over 70,000 visitors toured the Observatory's visitor center in 2001.

Wildfire:

The Forest Service has a great concern for these State Trust sections that create "islands" within Forest Service lands. Since the prevailing winds in the Flagstaff area are from the southwest, the islands west and southwest of Flagstaff pose the greatest threat of a wildfire approaching Flagstaff. Development on these State Trust land sections would geometrically increase the amount of wildland/urban interface needing protection from wildfire. Once these sections are developed there would be a dramatic increase in the probability of ignitions within the islands, as well as, within the adjacent National Forest land blocks.

Developing these sections of State Trust Land would significantly weaken the efforts by the Forest Service to reduce the wildfire hazard to Flagstaff and adjacent communities. State funds for fire hazard reduction treatments are severely limited and may be postponed on any given year due to budget constraints. Allowing commercial and residential development on these islands is similar to leaving gaps in a castle wall. Disconnected portions of a castle wall are unlikely to protect those on the other side. The communities of Flagstaff and the Lowell Observatory site remain at risk with this interspersed pattern of high fuels and/or residential development.

The Mesa has received extensive forest management and prescribed burns, particularly the Mars Hill Project on Lowell Observatory land (Section 17). Over the last several years, this project has included forest health thinning, fuel reduction, and prescribed fire. It has been a high profile demonstration area to show case to the Chief of the Forest Service and Congressional legislators the effects of healthy forest management.

Benefits to the Trust:

The proposed sections are identified as priority lands for protection in the *Greater Flagstaff Area Open Spaces and Greenways Plan*. While the Trust might be able to return some income to the state educational system by selling these lands now, that amount is dwarfed by the sum of money that would be needed to purchase equivalent land in the future for the same educational and research uses it currently serves and in the future can provide. It is therefore greatly to the benefit of the educational system to preserve these lands for educational and conservation use.

5. Existing Surface Uses (items B, C & D may be submitted on separate sheets) :

A. Are any of the following on the land?

1. Planning Permit issued under the Urban Lands Act **Yes ____** **No __X__**

2. Approved Development Plan under the Urban Lands Act **Yes ____** **No __X__**

3. Holding Lease **Yes __X__** **No ____**

B. Identify all existing surface uses of the land by lease number:

Sec. #	Grazing Lease	Right of Way	Other Uses
6	005-002153-00-000 Brackin	016-001857-00-000 El Paso Gas 0016-088092-00-000 Lee 014-099604-00-000 Transwestern Pipe 018-100352-00-000 Lee 016-072839-61-000 USDA-FS REG. 3	
6	005-002153-00-000 Brackin	016-001857-00-000 El Paso Gas 016-088092-00-000 Lee 014-099604-00-000 Transwestern Pipe 018-100352-00-000 Lee 016-072839-61-000 USDA-FS REG. 3	
8	005-002153-00-000 Brackin	029-104772-00-000 Martinez Right of Entry Permit 016-084074-00-000 Westbridge Prop. 016-091654-00-000 Sullivan 016-072839-61-000 USDA-FS REG. 3	
12	005-002153-00-000 Brackin `(FROM MICAH)	016-072839 USDA-FS (FROM MICAH)	
18	005-002153-00-000 Brackin	014-099604-00-000 Transwestern Pipe 018-103755-00-000 Flagstaff 018-104570-00-000 Flagstaff 016-072839-61-000 USDA-FS REG. 3	053-103756-00-000 Flagstaff Applic. to Purchase

Agricultural Lease(s) #

No Agricultural Leases

Special Land Use Permit(s) #

No Special Land Use Permits

C. For each of the existing surface uses listed in 5B above, state how the use will be affected <u>physically</u> by the proposed conservation use(s) you have identified in response to Question #3.

None of the existing surface uses listed in 5B above will be affected physically by the proposed conservation uses.

D. For each of the existing surface uses listed in 5B above, state how the use will be affected <u>economically</u> by the proposed conservation use(s) you have identified in response to Question #3.

None of the existing surface uses listed in 5B above will be affected economically by the proposed conservation uses.

6. In what local jurisdiction(s), i.e., city, town, or county, is the land located?

Section 6 – City of Flagstaff
Section 8 – City of Flagstaff
Section 12 – Coconino County
Section 18 – City of Flagstaff
Section 19 – City of Flagstaff and Coconino County

7. Local Government Comprehensive Plan and Zoning (attach maps if necessary):

A. What use does the local governing authority designate for the land in its comprehensive plan?

Sec. #	Land Use Designation Regional Plan
8	Public-Multiple-Use
6	Public-Multiple-Use
18	Public-Multiple-Use
19	Open Space
12	Public-Multiple Use

B. Is the proposed conservation use(s) consistent with that comprehensive plan? Yes __<u>X</u>__ No ____ If yes, how is it consistent or if not, how does it differ?

These land use designations are consistent with open space/conservation uses that are outlined in the *Flagstaff Area Regional Land Use and Transportation Plan*. The Regional Plan "Public Multiple-use" category is intended to accommodate lands that are under the jurisdiction of federal agencies (U.S. Forest Service, National Park Service) and state agencies (State Land Department) that are managed for a multitude of public recreational and economic uses. Lands in this category have been identified as having a high priority for retention in the Greater Flagstaff Area Open Spaces and Greenways Plan and thus should not be developed for urban uses. These lands can serve as buffers, quiet areas, wildlife habitat or scenic areas.

The "Open Space" category in the Regional Plan is in any parcel or area of land or water essentially unimproved and set aside, dedicated, designated, or reserved for public or private use or enjoyment, or for the use and enjoyment of owners and occupants of land adjoining or neighboring such open space. The term does not preclude low-impact recreational uses, such as hiking, fishing, or picnicking. Open Spaces include natural areas, greenways, trails, streetscapes, waterways, cemeteries, drainageways, floodplains, corridors, preserves, wildlife refuges, wetlands, and riparian areas. Open Space areas are used for passive recreation, and where specifically designated, for other forms of recreation, such as bicycling, horseback riding, and fishing; agriculture, shaping the development of the city and other communities by limiting urban sprawl and containing growth; and spatial definition of urban areas. Open Space areas also may be preserved or restored for their aesthetic value, scenic areas and vistas, ecological value, archaeological and historic significance; and wildlife habitat and corridors. Open space lands are a complex mosaic of natural systems with a wide variety of qualities, values, and purposes affecting all other elements of the Regional Plan.

C. What is the existing zoning on the property?

Section.	Zoning
8	Rural Residential (City)
6	Rural Residential (City)
18	Rural Residential (City)
19	Rural Residential (City) General (County)
12	Open Space (County)

D. Is the proposed conservation use(s) consistent with the existing zoning? Yes __X__ No ____ If yes, how is it consistent or if not, how does it differ?

The existing zoning is Rural Residential and Open Space. Both types of zoning are consistent with our proposal for open space and a conservation designation. The Rural Residential District, while allowing residential development where appropriate and in conformance to the City's general plan (Regional Plan which does not call for residential development), it also is "primarily designed for the utilization and enjoyment of the city's unique mountain environment with a minimum of municipal services and improvements."

In the County's Zoning Code, the Open Space and Conservation Zone is intended primarily for those areas of the county where it is desirable and necessary to provide permanent open spaces when such are necessary to safeguard the health, safety and general welfare and to provide for the location and preservation of scenic areas and recreation areas. This zone classification is intended to be applied primarily to lands held under public ownership.

8. A. Identify the positive physical and economic impacts of the proposed conservation use(s) on the local community nearest the land.

The positive physical impacts of preserved open space would benefit wildlife, migratory birds, scenic aesthetic qualities for the community, and maintain healthy, consolidated ecosystems. The positive economic impacts of preserving these open spaces would provide an expanded recreational area accessible by trail or road from Flagstaff, a buffer between these areas and development, as well as all of the tourist amenities.

Conservation designation will help preserve the economic viability and continuing research capabilities of the Naval and Lowell Observatories.

B. Identify the negative physical and economic impacts of the proposed conservation use(s) on the local community nearest the land.

There are no known negative physical and economic impacts of the proposed conservation use (s).

9. Who or what entity would likely manage the land if, after classification, the land is approved for lease or purchase for conservation purposes?

The State Land Department would still continue to manage the land after classification prior to lease or purchase. After reclassification and lease or purchase, any number of entities—public and/or private—would manage the lands depending on ownership, contractual agreements, inter-governmental agreements, etc.

10. What is the known mineral potential of the land, if any, including sand and gravel uses?

No known mineral potential.

CERTIFICATION: Pursuant to A.R.S. Title 37 and the Rules of the Arizona State Land Department, A.A.C. Title 12, Chapter 5, you must complete the following information pertinent to you and/or the organization you represent and sign the certification or your petition will not be processed.

Check and complete the category under which you are petitioning:

_____ **STATE AGENCY:**
- **(A) Are you currently leasing the land?** **Yes ____ No ____**
- **(B) Do you intend to lease or purchase the land?** **Yes ____ No ____**

_____ **BOARD OF SUPERVISORS:**
Is the land located within your county? **Yes ____ No ____**
***Section 12**

__X__ **GOVERNING BODY OF A CITY OR TOWN:**
- **(A) Is the land within the corporate boundaries of the city or town?** **Yes __X__ No ____**
- **(B) Is the land within one mile outside the corporate boundaries?** **Yes __X*__ No ____**

***Section 12**
Does the city or town have a population of less than ten thousand persons? **Yes ____ No __X__**
- **(C) Is the land petitioned for within three miles outside the corporate boundaries?** **Yes __X*__ No ____**

***Section 12**
Does the city or town have a population of more than ten thousand persons? **Yes __X__ No ____**

_____ **PRIVATE INDIVIDUALS (Must be 10 or more): Attach a list indicating the name and address of each individual.**
- **(A) Do all individuals reside in the county in which the land petitioned for is located?** **Yes ____ No ____**
- **(B) Do you as a group have the financial capability to lease or purchase the land?** **Yes ____ No ____**
- **(C) Describe the source of funding for the future lease or purchase of the land:**

_____

_____

_____ **CURRENT LESSEE:**
- **(A) Are you currently entitled to use the land? If so, LEASE NO. _____** **Yes ____ No ____**
- **(B) Do you plan to continue to lease the land after it is classified as Trust lands suitable for conservation purposes?** **Yes ____ No ____**

_____ **CORPORATION OR NON-PROFIT CORPORATION :**
- **(A) Do you have the authority from the Arizona Corporation Commission to do business in the State of Arizona?** **Yes ____ No ____**
- **(B) Is the corporation presently in good standing with the Arizona Corporation Commission?** **Yes ____ No ____**
- **(C) In what state are you incorporated? _____** **Yes ____ No ____**
- **(D) Is the legal corporate name and Arizona business address the same as stated in this application?** **Yes ____ No ____**
  If no, state the Legal Corporate Name: _____

Address: _____
(Street or Box Number) (City) (State) (Zip)

- **(E) Are you legally empowered to own or manage real property in this state? (NOT APPLICABLE TO NON-PROFITS)** **Yes ____No ____**
- **(F) Do you intend to lease or purchase the land being petitioned? (NOT APPLICABLE TO NON-PROFITS)** **Yes ____No ____**
- **(G) Does the purpose or power by which you are applying include the conservation of natural, scenic, open space or other conservation values? (NON-PROFIT CORPORATIONS ONLY)** **Yes____ No ____**

_____ **TRUST: (A) Complete the following pursuant to A.R.S. §33-404, for each beneficiary of the Trust:**
NAME ADDRESS AGE MARITAL STATUS

_____

_____

Or (B) Identify the Trust document by title, document number, and county where document is recorded: _____

Does the purpose or power by which you are applying include the conservation of natural, scenic, open space or other conservation values? **Yes ____ No ____**

_____ **BUSINESS: Attach a list indicating the name and business address of each authorized principal.**
- **(A) Are you authorized to conduct business in Arizona?** **Yes ____ No ____**
- **(B) Are you legally empowered to own or manage real property in this state?** **Yes ____ No ____**
- **(C) Do you intend to lease or purchase the land being petitioned?** **Yes ____ No ____**

I/WE HEREBY CERTIFY, UNDER PENALTY OF PERJURY, THAT THE INFORMATION AND STATEMENTS CONTAINED HEREIN, TOGETHER WITH ALL EXHIBITS AND ATTACHMENTS ARE TRUE, CORRECT AND COMPLETE AND THAT I/WE HAVE AUTHORITY TO SIGN THIS DOCUMENT.

SIGNATURE(S)

City of Flagstaff

_____ _____
(Name of Body or Organization Petitioning) **Date** **Signature of Petitioner (Current Lessee)** **Date**

_____ _____
Signature **Title** **Signature of Petitioner (Current Lessee)** **Date**

GROUP SIGNATURES

I/WE HEREBY CERTIFY, UNDER PENALTY OF PERJURY, THAT THE INFORMATION AND STATEMENTS CONTAINED HEREIN, TOGETHER WITH ALL EXHIBITS AND ATTACHMENTS ARE TRUE, CORRECT AND COMPLETE AND THAT I/WE HAVE AUTHORITY TO SIGN THIS DOCUMENT.

(Print Name)	Signature	Date
(Print Name)	Signature	Date
(Print Name)	Signature	Date
(Print Name)	Signature	Date
(Print Name)	Signature	Date
(Print Name)	Signature	Date
(Print Name)	Signature	Date
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(Print Name)	Signature	Date
(Print Name)	Signature	Date
(Print Name)	Signature	Date

Appendix "A"

Species List for Observatory Mesa Sections 6, 8, 12, 18, and 19

Compiled by: Erika Nowak and Jan Hart, Wildlife Biologists, USGS Colorado Plateau Field Station
Nat White, Lowell Observatory

These lists include species observed (including sign), as well as those not observed but likely due to the presence of suitable habitat (indicated by an asterisk*), during a survey on 28 July 2000, as well as observations over a 20-year period by Nat White. These are not intended to be complete species inventories, but rather indices of biotic diversity in these sections. For a more complete list of potential bird species, refer to the attached Flagstaff-area Christmas bird counts. In the plant lists, "sp." indicates that the plant was not identified to species.

Mammals

Elk
Mule Deer
Pronghorn
Grey Fox
Raccoon
Black bear
Abert's squirrel
Striped skunk*
Hog-nosed skunk
Coyote
Golden-mantled ground squirrel
Rock squirrel
Pocket gopher
Porcupine
Cliff chipmunk*
Grey-collared chipmunk*

Birds

Great blue heron
Northern goshawk*
Morning dove
Northern flicker
Violet-green swallow
American robin
Western bluebird
Western tanager
Common raven
Steller's jay
Dark-eyed junco
Pygmy nuthatch
White-breasted nuthatch
Mountain chickadee
Grace's warbler
Red-winged crossbill
House finch
Pine grosbeak
Great horned owl
Acorn woodpecker
Vesper sparrow
Rufus hummingbird
Broadtail hummingbird
Waterfowl
Sharp skinned hawk[1]
Cooper's hawk[1]
Red tailed hawk[1]
Flammulated owl[1]

Reptiles and Amphibians

Tiger salamander*
Chorus frog*
Eastern fence lizard
Many-lined skink*
Short-horned lizard*
Wandering garter snake
Sonoran mountain kingsnake*
Gopher snake*

[1] Observed by Arizona Game & Fish Department staff
[1] Observed by Arizona Game & Fish Department staff
[1] Observed by Arizona Game & Fish Department staff
[1] Observed by Arizona Game & Fish Department staff

Appendix "B"
Plants
Species List for Observatory Mesa Sections 6, 8, 12, 18, and 19

Compiled by: Erika Nowak and Jan Hart, Wildlife Biologists, USGS Colorado Plateau Field Station
Nat White, Lowell Observatory

These lists include species observed (including sign), as well as those not observed but likely due to the presence of suitable habitat (indicated by an asterisk*), during a survey on 28 July 2000, as well as observations over a 20-year period by Nat White. These are not intended to be complete species inventories, but rather indices of biotic diversity in these sections. For a more complete list of potential bird species, refer to the attached Flagstaff-area Christmas bird counts. In the plant lists, "sp." indicates that the plant was not identified to species.

Forbs

Achillea millefolium
Ambrosia sp.**
Antennaria parvifolia
Apocynum canabanum
Arceuthobium sp.
Arenaria congesta
Ascelpias sp.
Aster falcatus var. commutas
Astagulus sp.
Calochortus sp.*
Chenopodium album**
Cirsium vulgare**
Cirsium wheeleri
Convulvulus arvensis**
Erigeron flagellaris
Eriogonum racemosum
Geranium caespitosum
Grindelia aphanactis
Gaura coccinea
Gilia sp.
Helianthus annuus
Iris missouriensis
Linaria dalmatica**
Lupinus argenteus
Lupinus kingii
Machaeranthera canescens

Forbs cont.

Meliotis offinicinalis**
Nicotiana trigonophylla
Oenothera hookeri
Pedicularis centranthera
Penstemon barbatus
Penstemon linarioides
Potentilla anserina
Potentilla fruticosa
Pterospora andromedea*
Senecio multilobatus
Solidago sp.
Stephanomeria exigua
Thalictrum fendleri
Thermopsis pinetorum
Townsendia exscapa*
Verbascum thapsus**
Verbena sp.

Grasses/Sedges/Rushes

Aristida sp.
Bouteloua gracilis
Bromus sp.**
Carex sp.
Elymus elymoides
Poa fendleriana

Woody Species

Cercocarpus montanus*
Chrysothamnus nauseosus
Fallugia paradoxica
Juniperus scopulorum
Mahonia repens
Opuntia engelmannii
Pinus ponderosa
Prunus sp.
Quercus gambelii
Rhus glabra
Rhus trilobata
Ribes cereum*
Robinia neomexicana
Rosa woodsii

**** exotic species**

Appendix "C"
Bird Species Seen in Flagstaff Area Christmas Bird Counts, 1967-1999

Compiled by: Erika Nowak and Jan Hart, Wildlife Biologists, USGS Colorado Plateau Field Station
Nat White, Lowell Observatory

These lists include species observed (including sign), as well as those not observed but likely due to the presence of suitable habitat (indicated by an asterisk*), during a survey on 28 July 2000, as well as observations over a 20-year period by Nat White. These are not intended to be complete species inventories, but rather indices of biotic diversity in these sections. For a more complete list of potential bird species, refer to the attached Flagstaff-area Christmas bird counts. In the plant lists, "sp." indicates that the plant was not identified to species.

Canada Goose
Snow Goose
Pied-billed Grebe
Green-winged Teal
American Widgeon
Canvasback
Gadwall
Northern Shoveler
Common Goldeneye
Ring-necked Duck
Ruddy Duck
Mallard
Bufflehead
Pintail
Redhead
Lesser Scaup
Common Merganser
Hooded Merganser
American Coot
Great Blue Heron
Gull sp.
Killdeer
Sora
Common Snipe
Red-tailed Hawk
Rough-legged Hawk
Ferruginous Hawk
Cooper's Hawk
Northern Harrier
Sharp-shinned Hawk
Golden Eagle
Bald Eagle
Kestrel
Merlin
Peregrine Falcon
Prairie Falcon
Northern Goshawk
Turkey
Ring-necked Pheasant
Northern Pygmy Owl
Great-horned Owl
Saw-whet Owl
Flammulated Owl (AZ Game & Fish Dept)
Belted Kingfisher
Mourning Dove
Band-tailed Pigeon
Rock Dove
Greater Roadrunner
Acorn Woodpecker
Red-shafted Flicker
Yellow-shafted Flicker
Yellow-bellied Sapsucker
Red-naped Sapsucker
Williamson's Sapsucker
Hairy Woodpecker
Downy Woodpecker
Lewis' Woodpecker
Three-toed Woodpecker
Horned Lark
Steller's Jay
Pinyon Jay
Scrub Jay
Clark's Nutcracker
Common Raven
American Crow
Mountain Chickadee
Brown Creeper
Plain Titmouse
White-breasted Nuthatch
Red-breasted Nuthatch
Pygmy Nuthatch
Bridled Titmouse
Common Bushtit
Canyon Wren
Winter Wren
Bewick's Wren
(Long-billed) Marsh Wren
Rock Wren
Ruby-crowned Kinglet
Golden-crowned Kinglet
Western Bluebird
Mountain Bluebird
Townsend's Solitaire
American Robin
Northern Shrike
Loggerhead Shrike
Northern Mockingbird
Varied Thrush
Yellow-rumped Warbler
Cedar Waxwing
Water Pipit
American Dipper
Sage Thrasher
Evening Grosbeak
Rufous-sided Towhee
European Starling
House Sparrow
White-crowned Sparrow
Song Sparrow
Savannah Sparrow
Lincoln's Sparrow
White-throated Sparrow
"Long Sparrow"
Dark-eyed Junco
Western Meadowlark
Eastern Meadowlark
Red-winged Blackbird
Brewer's Blackbird
Great-tailed Grackle
Pine Siskin
Cassin's Finch
House Finch
American Goldfinch
Lesser Goldfinch
Red Crossbill

APPENDIX "D"

Cultural, Recreational, Geological, and Management Sources

"Observatory Mesa Area," Arizona State Museum Archaeological Site Cards, The University of Arizona, 22 October 2002.

They Came to the Mountain, Platt Cline, Northland Press, Flagstaff, AZ 1976.

Stone Landmarks, Marie Jackson, Piedra Azul Press, 1999.

"West Management Area – MA 38 Excerpt pp. 206-113 – 206-117"; Maps: Urban/Rural Influence Zone, Objectives for Recreation Opportunity Spectrum, Management Areas, Fire Management Analysis Zone 1U, and Objectives for Camping.

APPENDIX "E"

Land Use & Wildlife Planning Maps

Lands Proposed for API Reclassification in the Observatory Mesa Area

Terrestrial Ecosystem Survey Vegetation Map

Land Retention Priorities Map, Greater Flagstaff Area Open Spaces and Greenways Plan

Recreational Uses Map, Greater Flagstaff Area Open Spaces and Greenways Plan

Map 4: City Land Use Plan, Flagstaff Area Regional Land Use and Transportation Plan

Pronghorn Antelope Map

Black Bear Movement Corridors Map

Turkey Map

Northern Goshawk Map

Tank & Spring Locations Map

APPENDIX "F"

RESOURCE LIST
ARIZONA PRESERVE INITIATIVE PETITION
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APPENDIX "G"

LITTLE COLORADO RIVER PLATEAU BASIN WATERSHED INFORMATION EXCERPTED FROM ARIZONA DEPARTMENT WATER RESOURCES (ADWR) WEBSITE

The Little Colorado River Plateau basin occupies the northeast portion of Arizona. The basin contains about 27,300 square miles and lies entirely within the Plateau uplands province. There are two distinct volcanic fields in the basin: one in the west around Flagstaff and another in the southeast in the White Mountains area. The Little Colorado River is the main drainage for the basin. The river flows to the northwest from the White Mountains area, leaving the basin near Cameron, Arizona. The Little Colorado River Plateau basin is bordered on the north by the Arizona-Utah border, on the east by the Arizona-New Mexico state line, on the south by the Mogollon Rim, and on the west by U.S. Highway 89. The presence of U.S. Highway 89 does not have any hydrogeologic significance to the basin boundary, but happens to coincide with the lithologic and tectonic changes in the aquifer system.

Elevations in the Little Colorado River Plateau basin vary from 12,600 feet above mean sea level at Humphrey's Peak, north of Flagstaff, to 4,200 feet above mean sea level where the Little Colorado River flows out of the basin.

There are several local aquifers and three regional aquifers in the Little Colorado River Plateau basin which saturate predominantly consolidated sedimentary formations such as sandstones and limestones. These formations are stacked on top of each other and are separated by impermeable shales and siltstones. Water-bearing formations dip gently and gain thickness towards the center of the basin causing the regional aquifers to occur at water-table conditions at the southern and eastern periphery and becoming artesian (confined) towards the center. Main recharge areas are also along the southern and eastern peripheral belt.

REGIONAL AQUIFERS

The regional aquifers are designated in descending order as the D-, N-, and C-aquifers. Each aquifer has a very large areal extent within the basin, and except for the D and N aquifers, there is little vertical hydrologic connection between them. They are the main source of water supply for municipal and industrial uses. The primary industrial uses include three electrical generating stations and a pulp mill.

C-Aquifer

The C-aquifer's main water-bearing units are the Kaibab Limestone, Coconino Sandstone and upper sequences of the Supai Formation. The C-aquifer is the largest aquifer in the Little Colorado River Plateau basin with an areal extent of 21,655 square miles. The aquifer is generally utilized, however, only south of the Little Colorado River and along the eastern edge of the basin by communities such as Flagstaff, Heber, Overgaard, Show Low, Snowflake, and Concho. North of the river, the C-aquifer is either too deep to be economically useful or the water quality is unsuitable for most uses because of the high content of dissolved salts. North of the Little Colorado River, total dissolved solids concentrations in the C-aquifer range from 1,000 to 64,100 milligrams per liter.

The C-aquifer is recharged by rainfall and by runoff from the San Francisco Plateau, Mogollon Rim, White Mountains, and Defiance Uplift. Recharge to the C-aquifer along the Mogollon Rim and White Mountains is estimated to be over 500,000 acre-feet per year. Groundwater in the C-Aquifer moves to the northwest from the large areas of inflow on the south and east.

Aquifers of the Little Colorado River Plateau basin contain large quantities of groundwater in storage, however, they are in a sensitive relationship with the Little Colorado River and its perennial tributaries. Lowering of

hydrostatic heads by excessive groundwater withdrawals may cause some perennial reaches of the streams to dry up.

The C-aquifer is the source of water for Sterling Spring at the head of Oak Creek in the Verde River basin. Future development of this aquifer and the limestone aquifer in the Flagstaff area should be preceded by an area-wide hdyrologic study. Local heavy withdrawals from the C-aquifer may also cause upward shifting of the salt water interface from the evaporates in the Supai Formation near Joseph City.

The D- and C- regional aquifers are still in hydrostatic equilibrium (steady-state); however, local groundwater sinks or cones of depression are developing in areas of heavy pumpage such as the paper mill near Snowflake and three of the power plants: Springerville Generating Station, Coronado Generating Station (St. Johns), and Cholla Generating Station (Joseph City/Holbrook). The Navajo Generating Station, near Page, uses surface water from Lake Powell. Water levels in wells that tap the confined area of the N- aquifer are declining because of heavy withdrawals for the Black Mesa coal mine slurry pipeline.

The surface watershed is the Colorado River Watershed. Again, this information comes from ADWR's site (2000):

COLORADO RIVER WATERSHED

The Colorado River watershed is located in the northern and western portions of Arizona and extends through two other planning areas known as the Upper Colorado River and Lower Colorado River planning areas. Within the Plateau planning area, the Colorado River flows southwest from Lake Powell to Lake Mead. The Colorado River watershed is located in the northern and western portions of Arizona. The watershed also extends through two other planning areas: the Plateau to the north and Lower Colorado River to the southwest. The Upper Colorado River planning area is approximately one-third the total area of the Colorado River watershed which lies in Arizona.

Streamflow Characteristics

The major drainages in the Colorado watershed portion of the planning area are ephemeral and contribute very little or nothing to the flow of the Colorado River. Substantial streamflow occurs in the mountains as a result of high-intensity storms, but the flows seldom reach the middle of the valleys; most of the flow is lost to evapotranspiration and infiltration.

Colorado River Main Stem

Water in the Colorado River first enters the state and the Plateau planning area as storage in Lake Powell and is released to generate power and meet downstream requirements. The U.S. Geological Survey stream gage at Lees Ferry measures the discharge from Lake Powell's Glen Canyon Dam which is the main flow of the Colorado River into Arizona. The average flow into Arizona before the dam was built in 1963 was 12,923,000 acre-feet per year. Since construction of the dam, the flow averages 10,701,000 acre-feet per year

The main stem of the Colorado River is joined by numerous streams and springs within the Plateau planning area. The springs are the discharge points for groundwater that moves northward and southward toward the Colorado River. Most of the springs issue from the Muav and Redwall Limestones, although a few small springs issue from the Tapeats Sandstone. Some of the springs emerge in the tributary canyons and flow some distance to the Colorado River, while others emerge along or very close to the main stem. The Paria River enters the main stem of the Colorado River about 16 miles downstream from Glen Canyon Dam. It is the first tributary inflow into the Colorado River below the dam and marks the beginning of Marble Canyon.

Surface Water Resources Within Each Groundwater Basin

This section will discuss the surface water supplies for each groundwater basin within the Plateau planning area. All of the basins are within the Colorado River watershed.

Little Colorado River Plateau Basin

The northern one-third of the Little Colorado River Plateau basin drains northward toward Utah and eventually enters the San Juan River as part of the Colorado River watershed. Chinle Creek collects the majority of the surface water runoff in the northern part of the basin and flows out of Arizona into Utah. Chinle Creek sustains perennial flow for approximately six miles in Arizona before crossing the Utah border. A U.S. Geological Survey gauging station on Chinle Creek (09379200) had an average flow of 18,100 acre-feet per year since 1964

The southern two-thirds of the basin are within the Little Colorado River watershed. The Little Colorado River is one of the major surface streams in the planning area and has headwaters which begin in the White Mountains as perennial flow. The river flows downstream into Lyman Lake where the flow is regulated to Zion Reservoir (Brown and others, 1981). From Zion Reservoir to Silver Creek the flow is intermittent. Most of the Little Colorado River reach from the confluence of Silver Creek to Winslow is perennial.

A majority of the streams in the Little Colorado River watershed are ephemeral or intermittent. In perennial locations, however, surface-water flow is sustained from approximately 900 springs varying from less than 10 cubic feet per second (720 acre-feet per year) in the White Mountains to 223 cubic feet per second (161,400 acre-feet per year) at Blue Spring in the Coconino Plateau basin.

The total storage capacity for reservoirs within the Arizona portion of the Little Colorado River watershed is estimated to be 222,900 acre-feet. Approximately half of this volume, 106,350 acre-feet, is the average storage in an average year. Storage capacities for three of the largest reservoirs in the watershed, Lyman Lake, Upper Lake Mary and Blue Ridge Reservoir are 30,600 acre-feet, 15,620 acre-feet, and 19,500 acre-feet, respectively.

High rates of evaporation and transpiration occur within the Little Colorado River watershed because of high temperatures and low humidity. Mean annual lake evaporation rates vary from 40 inches per year near Springerville to 55 inches per year in the Holbrook area.

The U.S. Department of Agriculture reported in1981 that 359,800 acre-feet of water were discharged out of the Little Colorado River basin. Approximately 345,600 acre-feet of this were discharged into the Colorado River. The remainder is exported out of the basin (and planning area) from two locations along the Mogollon Rim. These two annual exports are to the East Verde River from the Blue Ridge Reservoir, and to Forestdale Creek from Show Low Lake, totaling 10,900 and 3,300 acre-feet, respectively. The surface water exports are diverted by the Phelps-Dodge Corporation in exchange for water they are using in the Salt River basin. The East Verde River in the Verde River basin and Forestdale Creek in the Salt River basin are within the Central Highlands planning area.

Surface-water contamination has occurred in the basin as a result of mining activities and rangeland/agricultural practices. As mentioned previously in the Groundwater text of this report, there has been severe radiochemical contamination in the Puerco River caused by the 1979 Church Rock uranium mine tailing pond spill in New Mexico. In the Silver Creek/Show Low area, metals and turbidity exceedances appear to have resulted from sand and gravel operations.

The Arizona Department of Environmental Quality (1990) has reported high turbidity levels in the Little Colorado River related to rangeland management practices and natural background levels. High levels of metals from abandoned uranium mines and unknown sources were also reported. In general, surface water quality tends to degrade in a downstream direction. This results from the inflow of highly-concentrated salt water from

springs, and an increase in sediment concentration. Three areas in the basin, St. Johns, Woodruff, and Joseph City, use poor quality surface water for irrigation. In Joseph City, where total dissolved solids are high, the irrigation of salt-tolerant crops is successful because of naturally-occurring gypsum present in the soil. At Woodruff, surface water is pumped from the Little Colorado River and supplemented by wells to mitigate the periodic high sediment concentrations. St. Johns uses salty water from the Little Colorado River downstream from Salado Springs (U.S. Department of Agriculture, 1981).