

## **APPENDIX F – BIOLOGICAL RESOURCES**



**APPENDIX F**  
**ATTACHMENT 1**  
**SPECIES LISTS PROVIDED BY THE U.S. FISH AND WILDLIFE SERVICE AND NOAA**  
**FISHERIES FOR THE NSCARP PROJECT**







# United States Department of the Interior

## FISH AND WILDLIFE SERVICE

Sacramento Fish and Wildlife Office  
2800 Cottage Way, Room W-2605  
Sacramento, California 95825



November 2, 2006

Document Number: 061102123857

Kevin Crouch  
Padre Associates, Inc.  
3020 Explorer Dr. Suite 5  
Sacramento, CA 95827

Subject: Species List for NSCARP

Dear: Interested party

We are sending this official species list in response to your November 2, 2006 request for information about endangered and threatened species. The list covers the California counties and/or U.S. Geological Survey 7½ minute quad or quads you requested.

Our database was developed primarily to assist Federal agencies that are consulting with us. Therefore, our lists include all of the sensitive species that have been found in a certain area *and also ones that may be affected by projects in the area*. For example, a fish may be on the list for a quad if it lives somewhere downstream from that quad. Birds are included even if they only migrate through an area. In other words, we include all of the species we want people to consider when they do something that affects the environment.

Please read Important Information About Your Species List (below). It explains how we made the list and describes your responsibilities under the Endangered Species Act.

Our database is constantly updated as species are proposed, listed and delisted. If you address proposed and candidate species in your planning, this should not be a problem. However, we recommend that you get an updated list every 90 days. That would be January 31, 2007.

Please contact us if your project may affect endangered or threatened species or if you have any questions about the attached list or your responsibilities under the Endangered Species Act. A list of Endangered Species Program contacts can be found at [www.fws.gov/sacramento/es/branches.htm](http://www.fws.gov/sacramento/es/branches.htm).

Endangered Species Division





Federal Endangered and Threatened Species that Occur in  
or may be Affected by Projects in the Counties and/or  
U.S.G.S. 7 1/2 Minute Quads you requested

Document Number: 061102124324

Database Last Updated: October 27, 2006

**Species of Concern** - The Sacramento Fish & Wildlife Office no longer maintains a list of species of concern. However, various other agencies and organizations maintain lists of at-risk species. These lists provide essential information for land management planning and conservation efforts. See [www.fws.gov/sacramento/es/spp\\_concern.htm](http://www.fws.gov/sacramento/es/spp_concern.htm) for more information and links to these sensitive species lists.

**Red-Legged Frog Critical Habitat** - The Service has designated final critical habitat for the California red-legged frog. The designation became final on May 15, 2006. See our [map index](#).

## Species

### Listed Species

#### Invertebrates

*Speyeria zerene myrtleae*

Myrtle's silverspot butterfly (E)

*Syncaris pacifica*

California freshwater shrimp (E)

#### Fish

*Hypomesus transpacificus*

delta smelt (T)

*Oncorhynchus kisutch*

coho salmon - central CA coast (E) (NMFS)

Critical habitat, coho salmon - central CA coast (X) (NMFS)

*Oncorhynchus mykiss*

Central California Coastal steelhead (T) (NMFS)

Central Valley steelhead (T) (NMFS)

Critical habitat, Central California coastal steelhead (X) (NMFS)

Critical habitat, Northern California steelhead (X) (NMFS)

Northern California steelhead (T) (NMFS)

*Oncorhynchus tshawytscha*

California coastal chinook salmon (T) (NMFS)

Critical habitat, California coastal chinook salmon (X) (NMFS)

#### Amphibians

*Ambystoma californiense*

California tiger salamander, central population (T)

California tiger salamander, Sonoma Co. pop (E)

*Rana aurora draytonii*

California red-legged frog (T)

## Birds

*Brachyramphus marmoratus*

Critical habitat, marbled murrelet (X)  
marbled murrelet (T)

*Haliaeetus leucocephalus*

bald eagle (T)

*Strix occidentalis caurina*

northern spotted owl (T)

## Plants

*Alopecurus aequalis* var. *sonomensis*

Sonoma alopecurus (E)

*Blennosperma bakeri*

Baker's stickyseed [=Sonoma Sunshine] (E)

*Carex albida*

white sedge (E)

*Clarkia imbricata*

Vine Hill clarkia (E)

*Cordylanthus tenuis* ssp. *capillaris*

Pennell's bird's-beak (E)

*Delphinium bakeri*

Critical habitat, Baker's larkspur (X)

*Lasthenia burkei*

Burke's goldfields (E)

*Lilium pardalinum* ssp. *pitkinense*

Pitkin Marsh lily (E)

*Limnanthes vinculans*

Sebastopol meadowfoam (E)

*Navarretia leucocephala* ssp. *plieantha*

many-flowered navarretia (E)

## Selected Quads

SEBASTOPOL (502A) CAMP MEEKER (502B) JIMTOWN (518A) GEYSERVILLE (518B) GUERNEVILLE (518C) HEALDSBURG (518D) WARM SPRINGS DAM (519A) ASTI (534C) CLOVERDALE (535D)

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## County Lists

### Sonoma County

#### Listed Species

## *Invertebrates*

### *Haliotes sorenseni*

white abalone (E) (NMFS)

### *Speyeria zerene behrensii*

Behren's silverspot butterfly (E)

### *Speyeria zerene myrtleae*

Myrtle's silverspot butterfly (E)

### *Syncaris pacifica*

California freshwater shrimp (E)

## *Fish*

### *Eucyclogobius newberryi*

tidewater goby (E)

### *Oncorhynchus kisutch*

coho salmon - central CA coast (E) (NMFS)

Critical habitat, coho salmon - central CA coast (X) (NMFS)

### *Oncorhynchus mykiss*

Central California Coastal steelhead (T) (NMFS)

Critical habitat, Central California coastal steelhead (X) (NMFS)

Critical habitat, Northern California steelhead (X) (NMFS)

Northern California steelhead (T) (NMFS)

### *Oncorhynchus tshawytscha*

California coastal chinook salmon (T) (NMFS)

Central Valley spring-run chinook salmon (T) (NMFS)

Critical habitat, California coastal chinook salmon (X) (NMFS)

Critical habitat, winter-run chinook salmon (X) (NMFS)

winter-run chinook salmon, Sacramento River (E) (NMFS)

## *Amphibians*

### *Ambystoma californiense*

California tiger salamander, Sonoma Co. pop (E)

### *Rana aurora draytonii*

California red-legged frog (T)

## *Reptiles*

### *Caretta caretta*

loggerhead turtle (T) (NMFS)

### *Chelonia mydas (incl. agassizi)*

green turtle (T) (NMFS)

### *Dermochelys coriacea*

leatherback turtle (E) (NMFS)

*Lepidochelys olivacea*

olive (=Pacific) ridley sea turtle (T) (NMFS)

**Birds**

*Brachyramphus marmoratus*

Critical habitat, marbled murrelet (X)

marbled murrelet (T)

*Charadrius alexandrinus nivosus*

western snowy plover (T)

*Diomedea albatrus*

short-tailed albatross (E)

*Haliaeetus leucocephalus*

bald eagle (T)

*Pelecanus occidentalis californicus*

California brown pelican (E)

*Rallus longirostris obsoletus*

California clapper rail (E)

*Strix occidentalis caurina*

northern spotted owl (T)

**Mammals**

*Arctocephalus townsendi*

Guadalupe fur seal (T) (NMFS)

*Balaenoptera borealis*

sei whale (E) (NMFS)

*Balaenoptera musculus*

blue whale (E) (NMFS)

*Balaenoptera physalus*

finback (=fin) whale (E) (NMFS)

*Eubalaena glacialis*

right whale (E) (NMFS)

*Eumetopias jubatus*

Steller (=northern) sea-lion (T) (NMFS)

*Megaptera novaeangliae*

humpback whale (E) (NMFS)

*Physeter catodon* (=macrocephalus)

sperm whale (E) (NMFS)

*Reithrodontomys raviventris*  
salt marsh harvest mouse (E)

### *Plants*

*Alopecurus aequalis* var. *sonomensis*  
Sonoma alopecurus (E)

*Astragalus clarianus*  
Clara Hunt's milk-vetch (E)

*Blennosperma bakeri*  
Baker's stickyseed [=Sonoma Sunshine] (E)

*Carex albida*  
white sedge (E)

*Clarkia imbricata*  
Vine Hill clarkia (E)

*Cordylanthus tenuis* ssp. *capillaris*  
Pennell's bird's-beak (E)

*Delphinium bakeri*  
Critical habitat, Baker's larkspur (X)

*Delphinium luteum*  
Critical habitat, yellow larkspur (X)  
yellow larkspur (E)

*Eryngium constancei*  
Loch Lomond coyote-thistle (=button-celery) (E)

*Lasthenia burkei*  
Burke's goldfields (E)

*Lilium pardalinum* ssp. *pitkinense*  
Pitkin Marsh lily (E)

*Limnanthes vinculans*  
Sebastopol meadowfoam (E)

*Lupinus tidestromii*  
clover lupine [Tidestrom's lupine] (E)

*Navarretia leucocephala* ssp. *plieantha*  
many-flowered navarretia (E)

*Sidalcea oregana* ssp. *valida*  
Kenwood Marsh checkermallow (=checkerbloom) (E)

### **Candidate Species**

## Invertebrates

### *Haliotes cracherodii*

black abalone (C) (NMFS)

## Fish

### *Oncorhynchus tshawytscha*

Central Valley fall/late fall-run chinook salmon (C) (NMFS)

Critical habitat, Central Valley fall/late fall-run chinook (C) (NMFS)

## Key:

(E) *Endangered* - Listed as being in danger of extinction.

(T) *Threatened* - Listed as likely to become endangered within the foreseeable future.

(P) *Proposed* - Officially proposed in the Federal Register for listing as endangered or threatened.

(NMFS) Species under the Jurisdiction of the National Oceanic & Atmospheric Administration Fisheries Service. Consult with them directly about these species.

*Critical Habitat* - Area essential to the conservation of a species.

(PX) *Proposed Critical Habitat* - The species is already listed. Critical habitat is being proposed for it.

(C) *Candidate* - Candidate to become a proposed species.

(V) Vacated by a court order. Not currently in effect. Being reviewed by the Service.

(X) *Critical Habitat* designated for this species

## Important Information About Your Species List

### How We Make Species Lists

We store information about endangered and threatened species lists by U.S. Geological Survey 7½ minute quads. The United States is divided into these quads, which are about the size of San Francisco.

The animals on your species list are ones that occur within, **or may be affected by** projects within, the quads covered by the list.

- Fish and other aquatic species appear on your list if they are in the same watershed as your quad or if water use in your quad might affect them.
- Amphibians will be on the list for a quad or county if pesticides applied in that area may be carried to their habitat by air currents.
- Birds are shown regardless of whether they are resident or migratory. Relevant birds on the county list should be considered regardless of whether they appear on a quad list.

## Plants

Any plants on your list are ones that have actually been observed in the area covered by the list. Plants may exist in an area without ever having been detected there. You can find out what's in the nine surrounding quads through the California Native Plant Society's online Inventory of Rare and Endangered Plants.

## Surveying

Some of the species on your list may not be affected by your project. A trained biologist or botanist, familiar with the habitat requirements of the species on your list, should determine whether they or habitats suitable for them may be affected by your project. We recommend that your surveys include any proposed and candidate species on your list.

For plant surveys, we recommend using the Guidelines for Conducting and Reporting Botanical Inventories. The results of your surveys should be published in any environmental documents prepared



for your project.

## **Your Responsibilities Under the Endangered Species Act**

All animals identified as listed above are fully protected under the Endangered Species Act of 1973, as amended. Section 9 of the Act and its implementing regulations prohibit the take of a federally listed wildlife species. Take is defined by the Act as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect" any such animal.

Take may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or shelter (50 CFR §17.3).

## **Take incidental to an otherwise lawful activity may be authorized by one of two procedures:**

- If a Federal agency is involved with the permitting, funding, or carrying out of a project that may result in take, then that agency must engage in a formal consultation with the Service.

During formal consultation, the Federal agency, the applicant and the Service work together to avoid or minimize the impact on listed species and their habitat. Such consultation would result in a biological opinion by the Service addressing the anticipated effect of the project on listed and proposed species. The opinion may authorize a limited level of incidental take.

- If no Federal agency is involved with the project, and federally listed species may be taken as part of the project, then you, the applicant, should apply for an incidental take permit. The Service may issue such a permit if you submit a satisfactory conservation plan for the species that would be affected by your project.

Should your survey determine that federally listed or proposed species occur in the area and are likely to be affected by the project, we recommend that you work with this office and the California Department of Fish and Game to develop a plan that minimizes the project's direct and indirect impacts to listed species and compensates for project-related loss of habitat. You should include the plan in any environmental documents you file.

## **Critical Habitat**

When a species is listed as endangered or threatened, areas of habitat considered essential to its conservation may be designated as critical habitat. These areas may require special management considerations or protection. They provide needed space for growth and normal behavior; food, water, air, light, other nutritional or physiological requirements; cover or shelter; and sites for breeding, reproduction, rearing of offspring, germination or seed dispersal.

Although critical habitat may be designated on private or State lands, activities on these lands are not restricted unless there is Federal involvement in the activities or direct harm to listed wildlife.

If any species has proposed or designated critical habitat within a quad, there will be a separate line for this on the species list. Boundary descriptions of the critical habitat may be found in the Federal Register. The information is also reprinted in the Code of Federal Regulations (50 CFR 17.95). See our [critical habitat page](#) for maps.

## **Candidate Species**

We recommend that you address impacts to candidate species. We put plants and animals on our candidate list when we have enough scientific information to eventually propose them for listing as threatened or endangered. By considering these species early in your planning process you may be able to avoid the problems that could develop if one of these candidates was listed before the end of your project.

## **Wetlands**

If your project will impact wetlands, riparian habitat, or other jurisdictional waters as defined by

section 404 of the Clean Water Act and/or section 10 of the Rivers and Harbors Act, you will need to obtain a permit from the U.S. Army Corps of Engineers. Impacts to wetland habitats require site specific mitigation and monitoring. For questions regarding wetlands, please contact Mark Littlefield of this office at (916) 414-6580.

## **Updates**

Our database is constantly updated as species are proposed, listed and delisted. If you address proposed and candidate species in your planning, this should not be a problem. However, we recommend that you get an updated list every 90 days. That would be January 31, 2007.

**Federal Endangered and Threatened Species  
that Occur in or may be Affected by Projects in the  
CAMP MEEKER (502B)  
U.S.G.S. 7 1/2 Minute Quad  
Database Last Updated: August 8, 2005  
Document Number: 050823110629**

**Listed Species**

✓ *Invertebrates*

*Speyeria zerene myrtleae* - Myrtle's silverspot butterfly (E)

*Syncaris pacifica* - California freshwater shrimp (E)

*Fish*

*Oncorhynchus kisutch* - coho salmon - central CA coast (E)

*Oncorhynchus kisutch* - Critical habitat, coho salmon - central CA coast (X)

*Oncorhynchus mykiss* - Central California Coastal steelhead (T)

*Oncorhynchus mykiss* - Central Valley steelhead (T)

*Oncorhynchus tshawytscha* - California coastal chinook salmon (T)

*Amphibians*

✓ *Ambystoma californiense* - California tiger salamander (T)

✓ *Birds*

*Brachyramphus marmoratus* - marbled murrelet (T)

*Haliaeetus leucocephalus* - bald eagle (T)

*Strix occidentalis caurina* - northern spotted owl (T)

✓ *Plants*

*Alopecurus aequalis* var. *sonomensis* - Sonoma alopecurus (E)

*Cordylanthus tenuis* ssp. *capillaris* - Pennell's bird's-beak (E)

*Delphinium bakeri* - Critical habitat, Baker's larkspur (X)

**Species of Concern**

✓ *Invertebrates*

*Carterocephalus palaemon* ssp. - Sonoma arctic skipper (SC)

✓ *Fish*

*Hysterothorax traski* - Russian River tute perch (SC)

*Lampetra tridentata* - Pacific lamprey (SC)

*Pogonichthys macrolepidotus* - Sacramento splittail (SC)

### ✓ *Amphibians*

*Rana aurora aurora* - Northern red-legged frog (SC)

*Rana boylei* - foothill yellow-legged frog (SC)

### ✓ *Reptiles*

*Clemmys marmorata marmorata* - northwestern pond turtle (SC)

*Phrynosoma coronatum frontale* - California horned lizard (SC)

### ✓ *Birds*

*Agelaius tricolor* - tricolored blackbird (SC)

*Chaetura vauxi* - Vaux's swift (SC)

*Cypseloides niger* - black swift (SC)

*Elanus leucurus* - white-tailed (=black shouldered) kite (SC)

*Empidonax traillii brewsteri* - little willow flycatcher (CA)

*Falco peregrinus anatum* - American peregrine falcon (D)

*Lanius ludovicianus* - loggerhead shrike (SC)

*Numenius americanus* - long-billed curlew (SC)

*Riparia riparia* - bank swallow (CA)

*Selasphorus sasin* - Allen's hummingbird (SC)

*Toxostoma redivivum* - California thrasher (SC)

### ✓ *Mammals*

✓ *Corynorhinus (=Plecotus) townsendii townsendii* - Pacific western big-eared bat (SC)

✓ *Eumops perotis californicus* - greater western mastiff-bat (SC)

✓ *Myotis evotis* - long-eared myotis bat (SC)

✓ *Myotis thysanodes* - fringed myotis bat (SC)

✓ *Myotis volans* - long-legged myotis bat (SC)

✓ *Myotis yumanensis* - Yuma myotis bat (SC)

## Plants ✓

*Arctostaphylos bakeri* ssp. *bakeri* - Baker's manzanita (SC)

*Calamagrostis bolanderi* - Bolander's reed grass (SLC)

*Erigeron angustatus* - narrow-leaved daisy (=serpentine fleabane) (SLC)

*Fritillaria liliacea* - fragrant fritillary (= prairie bells) (SC)

*Horkelia tenuiloba* - thin-lobbed (=Santa Rosa) horkelia (SLC)

*Pleuropogon hooverianus* - northcoast semaphore grass (SC)

*Trifolium depauperatum* var. *hydrophilum* - water sack (=saline) clover (SC)

## Key:

(E) *Endangered* - Listed (in the Federal Register) as being in danger of extinction.

(T) *Threatened* - Listed as likely to become endangered within the foreseeable future.

(P) *Proposed* - Officially proposed (in the Federal Register) for listing as endangered or threatened.

(NMFS) Species under the Jurisdiction of the National Marine Fisheries Service. Consult with them directly about these species.

*Critical Habitat* - Area essential to the conservation of a species.

(PX) *Proposed Critical Habitat* - The species is already listed. Critical habitat is being proposed for it.

(C) *Candidate* - Candidate to become a proposed species.

(CA) Listed by the State of California but not by the Fish & Wildlife Service.

(D) *Delisted* - Species will be monitored for 5 years.

(SC) *Species of Concern*/(SLC) Species of Local Concern - Other species of concern to the Sacramento Fish & Wildlife Office.

(X) *Critical Habitat* designated for this species

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# Important Information About Your Species List

## How We Make Species Lists

We store information about endangered and threatened species lists by U.S. Geological Survey 7½ minute quads. The United States is divided into these quads, which are about the size of San Francisco.

The animals on your species list are ones that occur within, or may be affected by projects within, the quads covered by the list.

- Fish and other aquatic species appear on your list if they are in the same watershed as your quad or if water use in your quad might affect them.
- Amphibians will be on the list for a quad or county if pesticides applied in that area may be carried to their habitat by air currents.
- Birds are shown regardless of whether they are resident or migratory. Relevant birds on the county list should be considered regardless of whether they appear on a quad list.

## Plants

Any plants on your list are ones that have actually been observed in the quad or quads covered by the list. Plants may exist in

an area without ever having been detected there. You can find out what's in the nine surrounding quads through the California Native Plant Society's online [Inventory of Rare and Endangered Plants](#).

## Surveying

Some of the species on your list may not be affected by your project. A trained biologist or botanist, familiar with the habitat requirements of the species on your list, should determine whether they or habitats suitable for them may be affected by your project. We recommend that your surveys include any proposed and candidate species on your list.

For plant surveys, we recommend using the [Guidelines for Conducting and Reporting Botanical Inventories](#). The results of your surveys should be published in any environmental documents prepared for your project.

## State-Listed Species

If a species has been listed as threatened or endangered by the State of California, but not by us nor by the National Marine Fisheries Service, it will appear on your list as a Species of Concern. However you should contact the California Department of Fish and Game [Wildlife and Habitat Data Analysis Branch](#) for official information about these species.

## Your Responsibilities Under the Endangered Species Act

All plants and animals identified as listed above are fully protected under the Endangered Species Act of 1973, as amended. Section 9 of the Act and its implementing regulations prohibit the take of a federally listed wildlife species. Take is defined by the Act as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect" any such animal.

Take may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or shelter (50 CFR §17.3).

### Take incidental to an otherwise lawful activity may be authorized by one of two procedures:

- If a Federal agency is involved with the permitting, funding, or carrying out of a project that may result in take, then that agency must engage in a formal [consultation](#) with the Service.

During formal consultation, the Federal agency, the applicant and the Service work together to avoid or minimize the impact on listed species and their habitat. Such consultation would result in a biological opinion by the Service addressing the anticipated effect of the project on listed and proposed species. The opinion may authorize a limited level of incidental take.

- If no Federal agency is involved with the project, and federally listed species may be taken as part of the project, then you, the applicant, should apply for an incidental take permit. The Service may issue such a permit if you submit a satisfactory conservation plan for the species that would be affected by your project.

Should your survey determine that federally listed or proposed species occur in the area and are likely to be affected by the project, we recommend that you work with this office and the California Department of Fish and Game to develop a plan that minimizes the project's direct and indirect impacts to listed species and compensates for project-related loss of habitat. You should include the plan in any environmental documents you file.

## Critical Habitat

When a species is listed as endangered or threatened, areas of habitat considered essential to its conservation may be designated as critical habitat. These areas may require special management considerations or protection. They provide needed space for growth and normal behavior; food, water, air, light, other nutritional or physiological requirements; cover or shelter; and sites for breeding, reproduction, rearing of offspring, germination or seed dispersal.

Although critical habitat may be designated on private or State lands, activities on these lands are not restricted unless there is Federal involvement in the activities or direct harm to listed wildlife.

If any species has proposed or designated critical habitat within a quad, there will be a separate line for this on the species

list. Boundary descriptions of the critical habitat may be found in the Federal Register. The information is also reprinted in the Code of Federal Regulations (50 CFR 17.95). See our [critical habitat](#) page for maps.

## Candidate Species

We recommend that you address impacts to candidate species. We put plants and animals on our candidate list when we have enough scientific information to eventually propose them for listing as threatened or endangered. By considering these species early in your planning process you may be able to avoid the problems that could develop if one of these candidates was listed before the end of your project.

## Species of Concern

Your list may contain a section called Species of Concern. This is an informal term that refers to those species that the Sacramento Fish and Wildlife Office believes might be in need of concentrated conservation actions. Such conservation actions vary depending on the health of the populations and degree and types of threats. At one extreme, there may only need to be periodic monitoring of populations and threats to the species and its habitat. At the other extreme, a species may need to be listed as a Federal threatened or endangered species. Species of concern receive no legal protection and the use of the term does not necessarily mean that the species will eventually be proposed for listing as a threatened or endangered species.

## Wetlands

If your project will impact wetlands, riparian habitat, or other jurisdictional waters as defined by section 404 of the Clean Water Act and/or section 10 of the Rivers and Harbors Act, you will need to obtain a permit from the U.S. Army Corps of Engineers. Impacts to wetland habitats require site specific mitigation and monitoring. For questions regarding wetlands, please contact Mark Littlefield of this office at (916) 414-6580.

## Updates

Our database is constantly updated as species are proposed, listed and delisted. If you address proposed, candidate and special concern species in your planning, this should not be a problem. However, we recommend that you get an updated list every 90 days. That would be November 21, 2005.





**Federal Endangered and Threatened Species  
that Occur in or may be Affected by Projects in the  
HEALDSBURG (518D)  
U.S.G.S. 7 1/2 Minute Quad  
Database Last Updated: August 8, 2005  
Document Number: 050823110315**

**Listed Species**

*Invertebrates*

*Syncaris pacifica* - California freshwater shrimp (E)

*Fish*

*Oncorhynchus kisutch* - coho salmon - central CA coast (E)

*Oncorhynchus kisutch* - Critical habitat, coho salmon - central CA coast (X)

*Oncorhynchus mykiss* - Central California Coastal steelhead (T)

*Oncorhynchus mykiss* - Central Valley steelhead (T)

*Oncorhynchus tshawytscha* - California coastal chinook salmon (T)

*Amphibians*

*Ambystoma californiense* - California tiger salamander (T)

*Ambystoma californiense* - California tiger salamander, Sonoma Co. pop (E)

*Birds*

*Haliaeetus leucocephalus* - bald eagle (T)

*Strix occidentalis caurina* - northern spotted owl (T)

*Plants*

*Blennosperma bakeri* - Baker's stickseed [=Sonoma Sunshine] (E)

*Lasthenia burkei* - Burke's goldfields (E)

*Navarretia leucocephala* ssp. *plieantha* - many-flowered navarretia (E)

**Proposed Species**

*Amphibians*

*Ambystoma californiense* - California tiger salamander, Sonoma Co. critical habitat (PX)

**Species of Concern**

*Invertebrates*

*Carterocephalus palaemon ssp.* - Sonoma arctic skipper (SC)

*Linderiella occidentalis* - California linderiella fairy shrimp (SC)

### Fish

*Hysterocephalus traski pomo* - Russian River tule perch (SC)

*Pogonichthys macrolepidotus* - Sacramento splittail (SC)

### Amphibians

*Rana aurora aurora* - Northern red-legged frog (SC)

*Rana boylei* - foothill yellow-legged frog (SC)

### Reptiles

*Clemmys marmorata marmorata* - northwestern pond turtle (SC)

### Birds

*Agelaius tricolor* - tricolored blackbird (SC) ✓

*Amphispiza belli belli* - Bell's sage sparrow (SC) ✓

*Baeolophus inornatus* - oak titmouse (SLC) ✓

*Chaetura vauxi* - Vaux's swift (SC) ✓

*Cypseloides niger* - black swift (SC) ✓

*Elanus leucurus* - white-tailed (=black shouldered) kite (SC) ✓

*Empidonax traillii brewsteri* - little willow flycatcher (CA) ✓

*Falco peregrinus anatum* - American peregrine falcon (D) ✓

*Lanius ludovicianus* - loggerhead shrike (SC) ✓

*Numenius americanus* - long-billed curlew (SC) ✓

*Riparia riparia* - bank swallow (CA) ✓

*Selasphorus sasin* - Allen's hummingbird (SC) ✓

*Toxostoma redivivum* - California thrasher (SC) ✓

### Mammals

*Corynorhinus (=Plecotus) townsendii townsendii* - Pacific western big-eared bat (SC)

*Eumops perotis californicus* - greater western mastiff-bat (SC)

*Myotis evotis* - long-eared myotis bat (SC)

*Myotis thysanodes* - fringed myotis bat (SC)

*Myotis volans* - long-legged myotis bat (SC)

*Myotis yumanensis* - Yuma myotis bat (SC)

## ✓ Plants

*Brodiaea californica* var *leptandra* - narrow-anthered California brodiaea (SLC)

*Microseris paludosa* - marsh microseris (=marsh silverpuffs) (SLC)

*Monardella villosa* ssp *globosa* - robust monardella (=robust coyote mint) (SLC)

*Navarretia leucocephala* ssp. *bakeri* - Baker's narvarretia (SC)

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## Wetlands

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## Updates

Our database is constantly updated as species are proposed, listed and delisted. If you address proposed, candidate and special concern species in your planning, this should not be a problem. However, we recommend that you get an updated list every 90 days. That would be November 21, 2005.



**Federal Endangered and Threatened Species  
that Occur in or may be Affected by Projects in the  
CLOVERDALE (535D)  
U.S.G.S. 7 1/2 Minute Quad  
Database Last Updated: August 8, 2005  
Document Number: 050823110446**

**Listed Species**

*Invertebrates*

*Syncaris pacifica* - California freshwater shrimp (E)

*Fish*

*Oncorhynchus kisutch* - coho salmon - central CA coast (E)

*Oncorhynchus kisutch* - Critical habitat, coho salmon - central CA coast (X)

*Oncorhynchus mykiss* - Central California Coastal steelhead (T)

*Oncorhynchus mykiss* - Central Valley steelhead (T)

*Oncorhynchus tshawytscha* - California coastal chinook salmon (T)

*Birds*

*Brachyramphus marmoratus* - marbled murrelet (T)

*Haliaeetus leucocephalus* - bald eagle (T)

*Strix occidentalis caurina* - northern spotted owl (T)

**Species of Concern**

*Fish*

*Hysterocarpus traski pomo* - Russian River tule perch (SC)

*Lavinia symmetricus parvipinnis* - Gualala roach (SC)

*Amphibians*

*Rana aurora aurora* - Northern red-legged frog (SC)

*Rana boylei* - foothill yellow-legged frog (SC)

*Reptiles*

*Clemmys marmorata marmorata* - northwestern pond turtle (SC)

*Birds*

*Agelaius tricolor* - tricolored blackbird (SC)

*Baeolophus inornatus* - oak titmouse (SLC)

*Chaetura vauxi* - Vaux's swift (SC)

*Cypseloides niger* - black swift (SC)

*Elanus leucurus* - white-tailed (=black shouldered) kite (SC)

*Empidonax traillii brewsteri* - little willow flycatcher (CA)

*Falco peregrinus* - Critical habitat, peregrine falcon (D) ✓

*Falco peregrinus anatum* - American peregrine falcon (D)

*Lanius ludovicianus* - loggerhead shrike (SC)

*Numenius americanus* - long-billed curlew (SC)

*Selasphorus sasin* - Allen's hummingbird (SC)

*Toxostoma redivivum* - California thrasher (SC)

### Mammals

*Arborimus pomo* - California red tree vole (SC)

*Corynorhinus* (=Plecotus) *townsendii townsendii* - Pacific western big-eared bat (SC)

*Myotis evotis* - long-eared myotis bat (SC)

*Myotis thysanodes* - fringed myotis bat (SC)

*Myotis volans* - long-legged myotis bat (SC)

*Myotis yumanensis* - Yuma myotis bat (SC)

### Plants

*Ceanothus confusus* - Rincon Ridge ceanothus (SC)

*Cryptantha clevelandii* - serpentine (=Cleveland's) cryptantha (SLC)

*Layia septentrionalis* - Colusa layia (=Colusa tidytips) (SLC)

*Linanthus jepsonii* - Jepson's linanthus (SLC)

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**Federal Endangered and Threatened Species  
that Occur in or may be Affected by Projects in the  
JIMTOWN (518A)  
U.S.G.S. 7 1/2 Minute Quad  
Database Last Updated: August 8, 2005  
Document Number: 050823110357**

**Listed Species**

✓ *Invertebrates*

*Syncaris pacifica* - California freshwater shrimp (E)

✓ *Fish*

*Oncorhynchus kisutch* - coho salmon - central CA coast (E)

*Oncorhynchus kisutch* - Critical habitat, coho salmon - central CA coast (X)

*Oncorhynchus mykiss* - Central California Coastal steelhead (T)

*Oncorhynchus mykiss* - Central Valley steelhead (T)

*Oncorhynchus tshawytscha* - California coastal chinook salmon (T)

✓ *Birds*

*Haliaeetus leucocephalus* - bald eagle (T)

*Strix occidentalis caurina* - northern spotted owl (T)

✓ *Plants*

*Lasthenia burkei* - Burke's goldfields (E)

**Species of Concern**

✓ *Invertebrates*

*Carterocephalus palaemon* ssp. - Sonoma arctic skipper (SC)

✓ *Fish*

*Hysterocarpus traski* pomo - Russian River tule perch (SC)

*Pogonichthys macrolepidotus* - Sacramento splittail (SC)

✓ *Amphibians*

*Rana aurora aurora* - Northern red-legged frog (SC)

*Rana boylei* - foothill yellow-legged frog (SC)

✓ *Reptiles*

*Clemmys marmorata marmorata* - northwestern pond turtle (SC)

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*Agelaius tricolor* - tricolored blackbird (SC)

*Amphispiza belli belli* - Bell's sage sparrow (SC)

*Baeolophus inornatus* - oak titmouse (SLC)

*Chaetura vauxi* - Vaux's swift (SC)

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*Numenius americanus* - long-billed curlew (SC)

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### Plants

*Arctostaphylos bakeri ssp. bakeri* - Baker's manzanita (SC)

*Calystegia collina ssp. oxyphylla* - Mt. Saint Helena morning-glory (SLC)

*Cryptantha clevelandii* - serpentine (=Cleveland's) cryptantha (SLC)

*Streptanthus brachiatus ssp. hoffmanii* - Freed's jewelflower (SC)

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**Federal Endangered and Threatened Species  
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WARM SPRINGS DAM (519A)  
U.S.G.S. 7 1/2 Minute Quad  
Database Last Updated: August 8, 2005  
Document Number: 050823110555**

**Listed Species**✓ *Invertebrates*

*Syncaris pacifica* - California freshwater shrimp (E)

✓ *Fish*

*Oncorhynchus kisutch* - coho salmon - central CA coast (E)

*Oncorhynchus kisutch* - Critical habitat, coho salmon - central CA coast (X)

*Oncorhynchus mykiss* - Central California Coastal steelhead (T)

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*Elanus leucurus* - white-tailed (=black shouldered) kite (SC)

*Empidonax traillii brewsteri* - little willow flycatcher (CA)

*Falco peregrinus* - Critical habitat, peregrine falcon (D)

*Falco peregrinus anatum* - American peregrine falcon (D)

*Lanius ludovicianus* - loggerhead shrike (SC)

*Numenius americanus* - long-billed curlew (SC)

*Selasphorus sasin* - Allen's hummingbird (SC)

*Toxostoma redivivum* - California thrasher (SC)

### ✓ Mammals

*Arborimus pomo* - California red tree vole (SC)

*Corynorhinus (=Plecotus) townsendii townsendii* - Pacific western big-eared bat (SC)

*Myotis evotis* - long-eared myotis bat (SC)

*Myotis thysanodes* - fringed myotis bat (SC)

*Myotis volans* - long-legged myotis bat (SC)

*Myotis yumanensis* - Yuma myotis bat (SC)

### ✓ Plants

*Arctostaphylos bakeri ssp. sublaevis* - The Cedars manzanita (SLC)

*Arctostaphylos stanfordiana ssp. decumbens* - Rincon manzanita (SC)

*Calochortus raichei* - The Cedars globe-lily (=fairy-lantern) (SC)

*Ceanothus confusus* - Rincon Ridge ceanothus (SC)

*Monardella villosa ssp. globosa* - robust monardella (=robust coyote mint) (SLC)

*Streptanthus glandulosus var. hoffmanii* - secund jewelflower (SC)

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## Updates

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**Federal Endangered and Threatened Species  
that Occur in or may be Affected by Projects in the  
GEYSERVILLE (518B)  
U.S.G.S. 7 1/2 Minute Quad  
Database Last Updated: August 8, 2005  
Document Number: 050823110420**

**Listed Species**

✓ *Invertebrates*

*Syncaris pacifica* - California freshwater shrimp (E)

✓ *Fish*

*Oncorhynchus kisutch* - coho salmon - central CA coast (E)

*Oncorhynchus kisutch* - Critical habitat, coho salmon - central CA coast (X)

*Oncorhynchus mykiss* - Central California Coastal steelhead (T)

*Oncorhynchus mykiss* - Central Valley steelhead (T)

*Oncorhynchus tshawytscha* - California coastal chinook salmon (T)

✓ *Birds*

*Haliaeetus leucocephalus* - bald eagle (T)

*Strix occidentalis caurina* - northern spotted owl (T)

*Plants*

✓ *Cordylanthus tenuis* ssp. *capillaris* - Pennell's bird's-beak (E)

**Species of Concern**

✓ *Invertebrates*

*Carterocephalus palaemon* ssp. - Sonoma arctic skipper (SC)

✓ *Fish*

*Hysteroecarpus traski* pomo - Russian River tule perch (SC)

*Pogonichthys macrolepidotus* - Sacramento splittail (SC)

✓ *Amphibians*

*Rana aurora aurora* - Northern red-legged frog (SC)

*Rana boylei* - foothill yellow-legged frog (SC)

✓ *Reptiles*

*Clemmys marmorata marmorata* - northwestern pond turtle (SC)

## Birds ✓

*Agelaius tricolor* - tricolored blackbird (SC)

*Baeolophus inornatus* - oak titmouse (SLC)

*Chaetura vauxi* - Vaux's swift (SC)

*Cypseloides niger* - black swift (SC)

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## ✓ Plants

*Arctostaphylos stanfordiana* ssp. *decumbens* - Rincon manzanita (SC)

*Brodiaea californica* var *leptandra* - narrow-anthered California brodiaea (SLC)

*Ceanothus confusus* - Rincon Ridge ceanothus (SC)

*Horkelia tenuiloba* - thin-lobbed (=Santa Rosa) horkelia (SLC)

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GUERNEVILLE (518C)  
U.S.G.S. 7 1/2 Minute Quad  
Database Last Updated: August 8, 2005  
Document Number: 050823110508**

**Listed Species**

✓ *Invertebrates*

*Syncaris pacifica* - California freshwater shrimp (E)

✓ *Fish*

*Oncorhynchus kisutch* - coho salmon - central CA coast (E)

*Oncorhynchus kisutch* - Critical habitat, coho salmon - central CA coast (X)

*Oncorhynchus mykiss* - Central California Coastal steelhead (T)

*Oncorhynchus mykiss* - Central Valley steelhead (T)

*Oncorhynchus tshawytscha* - California coastal chinook salmon (T)

✓ *Amphibians*

*Ambystoma californiense* - California tiger salamander (T)

✓ *Birds*

*Brachyramphus marmoratus* - Critical habitat, marbled murrelet (X)

*Brachyramphus marmoratus* - marbled murrelet (T)

*Haliaeetus leucocephalus* - bald eagle (T)

*Strix occidentalis caurina* - northern spotted owl (T)

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### ✓ Plants

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ASTI (534C)  
U.S.G.S. 7 1/2 Minute Quad  
Database Last Updated: August 8, 2005  
Document Number: 050823110528**

**Listed Species**

✓ *Invertebrates*

*Syncaris pacifica* - California freshwater shrimp (E)

✓ *Fish*

*Hypomesus transpacificus* - delta smelt (T)

*Oncorhynchus kisutch* - coho salmon - central CA coast (E)

*Oncorhynchus kisutch* - Critical habitat, coho salmon - central CA coast (X)

*Oncorhynchus mykiss* - Central California Coastal steelhead (T)

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✓ *Amphibians*

*Rana aurora draytonii* - California red-legged frog (T)

✓ *Birds*

*Haliaeetus leucocephalus* - bald eagle (T)

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*Baeolophus inornatus* - oak titmouse (SLC)  
*Chaetura vauxi* - Vaux's swift (SC)  
*Cypseloides niger* - black swift (SC)  
*Elanus leucurus* - white-tailed (=black shouldered) kite (SC)  
*Empidonax traillii brewsteri* - little willow flycatcher (CA)  
*Falco peregrinus anatum* - American peregrine falcon (D)  
*Lanius ludovicianus* - loggerhead shrike (SC)  
*Melanerpes lewis* - Lewis' woodpecker (SC)  
*Numenius americanus* - long-billed curlew (SC)  
*Selasphorus rufus* - rufous hummingbird (SC)  
*Selasphorus sasin* - Allen's hummingbird (SC)  
*Toxostoma redivivum* - California thrasher (SC)

✓ *Mammals*

*Arborimus pomo* - California red tree vole (SC)  
*Corynorhinus (=Plecotus) townsendii townsendii* - Pacific western big-eared bat (SC)  
*Eumops perotis californicus* - greater western mastiff-bat (SC)  
*Myotis evotis* - long-eared myotis bat (SC)  
*Myotis thysanodes* - fringed myotis bat (SC)  
*Myotis volans* - long-legged myotis bat (SC)  
*Myotis yumanensis* - Yuma myotis bat (SC)

✓ *Plants*

*Linanthus jepsonii* - Jepson's linanthus (SLC)

## Key:

(E) *Endangered* - Listed (in the Federal Register) as being in danger of extinction.

(T) *Threatened* - Listed as likely to become endangered within the foreseeable future.

(P) *Proposed* - Officially proposed (in the Federal Register) for listing as endangered or threatened.

(NMFS) Species under the Jurisdiction of the National Marine Fisheries Service. Consult with them directly about these species.

*Critical Habitat* - Area essential to the conservation of a species.

(PX) *Proposed Critical Habitat* - The species is already listed. Critical habitat is being proposed for it.

(C) *Candidate* - Candidate to become a proposed species.

(CA) Listed by the State of California but not by the Fish & Wildlife Service.

(D) *Delisted* - Species will be monitored for 5 years.

(SC) *Species of Concern*/(SLC) Species of Local Concern - Other species of concern to the Sacramento Fish & Wildlife Office.

(X) *Critical Habitat* designated for this species

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## Important Information About Your Species List

### How We Make Species Lists

We store information about endangered and threatened species lists by U.S. Geological Survey 7½ minute quads. The United States is divided into these quads, which are about the size of San Francisco.

The animals on your species list are ones that occur within, or may be affected by projects within, the quads covered by the list.

- Fish and other aquatic species appear on your list if they are in the same watershed as your quad or if water use in your quad might affect them.
- Amphibians will be on the list for a quad or county if pesticides applied in that area may be carried to their habitat by air currents.
- Birds are shown regardless of whether they are resident or migratory. Relevant birds on the county list should be considered regardless of whether they appear on a quad list.

### Plants

Any plants on your list are ones that have actually been observed in the quad or quads covered by the list. Plants may exist in an area without ever having been detected there. You can find out what's in the nine surrounding quads through the California Native Plant Society's online [Inventory of Rare and Endangered Plants](#).

### Surveying

Some of the species on your list may not be affected by your project. A trained biologist or botanist, familiar with the habitat requirements of the species on your list, should determine whether they or habitats suitable for them may be affected by your project. We recommend that your surveys include any proposed and candidate species on your list.

For plant surveys, we recommend using the [Guidelines for Conducting and Reporting Botanical Inventories](#). The results of your surveys should be published in any environmental documents prepared for your project.

### State-Listed Species

If a species has been listed as threatened or endangered by the State of California, but not by us nor by the National Marine Fisheries Service, it will appear on your list as a Species of Concern. However you should contact the California Department of Fish and Game [Wildlife and Habitat Data Analysis Branch](#) for official information about these species.

### Your Responsibilities Under the Endangered Species Act

All plants and animals identified as listed above are fully protected under the Endangered Species Act of 1973, as amended. Section 9 of the Act and its implementing regulations prohibit the take of a federally listed wildlife species. Take is defined by the Act as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect" any such animal.

Take may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or shelter (50 CFR §17.3).

## Take incidental to an otherwise lawful activity may be authorized by one of two procedures:

- If a Federal agency is involved with the permitting, funding, or carrying out of a project that may result in take, then that agency must engage in a formal consultation with the Service.

During formal consultation, the Federal agency, the applicant and the Service work together to avoid or minimize the impact on listed species and their habitat. Such consultation would result in a biological opinion by the Service addressing the anticipated effect of the project on listed and proposed species. The opinion may authorize a limited level of incidental take.

- If no Federal agency is involved with the project, and federally listed species may be taken as part of the project, then you, the applicant, should apply for an incidental take permit. The Service may issue such a permit if you submit a satisfactory conservation plan for the species that would be affected by your project.

Should your survey determine that federally listed or proposed species occur in the area and are likely to be affected by the project, we recommend that you work with this office and the California Department of Fish and Game to develop a plan that minimizes the project's direct and indirect impacts to listed species and compensates for project-related loss of habitat. You should include the plan in any environmental documents you file.

## Critical Habitat

When a species is listed as endangered or threatened, areas of habitat considered essential to its conservation may be designated as critical habitat. These areas may require special management considerations or protection. They provide needed space for growth and normal behavior; food, water, air, light, other nutritional or physiological requirements; cover or shelter; and sites for breeding, reproduction, rearing of offspring, germination or seed dispersal.

Although critical habitat may be designated on private or State lands, activities on these lands are not restricted unless there is Federal involvement in the activities or direct harm to listed wildlife.

If any species has proposed or designated critical habitat within a quad, there will be a separate line for this on the species list. Boundary descriptions of the critical habitat may be found in the Federal Register. The information is also reprinted in the Code of Federal Regulations (50 CFR 17.95). See our [critical habitat page](#) for maps.

## **Candidate Species**

We recommend that you address impacts to candidate species. We put plants and animals on our candidate list when we have enough scientific information to eventually propose them for listing as threatened or endangered. By considering these species early in your planning process you may be able to avoid the problems that could develop if one of these candidates was listed before the end of your project.

## Species of Concern

Your list may contain a section called Species of Concern. This is an informal term that refers to those species that the Sacramento Fish and Wildlife Office believes might be in need of concentrated conservation actions. Such conservation actions vary depending on the health of the populations and degree and types of threats. At one extreme, there may only need to be periodic monitoring of populations and threats to the species and its habitat. At the other extreme, a species may need to be listed as a Federal threatened or endangered species. Species of concern receive no legal protection and the use of the term does not necessarily mean that the species will eventually be proposed for listing as a threatened or endangered species.

## **Wetlands**

If your project will impact wetlands, riparian habitat, or other jurisdictional waters as defined by section 404 of the Clean Water Act and/or section 10 of the Rivers and Harbors Act, you will need to obtain a permit from the U.S. Army Corps of Engineers. Impacts to wetland habitats require site specific mitigation and monitoring. For questions regarding wetlands, please contact Mark Littlefield of this office at (916) 414-6580.



## Updates

Our database is constantly updated as species are proposed, listed and delisted. If you address proposed, candidate and special concern species in your planning, this should not be a problem. However, we recommend that you get an updated list every 90 days. That would be November 21, 2005.





ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

September 28, 2005

Project No. 0402-0740

NOAA Fisheries  
Protected Resources Division  
777 Sonoma Avenue, Room 325  
Santa Rosa, CA 95404

Subject: North Sonoma County Agricultural Water Reuse Project

The Sonoma County Water Agency (SCWA) is proposing to construct the North Sonoma County Agricultural Water Reuse Project (NSCARP). The NSCARP would involve enlarging or constructing a number of reservoirs, connecting pipelines, and pumping stations to utilize recycled water for agricultural resources within the Russian River Valley, Dry Creek Valley, and the Alexander Valley.

We are conducting biological field surveys for the proposed project including cover type mapping, resource inventory, and wetland delineations. I am requesting a list of protected species that may occur in the general project area, specifically within the following USGS quadrangles:

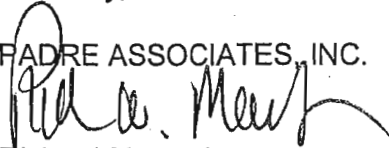
|             |                  |
|-------------|------------------|
| Asti        | Healdsburg       |
| Camp Meeker | Jim Town         |
| Cloverdale  | Sebastopol       |
| Geyserville | Warm Springs Dam |
| Guerneville |                  |

Please send any pertinent information you may have to:

Richard Meredith  
Padre Associates, Inc.  
3020 Explorer Drive, Suite 5  
Sacramento, CA 95827-2727

Thank you for your assistance with this project, and if you have any questions please call me at 916-857-1601 X22.

Sincerely,

PADRE ASSOCIATES, INC.  
  
Richard Meredith  
Senior Principal Biologist



**APPENDIX F**  
**ATTACHMENT 2**  
**FEDERAL, STATE, AND LOCAL LAWS AND REGULATIONS PERTAINING TO**  
**BIOLOGICAL RESOURCES FOR THE NSCARP PROJECT**



## 1.0 FEDERAL REGULATIONS

### 1.1 Federal Endangered Species Act

The federal Endangered Species Act (FESA), administered by the U.S. Fish and Wildlife Service (USFWS) and NOAA Fisheries (formerly the National Marine Fisheries Service), collectively referred to as the "Services", provides protection to species listed as Threatened (FT) or Endangered (FE), or proposed for listing as Threatened (PFT) or Endangered (PFE). The federal government also maintains lists of species that are neither formally listed nor proposed, but could be listed in the future. Federal candidate species (FC) include taxa for which substantial information on biological vulnerability and potential threats exists, and are maintained in order to support the appropriateness of proposing to list the taxa as an endangered or threatened species.

Section 9 of FESA prohibits the "take" of any member of a listed species. Take is defined as, "...to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." Harass is "...an intentional or negligent act or omission that creates the likelihood of injury to a listed species by annoying it to such an extent as to significantly disrupt normal behavior patterns that include, but are not limited to, breeding, feeding, or sheltering". Harm is defined as "...significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding, or sheltering."

Under Section 7 of FESA, the Services are authorized to issue Incidental Take Statements (ITS) for the take of a listed species that results from, but is not the purpose of, carrying out an otherwise lawful activity conducted by the federal agency. The ITS includes measures to minimize the take. Section 7 requires federal agencies to make a finding on all federal actions, including the approval by an agency of a public or private action, such as the issuance of a federal permit (e.g., Section 10/404 of the Clean Water Act), projects conducted on federal lands, or projects receiving federal funding, on the potential to jeopardize the continued existence of any listed or proposed species potentially impacted by the action. Depending on the potential impact on listed species, one of three consultation methods is employed. First, if the lead federal agency determines that no "take" will occur, it can voluntarily notify the Services with a "no effect determination" letter and the Services may or may not respond. Second, an "informal consultation" involves submission of a letter to the Services by the lead federal agency indicating that a project is "not likely to adversely affect" a listed species. In turn, the Services issue a concurrence letter to the lead agency. Third, a "formal" consultation is conducted between the lead agency and the Services when a "take" of a listed species will occur. This results in the issuance of a Biological Opinion by the Services to the lead agency. The biological opinion identifies "take" limits and terms and conditions that must be adhered to by the lead agency to be in compliance with FESA. In some instances, the Services will issue jeopardy opinions if it is determined the continued existence of a species would be jeopardized. Such a finding will result in the denial of a project or action.

A Biological Assessment is usually required as part of the Section 7 consultation to provide sufficient information for the Services to fully determine the project's potential to affect threatened or endangered species. The Services must make one of three possible findings for each species potentially affected:

- *No effect:* The proposed action will not affect the listed species or critical habitat

- *Not likely to adversely affect:* Effects of construction on the listed species are expected to be discountable (extremely unlikely to occur), insignificant (minimal impact without take), or beneficial; and
- *Likely to adversely affect:* An adverse effect may occur as a direct or indirect result of the proposed action, and the effect is not discountable, insignificant, or beneficial

Section 10 of the Act is applicable when there is no federal involvement in a project except compliance with FESA. If a project or action has no federal nexus and the “take” of a listed species will occur, the non-federal project proponent must coordinate with and request technical assistance from the Services under Section. This requires the non-federal entity to prepare a Habitat Conservation Plan that must be approved by the Services in the form of the issuance of a Section 10(a) Incidental Take Permit. This permit authorizes the incidental “take” of a listed species if the take is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. The permit identifies mitigation and monitoring requirements that the permittee must adhere to and “take” limits. As with jeopardy opinions mentioned above, the Services will not issue Section 10(a) permits if they determine the continued existence of a species would be jeopardized by a particular project or action. Depending on take/potential take of listed species, the Services may alternately approve a low-effect HCP in the form of an internal Environmental Action Statement.

## **1.2 Migratory Bird Treaty Act**

The USFWS administers the federal Migratory Bird Treaty Act (MBTA) of 1918 (16 USC 703-711). The focus of the MBTA was the “establishment of a federal prohibition, unless permitted by regulations, to pursue, hunt, take, capture, kill, attempt to take, capture or kill, possess, offer for sale, sell, offer to purchase, purchase, deliver for shipment, ship, cause to be shipped, deliver for transportation, transport, cause to be transported, carry or cause to be carried by any means whatever, receive for shipment, transportation or carriage, or export, at any time, or in any manner, any migratory bird, included in the terms of this Convention for the protection of migratory birds, or any part, nest or egg of any such bird” (16 USC 703). Implementing regulations at 50 CFR 10 list the migratory birds covered under the MBTA.

The MBTA prevents the removal of trees, shrubs, and other structures containing active nests of migratory bird species that may result in the loss of eggs or nestlings. Adherence to construction windows either before the initiation of breeding activities or after young birds have fledged is an active step to protect migratory birds and comply with the MBTA.

## **1.3 Bald Eagle and Golden Eagle Protection Act**

The USFWS also administers the Bald Eagle and Golden Eagle Protection Act (16 USC 668-688), which prohibits the taking or possession of bald and golden eagles, their eggs, or their nests without a permit from the USFWS.

## **1.4 Essential Fish Habitat**

In addition to FESA, NOAA Fisheries administers the Magnuson-Stevens Fishery Conservation and Management Act (MSA), as amended by the Sustainable Fisheries Act of 1996 (Public Law 104-267). This act established procedures designed to identify, conserve, and enhance Essential Fish Habitat (EFH) for those species regulated under a federal Fisheries Management Plan (FMP). The MSA requires federal agencies to



consult with NOAA Fisheries on all actions, or proposed actions, authorized, funded, or undertaken by the agency, that may adversely affect EFH (MSA §305[b][2]).

## **1.5 Federal Waters and Wetlands**

The Corps is responsible for the issuance of permits for the placement of dredged or fill material into waters of the United States (waters) pursuant to Section 404 of the Clean Water Act (33 USC 1344). As defined by the Corps at 33 CFR 328.3(a)(3), waters are those that are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide; tributaries and impoundments to such waters; all interstate waters including interstate wetlands; and, territorial seas. Based on the U.S. Supreme Court decision in *Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers* (2001), and guidance from the Corps and U.S. Environmental Protection Agency (2001), the federal government no longer asserts jurisdiction over isolated waters and wetlands under Section 404 of the Clean Water Act based on the "migratory bird rule".

Under Corps and EPA regulations, wetlands are defined as: "those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas."

In non-tidal waters the lateral extent of Corps jurisdiction is determined by the ordinary high water mark (OHWM) which is defined as the: "...line on the shore established by the fluctuations of water and indicated by physical characteristics such as clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas." (33 CFR 328[e]).

## **2.0 STATE REGULATIONS**

### **2.1 California Environmental Quality Act**

Pursuant to Section 15065 of the CEQA Guidelines, a lead agency is required to make mandatory findings of significance in an EIR if "a Project has the potential to substantially degrade the quality of the environment; substantially reduce the habitat of a fish or wildlife species; cause a fish or wildlife population to drop below self-sustaining levels; threaten to eliminate a plant or animal community; substantially reduce the number or restrict the range of an endangered, rare or threatened species; or eliminate important examples of the major periods of California history or prehistory."

At Section 15380, the CEQA Guidelines define the following:

- (a) "Species" as used in this section means a species or subspecies of animal or plant or variety of plant.

- (b) A species of animal or plant is:
  - (1) “Endangered” when its survival and reproduction in the wild are in immediate jeopardy from one or more causes, including loss of habitat, change in habitat, overexploitation, predation, competition, disease, or other factors; or
  - (2) “Rare” when either:
    - (A) Although not presently threatened with extinction, the species is existing in such small numbers throughout all or a significant portion of its range that it may become endangered if its environment worsens; or
    - (B) The species is likely to become endangered within the foreseeable future throughout all or a significant portion of its range and may be considered “threatened” as that term is used in the federal Endangered Species Act.
- (c) A species of animal or plant shall be presumed to be rare or endangered if it is listed in:
  - (1) Sections 670.2 or 670.5, Title 14, California Administrative Code; or
  - (2) Title 50, Code of Federal Regulations Sections 17.11 or 17.12 pursuant to the federal Endangered Species Act as rare, threatened, or endangered.
- (d) A species not included in any listing identified in subsection (c) shall nevertheless be considered to be rare or endangered if the species can be shown to meet the criteria in subsection (b).

## **2.2 CEQA Guidelines - Appendix G**

Appendix G of the State CEQA Guidelines designates impacts that are “normally” considered significant. For biological resources, these include the following:

1. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service;
2. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or US Fish and Wildlife Service;
3. Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;
4. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;
5. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; and/or,
6. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

### **2.3 California Endangered Species Act**

The California Department of Fish and Game (CDFG) administers a number of laws and programs designed to protect the state's fish and wildlife resources. Principal of these is the California Endangered Species Act of 1984 (CESA - Fish and Game Code Section 2050), which regulates the listing and take of state endangered (SE) and threatened species (ST). Section 2080 of the Fish and Game Code prohibits the take of a species listed as threatened or endangered by CESA. Take is any act that involves direct mortality or other actions that may result in adverse impacts when attempting to take individuals of a listed species. Under Section 2081 of CESA, CDFG may issue a Memorandum of Understanding to authorize the incidental take for scientific, educational, or management purposes. Development that may adversely affect a listed species is prohibited unless a Management Authorization is obtained, and the project proponent signs a Memorandum of Understanding that outlines the measures and standards to manage the species.

CDFG maintains lists of Candidate-Endangered species (SCE) and Candidate-Threatened species (SCT). These candidate species are afforded the same level of protection as listed species. CDFG also designates Species of Special Concern (CSC) that are species of limited distribution, declining populations, diminishing habitat, or unusual scientific, recreational, or educational value. These species do not have the same legal protection as listed species, but may be added to official lists in the future. The CSC list is intended by CDFG as a management tool for consideration in future land use decisions.

### **2.4 Fully Protected Species and Birds of Prey**

CDFG administers other state laws designed to protect wildlife and plants. Under Section 3511 of the California Fish and Game Code, CDFG designates species that are afforded "fully protected" (FP) status. CDFG cannot authorize the take of a fully protected species. Section 3503.5 of the California Fish and Game Code protects all birds-of-prey (Falconiformes and Strigiformes), their eggs, and their nests.

### **2.5 Native Plant Protection Act**

CDFG manages the California Native Plant Protection Act of 1977 (Fish and Game Code Section 1900, et seq), which was enacted to identify, designate, and protect rare plants. In accordance with CDFG guidelines, California Native Plant Society (CNPS) 1B list plants are considered "rare" under the Act, and are evaluated in California Environmental Quality Act (CEQA) reports.

### **2.6 Section 1600 Lake or Streambed Alteration Agreement**

Pursuant to Section 1600 of the California Fish and Game Code, CDFG requires a Lake or Streambed Alteration Agreement (SAA) between CDFG and any state or local governmental agency or public utility before the initiation of any construction project that will: 1) divert, obstruct, or change the natural flow or the bed, channel, or bank of any river, stream, or lake; 2) use materials from a streambed; or 3) result in the disposal or deposition of debris, waste, or other material containing crumbled, flaked, or ground pavement where it can pass into any river, stream, or lake.

The California Fish and Game Commission adopted a modification of the USFWS definition of wetlands on March 9, 1987 as its principal means of wetland identification in conjunction with on-site inspections for implementation of the Fish and Game Commission's policy (Rollins, 1987). Unlike the USFWS, the CDFG definition only

requires the presence of one wetland indicator for an area to qualify as a wetland. CDFG does not have a wetland regulatory program, but advises other state agencies on wetland issues.

## **2.7 Section 401 Water Quality Certification/Porter-Cologne Act**

Pursuant to Section 401 of the Clean Water Act, the Corps cannot issue a federal permit under Section 404 until the State of California first issues a water quality certification to ensure that a project will comply with state water quality standards. The authority to issue water quality certifications in the NSCARP project area is vested with the North Coast Regional Water Quality Control Board (NCRWQCB).

## **2.8 Oak Woodland Protection**

California Senate Concurrent Resolution No. 17 (1989) is a Senate resolution concerning the protection of native oak trees and oak woodlands. The resolution, which was concurred upon by the California Assembly, requested that... “all state agencies having land use planning duties and responsibilities...to assess and determine the effects of their land use decisions or actions within any oak woodlands” and that agencies ... “preserve and protect native oak woodlands to the maximum extent feasible...or provide for replacement plantings where designated oak species are removed from oak woodlands”.

The Oak Woodlands Conservation Act (Section 1363 of the Fish and Game Code) was enacted in 2001. The program, which is managed by the Wildlife Conservation Board, is intended to:

- Support and encourage voluntary, long-term private stewardship and conservation of California oak woodlands by offering landowners financial incentives to protect and promote biologically functional oak woodlands;
- Provide incentives to protect and encourage farming and ranching operations that are operated in a manner that protect and promote healthy oak woodlands;
- Provide incentives for the protection of oak trees providing superior wildlife values on private land, and;
- Encourage planning that is consistent with oak woodlands preservation.

In 2004, Section 21083.4 of the Public Resources Code was enacted, which requires counties to determine if a project within its jurisdiction may result in a conversion of oak woodlands that will have a significant effect on the environment. If a significant effect would result, the county would be required to mitigate by:

- Conserve oak woodland through the use of conservation easements
- Plant an appropriate number of trees, including maintaining plantings and replacing dead or diseased trees
- Maintain oak trees for seven years after planting
- Contribute funds to the Oak Woodlands Conservation Fund administered by the Wildlife Conservation Board
- Other mitigation measures developed by the specific County.

### 3.0 Local Plans and Policies

Item E of Appendix G of the CEQA Guidelines specifies that any project that conflicts with any local policies or ordinances protecting biological resources (e.g., wetlands, aquatic and terrestrial habitats and species, and special-status species) requires a mandatory finding of significance. To identify relevant policies and potential conflicts that could occur as a result of implementation of NSCARP, the Sonoma County General Plan was reviewed. Pertinent goals and policies are detailed below.

#### 3.1 Sonoma County General Plan -- Land Use Element

**GOAL LU-9:** The uses and intensities of any land development shall be consistent with preservation of important biotic resource areas and scenic features.

- **Objective LU-9.1:** Accomplish development on lands with important biotic resources and scenic features in a manner which preserves or enhances these features.
- In addition to policies in the Open Space and Resource Conservation Elements, the following policies shall be used to accomplish the above objectives:
- **Objective LU-9a:** Establish maximum densities and/or siting standards for development in community separators, scenic landscape units, critical habitats, riparian corridors, and scenic corridors.
- **Objective LU-9b:** Use incentives to encourage voluntary easements when considering development on lands with important biotic or scenic resources.
- **Objective LU-9c:** *Develop programs for preservation and enhancement of important biotic resource areas with emphasis on lands surrounding the Laguna de Santa Rosa and San Pablo Bay.*

#### 3.2 Sonoma County General Plan -- Open Space Element

- **Objective OS-4.2:** Establish development guidelines to protect designated critical habitat areas.

The County shall use the following policies to achieve these objectives:

- **Objective OS-4a:** Add a Biotic Resources combining district to the zoning ordinance.
- **Objective OS-4b:** Rezone to the Biotic Resources combining district any lands designated as a critical habitat area.
- **Objective OS-4c:** Require the preparation of a biotic resource assessment to develop mitigation measures if the Planning Director determines that a discretionary project could adversely impact a designated critical habitat area.
- **Objective OS-4d:** Establish building envelopes to avoid designated critical habitat areas on tentative maps.
- **Objective OS-4e:** Require on building permits a minimum setback of 50 feet from the edge of any wetlands which are within a critical habitat area. Exempt existing farm buildings and allow them to be expanded or modified.

- **Objective OS-4f:** Consider waiver of the setback if, after preparation of a biotic resource assessment, it is determined that applying the setback makes the parcel unbuildable or the structure is a noncommercial agricultural building and must be located adjacent to an existing farm complex for efficient farm operation.
- **Objective OS-4g:** Consider voluntary transfer of development rights (TDR) and purchase of development rights (PDR) programs and make critical habitat areas eligible with owner consent.
- **Objective OS-5.1:** Classify important streams with native vegetation as "riparian corridors". Develop guidelines to protect and manage these areas as valuable resources.

The County shall use the following policies to achieve the above objective:

- **Objective OS-5a:** Classify riparian corridors designated in the open space element as follows:
  - "Urban Riparian Corridors" include those portions of designated corridors within urban residential, commercial, industrial, or public/quasi-public land use categories.
  - "Russian River Riparian Corridor" includes the corridor adjacent to any part of the Russian River which is neither located within the above urban riparian corridor nor within the jurisdiction of a city.
  - "Flatland Riparian Corridors" include the corridors adjacent to any streams which flow through predominantly flat or very gently sloping land, generally with alluvial soil. This classification excludes areas covered by 1) and 2) above.
  - "Upland Riparian Corridors" include the corridors adjacent to streams not included in the above three categories.
- **Objective OS-5b:** Rezone to the Biotic Resources combining district any lands designated as riparian corridors.
- **Objective OS-5c:** Establish streamside conservation areas, measured from the top of the higher bank as determined by the SCWA, for designated riparian corridors as follows:
  - *Urban Riparian Corridors: 50'*
  - *Russian River Riparian Corridor: 200'*
  - *Flatland Riparian Corridors: 100'*
  - *Upland Riparian Corridors: 50'*
- **Objective OS-5d:** Designate additional riparian corridors in specific plans, area plans, or local area development guidelines which will be subject to policies included therein.
- **Objective OS-5e:** Allow or consider allowing the following uses within any streamside conservation area:
  - Timber operations conducted in accordance with an approved timber harvest plan.
  - Streamside maintenance.

- Road crossings and street crossings, utility line crossings.
- Mining operations conducted in accordance with the County Surface Mining and Reclamation Ordinance.
- Permitted summer dams.
- Grazing and similar agricultural production activities not involving structures or cultivation, except as defined below.
- Agricultural cultivation:
  - a) located no closer than 100' from the top of the bank in the "Russian River Riparian Corridor".
  - b) located no closer than 50' from the top of the bank in "flatland riparian corridors".
  - c) located no closer than 25' from the top of the bank in "upland riparian corridors".
  - d) The setbacks of a), b), and c) above may be reduced through the discretionary approval process or through a plan approved by the Planning Director provided the owner includes appropriate mitigations for potential erosion, bank stabilization and biotic impacts.
- Vegetation removal as part of an integrated pest management program administered by the Agricultural Commissioner.
- Creekside bikeways, trails and parks within urban riparian corridors.
- Development authorized by waiver under OS-5f.
- **Objective OS-5f:** Prohibit, except as allowed by [OS-5e](#), structures, roads and utility lines and parking lots within any streamside conservation area. Consider waiver of this prohibition if:
  - it makes a lot unbuildable and vegetation removal is minimized,
  - no significant disturbance of riparian habitat would occur, or
  - the use involves only the maintenance, restoration or minor expansion of an existing structure.

A biotic resource assessment may be required prior to issuance of a waiver.

- **Objective OS-5g:** Review timber harvest plans adjacent to designated riparian corridors and request that clear cutting not occur within streamside conservation areas. Where clear cutting is approved by the applicable state or federal agency along designated riparian corridors, ensure that at least 50 percent of the overstory canopy and at least 50 percent of the understory vegetation be retained.
- **Objective OS-5h:** Use the following criteria to determine whether or not public projects are consistent with this element:
  - Non-emergency Water Agency projects which include significant streambank modification are not consistent. Refer plans for vegetation removal for maintenance purposes to the Department of Fish and Game (DFG) for review.
  - Roadway and utility construction should seek to minimize and mitigate, where feasible, damage to riparian areas. Minimize vegetation removal for necessary stream crossings.

- All criteria established in policy [OS-5f](#).
- Grading, filling or construction shall not substantially diminish or divert any stream flow or result in any substantial increase in bank instability or erosion.

In the event that the above criteria cannot be met, a public project may be found consistent with this element if there is an overriding net public benefit.

- **OS-5i:** Refer discretionary permits along undesignated streams to the SCWA and the DFG as part of the environmental review process.

### 3.3 Sonoma County General Plan -- Resource Conservation Element

- **Objective RC-5.3:** Recognize and preserve the Laguna de Santa Rosa and the San Pablo Bay area as biotic resource areas and historic water retention basins of particular significance to Sonoma County's environment.
- **Objective RC-5.4:** Identify important valley oak habitat areas and protect and enhance valley oaks and valley oak woodlands in these areas.

In addition to the policies of the Land Use, Open Space, and Resource Conservation Elements, the following policies shall be used to carry out these objectives:

- **Objective RC-5a:** Apply the "Resources and Rural Development" land use category where it is the County's intent to manage and conserve natural resources, including wildlife and vegetation habitats while allowing a compatible level of residential development.
- **Objective RC-5b:** On discretionary projects, use native or compatible non-native species to the extent possible for landscaping. Discourage use of exotics, such as pampas grass and scotch broom.
- **Objective RC-5c:** Make the preservation of significant native oaks and other native trees a primary consideration in the review of development projects.
- **Objective RC-5d:** Develop comprehensive programs for preservation and restoration of the Laguna de Santa Rosa as shown on Figures [RC-2c](#), [2d](#), [2e](#), and [2f](#) on pages 229 - 235 and for the San Pablo Bay Area as shown on Figures [RC-2h](#) and [RC-2i](#) on pages 239 - 241. Include mechanisms for preservation and enhancement such as acquisition, zoning and easements. Avoid activities such as filling, grading or construction that would be detrimental to the biotic resources or historic water retention functions of these areas.
- **Objective RC-5e:** Encourage landowners to voluntarily participate in the County's Landmark Tree Program.
- **Objective RC-5f:** Designate basins, flood plains, terraces, and alluvial fans that have Clear Lake-Reyes, Haire-Diablo, Huichica-Wright-Zamora, Pajaro, or Yolo-Cortina-Pleasanton soil associations, as identified by soils data from the United States Department of Agriculture, Natural Resources Conservation Service, as important valley oak habitat areas on Figures [RC-2a](#) through [RC-2i](#).
- **Objective RC-5g:** Add a Valley Oak Habitat combining district to the zoning ordinance. Rezone to the Valley Oak Habitat combining district any lands



designated as important valley oak habitat areas on Figures [RC-2a](#) through [RC-2i](#).

- **Objective RC-5h:** Provide for voluntary programs to protect and enhance valley oaks and valley oak woodlands in designated important valley oak habitat areas. Develop and require compliance with standards and guidelines for mitigating losses of valley oaks and valley oak woodlands in designated important valley oak habitat areas.

The County shall use the following policies in addition to those of the Open Space Element, to achieve the above objectives:

- **Objective RC-6a:** Maintain and update the "Biotic Resource" data maps which show the locations of known rare and endangered species, and use them in the environmental review process for development permits.
- **Objective RC-6b:** Protection for rare and endangered species, wetlands, and other biotic resources not indicated on Figure [OS-3](#) on page 183 shall be accomplished through compliance with applicable state and federal law.
- **Objective RC-6c:** Notwithstanding the densities shown on the land use maps, provide for creation of separate parcels of land where necessary to establish sites for the preservation of rare and endangered species and other biotic resources.

**GOAL RC-7:** Protect and conserve the quality of ocean, marine and estuarine environments for their scenic, economic and environmental values.

- **Objective RC-7.1:** Promote protection for the native marine and shoreline plant and animal communities along the Pacific coastline and San Pablo Bay shoreline.
- **Objective RC-7.2:** Oppose siting of onshore oil and gas facilities which support oil and gas exploration or development in the coastal area.
- **Objective RC-7.3:** Review any proposal for ocean or bay disposal of wastewater for consistency with the Sonoma County Coastal Plan and policies on sanctuary and habitat protection and determine the potential for marine fishery habitat degradation.

The following policies shall be used to carry out these objectives:

- **Objective RC-7a:** Review and comment on any proposals for the sale of oil leases and/or oil drilling off the Sonoma County Coast. Carry out the Onshore Oil Facilities Ordinance.
- **Objective RC-7b:** Review any proposal for ocean disposal of wastewater and comment as to any potential adverse impacts on the fishing and tourism industries and marine resources.
- **Objective RC-7c:** Use the policies of the Sonoma County Coastal Plan to protect wetlands, estuaries, and other coastal resources.
- **Objective RC-7d:** Encourage the establishment of adequate harbor facilities at Bodega Bay to meet the needs of the local commercial fishing industry. Give commercial fishing boats priority over all other boats and vessels.

- **Objective RC-8.1:** Identify sources of sediment and erosion and minimize their impact on local water courses.
- **Objective RC-8.2:** Manage riparian corridors along streams to provide protection for fish habitat.
- **Objective RC-8.3:** Encourage the preparation of a fishery management plan.
- In addition to the policies of the Open Space Element, the following shall be used to carry out these objectives:
- **Objective RC-8a:** Encourage educational programs dealing with stream bank stabilization practices.
- **Objective RC-8b:** Consider the establishment of a task force to develop a fishery management plan. Include representatives from fishing groups, stream restoration groups, timber, aggregate, and agriculture industries, the Fish and Wildlife Advisory Board, the Department of Fish and Game, and others.
- **Objective RC-8c:** Design public and private projects to minimize damage to the stream environment and to maintain instream flows.
- **Objective RC-8d:** Avoid substantial alteration of the stream channel and riparian vegetation in the design of flood control projects on streams with substantial natural areas.

### 3.4 Sonoma County Zoning Code

Sec. 26-02-140. In accordance with the Zoning Code, protected trees, and their hybrids, include:

- Big Leaf Maple (*Acer macrophyllum*)
- Black Oak (*Quercus kelloggii*)
- Blue Oak (*Quercus douglasii*)
- Coast Live Oak (*Quercus agrifolia*)
- Interior Live Oak (*Quercus wislizenii*)
- Madrone (*Arbutus menziesii*)
- Oracle Oak (*Quercus morehus*)
- Oregon Oak (*Quercus garryana*)
- Redwood (*Sequoia sempervirens*)
- Valley Oak (*Quercus lobata*)
- California Bay (*Umbellularia californica*)

Article 66. BR Biotic Resource Combining District.

Sec. 26-66-005. Purpose. Purpose: to protect biotic resource communities including critical habitat areas and riparian corridors for their habitat and environmental value and to implement the provisions of Sections 3.1 and 3.2 of the general plan open space element. (Ord. No. 4643, 1993.)

Sec. 26-66-010. Development criteria. Maximum building heights, minimum lot areas and lot widths, yard requirements and maximum percentages of lot coverage shall comply with the requirements for the districts with which the BR regulations are combined unless otherwise provided herein. (Ord. No. 4643, 1993.)

Sec. 26-66-020. Critical habitat area. The following provisions shall apply to properties within the BR district which are designated as critical habitat areas on Figures OS-5a through OS-5i, inclusive of the general plan open space element.

- a) A biotic resource assessment to develop mitigation measures may be required where the planning director determines that a discretionary project could adversely impact a designated critical habitat area.
- b) Building envelopes which avoid critical habitat areas shall be required on tentative maps accompanying major or minor subdivisions.
- c) Building permits shall require a minimum setback of fifty feet (50') from the edge of any wetlands which are within a designated critical habitat area, with the following exceptions:
  - 1) Existing farm buildings are exempt and may be expanded or modified, provided that such expansion or modification shall not encroach further into any wetland.
  - 2) The planning director may waive the setback if, after preparation of a biotic resource assessment, it is determined that either:
    - Applying the setback makes an otherwise buildable parcel unbuildable; or
    - The structure is a noncommercial agricultural building and must be located adjacent to an existing farm complex for efficient farm operation. (Ord. No. 4643, 1993.)

Sec. 26-66-030. Riparian corridors. The following provisions shall apply to properties within the BR district which are designated as riparian corridors on Figures OS-5a through OS-5i, inclusive, of the general plan open space element. These provisions are intended to be protective measures along selected streams which balance the need for agricultural production, urban development, timber and mining operations, and flood control, with preservation of riparian values.

Definitions. Riparian corridors designated in the general plan are defined as follows for purposes of this chapter:

- 1) "Flatland riparian corridors" include the corridors adjacent to any streams which flow through predominantly flat or very gently sloping land, generally with alluvial soil. This classification excludes areas covered by (2) and (4).
- 2) "Russian River Riparian Corridor" includes the corridor adjacent to any part of the Russian River which is neither located within the above urban riparian corridor nor within the jurisdiction of a city.
- 3) "Upland riparian corridors" include the corridors adjacent to streams not included in categories (1), (2) and (4).
- 4) "Urban riparian corridors" include those portions of designated corridors within urban residential, commercial, industrial or public/quasi-public land use categories.
  - a) The BR district shall be applied to streamside conservation areas along designated riparian corridors. The outermost boundaries of streamside conservation areas within the BR zoning district as indicated on the zoning maps should be considered approximate in order to allow for parcel specific determinations of the appropriate classification of a riparian corridor as a flatland or upland corridor based upon more detailed

analysis of the parcel topography, and for the purpose of this section, shall be measured from the top of the higher bank as determined by the Sonoma County water agency, for designated riparian corridors as follows:

- Urban riparian corridors, fifty feet (50');
  - Russian River Riparian Corridor, two hundred feet (200');
  - Flatland riparian corridor, one hundred feet (100');
  - Upland riparian corridor, fifty feet (50').
- b) Except as allowed by subsection (c) of this section, structures, roads, utility lines, parking lots, planting of lawns, grading, fill or excavation shall be prohibited within any streamside conservation area. This prohibition may be waived if:
- It makes a lot unbuildable and vegetation removal is minimized;
  - No significant disturbance of riparian habitat would occur; or
  - The use involves only the maintenance, restoration or minor expansion of an existing structure.
- The planning director may require a biotic resource assessment prior to waiver of this prohibition so that any potentially significant adverse effects on riparian habitat can be avoided or mitigated.
- c) The following uses where allowed by the base district with which this district is combined shall be considered within any streamside conservation area. Such uses are also subject to the requirements of the base district:
- Timber operations conducted in accordance with an approved timber harvest plan;
  - Streamside maintenance carried out by or under the authorization of responsible flood control agencies or pursuant to a permit issued by said responsible agencies;
  - Road crossings and street crossings, utility line crossings;
  - Mining operations conducted in accordance with the county surface mining and reclamation ordinance;
  - Permitted summer dams;
  - Grazing and similar agricultural production activities not involving structures or cultivation, except as defined by subsection (7) below;
  - Agricultural Cultivation.
    - \* Located no closer than one hundred feet (100') from the top of the bank in the Russian River riparian corridor,
    - \* Located no closer than fifty feet (50') from the top of the bank in flatland riparian corridors,
    - \* Located no closer than twenty-five feet (25') from the top of the bank in upland riparian corridors,
    - \* The setbacks of subsections (c)(7)(i) through (iv) of this section may be reduced through the use permit process or through a plan approved by the planning director provided the owner includes

appropriate mitigations for potential erosion, bank stabilization and biotic impacts;

- 5) Selective vegetation removal as part of an integrated pest management program administered by the agricultural commissioner;
- 6) Creekside bikeways, trails and parks within urban riparian corridors;
- 7) Development authorized by waiver under subsection (b) of this section. (Ord. No. 4643, 1993.)

Article 67. VOH Valley Oak Habitat Combining District.

Sec. 26-67-005. Purpose. Purpose: to protect and enhance valley oaks and valley oak woodlands and to implement the provisions of Section 5.1 of the general plan resource conservation element. (Ord. No. 4991 § 1(h), 1996.)

Sec. 26-67-010. Interpretation. The provisions of this article shall be liberally construed to effectuate the purpose of this article. Where a provision of this article conflicts with another provision of this chapter or this code, the more restrictive provision shall prevail. (Ord. No. 4991 § 1(h), 1996.)

Sec. 26-67-020. Permitted uses. All uses permitted within the respective district with which the VOH district is combined shall be permitted in the VOH district, subject to the provisions of this article. (Ord. No. 4991 § 1(h), 1996.)

Sec. 26-67-030. Mitigation required - Exceptions.

- a) Except as provided in subsection (b), when any person cuts down or removes any large valley oak, or any small valley oaks having a cumulative diameter at breast height greater than sixty inches (60"), on any property within the VOH district, such person shall mitigate the resulting valley oak loss by one of the following measures: (1) retaining other valley oaks on the subject property, (2) planting replacement valley oaks on the subject property or on another site in the county having the geographic, soil, and other conditions necessary to sustain a viable population of valley oaks, (3) a combination of measures (1) and (2), or (4) paying an in-lieu fee, which shall be used exclusively for valley oak planting programs in the county. Such person shall have the sole discretion to determine which mitigation measure to use to mitigate the valley oak loss. The requirements for each mitigation measure are specified in Table 26-67-030. The selected mitigation measure shall be undertaken and completed within one (1) year after the valley oak or valley oaks are cut down or removed in accordance with guidelines established by resolution or ordinance of the board of supervisors.
- b) This section shall not apply to the cutting down or removal of any valley oak within the VOH district that is (1) determined necessary by emergency personnel engaged in emergency procedures, (2) dead or irretrievably damaged or destroyed by causes beyond the property owner's control, including, without limitation, fire, flood, wind, lightning, or earth movement, or (3) part of a development project subject to the provisions of Section 26-67-040.

**Table 26-67-030. Mitigation Requirements for Cutting Down  
or Removing Valley Oaks within the VOH District**

| <b>LARGE VALLEY OAKS</b>   |  |   |  |                            |
|--|--|---|--|----------------------------|
| Diameter at Breast<br>Height of Large Valley<br>Oak Being Cut Down<br>or Removed | Valley Oak Retention<br>Requirement <sup>1</sup>   | Valley Oak<br>Replacement<br>Requirement <sup>2</sup> | Valley Oak Retention<br>and Replacement<br>Requirement <sup>2</sup>  | In-Lieu Fee<br>Requirement |
| Greater than 20<br>inches  | Retain 1 or more trees<br>having a cumulative<br>diameter at breast<br>height equal to or<br>greater than the<br>diameter at breast<br>height being cut down<br>or removed | Plant 16 trees  | Retain 1 or more trees<br>having a cumulative<br>diameter at breast<br>height equal to or<br>greater than one-half<br>the diameter at breast<br>height being cut down<br>or removed and plant<br>8 trees | \$ 50.00                   |

<sup>1</sup> All retained trees shall be valley oaks.

<sup>2</sup> All replacement trees shall be valley oak acorns, seedlings, saplings, or container grown stock.

| <b>SMALL VALLEY OAKS</b>  |   |   |   |                            |
|---|---|---|---|----------------------------|
| Cumulative Diameter<br>at Breast Height of<br>Small Valley Oaks<br>Being Cut Down or<br>Removed | Valley Oak Retention<br>Requirement <sup>1</sup>  | Valley Oak<br>Replacement<br>Requirement <sup>2</sup> | Valley Oak Retention<br>and Replacement<br>Requirement <sup>2</sup>   | In-Lieu Fee<br>Requirement |
| 60 inches or less   | None  | None  | None  | None                       |
| Greater than 60<br>inches up to and<br>including 80 inches                                      | Retain 1 or more trees<br>having a cumulative<br>diameter at breast<br>height equal to or<br>greater than the<br>cumulative diameter at<br>breast height being cut<br>down or removed | Plant 16 trees  | Retain 1 or more trees<br>having a cumulative<br>diameter at breast<br>height equal to or<br>greater than the<br>cumulative diameter at<br>breast height being cut<br>down or removed and<br>plant 8 trees  | \$ 50.00                   |
| Greater than 80<br>inches up to and<br>including 100 inches                                     | Retain 1 or more trees<br>having a cumulative<br>diameter at breast<br>height equal to or<br>greater than the<br>cumulative diameter at<br>breast height being cut<br>down or removed | Plant 20 trees  | Retain 1 or more trees<br>having a cumulative<br>diameter at breast<br>height equal to or<br>greater than the<br>cumulative diameter at<br>breast height being cut<br>down or removed and<br>plant 10 trees | \$ 75.00                   |

Table 26-67-030. (Continued)

| <b>LARGE VALLEY OAKS</b>                               |  |   |   |  |
|--|--|---|---|--|
| Greater than 100 inches up to and including 120 inches | Retain 1 or more trees having a cumulative diameter at breast height equal to or greater than the cumulative diameter at breast height being cut down or removed | Plant 24 trees  | Retain 1 or more trees having a cumulative diameter at breast height equal to or greater than the cumulative diameter at breast height being cut down or removed and plant 12 trees   | \$100.00   |
| Greater than 120 inches up to and including 140 inches | Retain 1 or more trees having a cumulative diameter at breast height equal to or greater than the cumulative diameter at breast height being cut down or removed | Plant 28 trees  | Retain 1 or more trees having a cumulative diameter at breast height equal to or greater than the cumulative diameter at breast height being cut down or removed and plant 14 trees   | \$125.00   |
| Greater than 140 inches                                | Retain 1 or more trees having a cumulative diameter at breast height equal to or greater than the cumulative diameter at breast height being cut down or removed | Plant 32 trees plus additional 4 trees for each 20 inches of cumulative diameter at breast height being cut down or removed over 140 inches | Retain 1 or more trees having a cumulative diameter at breast height equal to or greater than the cumulative diameter at breast height being cut down or removed and plant 16 trees, plus additional 2 trees for each 20 inches of cumulative diameter at breast height being cut down or removed over 140 inches | \$150.00, plus additional \$25.00 for each 20 inches of cumulative diameter at breast height being cut down or removed over 140 inches |

<sup>1</sup>All retained trees shall be valley oaks.

<sup>2</sup>All replacement trees shall be valley oak acorns, seedlings, saplings, or container grown stock.

(Ord. No. 4991 § 1(h), 1996.)

Sec. 26-67-040. Design review approval. Where any development project within the VOH district is subject to design review pursuant to another provision of this chapter, the design review approval shall include measures to protect and enhance valley oaks on the project site in accordance with guidelines adopted by resolution or ordinance of the board of supervisors. Such measures shall include, but not be limited to, a requirement that valley oaks shall comprise a minimum of fifty percent (50%) of the required landscape trees for the development project. (Ord. No. 4991 § 1(h), 1996.)

Sec. 26-67-050. Penalty for violation of article. Any person who knowingly fails to comply with the mitigation or design review requirements of this article shall be required to mitigate any valley oak loss at five (5) times the rate otherwise required by this article. (Ord. No. 4991 § 1(h), 1996.).

**APPENDIX F**  
**ATTACHMENT 3**  
**DESCRIPTION OF VEGETATIVE COVER TYPES AND**  
**WILDLIFE AND PLANT SPECIES OBSERVED ALONG NSCARP ALIGNMENT**



## **Vegetation Cover Types Occurring within the NSCARP Area**

The following is a brief description of the location and general characteristics of the plant communities along the project alignment:

**Oak Woodlands.** The oak woodland is a dominant vegetative cover type throughout the project area, primarily on the adjacent foothills surrounding the valleys. It is a major component of the natural California landscape, accounting for over 9.5 million acres, or 9.5 percent of the total land cover in the state (Barbour and Major, 1988). This habitat is particularly important because of its high value to wildlife, and the diversity of wildlife species that it supports. However, because this habitat is frequently converted for agriculture or development, oak woodlands have been declining for many years; this situation is aggravated by low regeneration. As a consequence, oak woodland is recognized by the CDFG as a valuable habitat that should be protected.

The oak habitats within the NSCARP area vary from savanna (defined by less than 30 percent canopy cover) to oak forest with a density of trees sufficient to create an overlapping and unbroken canopy. In response to the open space and absence of competition, trees that occur in savanna typically support larger crowns than their counterparts in the woodland environment.

According to the California Native Plant Society (CNPS) classification system (Sawyer and Keeler-Wolf, 1995), the oak habitat within the NSCARP area includes the Coast Live Oak and Valley Oak series. Approximately 47.3 acres of oak forest, 200.8 acres of oak woodland, and 51.75 acres of oak savanna, composed of the two series, are within the NSCARP area. The following is a description of the series:

**Coast Live Oak Series.** Coast live oak is the dominant tree species in this cover type. Common associate species include big-leaf maple, blue oak, California bay, and madrone. The canopy can be continuous, intermittent, or open with occasional shrubs or grassland understory. Shrubs commonly associated with this cover type include toyon, western poison-oak, and blackberry (Sawyer and Keeler-Wolf, 1995). This cover type occurs on slopes (often steep), raised streambanks, and terraces in soils typically derived from sandstone or shale. It is included in the Coast Live Oak Woodland (71160) cover type characterized by Holland (1986) and the Tanbark Oak-Madrone Forest described by Best *et al.* (1996). This cover type occurs at 0 to 4,000 feet, msl, elevation.

**Valley Oak Series.** Valley oak is the dominant species in this cover type. Common associates include blue oak, black oak, coast live oak, and Oregon ash. The canopy can be continuous, intermittent, or open with grass groundcover. Vines commonly occur throughout this cover type (predominantly grape) and shrubs are occasional. This cover type commonly occurs in floodplains where soils are intermittently flooded and seasonally saturated (Sawyer and Keeler-Wolf, 1995). Under the USFWS classification system (Cowardin, 1979), this cover type is categorized as Palustrine Forested Wetland (PFO), and corresponds with the Riparian Forest (61000), Cismontane Woodland (71000), and Valley Oak Woodland (71130) cover types characterized by Holland (1986), and the Oak-Buckeye Forest described by Best *et al.* (1996). It occurs in valley bottoms and on gentle slopes where soils are alluvial or residual. This cover type occurs from sea level to 2,500 feet, msl.

**Riparian Woodlands.** The riparian woodland cover type dominates along the Russian River and Dry Creek, as well as smaller tributary streams that occur throughout the project area. According to the CNPS classification system (Sawyer and Keeler-Wolf, 1995), the riparian woodlands within the NSCARP project area include the Mixed Willow

and California Bay series (described below), which encompass approximately 29.5 acres within the NSCARP project area.

**Mixed Willow Series.** The Mixed Willow series involves more than one willow species, and typical species include arroyo willow, narrow-leaf willow, and red willow. Common associates include big-leaf maple, Fremont cottonwood, and coyote brush. This cover type can occur as scrubland or woodland, if shrubby trees are present. Trees are less than 30 feet in height and the canopy is continuous. Shrubs and ground layer are sparse. This cover type occurs in floodplains and low-gradient depressions along rivers and streams in soils that are seasonally flooded or saturated (Sawyer and Keeler-Wolf, 1995). The Cowardin (1979) classification for this cover type is Palustrine Forested Wetland (PFO) or Palustrine Shrub-Scrub Wetland (PSS). This cover type correlates with the Riparian Forest (61000), Riparian Woodland (62000), or Riparian Scrub (63000) cover types characterized by Holland (1986), and the Riparian Community described by Best *et al.* (1996).

**California Bay Series.** California bay is the dominant tree in this cover type. Common associate species include coast live oak and madrone. Trees are less than 80 feet in height and the canopy is continuous. Shrubs and ground layer are sparse or absent. This cover type occurs along streams in soils that are intermittently flooded, and in uplands in sandstone or schist-derived soils (Sawyer and Keeler-Wolf, 1995). The Cowardin (1979) classification for this cover type is PFO. This cover type corresponds with the California Bay Forest (81200) cover type described by Holland (1986), and as Tanbark Oak-Madrone Forest described by Best *et al.* (1996). It often forms dense stands that support little or no understory. This cover type occurs at sea level to 1,600 feet, msl.

**Emergent Wetlands.** The emergent wetland cover type occurs in several wetland areas and channels within the NSCARP project area. A portion of the Russian River subarea at the Denner Ranch and Sonoma County Airport is within the Santa Rosa Plain, which is of particular importance because the wetlands (marshes, ponds, vernal pools, and vernal swales) include a number of special-status plants and animals (Sonoma County, 2005). According to the CNPS classification system (Sawyer and Keeler-Wolf, 1995), this cover type is considered cattail series as described below. Approximately 0.3-acre of this cover type occurs within the NSCARP project area.

**Cattail Series.** This cover type is characterized by inundated areas supporting a herbaceous stratum dominated by broadleaf cattail and/or narrowleaf cattail. Common associate species includes California bulrush, common tule, and various species of rushes, sedges, and umbrella sedges. This cover type occurs in areas that are permanently or seasonally inundated (Sawyer and Keeler-Wolf, 1995). The Cowardin (1979) classification for this cover type is Palustrine Emergent Wetland (PEM), and corresponds with the Coastal and Valley Freshwater Marsh Community (52410) under the Holland (1986) system, and the Freshwater Marsh Community by Best *et al.* (1996). This cover type occurs at sea level to 6,500 feet, msl.

**Northern Hardpan Vernal Pools.** Vernal pools occur in the southern-most section of the NSCARP project area, particularly at the Sonoma County Airport, which is the northern and western portion of the Santa Rosa Plain. These vernal pools are underlain by a hardpan of strongly cemented old valley floor alluvial soils that were derived from mixed sedimentary and volcanic ash sources. The pools form after winter rains, and are remnants in a matrix of agricultural fields, developed area, woodlands, grasslands, and perennial wetlands. The pool areas have a hummocky, mima mound micro-topography

with small swales and pools intermixed (Keeler-Wolf, et al., 1998). A number of special-status species, including Sonoma sunshine, Burke's goldfields, many-flowered naverettia, and Sebastopol meadowfoam, are found in these pools. This cover type is classified as PEM (Cowardin, 1979) and Vernal Pool by Best *et al.* (1996). Urban development, agricultural practices, waste water irrigation, and grazing have contributed to the decline of the area's vernal pools. This cover type occurs at sea level to 300 feet, msl.

**Watercourses.** The NSCARP project area includes a number of perennial and intermittent streams, ditches, swales, and canals including the Russian River, Dry Creek, and Mark West Creek. Table 3.3-3 is a list of potential watercourses that could be affected by the project. The biological characteristics of the various channels depend largely on the frequency, duration, and magnitude of flows. Perennial creeks and rivers have permanent flows, which result in open water areas without rooted emergent plants, but have shallow areas and banks that are vegetated in emergent wetland plants, riparian vegetation, and upland plants. Intermittent channels only have flows during certain periods, at which time emergent wetland vegetation can grow; however, as flows recede and the channels dry, the vegetation transitions to upland species over the year.

**Annual Grassland Series.** The annual grassland cover type occurs in several open fields within the project area. According to the CNPS classification system (Sawyer and Keeler-Wolf, 1995), this cover type is considered California Annual Grassland series. Non-native annual grasses and herbs are dominant in the ground layer. Common species include ripgut brome, soft chess, wild oat, clovers, black mustard, California poppy, Italian ryegrass, and yellow star-thistle. Herbaceous cover is generally continuous, but trees and shrubs may be present. This cover type is equivalent to the Non-native Grassland Community (42200) described by Holland (1986), and the Valley and Hill Grassland described by Best *et al.* (1996). This cover type occurs from sea level to 3,900 feet, msl. Approximately 145 acres of this series occurs within the NSCARP project area.

**Developed Lands.** The NSCARP project area is located in the vicinity of Healdsburg, Geyserville, and, Cloverdale, all of which are developed areas within the Urban Habitat category described by McBride and Reid (1988). The soil in these habitats has been modified or covered by construction practices. The air temperature is increased as heat-absorbing materials, such as asphalt and concrete, are introduced, and shading is lost as the native tree canopy is removed (even though tree canopies may become more dense as urban landscaping matures). Water quality and availability are diminished as impervious surfaces increase and urban pollutants accumulate. Air quality diminishes as emissions from automobiles, homes, and commercial entities increase (Vessel and Wong, 1987; Leedy *et al.*, 1978). Ruderal (weedy) or ornamental plant species become the dominant vegetative cover. Habitat components, such as roosting and nesting sites, escape cover, migration and/or travel corridors, and foraging habitat are lost or altered as a result of these processes. Consequently, the changes to the abiotic and biotic environments result in very low species populations and diversity. These areas favor inhabitation by species that tolerate human presence, and are able to exploit human food resources, and use buildings or other human structure for cover and nesting. Approximately 255 acres of this cover type occurs within the NSCARP project area.

**Agricultural Lands.** This cover type includes any lands cultivated for agricultural production. The dominant agricultural land use within the NSCARP project area is vineyard, with some small orchards and pastures. Vineyard accounts for the majority of the project area. This cover type has no natural vegetation, and plants are limited to

grapes used in wine production and weeds. Approximately 193 acres of this cover type occurs within the NSCARP project area.

| <b>Table F-3-1. Vascular Plant Species Observed Within the NSCARP Project Area</b> |   |                                 |                                      |
|--|---|---------------------------------|--------------------------------------|
| <b>FAMILY<br/>Common Name</b>  | <b>Scientific Name</b>                              | <b>Growth Habit<sup>1</sup></b> | <b>Hydric<br/>Status<sup>2</sup></b> |
| <b>DENNSTAEDTIACEAE (Bracken Family)</b>   |   |                                 |                                      |
| Bracken fern   | <i>Pteridium aquilinum</i> var. <i>pubescens</i>    | F                               | FACU                                 |
| <b>DRYOPTERIDACEAE (Wood Fern Family)</b>  |   |                                 |                                      |
| Lady fern  | <i>Athyrium filix-femina</i> var. <i>Cyclosorum</i> | F                               | FAC                                  |
| Coastal wood fern  | <i>Dryopteris arguta</i>                            | F                               | NL                                   |
| <b>EQUISETACEAE (Horsetail Family)</b>   |   |                                 |                                      |
| Scouring rush  | <i>Equisetum hymale</i>                             | H                               | FACW                                 |
| Giant horsetail  | <i>Equisetum telmateia</i>                          | H                               | OBL                                  |
| <b>PTERIDACEAE (Brake Family)</b>  |   |                                 |                                      |
| California maiden-hair   | <i>Adiantum jordanii</i>                            | F                               | NL                                   |
| <b>CUPRESSACEAE (Cypress Family)</b>   |   |                                 |                                      |
| Incense cedar  | <i>Calocedrus decurrens</i>                         | T                               | NL                                   |
| Italian cypress  | <i>Cupressus sempervirens</i>                       | T                               | UPL                                  |
| <b>PINACEAE (Pine Family)</b>  |   |                                 |                                      |
| Deodar cedar   | <i>Cedrus deodara</i>                               | T                               | UPL                                  |
| Douglas fir  | <i>Pseudotsuga menziesii</i>                        | T                               | NL                                   |
| <b>TAXACEAE (Yew Family)</b>   |   |                                 |                                      |
| Redwood  | <i>Sequoia sempervirens</i>                         | T                               | NI                                   |
| <b>ACERACEAE (Maple Family)</b>  |   |                                 |                                      |
| Big-leaf maple   | <i>Acer macrophyllum</i>                            | T                               | FAC                                  |
| California box-elder   | <i>Acer negundo</i> var. <i>californicum</i>        | T                               | FACW                                 |
| <b>ANACARDIACEAE (Sumac or Cashew Family)</b>                                      |   |                                 |                                      |
| Poison oak   | <i>Toxicodendron diversilobum</i>                   | S                               | NI                                   |
| <b>APIACEAE (Carrot Family)</b>  |   |                                 |                                      |
| Queen Anne's lace  | <i>Daucus carota</i>                                | H                               | NI                                   |
| Fennel (a)   | <i>Foeniculum vulgare</i>                           | H                               | FACU                                 |
| Common torilis (a)   | <i>Torilis arvensis</i>                             | H                               | NL                                   |
| <b>APOCYNACEAE (Dogbane Family)</b>  |   |                                 |                                      |
| Oleander   | <i>Nerium oleander</i>                              | S                               | UPL                                  |
| <b>ARALIACEAE (Ginseng Family)</b>   |   |                                 |                                      |
| English ivy (a)  | <i>Hedera helix</i>                                 | V                               | NI                                   |
| Greater periwinkle (a)   | <i>Vinca major</i>                                  | H                               | NI                                   |
| <b>ARISTOLOCHIACEAE (Pipevine Family)</b>  |   |                                 |                                      |
| Dutchman's pipe  | <i>Aristolocia californica</i>                      | V                               | NI                                   |
| <b>ASTERACEAE (Sunflower Family)</b>   |   |                                 |                                      |
| Mugwort  | <i>Artemisia douglasiana</i>                        | H                               | FACW                                 |
| Coyote brush   | <i>Baccharis pilularis</i>                          | S                               | NI                                   |
| Mule fat   | <i>Baccharis salicifolius</i>                       | S                               | FACW                                 |
| Italian thistle (a) (C)  | <i>Carduus pycnocephalus</i>                        | H                               | UPL                                  |
| Yellow star-thistle (a) (C)  | <i>Centaurea solstitialis</i>                       | H                               | NI                                   |
| Chicory  | <i>Cichorium intybus</i>                            | H                               | NI                                   |
| Bull thistle (a)   | <i>Cirsium vulgare</i>                              | H                               | FACU                                 |
| Little horseweed   | <i>Conyza bonariensis</i>                           | H                               | FAC                                  |

**Table F-3-1. Vascular Plant Species Observed Within the NSCARP Project Area**

| <b>FAMILY<br/>Common Name</b>                | <b>Scientific Name</b>                                 | <b>Growth Habit<sup>1</sup></b> | <b>Hydric<br/>Status<sup>2</sup></b> |
|--|--|---------------------------------|--------------------------------------|
| Hayfield tarweed                             | <i>Hemizonia congesta</i> ssp. <i>congesta</i>         | H                               | NL                                   |
| Fitch's tarweed                              | <i>Centromadia</i> [ <i>Hemizonia</i> ] <i>fitchii</i> | H                               | NI                                   |
| Prickly lettuce                              | <i>Lactuca serriola</i>                                | H                               | FAC                                  |
| Tarweed                                      | <i>Madia anomala</i>                                   | H                               | NL                                   |
| Coast tarweed                                | <i>Madia sativa</i>                                    | H                               | NL                                   |
| Bristly ox-tongue (a)                        | <i>Picris echioides</i>                                | H                               | FAC                                  |
| Common sow thistle                           | <i>Sonchus oleraceus</i>                               | H                               | FAC                                  |
| Salsify, Oyster plant                        | <i>Tragopogon porrifolius</i>                          | H                               | NI                                   |
| <b>BETULACEAE (Birch Family)</b>             |  |                                 |                                      |
| White alder                                  | <i>Alnus rhombifolia</i>                               | T                               | FACW                                 |
| California hazelnut                          | <i>Corylus cornuta</i> var. <i>californica</i>         | S                               | NI                                   |
| <b>BRASSICACEAE (Mustard Family)</b>         |  |                                 |                                      |
| Black mustard (a)                            | <i>Brassica nigra</i>                                  | H                               | NI                                   |
| Broad-leafed peppergrass (a) (B)             | <i>Lepidium latifolium</i>                             | H                               | FACW                                 |
| Wild radish (a)                              | <i>Raphanus sativus</i>                                | H                               | UPL                                  |
| <b>CACTACEAE (Cactus Family)</b>             |  |                                 |                                      |
| Cactus                                       | <i>Opuntia</i> sp.                                     |                                 | UPL                                  |
| <b>CAPRIFOLIACEAE (Honeysuckle Family)</b>   |  |                                 |                                      |
| Blue elderberry                              | <i>Sambucus mexicana</i>                               | S                               | FAC                                  |
| Snowberry                                    | <i>Symphoricarpos albus</i>                            | S                               | FACU                                 |
| <b>CHENOPODIACEAE (Goosefoot Family)</b>     |  |                                 |                                      |
| Spearscale                                   | <i>Atriplex triangularis</i>                           | S                               | FACW                                 |
| <b>CONVOLVULACEAE (Morning-Glory Family)</b> |  |                                 |                                      |
| Bindweed                                     | <i>Convolvulus arvensis</i>                            | H                               | NI                                   |
| <b>DIPSACACEAE (Teasel Family)</b>           |  |                                 |                                      |
| Wild teasel (a)                              | <i>Dipsacus fullonum</i>                               | H                               | NI                                   |
| <b>ERICACEAE (Heath Family)</b>              |  |                                 |                                      |
| Madrone                                      | <i>Arbutus menziesii</i>                               | T                               | NL                                   |
| White-leaved manzanita                       | <i>Arctostaphylos viscida</i> ssp. <i>pulchella</i>    | S                               | NL                                   |
| California rose-bay                          | <i>Rhododendron macrophyllum</i>                       | S                               | NL                                   |
| <b>EUPHORBIACEAE (Spurge Family)</b>         |  |                                 |                                      |
| Spotted spurge                               | <i>Chamaesyce maculata</i>                             | H                               | NI                                   |
| <b>FABACEAE (Legume Family)</b>              |  |                                 |                                      |
| Acacia                                       | <i>Acacia</i> sp.                                      | T                               | NL                                   |
| Western catalpa                              | <i>Catalpa speciosa</i>                                | T                               | NL                                   |
| Redbud                                       | <i>Cercis occidentalis</i>                             | S                               | NL                                   |
| Scotch broom (a) (C)                         | <i>Cytisus scoparius</i>                               | H                               | NI                                   |
| French broom (a) (C)                         | <i>Genista monspessulana</i>                           | S                               | UPL                                  |
| Perennial sweet pea                          | <i>Lathyrus latifolius</i>                             | H                               | NL                                   |
| Hill lotus                                   | <i>Lotus humistratus</i>                               | H                               | NL                                   |
| California bur-clover                        | <i>Medicago polymorpha</i>                             | H                               | NI                                   |
| White sweetclover                            | <i>Melilotus alba</i>                                  | H                               | FACU+                                |
| Clover                                       | <i>Trifolium</i> sp.                                   | H                               |                                      |
| Rose clover (a)                              | <i>Trifolium hirtum</i>                                | H                               | UPL                                  |
| Spring vetch                                 | <i>Vicia sativa</i>                                    | H                               | FACU                                 |
| Winter vetch                                 | <i>Vicia villosa</i>                                   | H                               | UPL                                  |

**Table F-3-1. Vascular Plant Species Observed Within the NSCARP Project Area**

| <b>FAMILY<br/>Common Name</b>                | <b>Scientific Name</b>                              | <b>Growth Habit<sup>1</sup></b> | <b>Hydric<br/>Status<sup>2</sup></b> |
|--|---|---------------------------------|--------------------------------------|
| <b>FAGACEAE (Oak Family)</b>                 |   |                                 |                                      |
| Coast live oak                               | <i>Quercus agrifolia</i>                            | T                               | NI                                   |
| Blue oak                                     | <i>Quercus douglasii</i>                            | T                               | NI                                   |
| California black oak                         | <i>Quercus kelloggii</i>                            | T                               | NI                                   |
| Valley oak                                   | <i>Quercus lobata</i>                               | T                               | FAC                                  |
| <b>HALORAGACEAE (Water-Milfoil Family)</b>   |   |                                 |                                      |
| Parrot's feather (a)                         | <i>Myriophyllum aquaticum</i>                       | H                               | OBL                                  |
| <b>HIPPOCASTANACEAE (Buckeye Family)</b>     |   |                                 |                                      |
| California buckeye                           | <i>Aesculus californica</i>                         | T                               | UPL                                  |
| <b>HYPERICACEAE (St. John's Wort Family)</b> |   |                                 |                                      |
| St. John's wort                              | <i>Hypericum formosum</i> var. <i>scouleri</i>      | H                               | FACW                                 |
| <b>JUGLANDACEAE (Walnut Family)</b>          |   |                                 |                                      |
| California black walnut                      | <i>Juglans californica</i>                          | T                               | FAC                                  |
| English walnut                               | <i>Juglans regia</i>                                | T                               | NI                                   |
| <b>LAMIACEAE (Mint Family)</b>               |   |                                 |                                      |
| Pennyroyal (a)                               | <i>Mentha pulegium</i>                              | H                               | OBL                                  |
| <b>LAURACEAE (Laurel Family)</b>             |   |                                 |                                      |
| California bay                               | <i>Umbellularia californica</i>                     | T                               | FAC                                  |
| <b>MAGNOLIACEAE (Magnolia Family)</b>        |   |                                 |                                      |
| Magnolia                                     | <i>Magnolia grandiflora</i>                         | T                               | UPL                                  |
| <b>MORACEAE (Mulberry Family)</b>            |   |                                 |                                      |
| Edible fig (a)                               | <i>Ficus carica</i>                                 | T                               | UPL                                  |
| White mulberry                               | <i>Morus alba</i>                                   | T                               | FACU                                 |
| <b>MYRTACEAE (Myrtle Family)</b>             |   |                                 |                                      |
| Tasmanian blue gum (a)                       | <i>Eucalyptus globulus</i>                          | T                               | NL                                   |
| <b>OLEACEAE (Olive Family)</b>               |   |                                 |                                      |
| Oregon ash                                   | <i>Fraxinus latifolia</i>                           | T                               | FACW                                 |
| Olive (a)                                    | <i>Olea europaea</i>                                | T                               | UPL                                  |
| <b>ONAGRACEAE (Evening Primrose Family)</b>  |   |                                 |                                      |
| Willow herb                                  | <i>Epilobium</i> sp.                                |                                 |                                      |
| Hairy willow herb                            | <i>Epilobium ciliatum</i>                           | H                               | FACW                                 |
| California water primrose                    | <i>Ludwigia peploides</i> ssp. <i>montevidensis</i> | H                               | OBL                                  |
| <b>PAPAVERACEAE (Poppy Family)</b>           |   |                                 |                                      |
| California poppy                             | <i>Eschscholzia californica</i>                     | H                               | UPL                                  |
| <b>PLANTAGINACEAE (Plantain Family)</b>      |   |                                 |                                      |
| English plantain (a)                         | <i>Plantago lanceolata</i>                          | H                               | FAC                                  |
| <b>POLYGONACEAE (Buckwheat Family)</b>       |   |                                 |                                      |
| Lady's thumb                                 | <i>Polygonum persicaria</i>                         | H                               | FACW                                 |
| Smartweed                                    | <i>Polygonum punctatum</i>                          | H                               | OBL                                  |
| Curly dock (a)                               | <i>Rumex crispus</i>                                | H                               | FACW-                                |
| <b>PRIMULACEAE (Primrose Family)</b>         |   |                                 |                                      |
| Scarlet pimpernel                            | <i>Anagallis arvensis</i>                           | H                               | FAC                                  |
| <b>ROSACEAE (Rose Family)</b>                |   |                                 |                                      |
| Toyon  | <i>Heteromeles arbutifolia</i>                      | S                               | NL                                   |
| Plum   | <i>Prunus domestica</i>                             | T                               | NL                                   |
| Peach  | <i>Prunus persica</i>                               | T                               | NL                                   |

**Table F-3-1. Vascular Plant Species Observed Within the NSCARP Project Area**

| <b>FAMILY<br/>Common Name</b>            | <b>Scientific Name</b>          | <b>Growth Habit<sup>1</sup></b> | <b>Hydric<br/>Status<sup>2</sup></b> |
|--|---------------------------------|---------------------------------|--------------------------------------|
| California rose                          | <i>Rosa californica</i>         | S                               | FAC+                                 |
| Himalaya blackberry (a)                  | <i>Rubus discolor</i>           | V                               | FACW                                 |
| California blackberry                    | <i>Rubus ursinus</i>            | V                               | FACW                                 |
| <b>SALICACEAE (Willow Family)</b>        |                                 |                                 |                                      |
| Fremont's cottonwood                     | <i>Populus fremontii</i>        | T                               | FACW                                 |
| Lombardy poplar                          | <i>Populus nigra italica</i>    | T                               | NI                                   |
| Weeping willow                           | <i>Salix bablonica</i>          | T                               | FACW-                                |
| Narrow-leaved willow                     | <i>Salix exigua</i>             | T                               | OBL                                  |
| Red willow                               | <i>Salix laevigata</i>          | T                               | FACW+                                |
| Arroyo willow                            | <i>Salix lasiolepis</i>         | S                               | FACW                                 |
| Shining willow                           | <i>Salix lucida lasiandra</i>   | S                               | NI                                   |
| <b>SCROPHULARIACEAE (Figwort Family)</b> |                                 |                                 |                                      |
| Bird's-beak                              | <i>Cordylanthus pilosus</i>     | H                               | NL                                   |
| Creek monkeyflower                       | <i>Mimulus guttatus</i>         | H                               | OBL                                  |
| California figwort                       | <i>Scrophularia californica</i> | H                               | FAC                                  |
| Woolly mullein (a)                       | <i>Verbascum thapsus</i>        | H                               | NI                                   |
| <b>VISCACEAE (Mistletoe Family)</b>      |                                 |                                 |                                      |
| Oak mistletoe                            | <i>Phoradendron villosum</i>    | H                               | NL                                   |
| <b>VITACEAE (Grape Family)</b>           |                                 |                                 |                                      |
| Wine grape                               | <i>Vitis vinifera</i>           | V                               | NL                                   |
| <b>CYPERACEAE (Sedge Family)</b>         |                                 |                                 |                                      |
| Sedge                                    | <i>Carex</i> sp.                |                                 |                                      |
| Tall cyperus                             | <i>Cyperus eragrostis</i>       | H                               | FACW                                 |
| Creeping spikerush                       | <i>Eleocharis macrostachya</i>  | H                               | OBL                                  |
| California bulrush                       | <i>Scirpus californicus</i>     | H                               | OBL                                  |
| <b>IRIDACEAE (Iris Family)</b>           |                                 |                                 |                                      |
| Blue-eyed grass                          | <i>Sisyrinchium bellum</i>      | H                               | FAC                                  |
| <b>JUNCACEAE (Rush Family)</b>           |                                 |                                 |                                      |
| Green rush                               | <i>Juncus effusus</i>           | H                               | OBL                                  |
| Baltic rush                              | <i>Juncus balticus</i>          | H                               | OBL                                  |
| Spreading rush                           | <i>Juncus patens</i>            | H                               | FAC                                  |
| <b>LILIACEAE (Lily Family)</b>           |                                 |                                 |                                      |
| Brodiaea                                 | <i>Brodiaea</i> sp.             | H                               |                                      |
| Soap plant                               | <i>Chlorogalum pomeridianum</i> | H                               | NI                                   |
| <b>POACEAE (Grass Family)</b>            |                                 |                                 |                                      |
| Silver hairgrass                         | <i>Aira caryophylla</i>         | G                               | NL                                   |
| Giant reed (a)                           | <i>Arundo donax</i>             | G                               | FACW                                 |
| Wild oat (a)                             | <i>Avena fatua</i>              | G                               | NI                                   |
| Rattlesnake grass (a)                    | <i>Briza maxima</i>             | G                               | NL                                   |
| Ripgut grass (a)                         | <i>Bromus diandrus</i>          | G                               | NI                                   |
| Pampas grass (a)                         | <i>Cortaderia jubata</i>        | G                               | UPL                                  |
| Bermuda grass (a) (C)                    | <i>Cynodon dactylon</i>         | G                               | FAC                                  |
| Dogtail grass (a)                        | <i>Cynosurus echinatus</i>      | G                               | NL                                   |
| Blue wild ryegrass                       | <i>Elymus glaucus</i>           | G                               | FACU                                 |
| Big squirreltail                         | <i>Elymus multisetus</i>        | G                               | NL                                   |
| Italian ryegrass (a)                     | <i>Lolium multiflorum</i>       | G                               | FAC                                  |

**Table F-3-1. Vascular Plant Species Observed Within the NSCARP Project Area**

| <b>FAMILY<br/>Common Name</b>     | <b>Scientific Name</b>            | <b>Growth Habit<sup>1</sup></b> | <b>Hydric<br/>Status<sup>2</sup></b> |
|-----------------------------------|-----------------------------------|---------------------------------|--------------------------------------|
| Dallis grass                      | <i>Paspalum dilatatum</i>         | G                               | FAC                                  |
| Harding grass (a)                 | <i>Phalaris aquatica</i>          | G                               | FAC                                  |
| Annual beard grass (a)            | <i>Polypogon monspeliensis</i>    | G                               | FACW+                                |
| Medusa-head (a) (C)               | <i>Taeniatherum caput-medusae</i> | G                               | NL                                   |
| <b>TYPHACEAE (Cattail Family)</b> |                                   |                                 |                                      |
| Narrow-leaved cattail             | <i>Typha angustifolia</i>         | H                               | OBL                                  |
| Broad-leaved cattail              | <i>Typha latifolia</i>            | H                               | OBL                                  |

**Growth Form<sup>1</sup>**

T Tree  
S Shrub  
H Herbaceous  
G Grass  
V Vine

**Hydrophytic Status**

OBL Obligate wetland plant  
FACW Facultative wet plant  
FAC Facultative plant  
FACU Facultative up plant  
UPL Upland plant  
NI Not indicated  
NL Not listed (assumed upland)

**Noxious Weed Codes:**

(a) – Cal-IPC Invasive non-native plant  
(A) – CDFA Level A Pest Rating  
(B) – CDFA Level B Pest Rating  
(C) – CDFG Level C Pest Rating  
(



**Table F-3-2. Wildlife Species Observed Within the NSCARP Project Area**

| Common Name                  | Scientific Name                  | Status <sup>1</sup> |
|------------------------------|----------------------------------|---------------------|
| <b>FISH</b>                  |                                  |                     |
| <b>Salmonidae</b>            |                                  |                     |
| Rainbow trout                | <i>Oncorhynchus mykiss</i>       |                     |
| <b>Cyprinidae</b>            |                                  |                     |
| California roach             | <i>Lavinia symmetricus</i>       |                     |
| Goldfish (Koi)               | <i>Carassius auratus</i>         |                     |
| Common carp                  | <i>Cyprinus carpio</i>           |                     |
| <b>Poeciliidae</b>           |                                  |                     |
| Mosquitofish                 | <i>Gambusia affinis</i>          |                     |
| <b>Centrarchidae</b>         |                                  |                     |
| Largemouth bass              | <i>Micropterus salmoides</i>     |                     |
| Smallmouth bass (?)          | <i>Micropterus dolomieu</i>      |                     |
| <b>AMPHIBIANS</b>            |                                  |                     |
| <b>Hylidae</b>               |                                  |                     |
| Pacific treefrog             | <i>Hyla regilla</i>              |                     |
| <b>Ranidae</b>               |                                  |                     |
| Bullfrog                     | <i>Rana catesbeinana</i>         |                     |
| <b>Bufonidae</b>             |                                  |                     |
| Western toad                 | <i>Bufo boreas</i>               |                     |
| <b>REPTILES</b>              |                                  |                     |
| <b>Emydidae</b>              |                                  |                     |
| Northern Pacific pond turtle | <i>Actinemys marmorata</i>       | CSC                 |
| Western fence lizard         | <i>Sceloporus occidentalis</i>   |                     |
| Pacific gopher snake         | <i>Pituophis catenifer</i>       |                     |
| <b>BIRDS</b>                 |                                  |                     |
| <b>Podicipedidae</b>         |                                  |                     |
| Western grebe                | <i>Aechmophorus occidentalis</i> | M                   |
| <b>Phalacrocoracidae</b>     |                                  |                     |
| Double-crested cormorant     | <i>Phalacrocorax auritus</i>     | M                   |
| <b>Ardeidae</b>              |                                  |                     |
| Great blue heron             | <i>Ardea herodias</i>            | M                   |
| Great egret                  | <i>Ardea alba</i>                | M                   |
| Snowy egret                  | <i>Egretta thula</i>             | M                   |
| Green heron                  | <i>Butorides virescens</i>       | M                   |
| <b>Anatidae</b>              |                                  |                     |
| Canada goose                 | <i>Branta canadensis</i>         | M                   |
| Mallard                      | <i>Anas platyrhynchos</i>        | M                   |
| Redhead                      | <i>Aythya americana</i>          | M                   |
| Greater scaup                | <i>Aythya marila</i>             | M                   |
| Bufflehead                   | <i>Bucephala albeola</i>         | M                   |
| <b>Cathartidae</b>           |                                  |                     |
| Turkey vulture               | <i>Cathartes aura</i>            | M                   |
| <b>Accipitridae</b>          |                                  |                     |
| White-tailed kite            | <i>Elanus leucurus</i>           | M, CFP              |
| Northern harrier             | <i>Circus cyaneus</i>            | M, CSC              |

**Table F-3-2. Wildlife Species Observed Within the NSCARP Project Area**

| Common Name                   | Scientific Name                   | Status <sup>1</sup> |
|-------------------------------|-----------------------------------|---------------------|
| Cooper's hawk                 | <i>Accipiter cooperii</i>         | M, CSC              |
| Red-shouldered hawk           | <i>Buteo lineatus</i>             | M                   |
| Red-tailed hawk               | <i>Buteo jamaicensis</i>          | M                   |
| Golden eagle                  | <i>Aquila chrysaetos</i>          | M, CSC              |
| <b>Falconidae</b>             |                                   |                     |
| American kestrel              | <i>Falco sparverius</i>           | M                   |
| <b>Phasianidae</b>            |                                   |                     |
| Wild turkey                   | <i>Meleagris gallopavo</i>        | M                   |
| <b>Odontophoridae</b>         |                                   |                     |
| California quail              | <i>Callipepla californica</i>     | M                   |
| <b>Rallidae</b>               |                                   |                     |
| American coot                 | <i>Fulica americana</i>           | M                   |
| <b>Charadriidae</b>           |                                   |                     |
| Killdeer                      | <i>Charadrius vociferus</i>       | M                   |
| <b>Columbidae</b>             |                                   |                     |
| Rock pigeon                   | <i>Columba livia</i>              |                     |
| Mourning dove                 | <i>Zenaida macroura</i>           | M                   |
| <b>Tytonidae</b>              |                                   |                     |
| Common barn owl               | <i>Tyto alba</i>                  | M                   |
| <b>Strigidae</b>              |                                   |                     |
| Great horned owl              | <i>Bubo virginianus</i>           | M                   |
| <b>Trochilidae</b>            |                                   |                     |
| Anna's hummingbird            | <i>Calypete anna</i>              | M                   |
| <b>Alcedinidae</b>            |                                   |                     |
| Belted kingfisher             | <i>Ceryle alcyon</i>              | M                   |
| <b>Picidae</b>                |                                   |                     |
| Acorn woodpecker              | <i>Melanerpes formicivorous</i>   | M                   |
| Nuttall's woodpecker          | <i>Picoides nuttallii</i>         | M                   |
| Hairy woodpecker              | <i>Picoides villosus</i>          | M                   |
| Northern flicker              | <i>Colaptes auratus</i>           | M                   |
| Pileated woodpecker           | <i>Dryocopus pileatus</i>         | M                   |
| <b>Tyrannidae</b>             |                                   |                     |
| Pacific-slope flycatcher      | <i>Empidonax difficilis</i>       | M                   |
| Black phoebe                  | <i>Sayornis nigricans</i>         | M                   |
| Say's phoebe                  | <i>Sayornis saya</i>              | M                   |
| Western kingbird              | <i>Tyrannus verticalis</i>        | M                   |
| <b>Hirundinidae</b>           |                                   |                     |
| Tree swallow                  | <i>Tachycineta bicolor</i>        | M                   |
| Northern rough-winged swallow | <i>Stelgidopteryx serripennis</i> | M                   |
| Barn swallow                  | <i>Hirundo rustica</i>            | M                   |
| Cliff swallow                 | <i>Petrochelidon pyrrhonota</i>   | M                   |
| <b>Vireonidae</b>             |                                   |                     |
| Hutton's vireo                | <i>Vireo huttoni</i>              | M                   |
| <b>Corvidae</b>               |                                   |                     |
| Steller's jay                 | <i>Cyanocitta stelleri</i>        | M                   |

**Table F-3-2. Wildlife Species Observed Within the NSCARP Project Area**

| Common Name               | Scientific Name                  | Status <sup>1</sup> |
|---------------------------|----------------------------------|---------------------|
| Western scrub-jay         | <i>Aphelocoma californica</i>    | M                   |
| American crow             | <i>Corvus brachyrhynchos</i>     | M                   |
| Common raven              | <i>Corvus corax</i>              | M                   |
| <b>Paridae</b>            |                                  |                     |
| Chestnut-backed chickadee | <i>Poecile rufescens</i>         | M                   |
| Oak titmouse              | <i>Baeolophus inornatus</i>      | M                   |
| <b>Aegithalidae</b>       |                                  |                     |
| Bushtit                   | <i>Psaltiriparus minimus</i>     | M                   |
| <b>Sittidae</b>           |                                  |                     |
| White-breasted nuthatch   | <i>Sitta carolinensis</i>        | M                   |
| <b>Certhiidae</b>         |                                  |                     |
| Brown creeper             | <i>Certhia americana</i>         | M                   |
| <b>Troglodytidae</b>      |                                  |                     |
| Bewick's wren             | <i>Thryomanes bewickii</i>       | M                   |
| House wren                | <i>Troglodytes aedon</i>         | M                   |
| <b>Regulidae</b>          |                                  |                     |
| Ruby-crowned kinglet      | <i>Regulus calendula</i>         | M                   |
| <b>Turdidae</b>           |                                  |                     |
| Western bluebird          | <i>Sialia mexicana</i>           | M                   |
| American robin            | <i>Turdus migratorius</i>        | M                   |
| <b>Mimidae</b>            |                                  |                     |
| Northern mockingbird      | <i>Mimus polyglottos</i>         | M                   |
| <b>Bombycillidae</b>      |                                  |                     |
| Cedar waxwing             | <i>Bombycilla cedrorum</i>       | M                   |
| <b>Sturnidae</b>          |                                  |                     |
| European starling         | <i>Sturnus vulgaris</i>          |                     |
| <b>Parulidae</b>          |                                  |                     |
| Orange-crowned warbler    | <i>Vermivora celata</i>          | M                   |
| Yellow-rumped warbler     | <i>Dendroica coronata</i>        | M                   |
| Yellow warbler            | <i>Dendroica petechia</i>        | M, CSC              |
| <b>Thraupidae</b>         |                                  |                     |
| Western tanager           | <i>Piranga ludoviciana</i>       | M                   |
| <b>Cardinalidae</b>       |                                  |                     |
| Black-headed grosbeak     | <i>Pheucticus melanocephalus</i> | M                   |
| <b>Emberizidae</b>        |                                  |                     |
| Spotted towhee            | <i>Pipilo maculatus</i>          | M                   |
| California towhee         | <i>Pipilo crissalis</i>          | M                   |
| Rufous-crowned sparrow    | <i>Aimophila ruficeps</i>        | M                   |
| Song sparrow              | <i>Melospiza melodia</i>         | M                   |
| Lincoln's sparrow         | <i>Melospiza lincolnii</i>       | M                   |
| Golden-crowned sparrow    | <i>Zonotrichia atricapilla</i>   | M                   |
| White-crowned sparrow     | <i>Zonotrichia leucophrys</i>    | M                   |
| Dark-eyed junco           | <i>Junco hyemalis</i>            | M                   |
| <b>Icteridae</b>          |                                  |                     |
| Red-winged blackbird      | <i>Agelaius phoeniceus</i>       | M                   |

**Table F-3-2. Wildlife Species Observed Within the NSCARP Project Area**

| Common Name                | Scientific Name                 | Status <sup>1</sup> |
|----------------------------|---------------------------------|---------------------|
| Brewer's blackbird         | <i>Euphagus cyanocephalus</i>   | M                   |
| Western meadowlark         | <i>Sturnella neglecta</i>       | M                   |
| Bullock's oriole           | <i>Icterus bullockii</i>        | M                   |
| Hooded oriole              | <i>Icterus cucullatus</i>       | M                   |
| <b>Fringillidae</b>        |                                 |                     |
| House finch                | <i>Carpodacus mexicanus</i>     | M                   |
| Lesser goldfinch           | <i>Carduelis psaltria</i>       | M                   |
| American goldfinch         | <i>Carduelis tristis</i>        | M                   |
| <b>Passeridae</b>          |                                 |                     |
| House sparrow              | <i>Passer domesticus</i>        |                     |
|                            |                                 |                     |
| <b>MAMMALS</b>             |                                 |                     |
| <b>Leporidae</b>           |                                 |                     |
| Black-tailed hare          | <i>Lepus californicus</i>       |                     |
| <b>Sciuridae</b>           |                                 |                     |
| California ground squirrel | <i>Spermophilus beecheyi</i>    |                     |
| Western gray squirrel      | <i>Sciurus griseus</i>          |                     |
| <b>Geomyidae</b>           |                                 |                     |
| Botta's pocket gopher      | <i>Thomomys bottae</i>          |                     |
| <b>Cricetidae</b>          |                                 |                     |
| Dusky-footed woodrat       | <i>Neotoma fuscipes</i>         |                     |
| California vole            | <i>Microtus californicus</i>    |                     |
| <b>Canidae</b>             |                                 |                     |
| Coyote                     | <i>Canis latrans</i>            |                     |
| Red fox                    | <i>Vulpes vulpes</i>            |                     |
| Gray fox                   | <i>Urocyon cinereoargenteus</i> |                     |
| <b>Procyonidae</b>         |                                 |                     |
| Raccoon                    | <i>Procyon lotor</i>            |                     |
| <b>Mepitidae</b>           |                                 |                     |
| Striped skunk              | <i>Mephitis mephitis</i>        |                     |
| <b>Felidae</b>             |                                 |                     |
| Bobcat                     | <i>Lynx rufus</i>               |                     |
| <b>Suidae</b>              |                                 |                     |
| Wild pig                   | <i>Sus scrofa</i>               |                     |
| <b>Cervidae</b>            |                                 |                     |
| Black-tailed deer          | <i>Odocoileus hemionus</i>      |                     |

**<sup>1</sup>Status Codes:**

CSC = California Species of Special Concern  
 CFP = California Fully Protected Species  
 M = Protected under Federal Migratory Bird Treaty Act

**APPENDIX F**  
**ATTACHMENT 4**  
**SPECIAL-STATUS SPECIES LIKELYHOOD OF OCCURRENCE ANALYSIS**  
**AND**  
**LIFE HISTORY DESCRIPTIONS OF SPECIES WITH LOW LIKELIHOOD OF**  
**OCCURRENCE IN THE NSCARP AREA**



### Special-Status Plants

Sonoma alopecurus is a federally listed Endangered species and a California Native Plant Society (CNPS) List 1B species (defined by the CNPS as plants that are rare, threatened, or endangered in California and elsewhere and must be considered under the California Environmental Quality Act [CEQA]). It is a perennial herbaceous species occurring in freshwater marshes and riparian scrub. It blooms May through July and occurs at elevations from 15 to 650 feet, msl. This species is known from fewer than five native occurrences in Marin and Sonoma counties. There are no recorded occurrences within one mile of the NSCARP project alignment (CNDDDB, 2006; CNPS, 2001).

Napa false indigo is a CNPS List 1B species. It is a deciduous shrub species occurring in openings within broad-leaved upland forest, chaparral, and cismontane woodland habitats. It blooms April through July and occurs at elevations from 400 to 6,000 feet, msl. There are no recorded occurrences within one mile of the NSCARP project alignment (CNDDDB, 2006; CNPS, 2001).

Baker's manzanita is a state-listed Rare species and a CNPS List 1B species. It is an evergreen shrub species occurring in broad-leaved upland forest and chaparral habitats often in serpentine soils. It blooms February through April, and occurs at elevations from 225 to 600 feet, msl. This species is known from fewer than ten occurrences in Sonoma County and is threatened by development. There are no recorded occurrences within one mile of the NSCARP project alignment (CNDDDB, 2006; CNPS, 2001).

Cedar's manzanita is a state-listed Rare species and a CNPS List 1B species. It is an evergreen shrub species occurring in closed-cone coniferous forest and chaparral habitat, particularly on serpentine seeps. It blooms February through May, and occurs at elevations from 900 to 2,500 feet, msl. There are no recorded occurrences within one mile of the NSCARP project alignment (CNDDDB, 2006; CNPS, 2001).

Bolander's reed grass is a CNPS List 1B species. It is a perennial herbaceous species that occurs in bogs and fens in closed-cone coniferous forest, coastal scrub habitat, and within seeps and marshes in North Coast coniferous forest habitat. It blooms from June through August, and occurs at elevations from 0 to 600 feet, msl. This species is known to occur in Humboldt, Mendocino, and Sonoma counties. There are no recorded occurrences within one mile of the NSCARP project alignment (CNDDDB, 2006; CNPS, 2001).

Thurber's reed-grass is a CNPS List 2 species. It is an annual herbaceous species that occurs in chaparral and coastal scrub in sandy or loamy soils. It blooms from March through June at elevations from 9 to 3,600 feet, msl. This species appears to be widely scattered but uncommon. There are no recorded occurrences within one mile of the NSCARP project alignment (CNDDDB, 2006; CNPS, 2001).

Cedars fairy-lantern is a CNPS List 1B species. It is a perennial herbaceous species from bulb that occurs in closed-cone coniferous forest and chaparral habitats on serpentine soils. It blooms from May through August, and occurs at elevations from 650 to 1,600 feet, msl. This species is known only from one location at The Cedars near Guerneville. There are no recorded occurrences within one mile of the NSCARP project alignment (CNDDDB, 2006; CNPS, 2001).

Mt. Saint Helena morning-glory is a CNPS List 1B species. It is a perennial herbaceous species that occurs in chaparral, lower montane coniferous forest, and valley and foothill grassland habitats, typically in serpentine soils. It blooms April through June and occurs at elevations from 1,000 to 3,300 feet, msl. This species is known to occur in Lake,

Sonoma, and Mendocino counties, and is threatened by road maintenance. There are no recorded occurrences within one mile of the NSCARP project alignment (CNDDDB, 2006; CNPS, 2001).

Bristly sedge is a CNPS List 2 species. It is a perennial herbaceous species from rhizomes that occurs in coastal prairie, marsh, and valley and foothill grassland habitats. It blooms from May through September, and occurs at elevations from 0 to 1,400 feet, msl. This species is listed as rare and endangered in several other states, and may be fairly widely distributed but rarely collected in California. There are no recorded occurrences within one mile of the NSCARP project alignment (CNDDDB, 2006; CNPS, 2001).

Pitkin Marsh lily is a federal and state-listed Endangered species and CNPS List 1B species. It is a perennial herbaceous plant occurring in cismontane woodland, meadows, seeps, and marshes, typically in sandy soil. It blooms from June through July and occurs at elevations from 100 to 200 feet, msl. This species is only known from two occurrences near Sebastopol. There are no recorded occurrences within one mile of the NSCARP project alignment (CNDDDB, 2006; CNPS, 2001).

Vine Hill ceanothus is a CNPS List 1B species. It is an evergreen shrub that occurs in chaparral habitat. It blooms from March through May at elevation from 150 to 950 feet, msl. There is one confirmed occurrence in Sonoma County; and no recorded occurrences within one mile of the NSCARP project alignment (CNDDDB, 2006; CNPS, 2001).

Holly-leaved ceanothus is a CNPS List 1B species. It is an evergreen shrub that occurs in chaparral and cismontane woodland habitats typically in rocky soils. It blooms from February through June, and occurs at elevations from 390 to 3,000 feet, msl. This species is known to occur in Solano, Sonoma, and Napa counties. There are no recorded occurrences within one mile of the NSCARP project alignment (CNDDDB, 2006; CNPS, 2001).

Serpentine cryptantha is a CNPS List 1B species. It is an annual herbaceous species that occurs in chaparral habitat on serpentine soils. It blooms from April through June, and occurs at elevations from 1,300 to 1,900 feet, msl. This species is known to occur in Lake, Sonoma, and Napa counties. There are no recorded occurrences within one mile of the NSCARP project alignment (CNDDDB, 2006; CNPS, 2001).

White sedge is a federal and state-listed Endangered species and CNPS List 1B species. It is a perennial herbaceous species occurring in fens, bogs, marshes, and swamps. It blooms from May through July at elevations from 50 to 275 feet, msl. This species is only known from one confirmed location at Pitkin Marsh. There are no recorded occurrences within one mile of the NSCARP project alignment (CNDDDB, 2006; CNPS, 2001).

Baker's larkspur is a federally listed Endangered species, a state-listed Rare species, and a CNPS List 1B species. It is a perennial herbaceous species that occurs in coastal scrub habitat. It blooms from March through May, and occurs at elevations from 250 to 1,000 feet, msl. This species is known from only one occurrence with fewer than 70 individuals on Salmon Creek. There are no recorded occurrences within one mile of the NSCARP project alignment (CNDDDB, 2006; CNPS, 2001).

Yellow larkspur is a federally listed Endangered species, a state-listed Rare species, and a CNPS List 1B species. It is a perennial herbaceous species from bulb that occurs in chaparral, coastal prairie, and scrub habitats in rocky soils. It blooms from March



through May, and occurs at elevations from 0 to 300 feet, msl. This species is known from only three occurrences in Sonoma and Marin counties. There are no recorded occurrences within one mile of the NSCARP project alignment (CNDDDB, 2006; CNPS, 2001).

Narrow-leaved daisy CNPS List 1B species. It is a perennial herbaceous species that occurs in chaparral habitat in serpentine soils. It blooms from May through September, and occurs at elevations from 250 to 450 feet, msl. This species is known to occur in Lake, Sonoma, and Napa counties. There are no recorded occurrences within one mile of the NSCARP project alignment (CNDDDB, 2006; CNPS, 2001).

Colusa layia is a CNPS List 1B species. It is an annual herbaceous species that occurs in chaparral, cismontane woodland, and valley and foothill grassland habitats, typically on sandy or serpentine soils. It blooms from April through May, and occurs at elevations from 330 to 3,600 feet, msl. This species is threatened by development. There are no recorded occurrences within one mile of the NSCARP project alignment (CNDDDB, 2006; CNPS, 2001).

Legenere is a CNPS List B species. It is an annual herbaceous species that occurs in vernal pools. It blooms from April through June at elevations from 3 to 2,700 feet, msl. There are no recorded occurrences within one mile of the NSCARP project alignment (CNDDDB, 2006; CNPS, 2001).

Crystal Springs lessingia is a CNPS List 1B species. It is an annual herbaceous species that occurs in cismontane woodland, coastal scrub, and valley and foothill grassland habitats in serpentine soils. It blooms from July through October, and occurs at elevations from 200 to 2,000 feet, msl. This species is known only from seven occurrences near Crystal Springs Reservoir in San Mateo County. This species is thought to occur in Sonoma County as well, but occurrences need taxonomic verification. There are no recorded occurrences within one mile of the NSCARP project alignment (CNDDDB, 2006; CNPS, 2001).

North Coast semaphore grass is a state-listed Rare species and a CNPS List 1B species. It is a perennial herbaceous species that occurs in meadows and seeps in broad-leaved upland forest habitat, in vernal pools, and in North Coast coniferous forests. It blooms from May through August, and occurs at elevations from 30 to 2,100 feet, msl. This species is known only from fewer than ten occurrences, and is threatened primarily by logging. There are no recorded occurrences within one mile of the NSCARP project alignment (CNDDDB, 2006; CNPS, 2001).

White beaked-rush is a CNPS List 2 species. It is a perennial herbaceous species that occurs in meadows, seeps, and marshes. It blooms from July through August at elevations from 200 to 6,000 feet, msl. There are no recorded occurrences within one mile of the NSCARP project alignment (CNDDDB, 2006; CNPS, 2001).

Brownish beaked-rush is a CNPS List 2 species. It is a perennial herbaceous species that occurs in meadows, seeps, and marshes. It blooms from July through August at elevations from 1,500 to 6,000 feet, msl. There are no recorded occurrences within one mile of the NSCARP project alignment (CNDDDB, 2006; CNPS, 2001).

Round-headed-rush is a CNPS List 2 species. It is a perennial herbaceous species that occurs in meadows, seeps, and marshes. It blooms from July through August at elevations from 135 to 180 feet, msl. This species is seriously threatened by marsh habitat loss. There are no recorded occurrences within one mile of the NSCARP project alignment (CNDDDB, 2006; CNPS, 2001).

Freed's jewel-flower is a CNPS List 1B species. It is a perennial herbaceous species that occurs in chaparral and cismontane woodland in serpentine soils. It blooms from May through July, and occurs at elevations from 1,600 to 4,000 feet, msl. This species is known from approximately ten occurrences in Lake and Sonoma counties. There are no recorded occurrences within one mile of the NSCARP project alignment (CNDDDB, 2006; CNPS, 2001).

Secund jewel-flower is a CNPS list 1B species. It is an annual herbaceous species occurring in chaparral, cismontane woodland, and valley and foothill grassland in rocky often serpentinite soils. It blooms from March through July at elevations from 350 to 1,500 feet, msl. This species is only known from historical occurrences. There are no recorded occurrences within one mile of the NSCARP project alignment (CNDDDB, 2006; CNPS, 2001).

Showy Indian clover is a federally listed Endangered species and CNPS List 1B species. It is an annual herbaceous species occurring coastal scrub bluff and valley and foothill grassland. It blooms from April through June at elevations from 15 to 1,300 feet, msl. This species was rediscovered in 1993. There are no recorded occurrences within one mile of the NSCARP project alignment (CNDDDB, 2006; CNPS, 2001).

Water sack clover is a CNPS List 1B species. It is an annual herbaceous species that occurs in alkaline marshes and vernal pools within valley and foothill grassland habitat. It blooms April through June, and occurs at elevations from 0 to 1,000 feet, msl. This species is threatened by development. There are no recorded occurrences within one mile of the NSCARP project alignment (CNDDDB, 2006; CNPS, 2001).

#### Special-Status Invertebrate Species

California freshwater shrimp is a federal and state-listed endangered species of the family Atyidae. This species has been found only in low-elevation and low-gradient streams. Preferred habitat are streams with water depths between 12 to 36 inches, abundance of exposed live roots of trees, such as alder and willow greater than 6 inches, undercut banks, and overhanging woody debris, or stream vegetation and vines, such as stinging nettles, grasses, vine maple and mint, where they feed on detritus collected on the plants. Such areas may provide refuges from swift currents as well as some protection from high sediment concentrations associated with high stream flows. During the winter, the shrimp is found in undercut banks with exposed fine root systems or dense, overhanging vegetation.

Historically, the shrimp was probably common in low elevation, perennial freshwater streams in Marin, Sonoma, and Napa counties. Today, it is found in sixteen stream segments in four geographic regions: tributary streams in the lower Russian River drainage, which flows westward into the Pacific Ocean; coastal streams flowing westward directly into the Pacific Ocean; streams draining into Tomales Bay; and, streams flowing southward into northern San Pablo Bay. There are no recorded occurrences within one mile of the NSCARP project area (CNDDDB, 2006).

Myrtle's silverspot is a federally listed endangered species in the brush foot (Nymphalidae) family. It is a medium-sized butterfly with a two-inch wingspan. The species once ranged as far south as San Mateo County, but is now restricted to four populations in western Marin and southwest Sonoma counties. Adults are generally found in areas sheltered from the wind within three miles of the coast in coastal terrace prairie, coastal bluff scrub, and associated non-native grassland habitats.

Adults feed on nectar from flowers including gumplant, yellow sand verbenas, mints, bull thistle, and seaside daisy. There are no recorded occurrences within one mile of the NSCARP project area (CNDDDB, 2006).

Sonoma arctic skipper is not a formally protected species. Three populations are known in northern Sonoma County and southern Mendocino County. It is typically found in second growth redwood forests, at the edge of clearings, in moist meadows, and along streams. Its main food source is purple reedgrass, which is common but restricted to coastal areas. There are no recorded occurrences within one mile of the NSCARP project area (CNDDDB, 2006).

#### Special-Status Fish Species

Delta smelt is a federal- and state-listed Threatened species endemic to the Bay-Delta estuary. Adult delta smelt inhabit open water areas where they feed on small zooplankton. They spawn in freshwater from late winter to early summer (primarily February through April) and usually die shortly afterward. Delta smelt spawning occurs primarily in shallow freshwater or slightly brackish water upstream of the mixing zone (Wang, 1991) in backwater sloughs and channel edge waters. Delta smelt are known to spawn in the lower reaches of the Sacramento and San Joaquin rivers as well as various sites within the Delta in shallow waters and dead-end sloughs. There are no recorded occurrences within one mile of the NSCARP project area (CNDDDB, 2006).

Sacramento splittail is a California species of special concern (CSC). The Sacramento splittail is endemic to lakes and rivers of the Central Valley, and is capable of tolerating moderate levels of salinity. The loss of floodplain and wetlands used for spawning, rearing, and foraging habitat is the primary reason for splittail decline. Migration barriers are also a contributing factor (Goals Project, 2000). High flows and floodplain inundation are key factors in increasing splittail abundance. Sacramento splittail most commonly occur in the brackish waters of Suisun Bay, Suisun Marsh, and the Sacramento-San Joaquin Delta; however, in wet years they occur as far down as San Pablo and San Francisco bays (Goals Project, 2000). Upstream spawning migration occurs from November through May. Preferred spawning substrate consists of freshwater submerged vegetation within inundated floodplains. A query of the CNDDDB gave records for splittail at Ryer Island to the east of the project site and Goodyear Slough to the north. There are no recorded occurrences within one mile of the NSCARP project area (CNDDDB, 2006).

Gualala roach is a CSC. It is one of five subspecies of the California roach, and is restricted to the Gualala River system in Sonoma County. It is a small fish, usually less than four inches in length, that is found in a variety of stream habitats including warm intermittent streams and cold, well-aerated streams. It is able to survive in small pools remaining after flows subside in intermittent streams. It feeds on filamentous algae, aquatic insects and small crustaceans. During spawning, the fish moves up from pools into shallow, flowing areas with bottoms covered in small rocks. Spawning occurs from March through late July. There are no recorded occurrences within one mile of the NSCARP project area (CNDDDB, 2006).

#### Special-Status Amphibian Species

Northern red-legged frog is a CSC and a U.S. Forest Service (FS) Sensitive species. The subspecies ranges from Mendocino County in northern California through Oregon and Washington into southwest British Columbia, and overlaps with the California red-legged frog between Point Arena and Elk in Mendocino County. It is found in humid

forests, woodland, grasslands, and streams from sea level to about 4,680 feet, msl. Breeding habitat is in permanent water sources (lakes, ponds, reservoirs, slow streams, marshes, bogs, and swamps). While typically associated with aquatic habitats, it can be terrestrial and found in damp places away from water. Breeding occurs in January and February. Females lay between 750 and 1,300 eggs in a large mass that is attached to vegetation. Eggs hatch after about four weeks, and tadpoles metamorphose in four to five months. There are no recorded occurrences within one mile of the NSCARP project area (CNDDDB, 2006).

#### Special-Status Reptile Species

California horned lizard is a CSC and a FS Sensitive species. It occurs in a variety of habitats including scrubland, annual grassland, valley-foothill woodlands, and coniferous forests. It is most common along lowland sandy washes. It occurs in the Central Valley from southern Tehama County southward; in the Sierra foothills from Butte County to Tulare County (typically below 2000 feet, msl), and throughout the Coast Range from Sonoma County into Baja California (CDFG, 1988). An isolated population occurs in Siskiyou County. There are no recorded occurrences within one mile of the NSCARP project area (CNDDDB, 2006).

#### Special-Status Bird Species

Bald eagle is federally listed Threatened (proposed for de-listing) and a state-listed Endangered species. The bald eagle is associated with permanent water sources including lakes, reservoirs, and large free-flowing rivers with abundant fish and nearby old-growth trees or snags for perching, roosting, and nesting. It roosts communally in winter in dense, uneven-aged conifer stands with old-growth components in proximity to feeding areas. It is a permanent resident in northern California and an uncommon winter migrant in the south of the state. According to the CNDDDB (2006), there are no recorded occurrences within one mile of the NSCARP project area. There are no records of nesting within the NSCARP project area (Burridge, 1995).

American peregrine falcon is a state-listed Endangered species. Peregrine falcon is a very uncommon breeding resident, and uncommon as a migrant. It breeds mostly in woodland, forest, and coastal habitats, near wetlands, lakes, and rivers. Nests are usually scrapes or depressions on high cliffs, ledges, banks, dunes, mounds, but will sometimes include man-made structures, trees, or old raptor nests. Nests are sited in areas inaccessible to land predators, and usually near large prey population like coastal areas or wetlands with large breeding populations of birds. In winter, peregrine falcons are found throughout the Central Valley, and occasionally on the Channel Islands. Riparian areas and coastal and inland wetlands are important habitats yearlong, especially in nonbreeding seasons. Breeding activity begins as early as February with pair bonding and territory reestablishment. The young fledge in June and July, but usually remain in the territory until late August. It is a common migrant and winter visitant, but a rare nester in Sonoma County (Bolander and Parmeter, 2000). There are no recorded occurrences within one mile of the NSCARP project area (CNDDDB, 2006).

Prairie falcon is a CSC. This species is an uncommon permanent resident and migrant that ranges from southeastern deserts northwest along the inner Coast Ranges and Sierra Nevada. It is associated with habitat from annual grasslands to alpine meadows, but primarily with perennial grasslands, savannas, rangeland, agricultural fields, and desert scrub areas. The species usually nests in a scrape on a sheltered ledge of a cliff overlooking a large, open area. It breeds from mid-February through mid-September, with peak April to early August. It is a rare winter visitant to Sonoma County (Bolander

and Parmeter, 2000), and there are no recorded occurrences within one mile of the NSCARP project area (CNDDDB, 2006).

Long-billed curlew is a CSC. Long-billed curlew occurs as a winter resident in the Central Valley and the California Coast, feeding primarily on intertidal mudflats in coastal estuaries and less often inland in croplands of the Central Valley. It breeds from southern British Columbia to Manitoba and south to northeastern California, northern Utah, New Mexico, and central Texas (Cogswell, 1977). It is a fairly common winter resident and migrant in the interior of Sonoma County (Bolander and Parmeter, 2000). According to the CNDDDB (2006), there are no recorded occurrences within one mile of the NSCARP project area.

Marbled murrelet is a federally listed Threatened species in Washington, Oregon, and California, and is a state-listed Endangered species. It is a small sea bird that spends most of its life in the near shore marine environment, but nests and roosts inland in low-elevation old growth forests, or other forests with remnant large trees. Nesting generally occurs in the marine fog belt within 25 miles of the coast in coastal redwood, Douglas fir, western red cedar, western hemlock, and Sitka spruce. The species nests from Washington to central California in the Monterey Bay area. Some birds winter in southern California. It is an uncommon permanent resident along the Sonoma Coast, but sightings are unusual from May through July (Bolander and Parmeter, 2000). There are no confirmed nesting records in the county (Bolander and Parmeter, 2000). According to the CNDDDB (2006), there are no recorded occurrences within one mile of the NSCARP project area.

Northern spotted owl is a federally listed Threatened species. It is an uncommon, permanent resident of heavily forested areas, preferring old growth forest or mixed stands of old growth and mature trees with multi-storied, high canopy cover. Douglas fir, mixed conifer, and coast redwood forest are most commonly used habitat types. It occurs in the Coast ranges from southwestern British Columbia south to San Francisco Bay. It is a fairly common permanent resident of Sonoma County (Bolander and Parmeter, 2000), and there is one probable nesting occurrence at the extreme southwest end of the project area (Burridge, 1995); however, there are no recorded occurrences within one mile of the project area (CNDDDB, 2006).

Short-eared owl is a CSC. The short-eared owl is a widespread winter migrant that is found primarily in the Central Valley, the western Sierra Nevada foothills, and in the southern desert region (Garrett and Dunn 1981). It is usually found in open areas with few trees, such as annual and perennial grasslands, prairies, dunes, meadows, irrigated lands, and saline and fresh emergent wetlands. Birds are an important food source in coastal wintering areas, and in nesting season. The species also eats reptiles, amphibians, and arthropods. It breeds from early March through July (Bent 1938). It is an uncommon winter resident and casual summer visitant to Sonoma County, and there is only one suspected nesting record for the County (Bolander and Parmeter, 2000). There are no recorded occurrences within one mile of the NSCARP project area (CNDDDB, 2006).

Black swift is a CSC. Black swift occupies breeding grounds in localized areas of the Sierra Nevada and Cascade ranges, as well as coastal mountains of Central California, but does not winter in California. Black swift nests in moist locations associated with the ocean or waterfalls on steep cliffs or canyons. This species avoids arid regions such as the Central Valley, Great Basin, and southern deserts. It is a casual migrant in Sonoma County in spring and fall, but there are no nesting records (Bolander and Parmeter,

2000). There are no recorded occurrences within one mile of the NSCARP project area (CNDDDB, 2006).

Little willow flycatcher is a CSC. It is a small neotropical migrant that breeds in riparian deciduous shrub habitat (primarily willows) in the United States and Canada. It is a common spring and fall migrant at lower elevations particularly riparian areas, throughout California. It is an uncommon summer resident in California, and rare breeding populations occur in the Sierra Nevada and Cascade ranges between about 2,000 and 8,000 feet, msl. Typical habitat includes moist montane meadows with perennial streams and smaller spring fed or boggy areas with willow or alders thickets. They have also been reported from small lakes or ponds surrounded by willows with a fringe of meadow or grassland, to willow lined streams, grasslands, or boggy areas. Willow flycatchers forage by gleaning insects from trees, shrubs, and herbaceous vegetation, or hawking larger insects; however, they will take berries and seeds on occasion. It is an uncommon fall migrant in Sonoma County (Bolander and Parmeter, 2000). There are no recorded occurrences within one mile of the NSCARP project area (CNDDDB, 2006).

Bank swallow is a state-listed Threatened species. The bank swallow is the smallest swallow in California. It is a summer breeder that migrates south in the winter. It is a colonial breeder that excavates burrows in river banks and railroad and highway embankments. The banks are generally greater than three feet in height to preclude predators, and soils must be sufficiently friable to excavate. It currently ranges from central to northern California wherever suitable nesting habitat exists, with major colonies found along the Sacramento and Feather rivers. The bank swallow forages mostly on flying insects that it captures on the wing. It is a casual fall migrant in Sonoma County, and there is one nesting record in 1960 (Bolander and Parmeter, 2000). There are no recorded occurrences within one mile of the NSCARP project area (CNDDDB, 2006).

Bell's sage sparrow is a CSC. It is one of five subspecies, and is a common to uncommon resident and summer visitor. It occurs in arid, open shrub habitats in winter. Typical breeding habitat includes sagebrush, alkali desert scrub, desert scrub, coastal scrub, and chamise-dominated chaparral. It generally feeds on the ground or in low foliage on insects, spiders, and seeds. It breeds from late March to mid-August. It is an uncommon summer resident in inland scrub, and a rare winter visitant (Bolander and Parmeter, 2000). According to the CNDDDB, there are no recorded occurrences within one mile of the NSCARP project area (CNDDDB, 2006).

Tricolored blackbird is a CSC and a BLM Sensitive species. The tricolored blackbird is a nomadic resident of the Sacramento and San Joaquin valleys and lower foothills of the Sierra Nevada. This species nests near freshwater in dense cattails and bulrush, and also in thickets of willow, blackberry, wild rose, and tall herbs (Zeiner *et al.*, 1990a). Estimates for colony size range from 15 to 47,000 birds. Flooded lands, pond margins, grass fields and agricultural fields constitute typical foraging habitat. It is an uncommon sporadic summer resident and rare winter visitant to Sonoma County (Bolander and Parmeter, 2000). The latest nesting record was from 1993. There are no recorded occurrences within one mile of the NSCARP project area (CNDDDB, 2006).

#### *Special-Status Mammal Species*

California red tree vole is a CSC. It occurs in Douglas fir, coastal redwood, and montane hardwood-conifer forests. It ranges from the Oregon border to Sonoma County, generally within the fog belt. It lives in the tree canopy, generally in large trees. It feeds

on the needles, buds, and tender bark on twigs of Douglas fir, grand fir, and western hemlock. There are no recorded occurrences within one mile of the NSCARP project area (CNDDB, 2006).

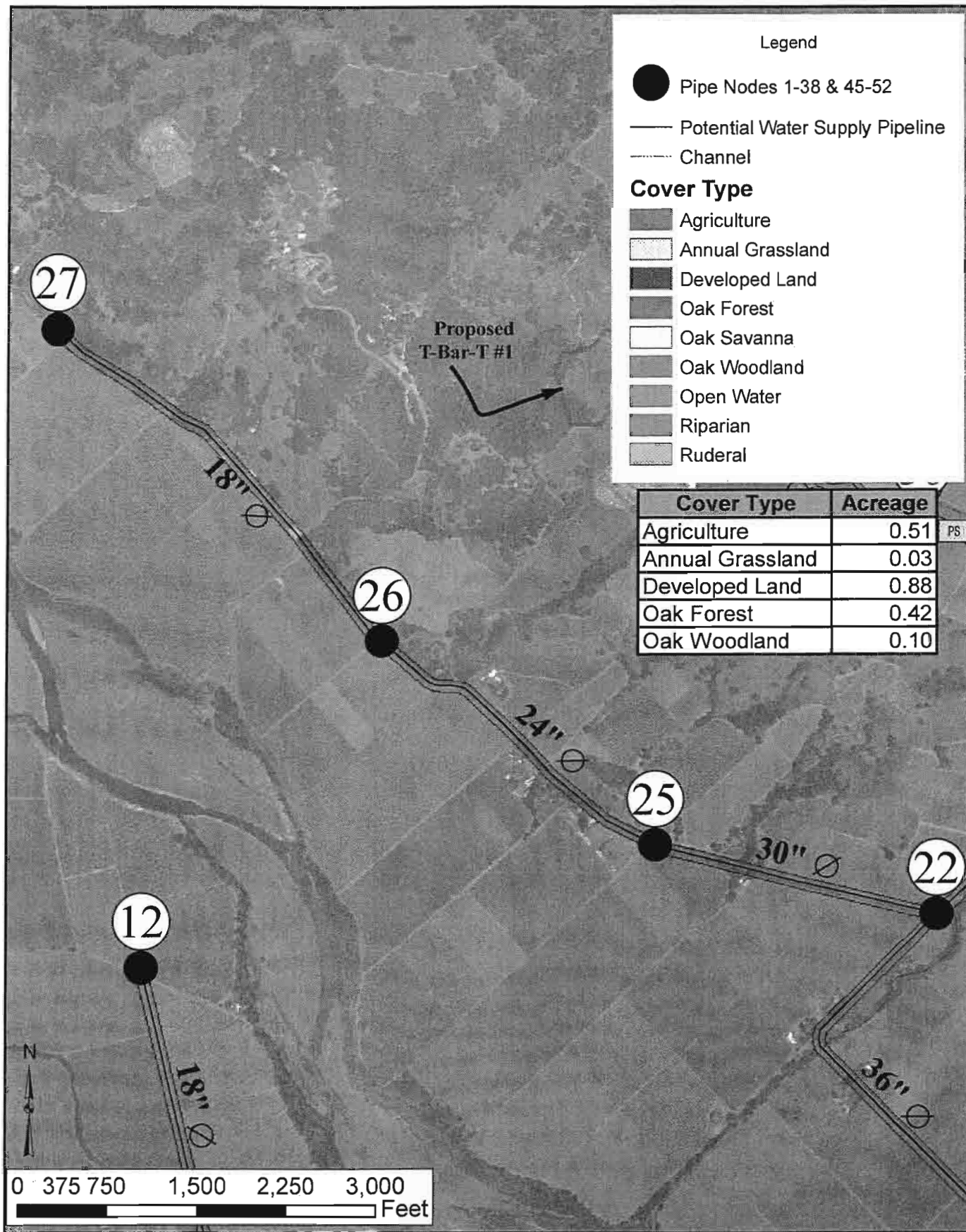
Greater western mastiff bat is a CSC It is a year-round resident in California occurring from San Diego County to the Oregon border at low to mid-elevations along the west side of the Sierra Nevada range. It occupies a variety of habitats from desert scrub to chaparral to montane coniferous forest. Distribution is associated with presence of significant rock features (granite or basalt formations). Day roosts are primarily in crevices in cliff faces, cracks in boulders, and occasionally in buildings. Roost aggregations are less than 100 individuals. It is active all winter at lower elevations. A single young is born per year between June and July. Females form maternity colonies, but males are sometimes present. The western mastiff bat feeds on moths, beetles, and crickets and foraging occurs in the open. Individuals have been known to travel more than 25 miles to feeding grounds. Feeding occurs most frequently over desert washes, grasslands, or meadows, but also feed above forest canopy. There are no recorded occurrences within one mile of the NSCARP project area (CNDDB, 2006).

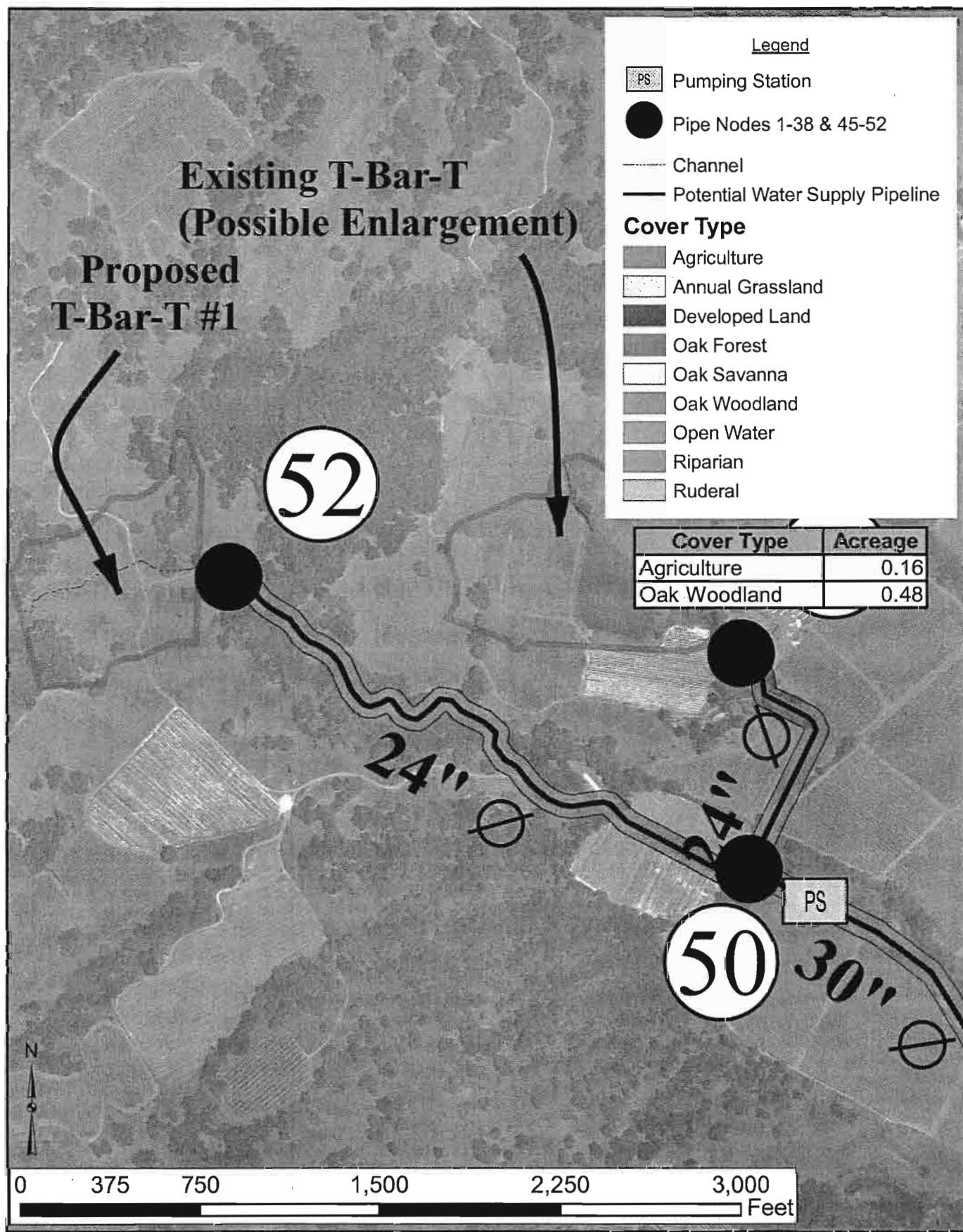
Pacific western big-eared bat is a CSC and a FS and BLM Sensitive species. It is a year-round resident in California occurring from low desert to mid-elevation montane habitats. It is found primarily in rural settings from inland deserts to coastal redwoods, oak woodland of the inner Coast Ranges and Sierra foothills, and low to mid-elevation mixed coniferous-deciduous forests. It typically roosts during the day in caves and mines, but can roost in buildings that offer suitable conditions. Night roosts are in more open settings and include bridges. It hibernates in mixed sex aggregations of a few to several hundred individuals. Hibernation is prolonged periods in colder areas and intermittently in non-freezing areas. It arouses periodically and moves to alternative roosts, and actively forages and drinks throughout the winter. A single young is born per year between May and July. Females form maternity colonies of 35 to 200 individuals, while males roost individually. Pacific western big-eared bat feed primarily on small moths that are gleaned from vegetation. There are no recorded occurrences within one mile of the NSCARP project area (CNDDB, 2006).

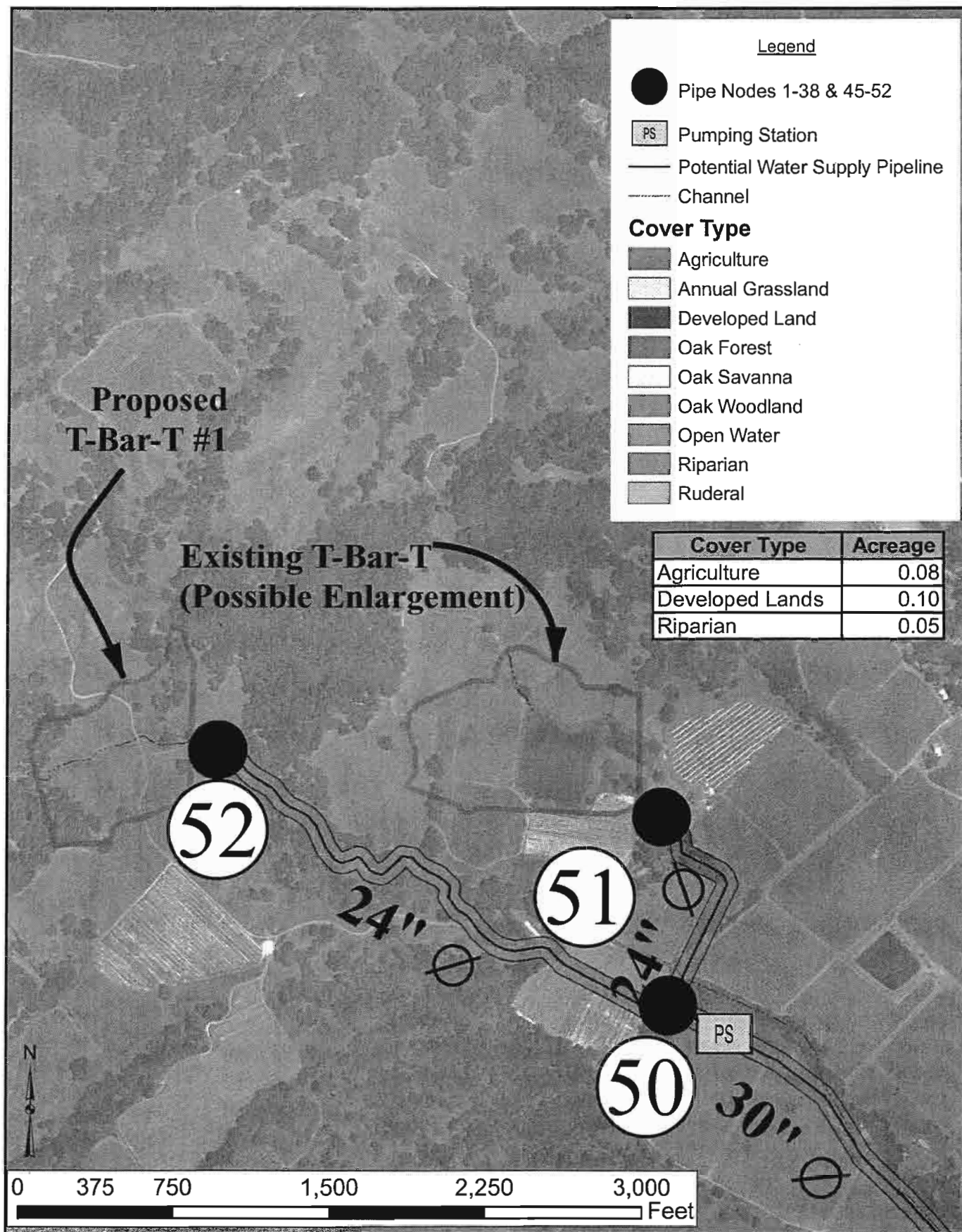




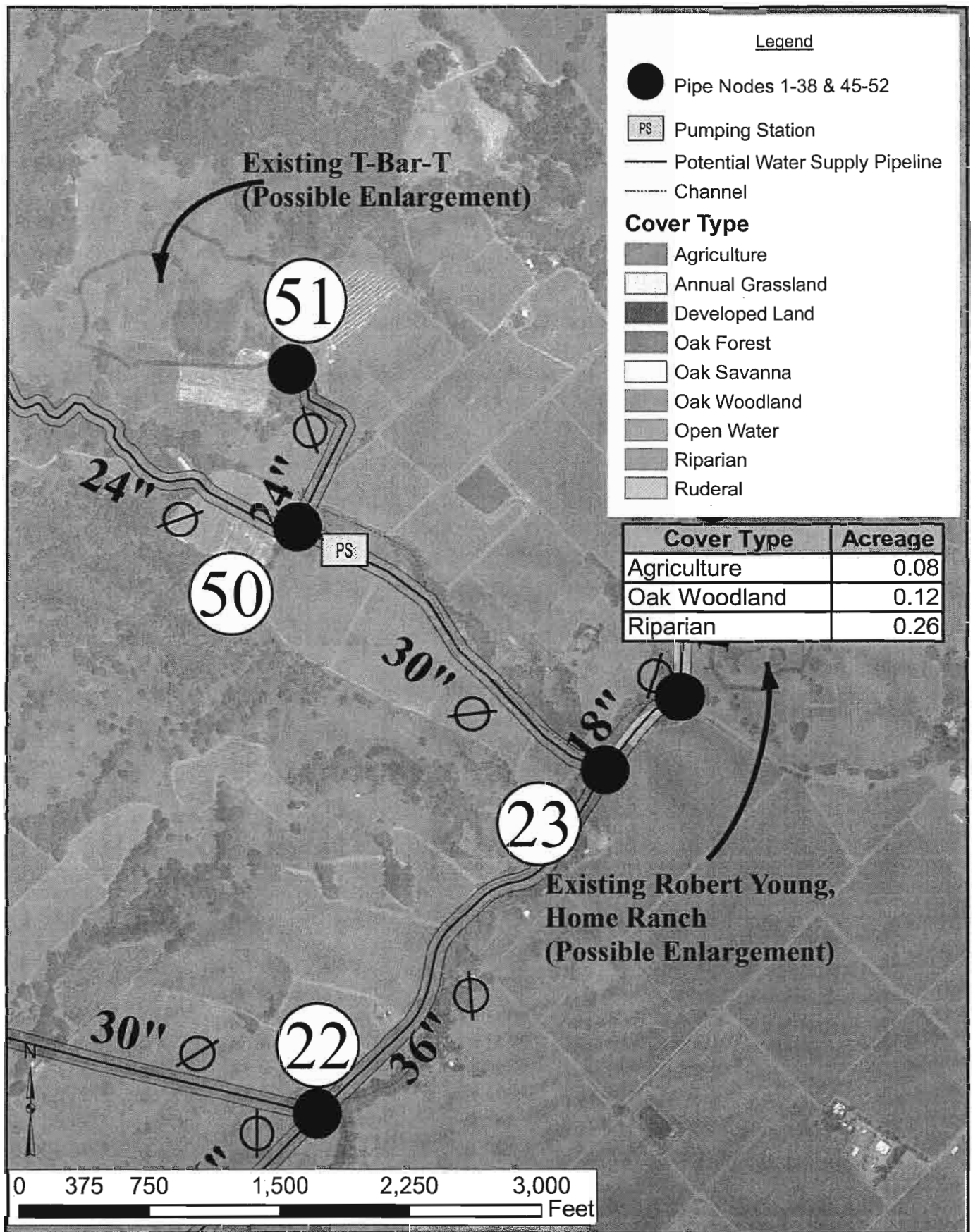
**APPENDIX F**  
**ATTACHMENT 5**  
**VEGETATIVE COVER TYPE MAPS FOR THE NSCARP PROJECT AREA**

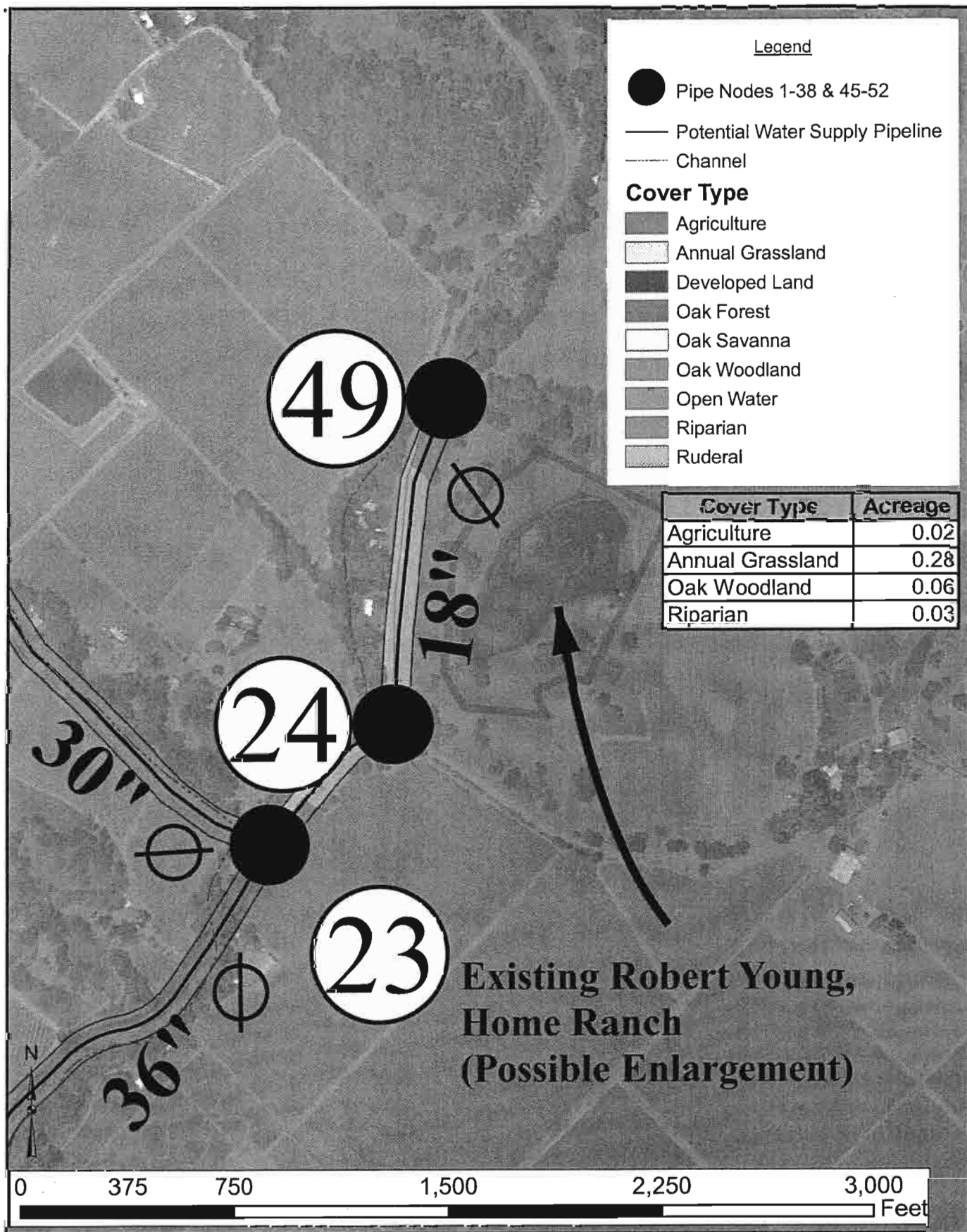


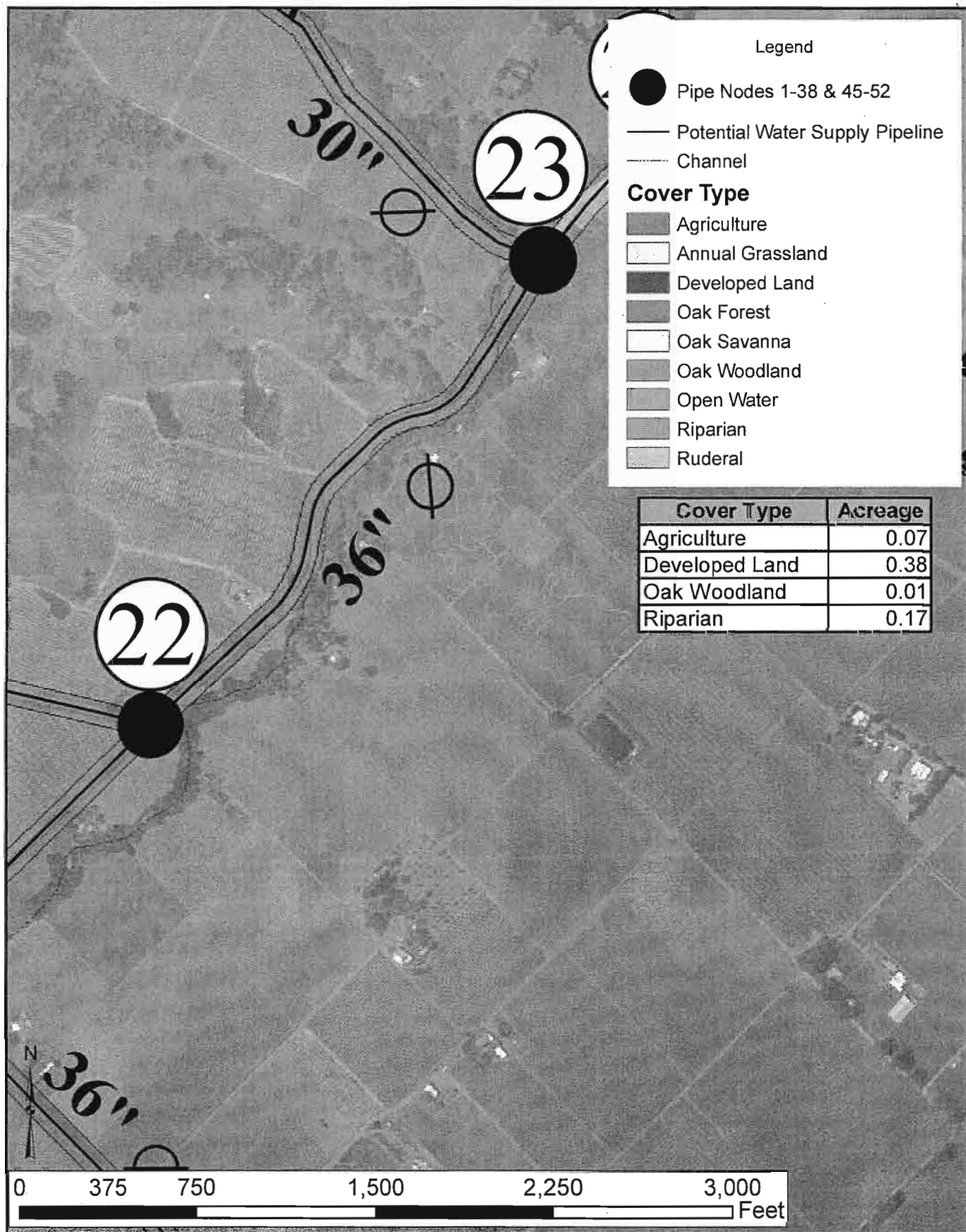




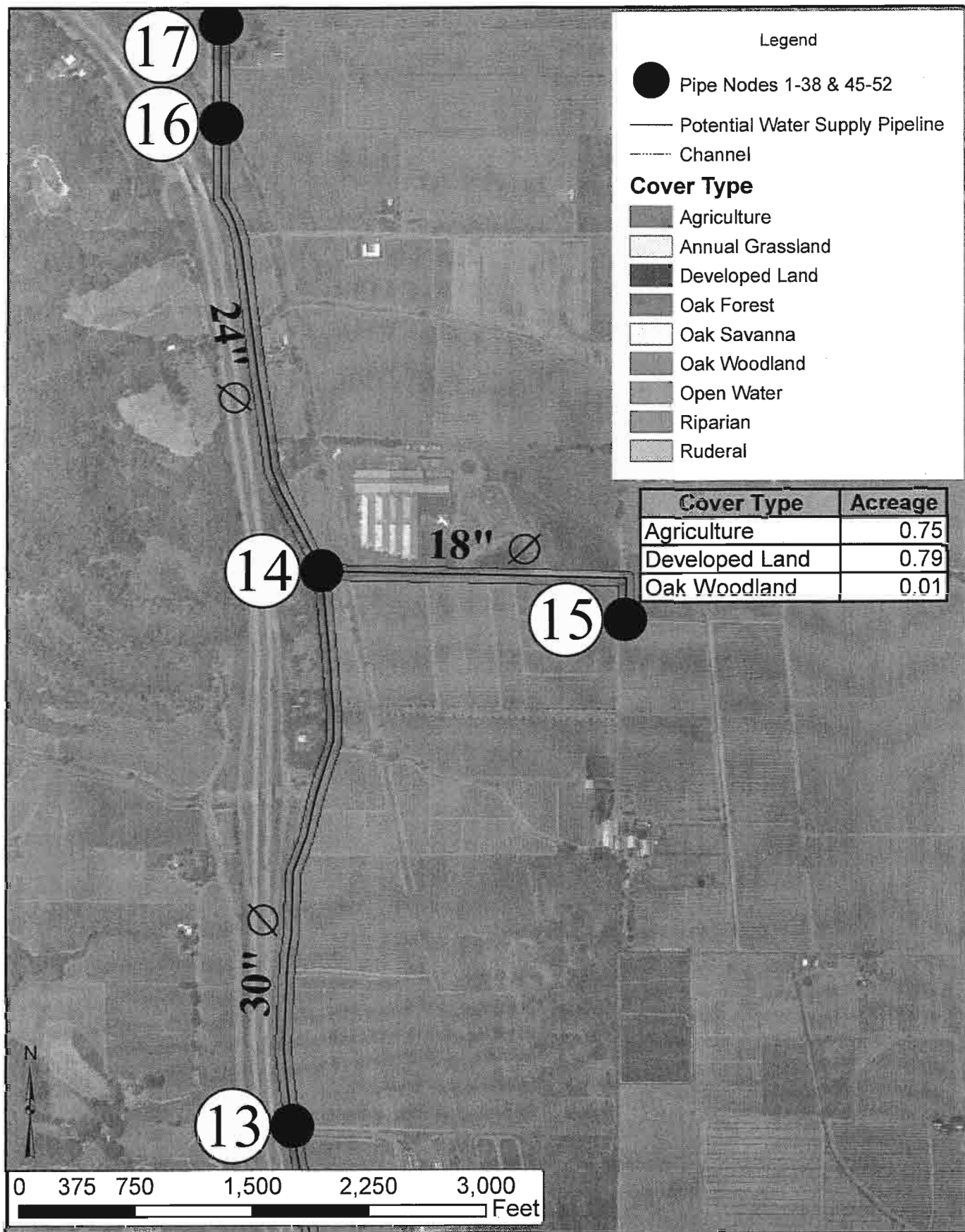




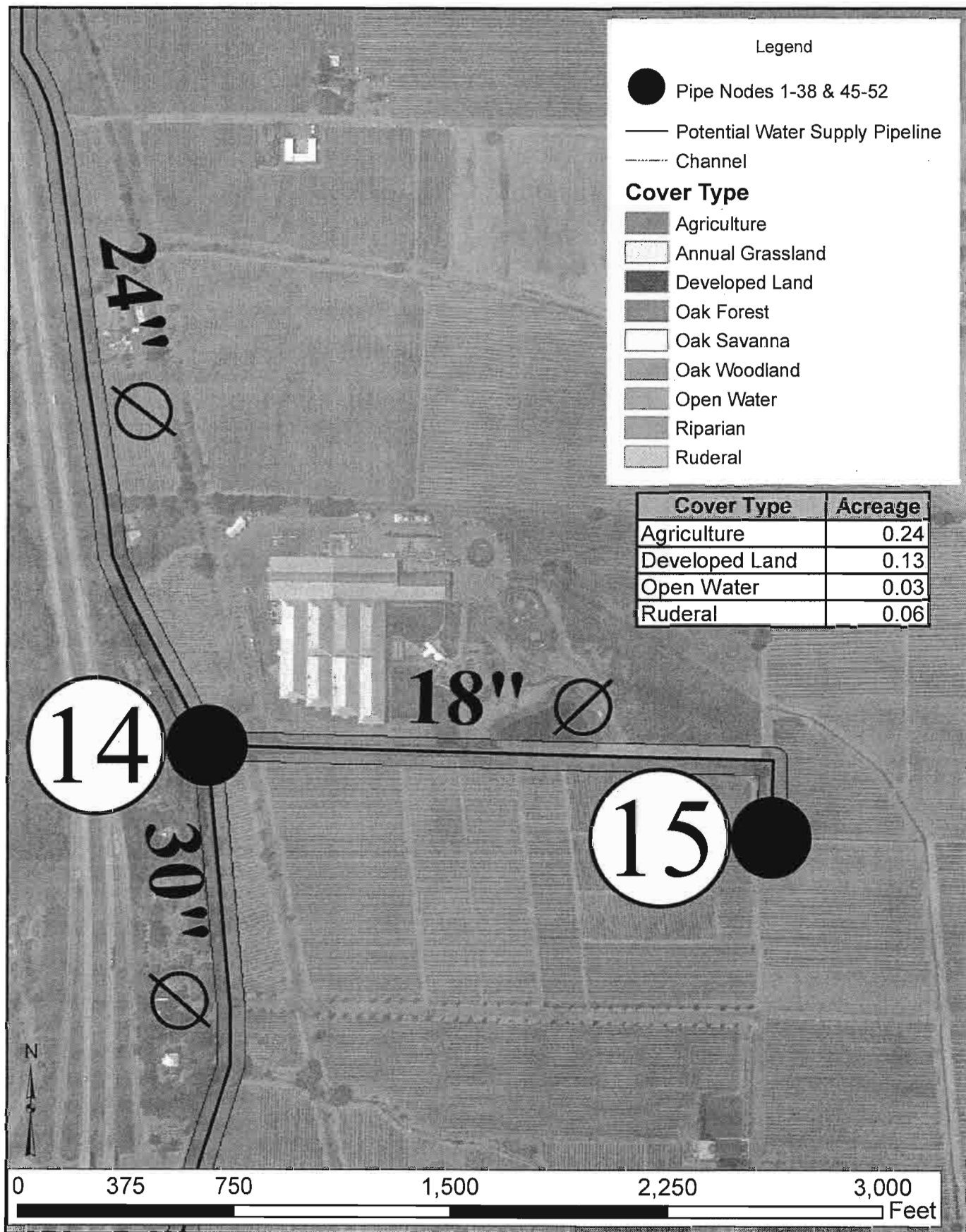


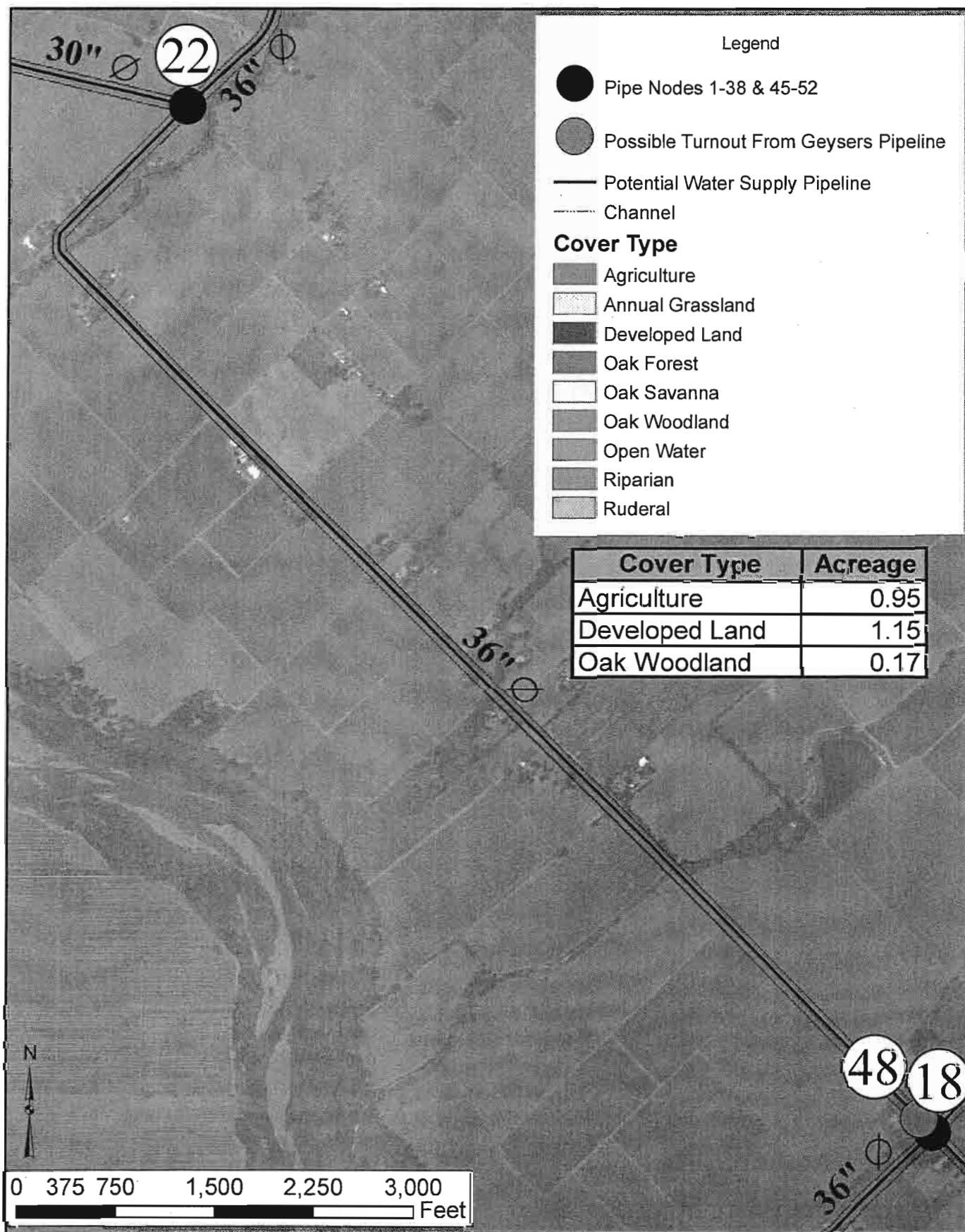


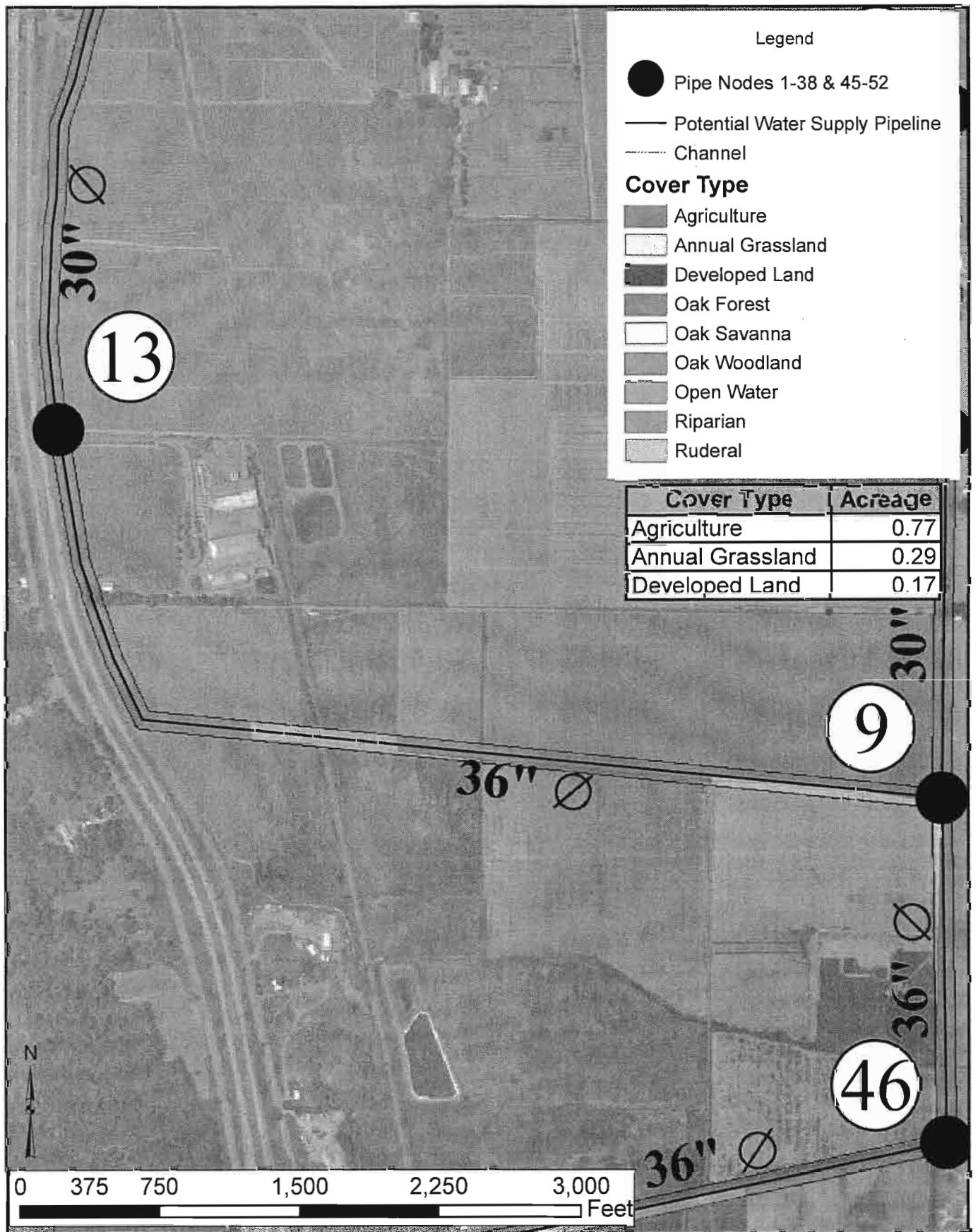




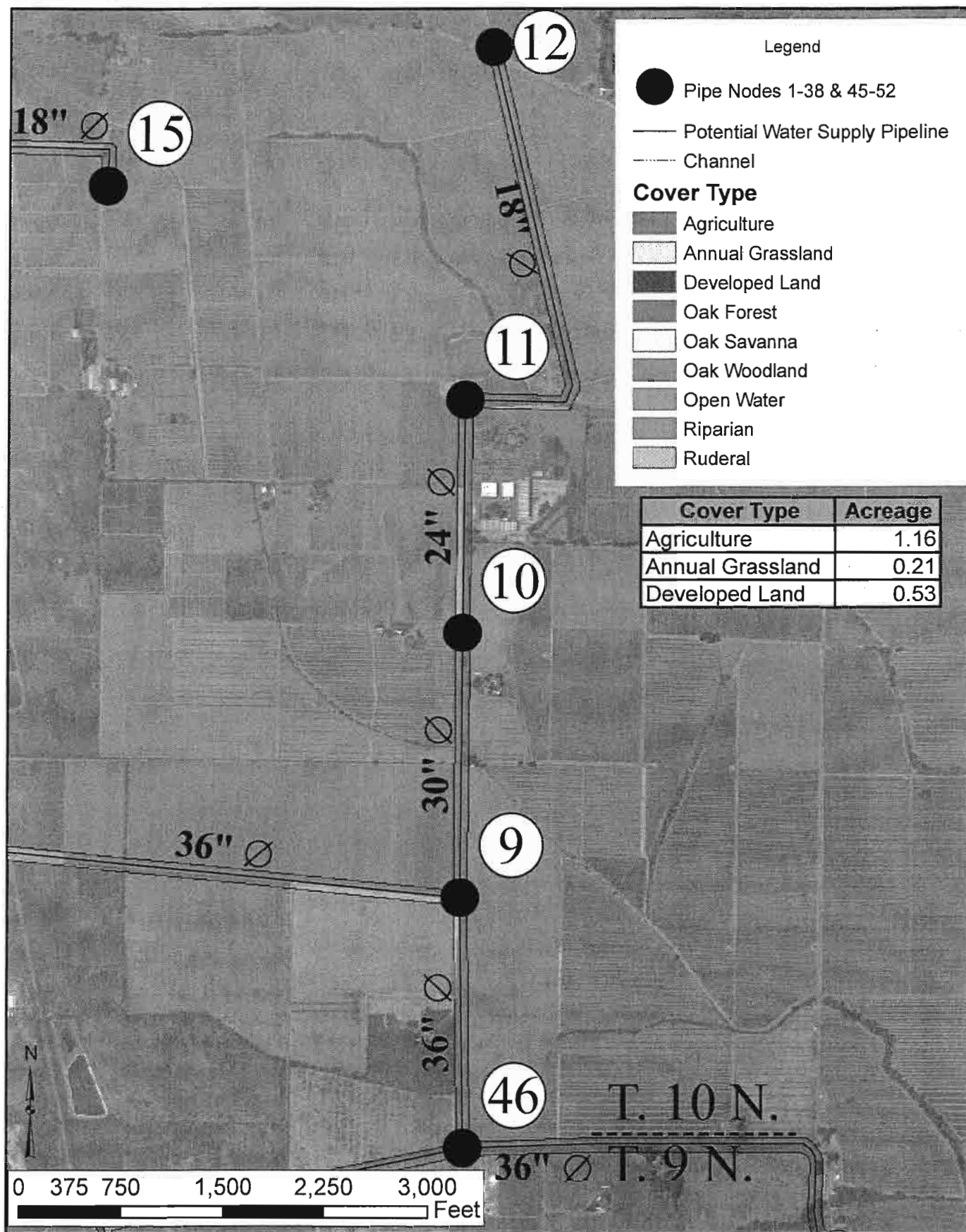


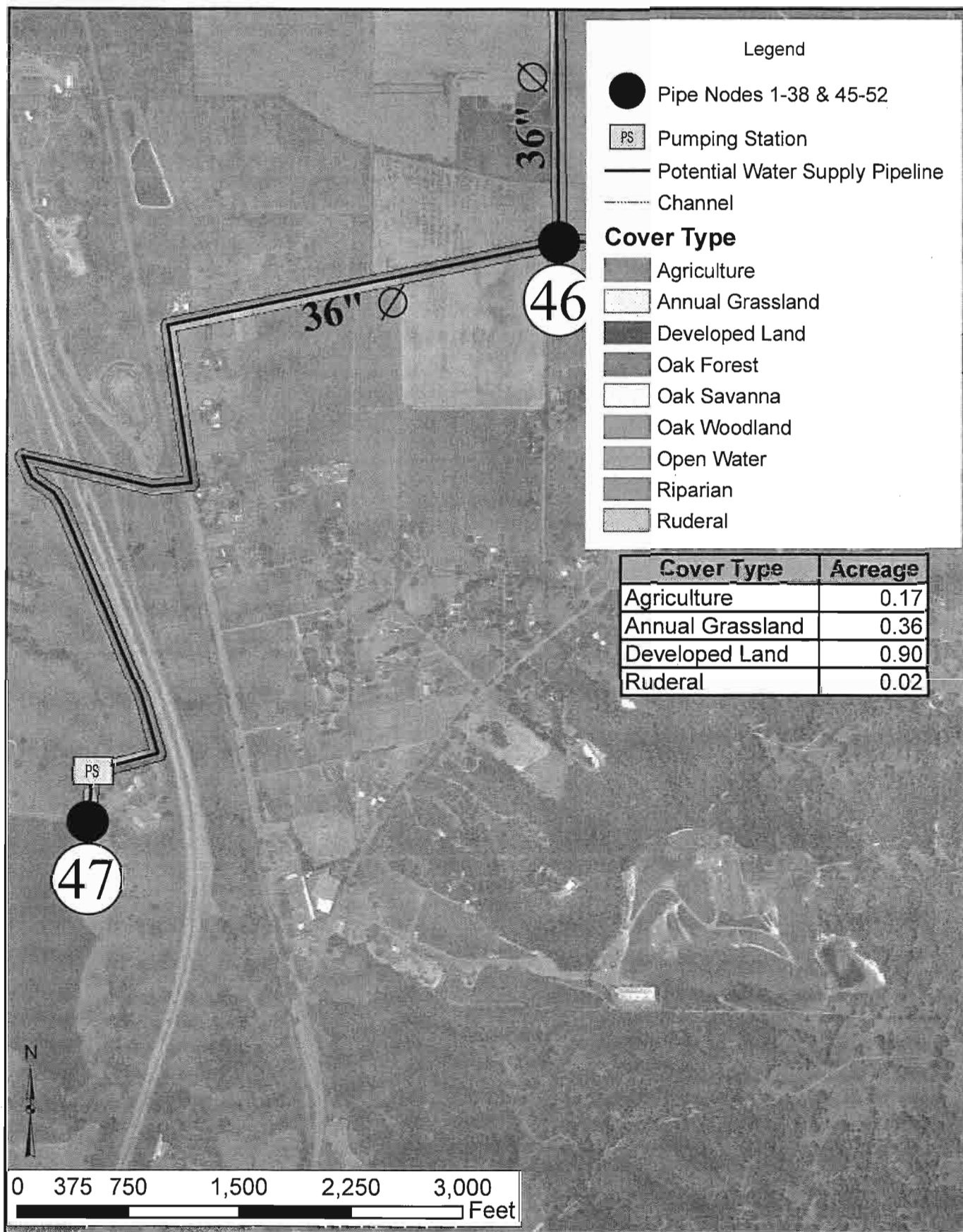


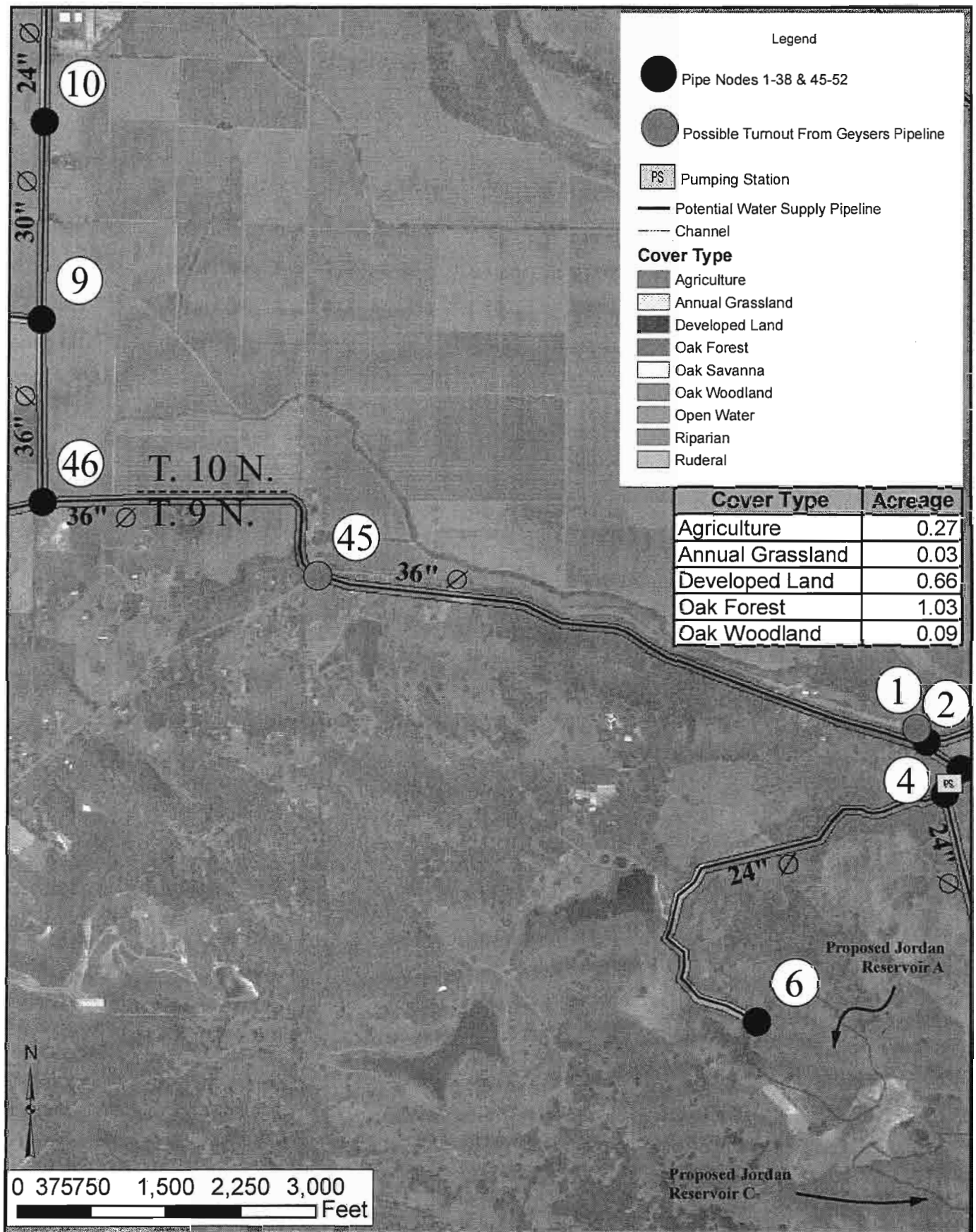




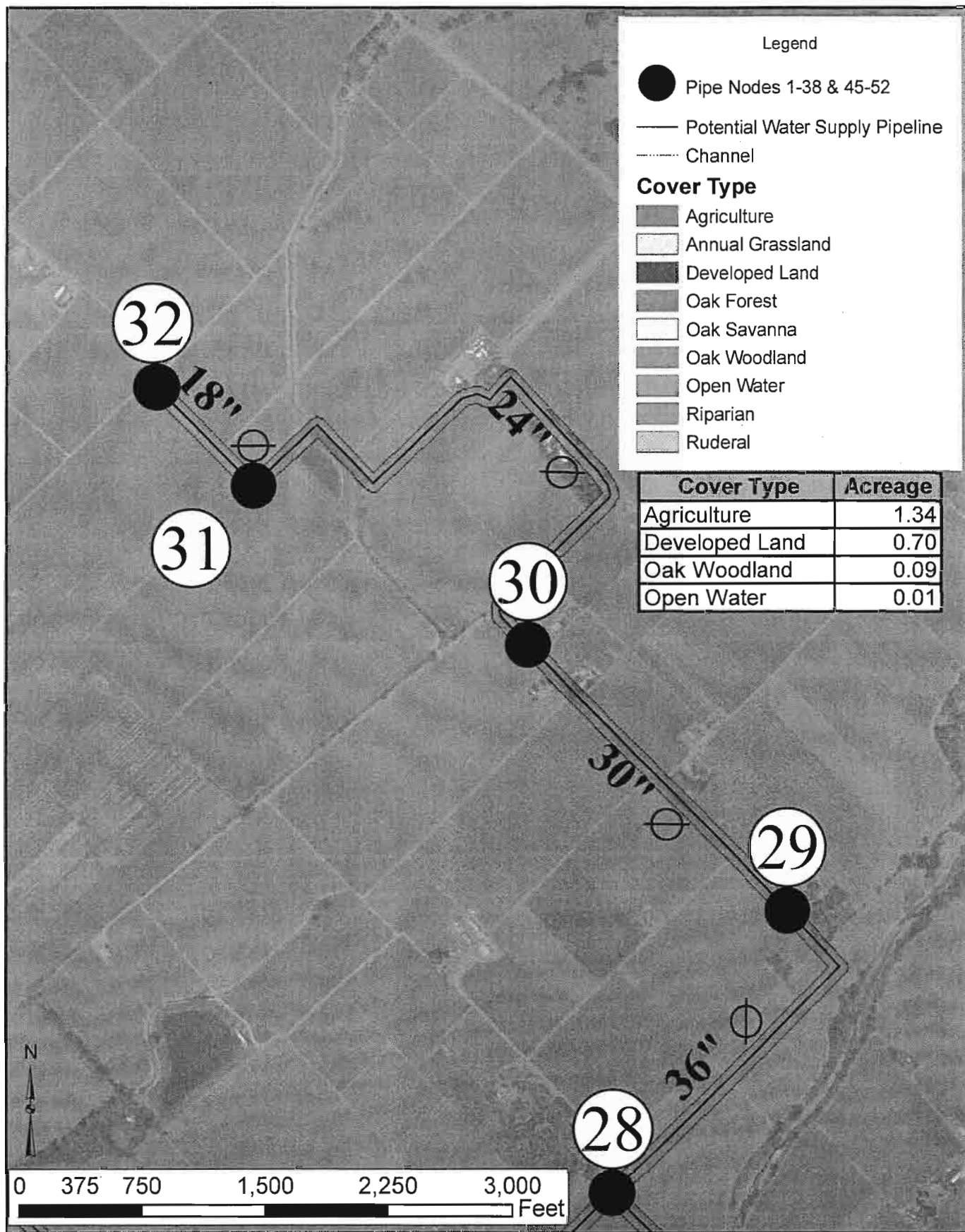


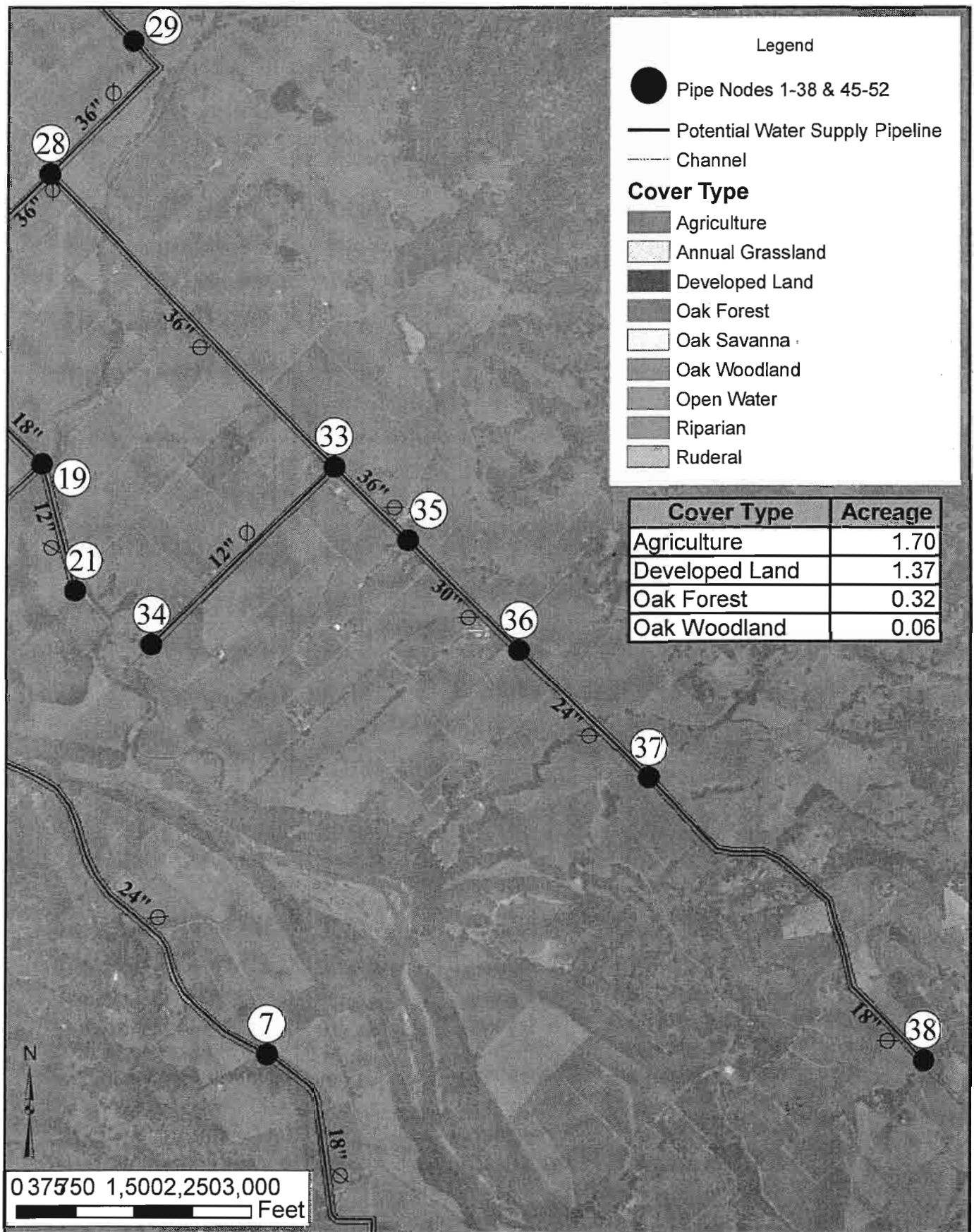




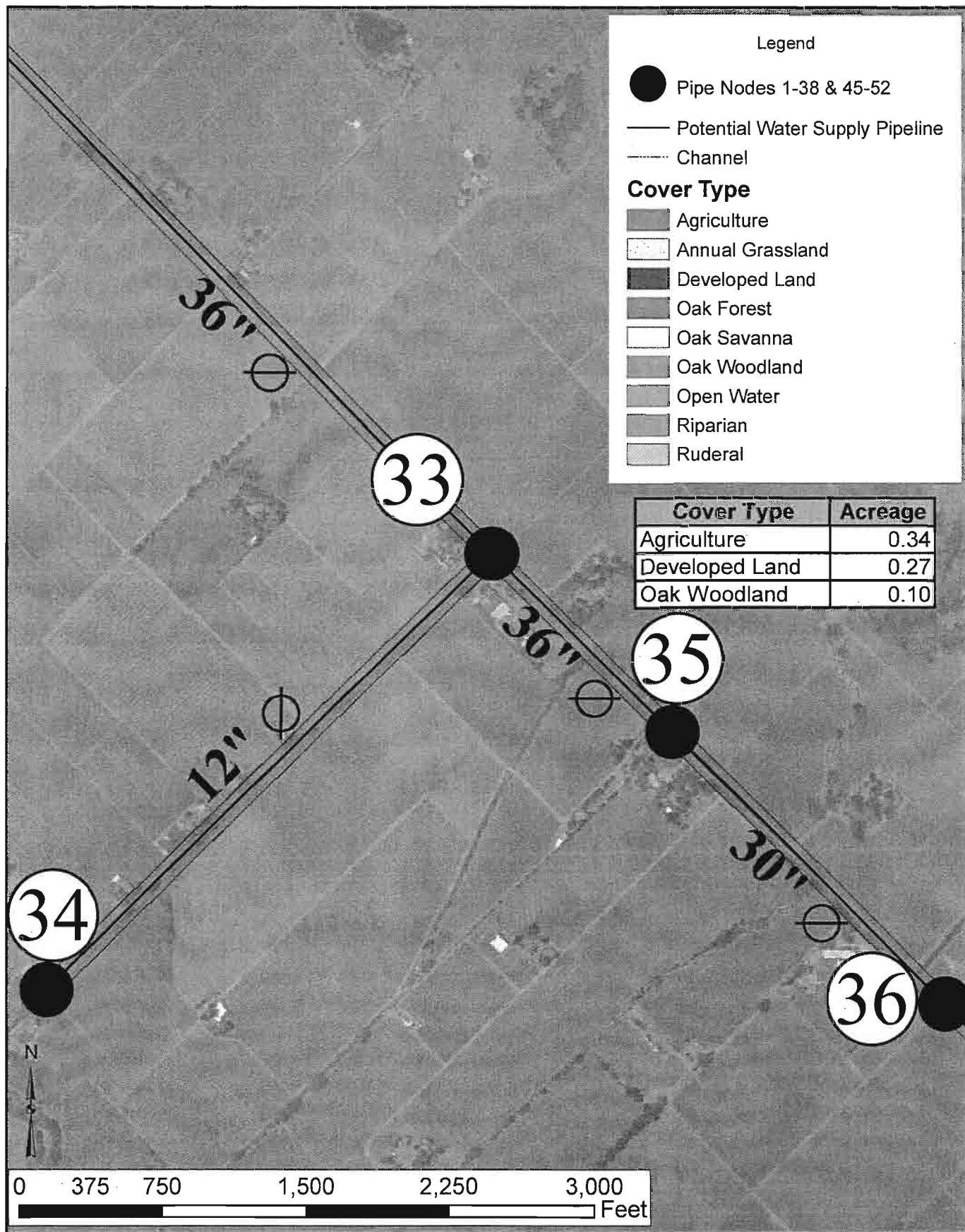


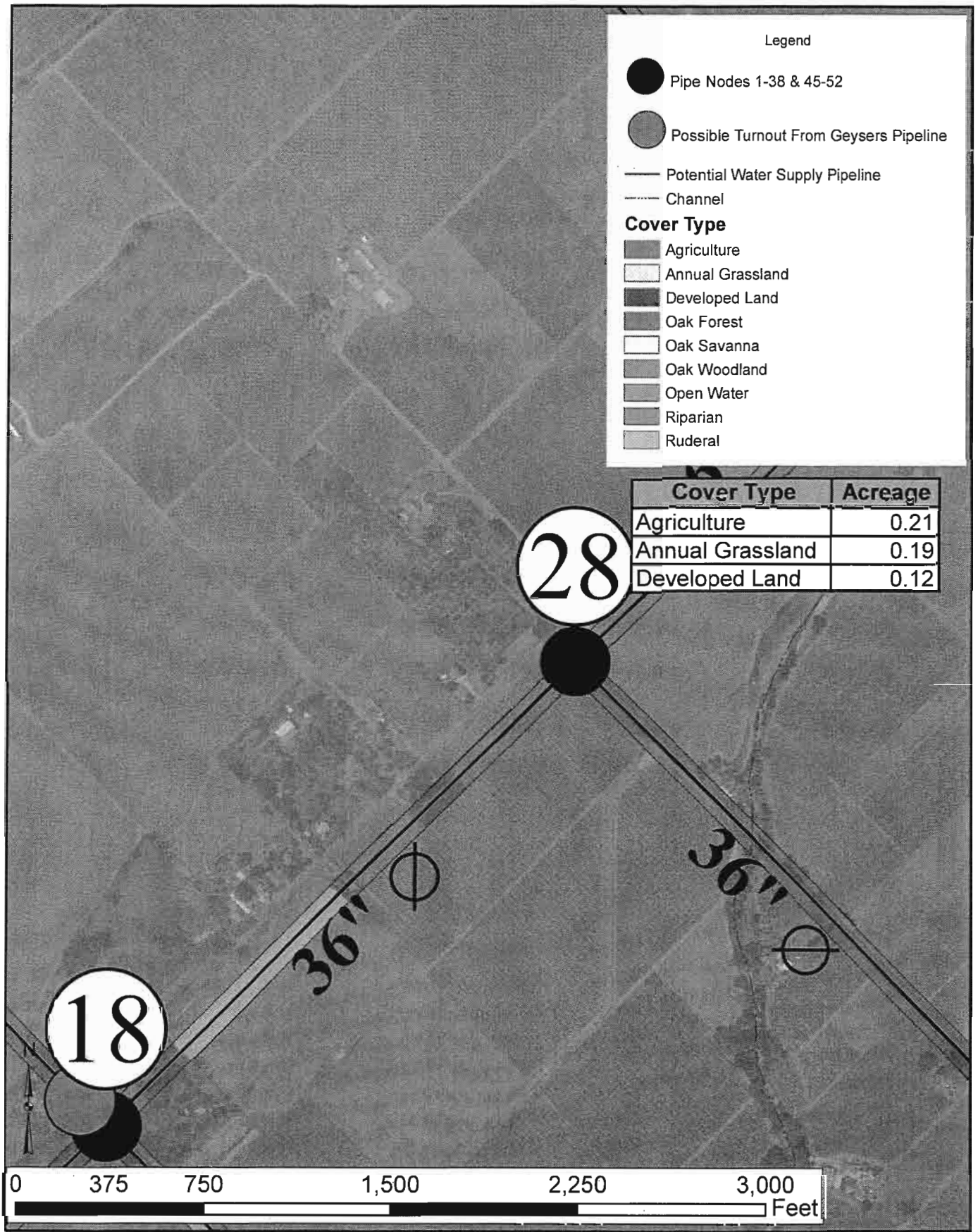


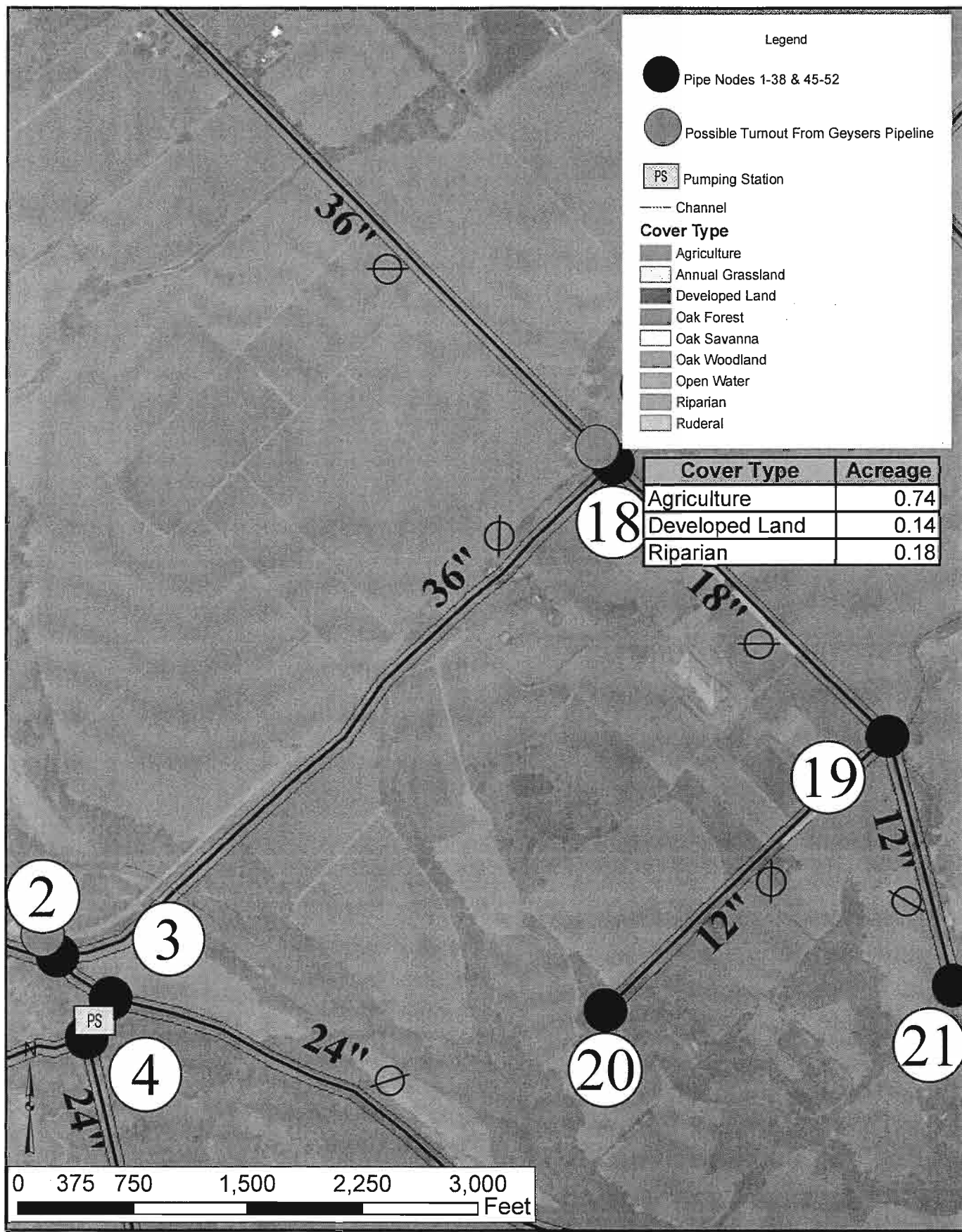




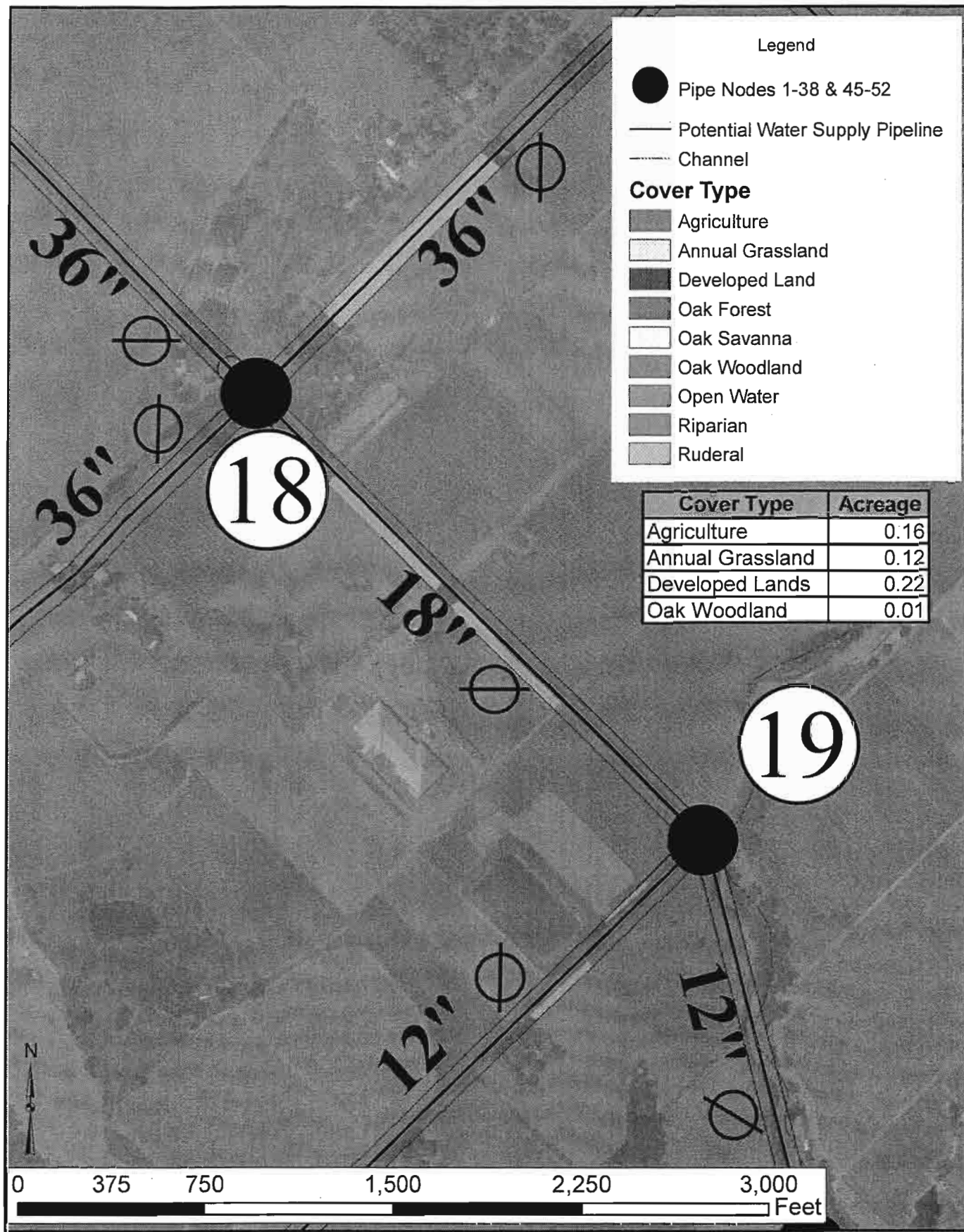


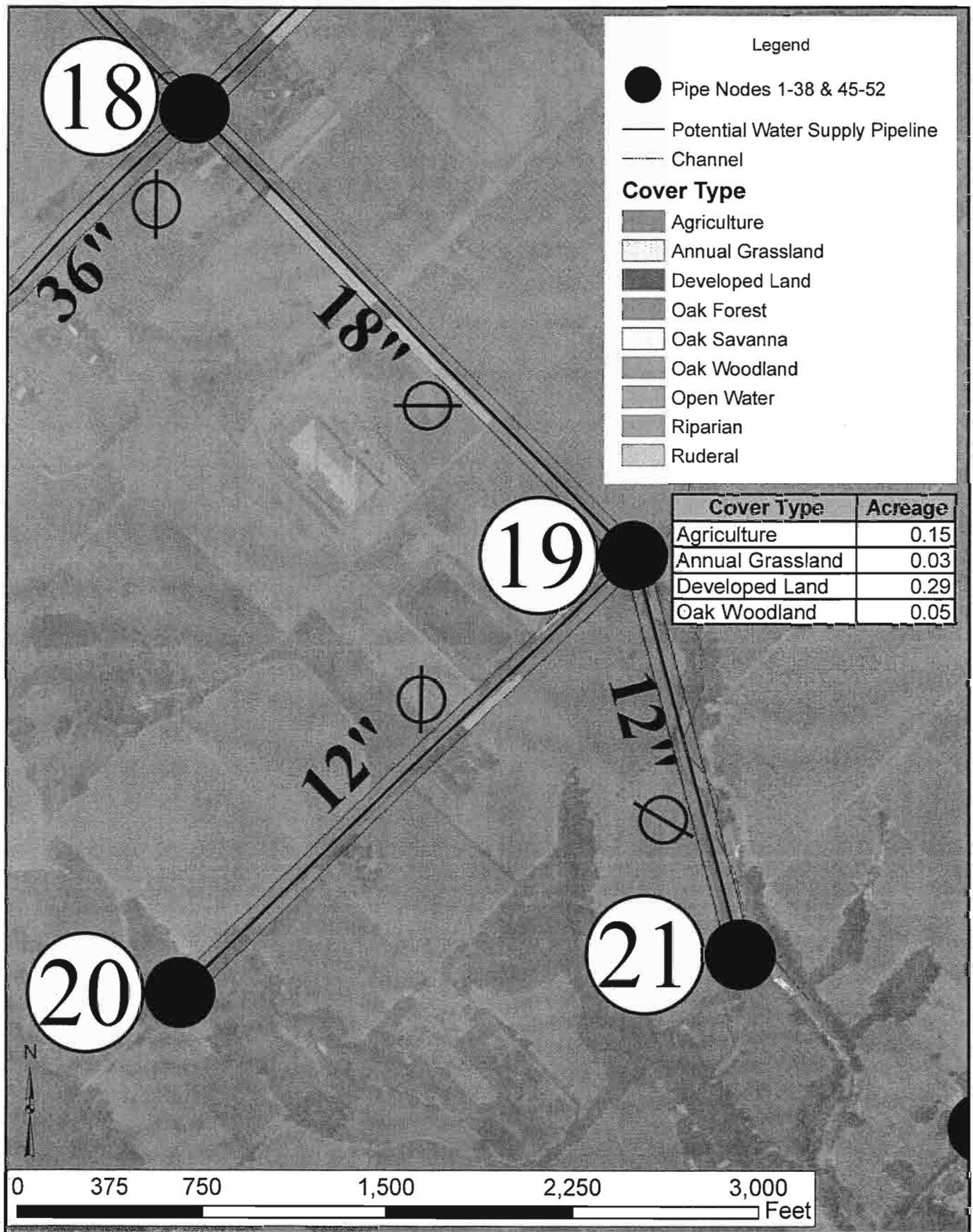


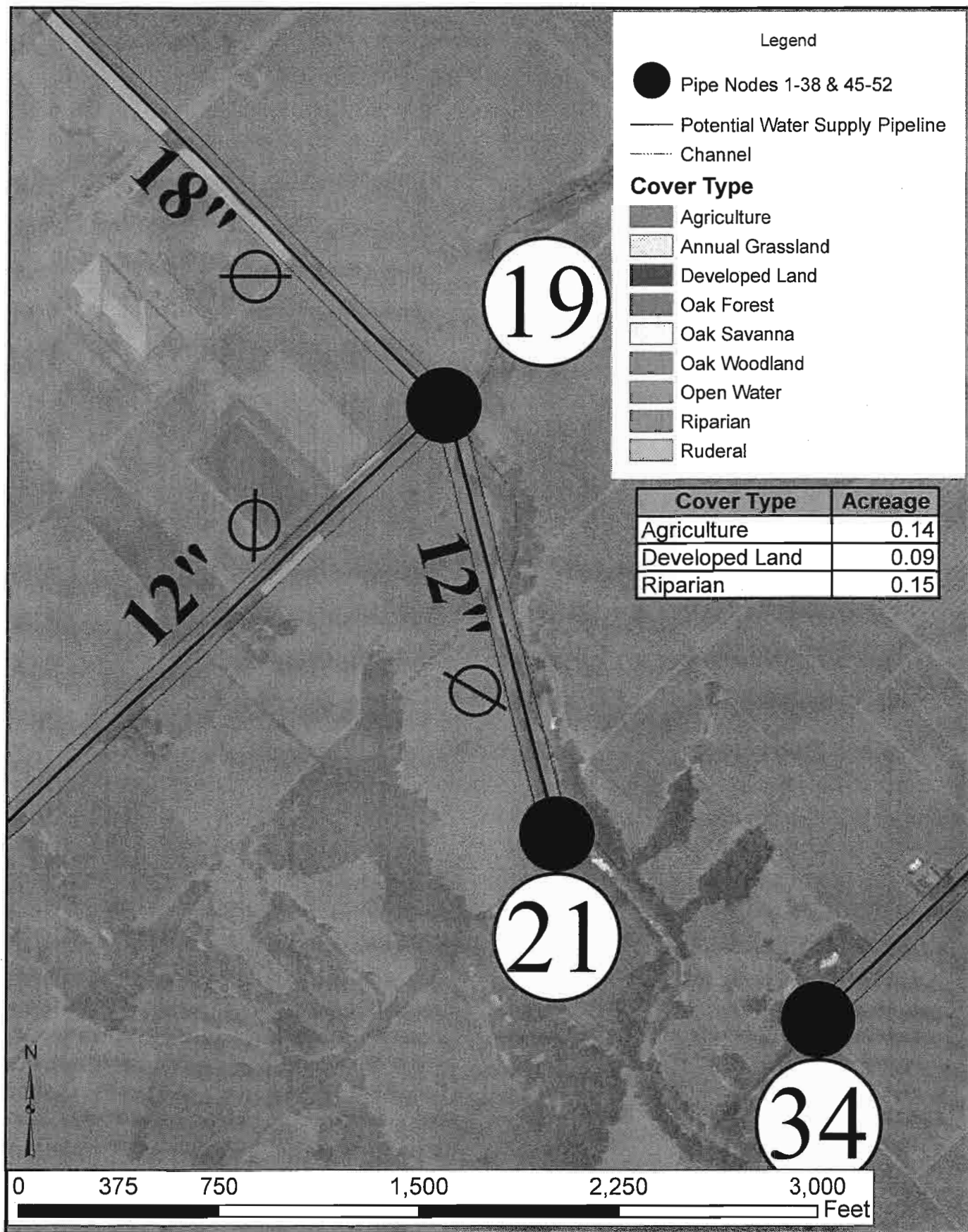




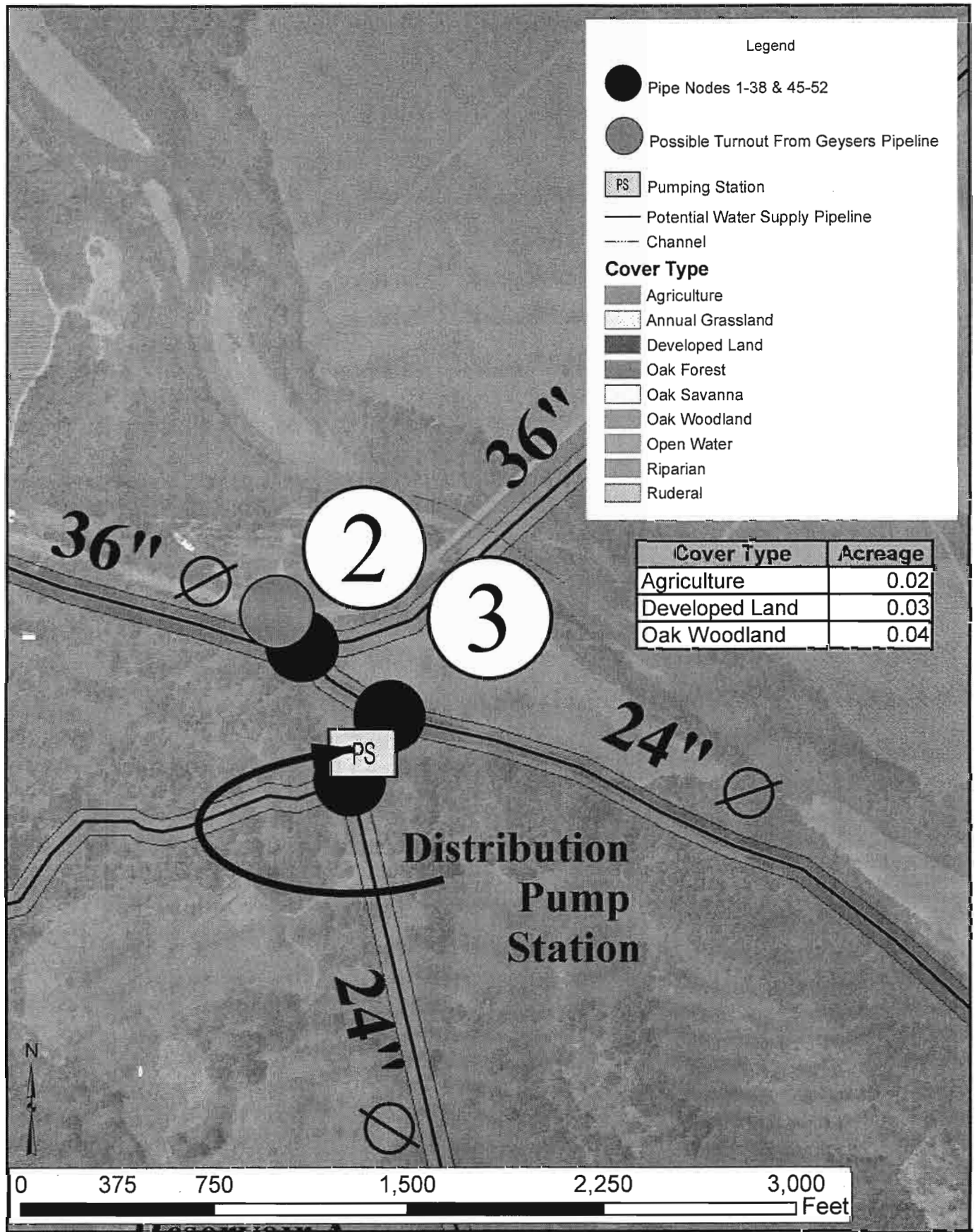


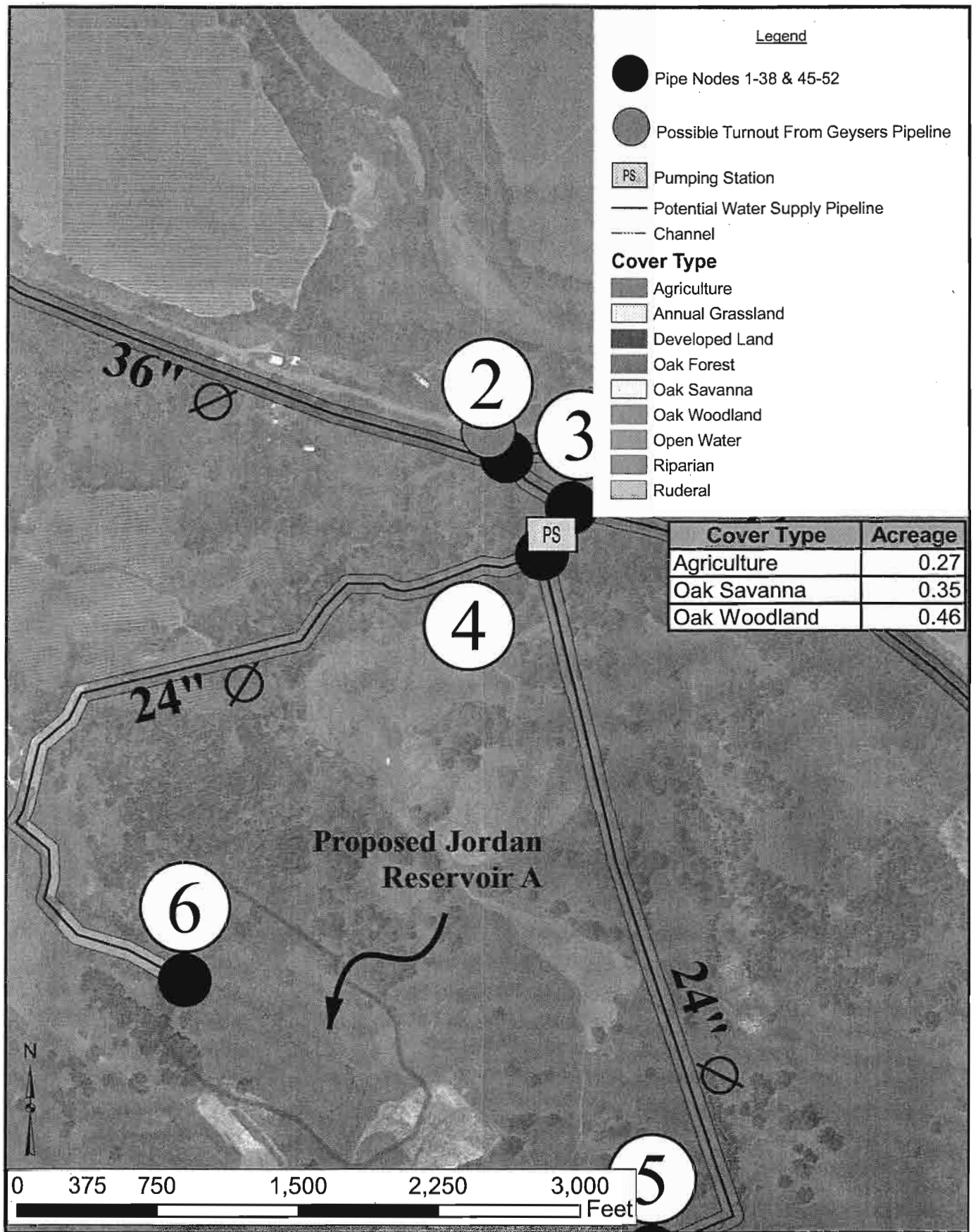




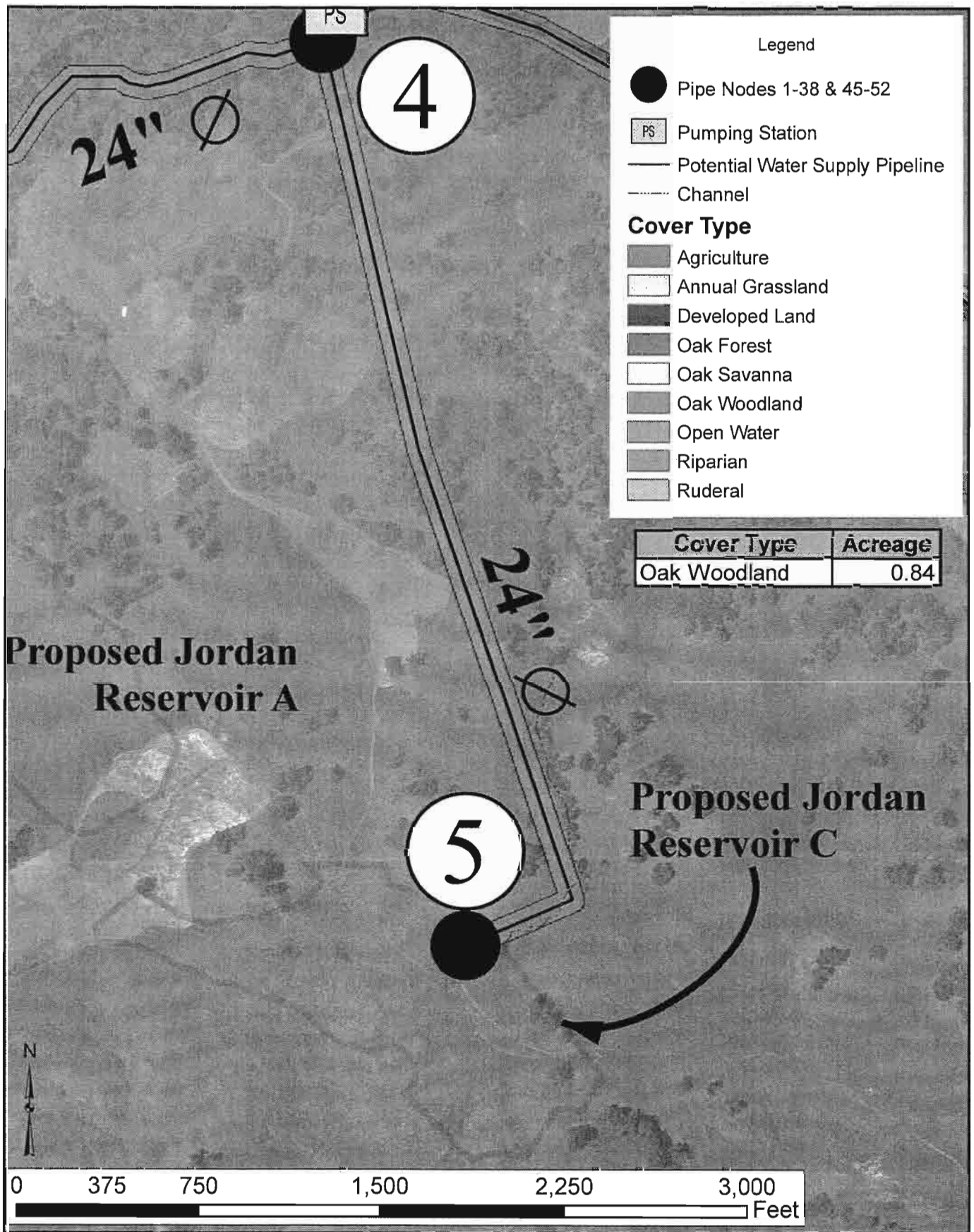


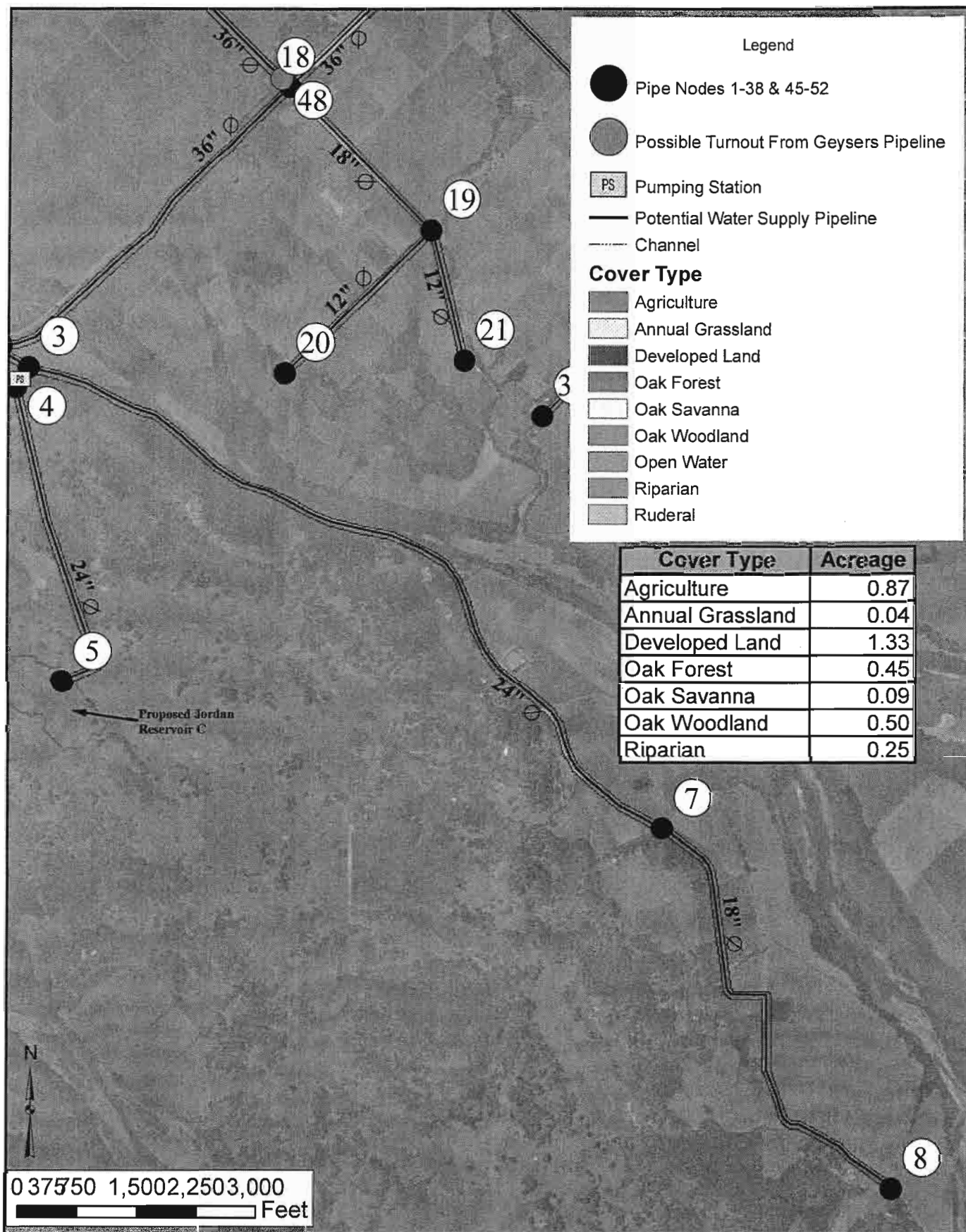


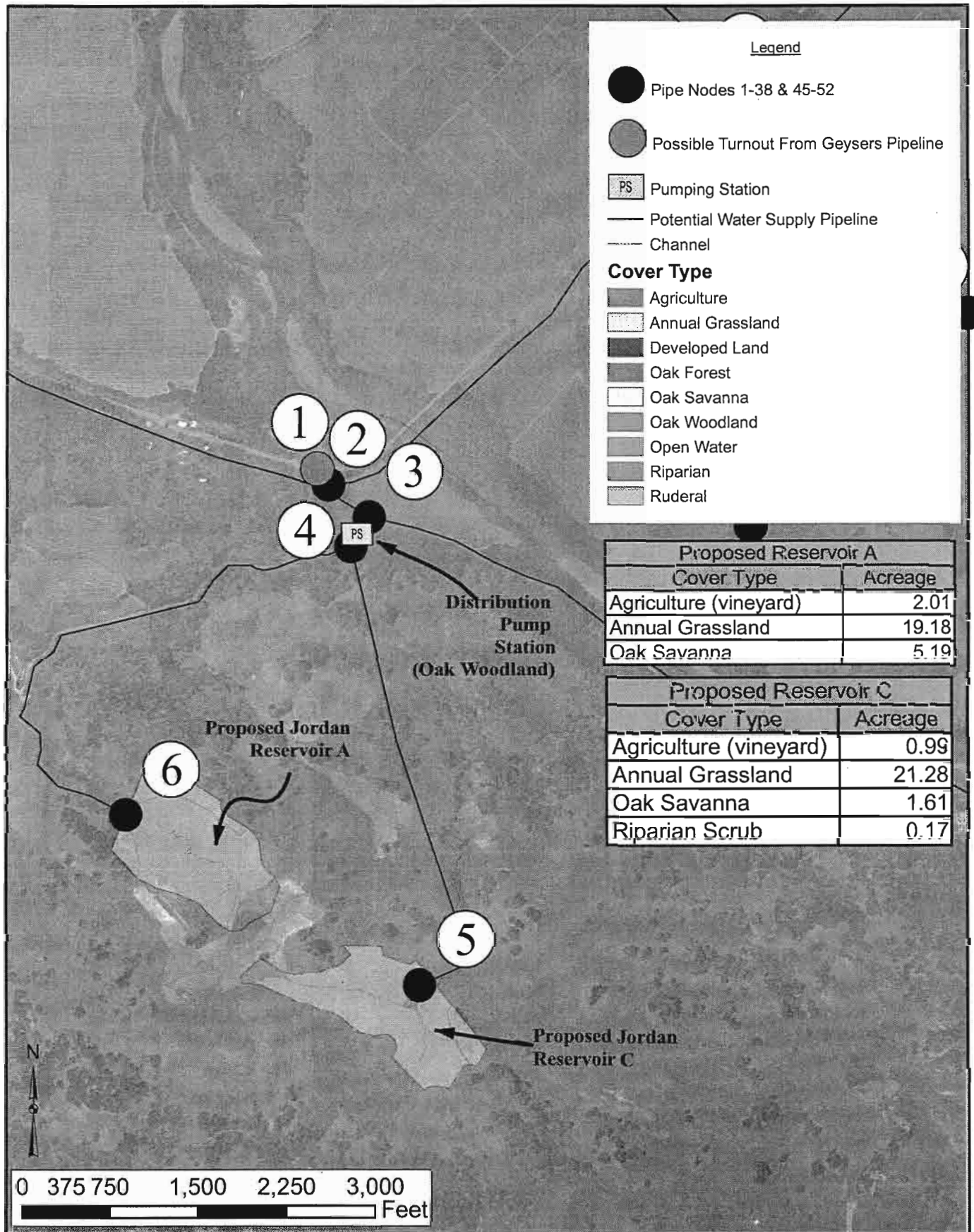




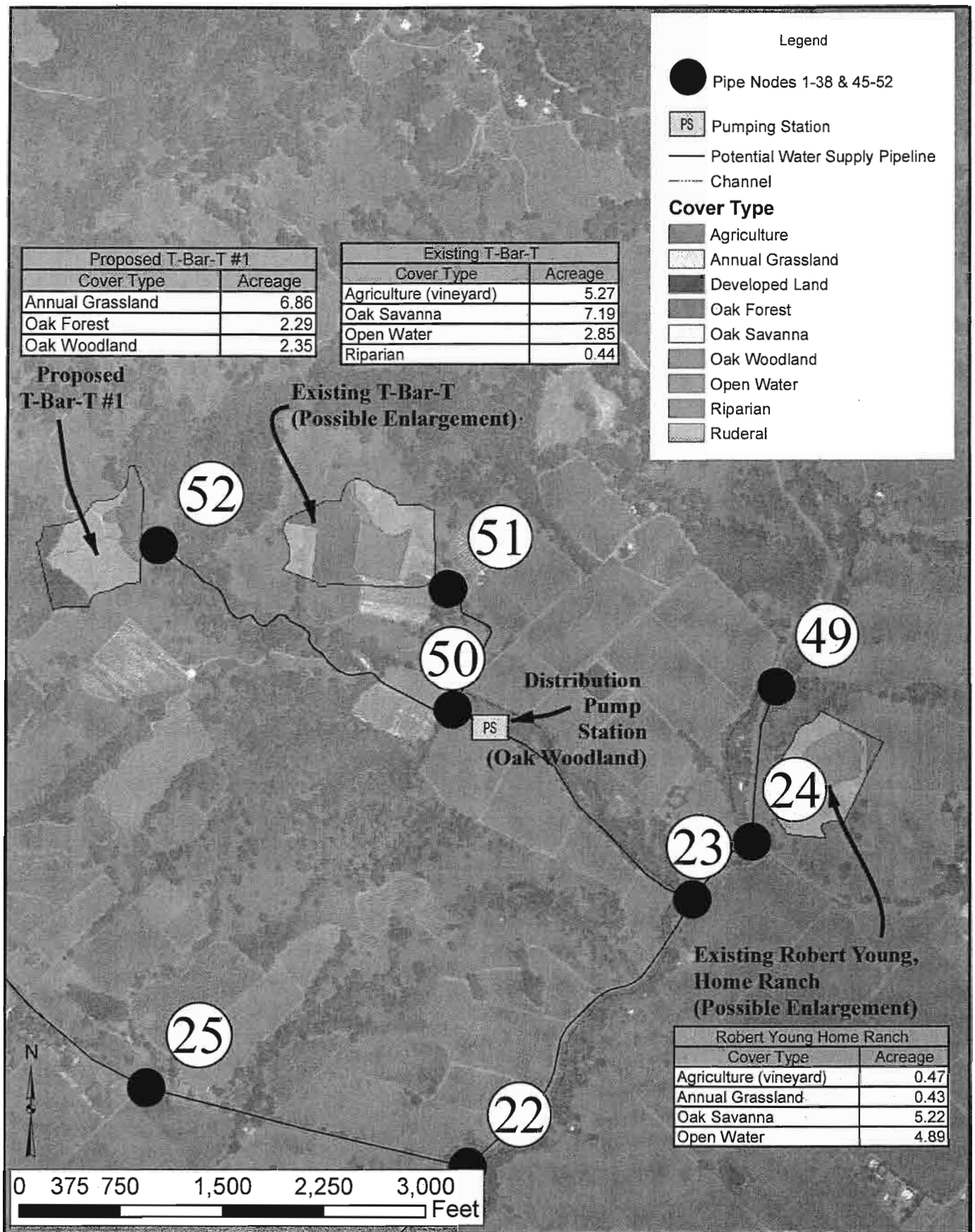


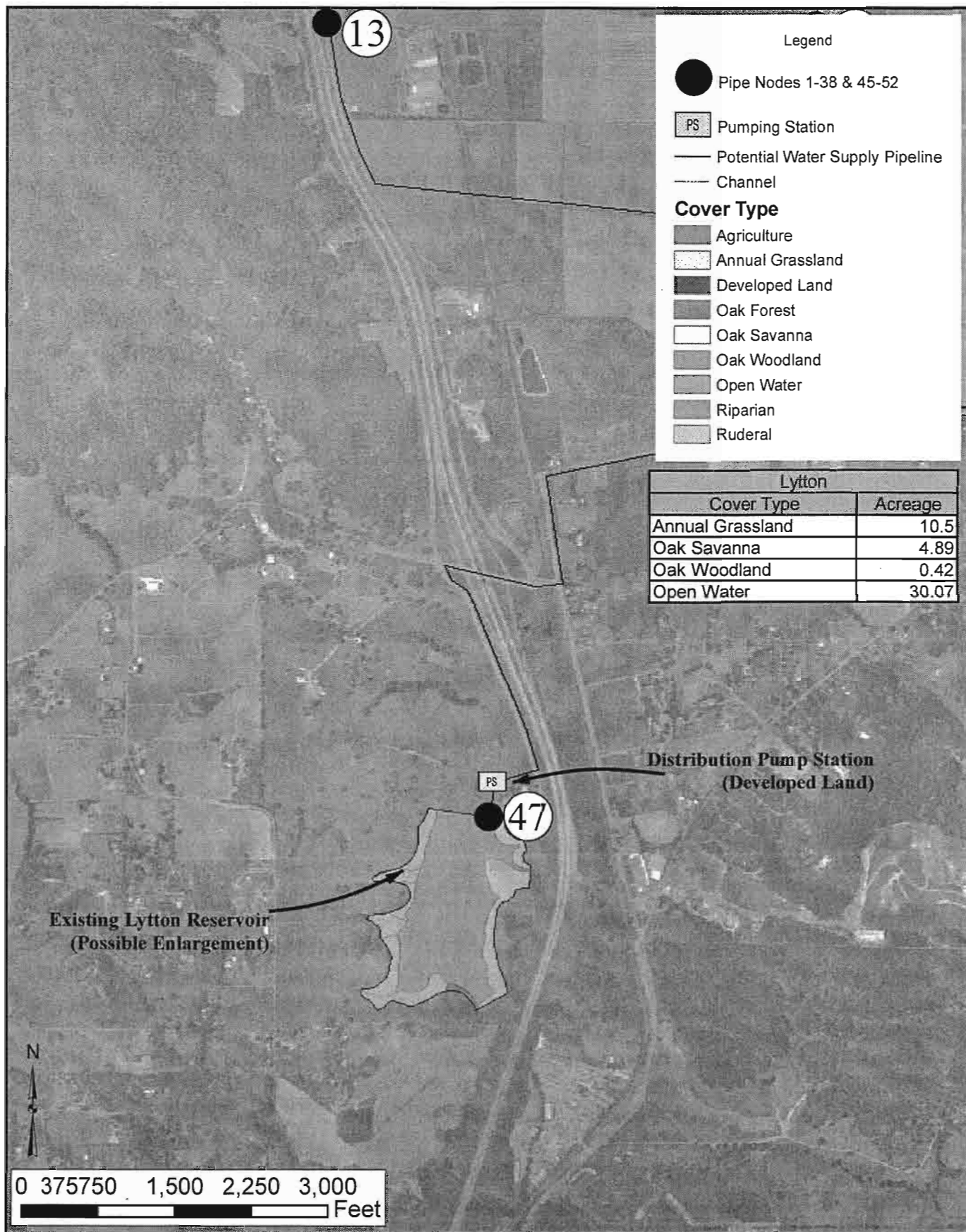


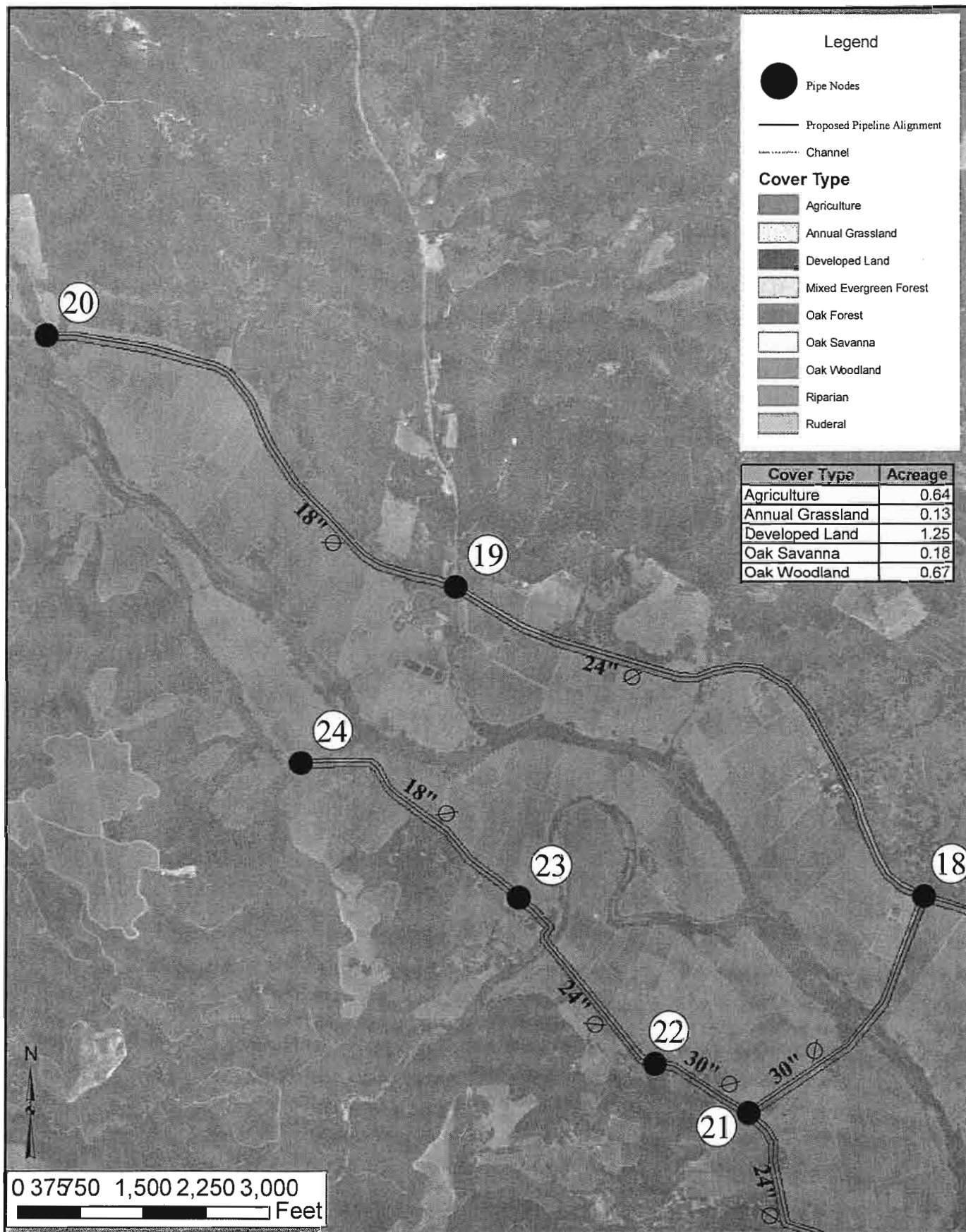




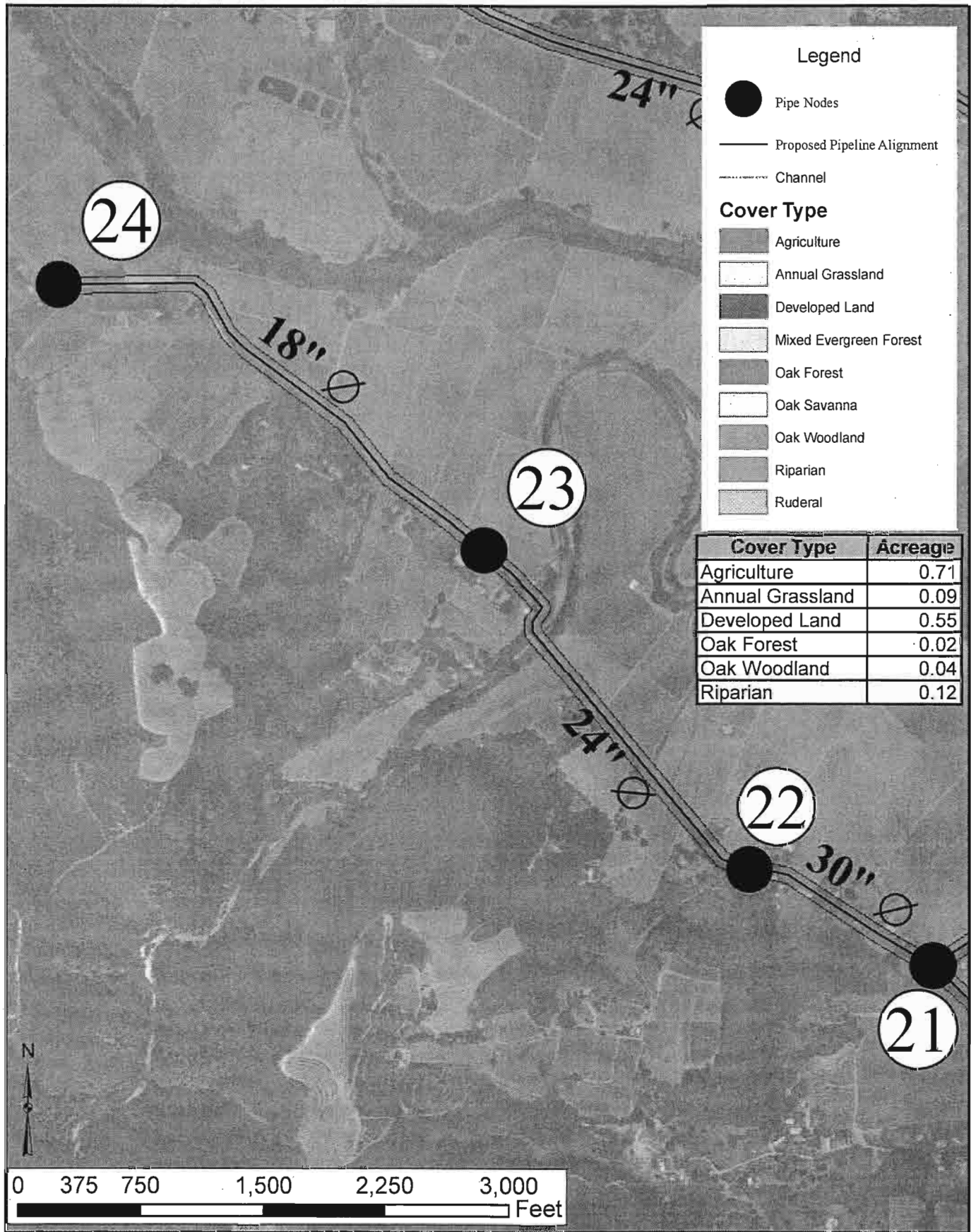


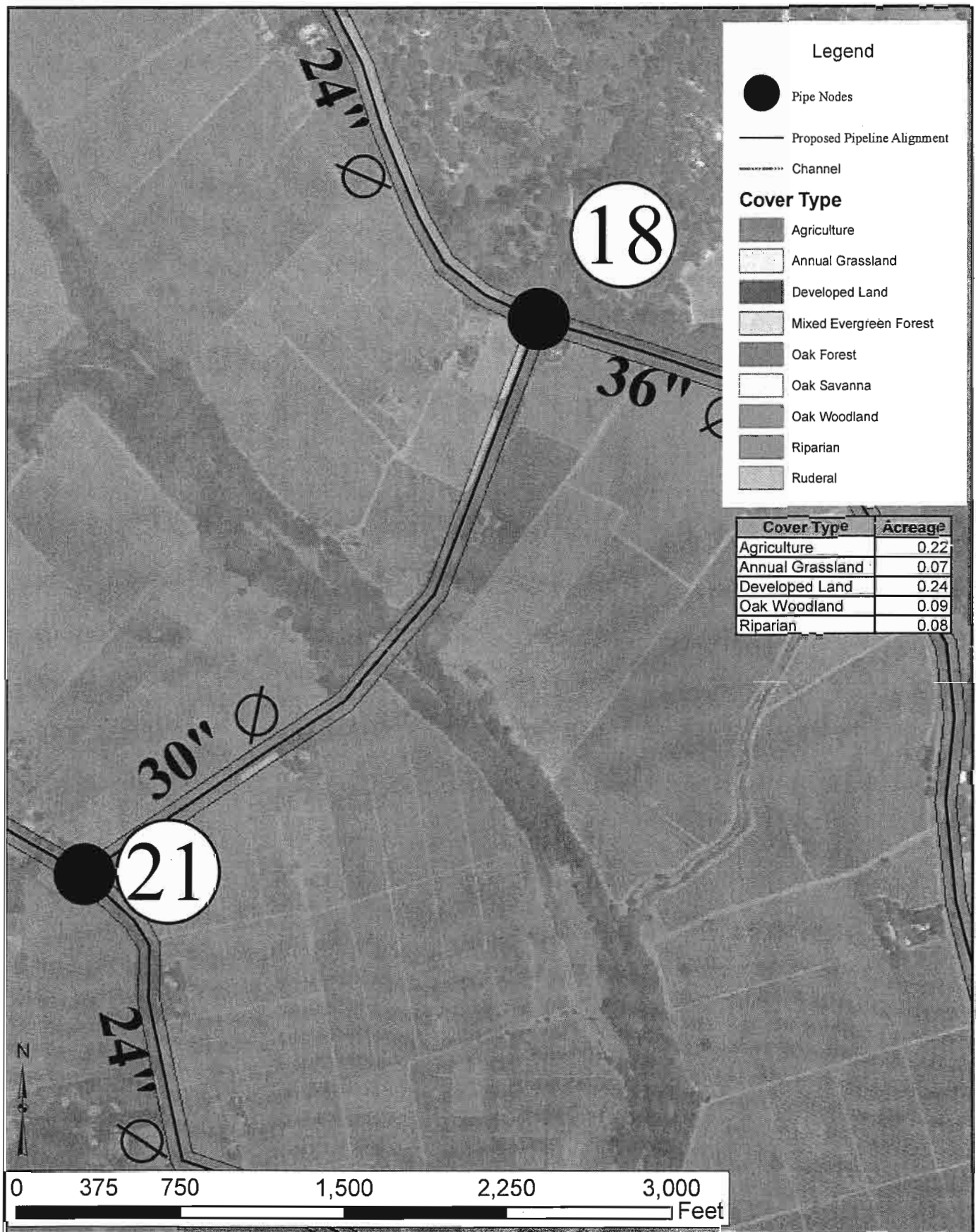




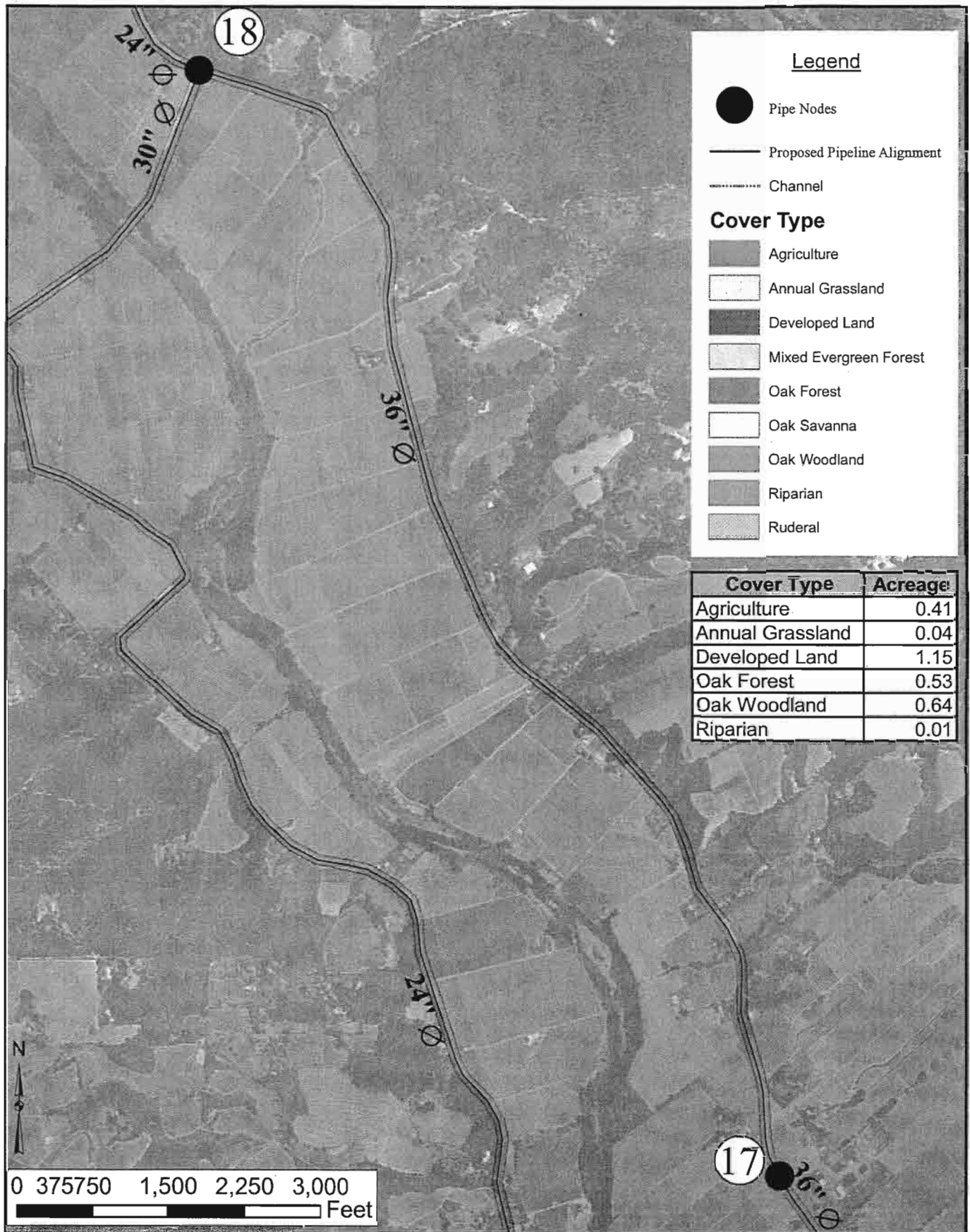


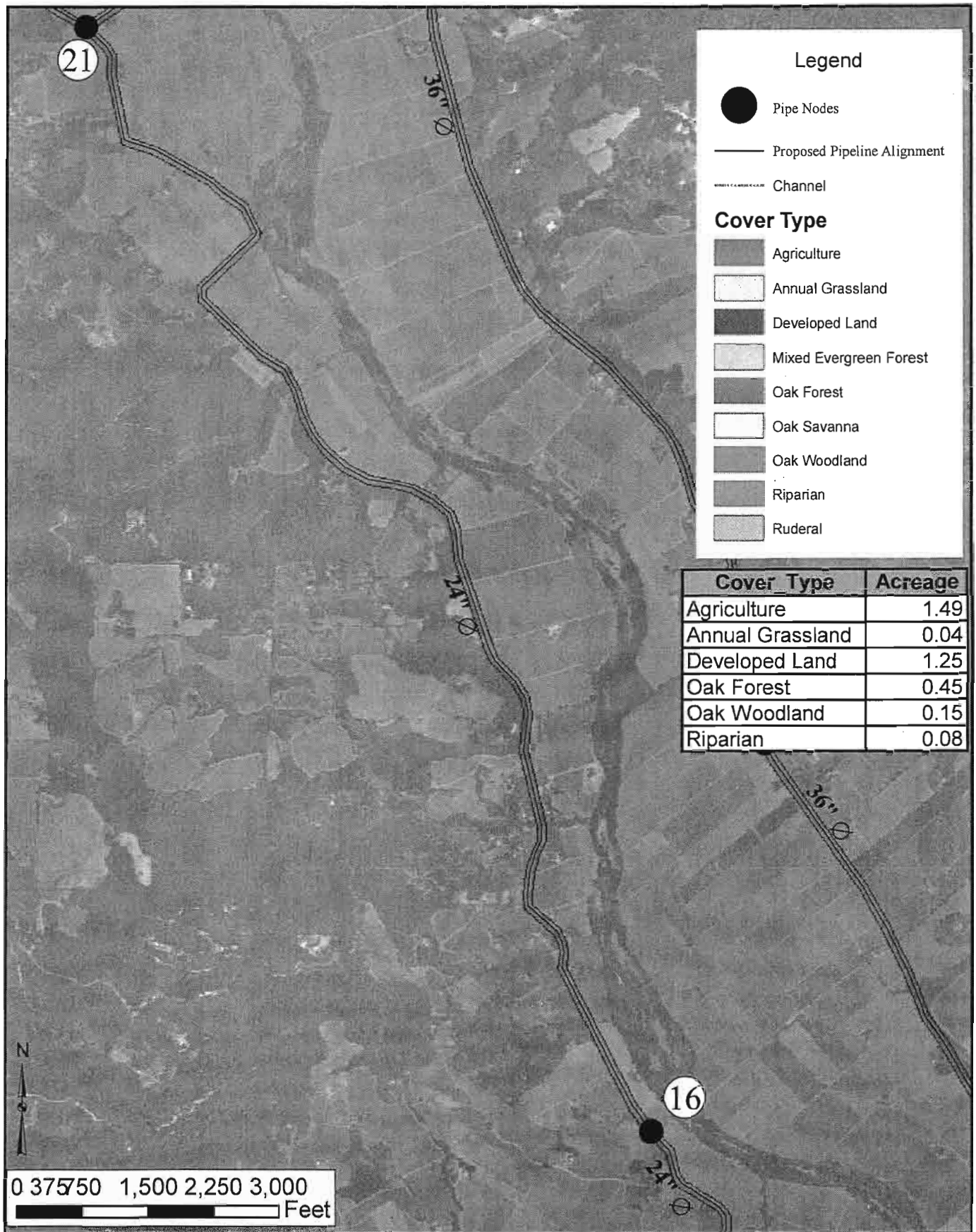


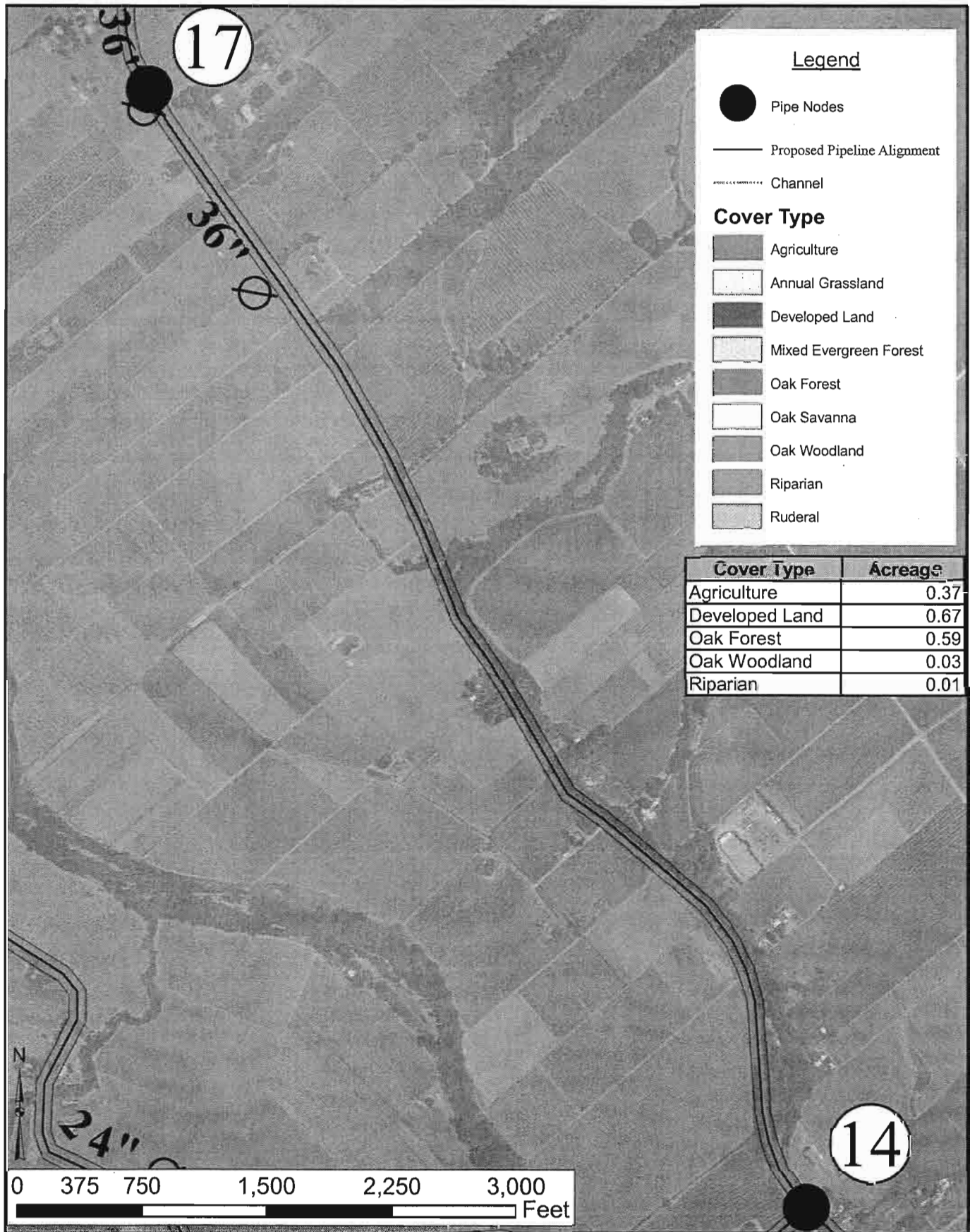




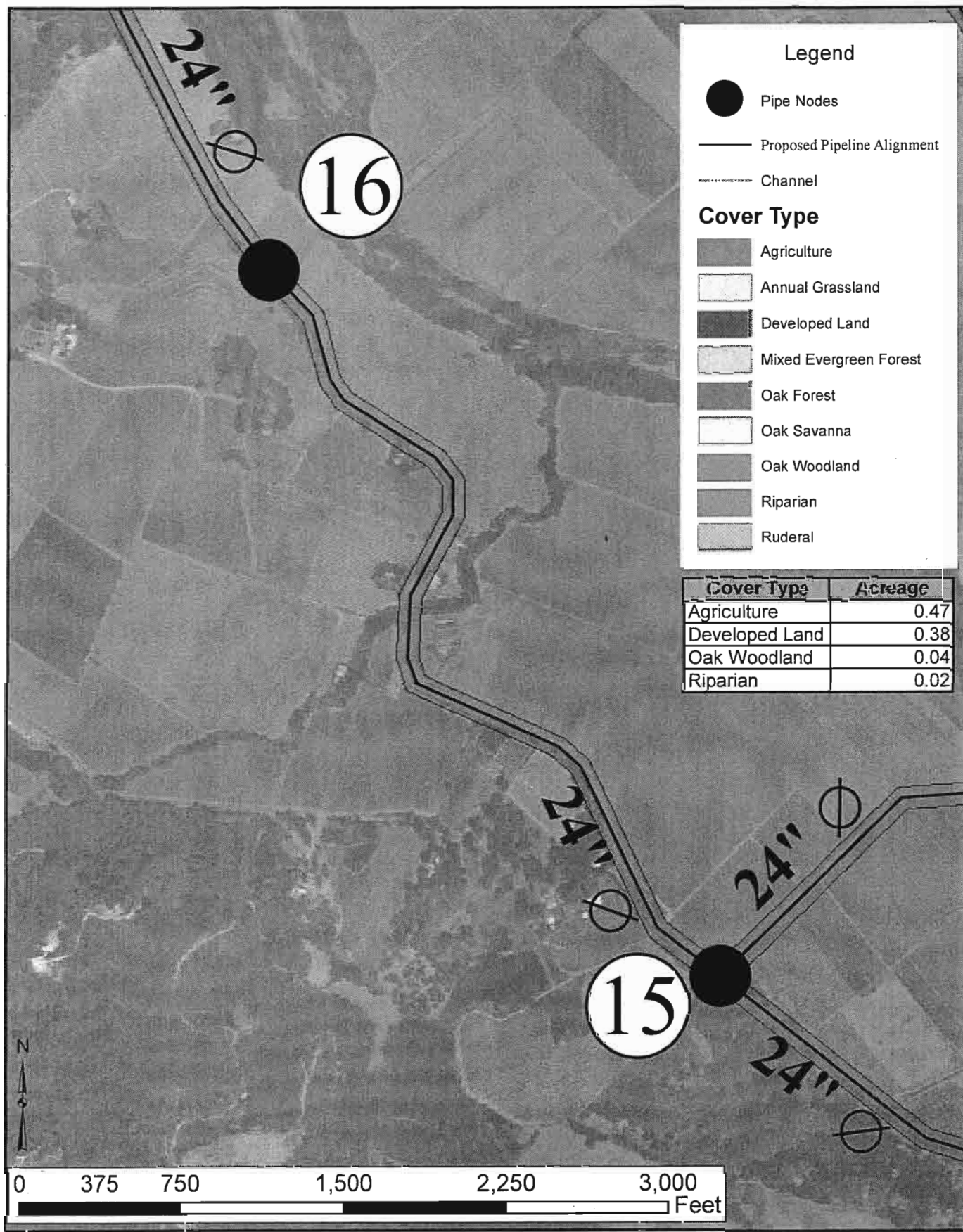


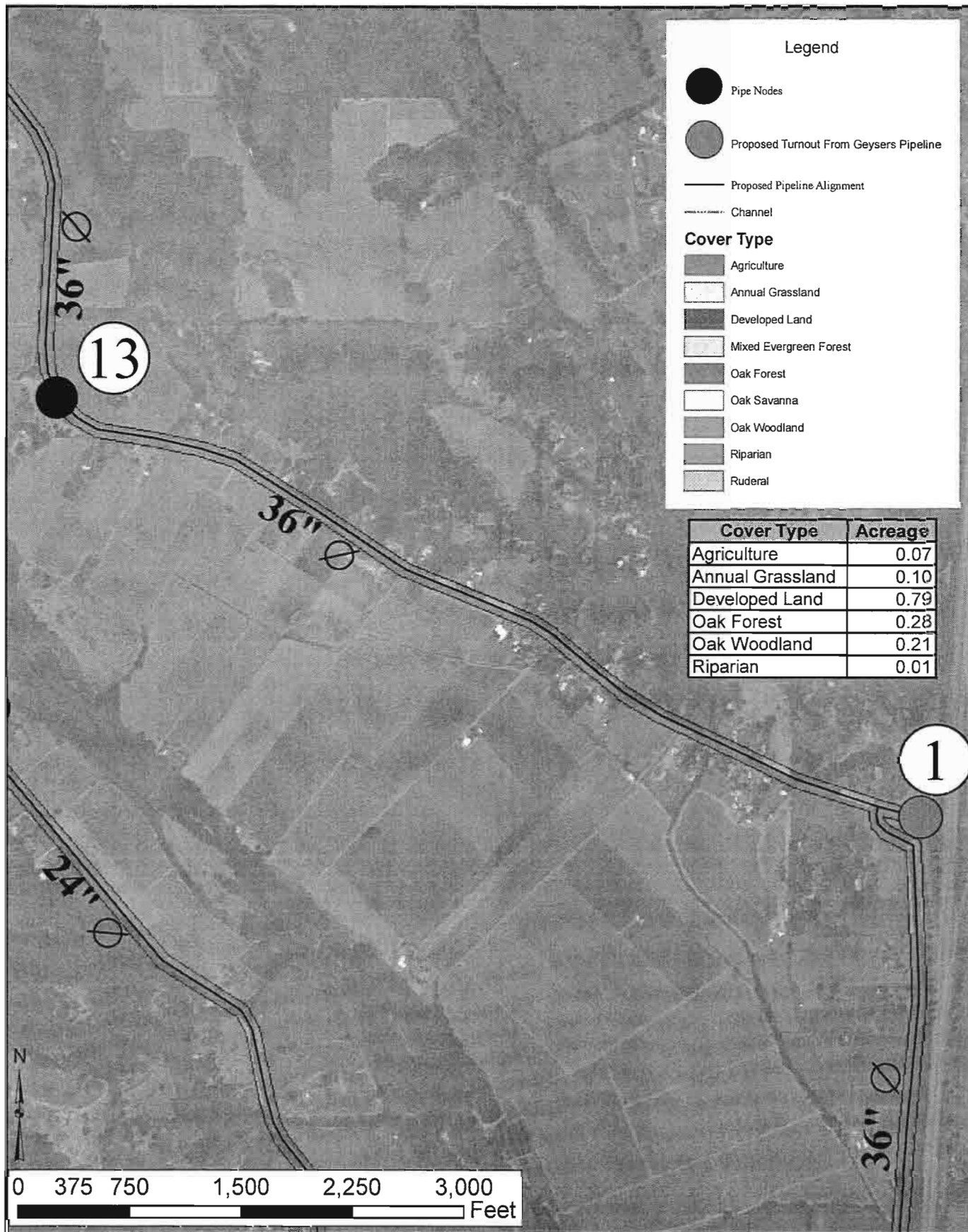


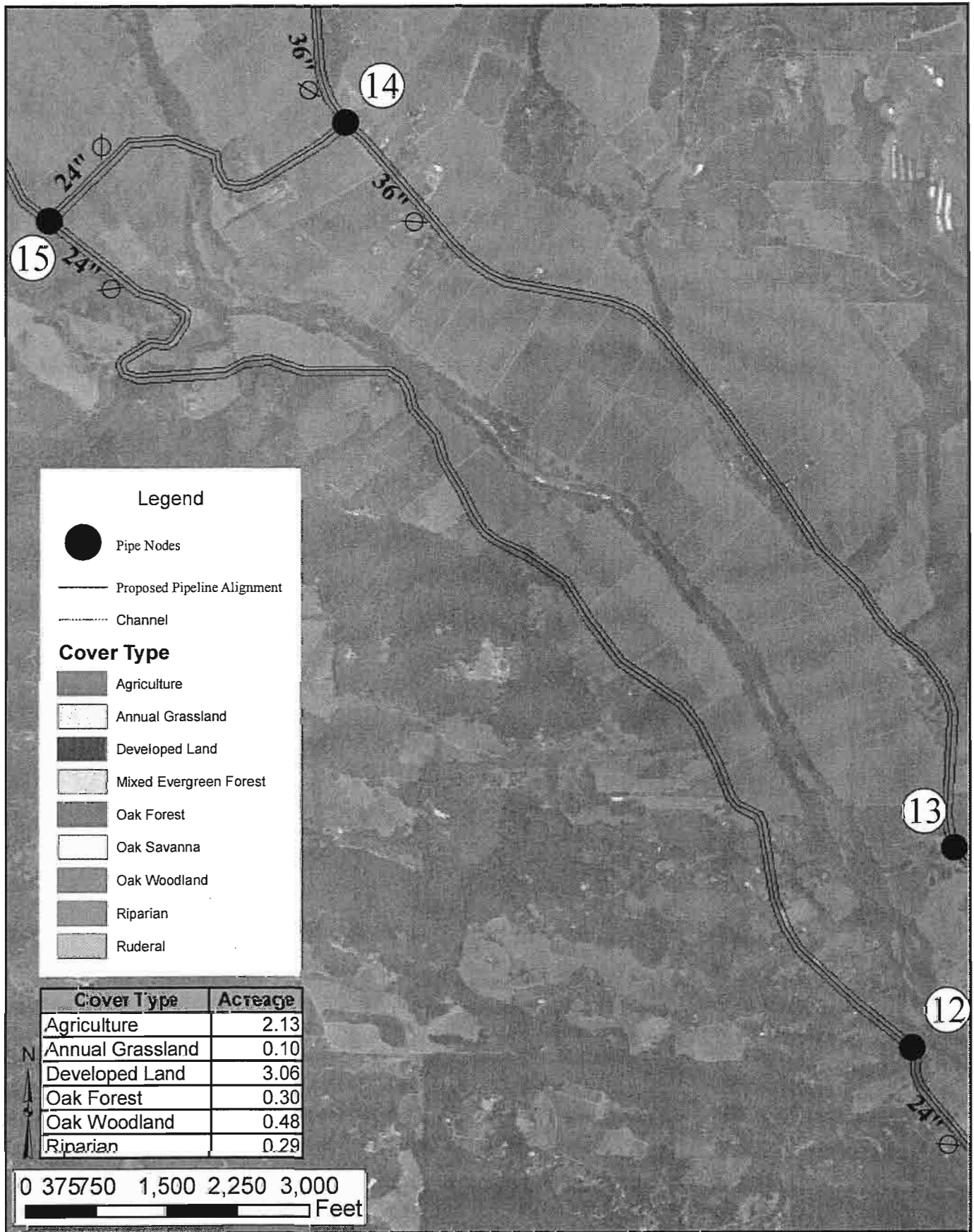




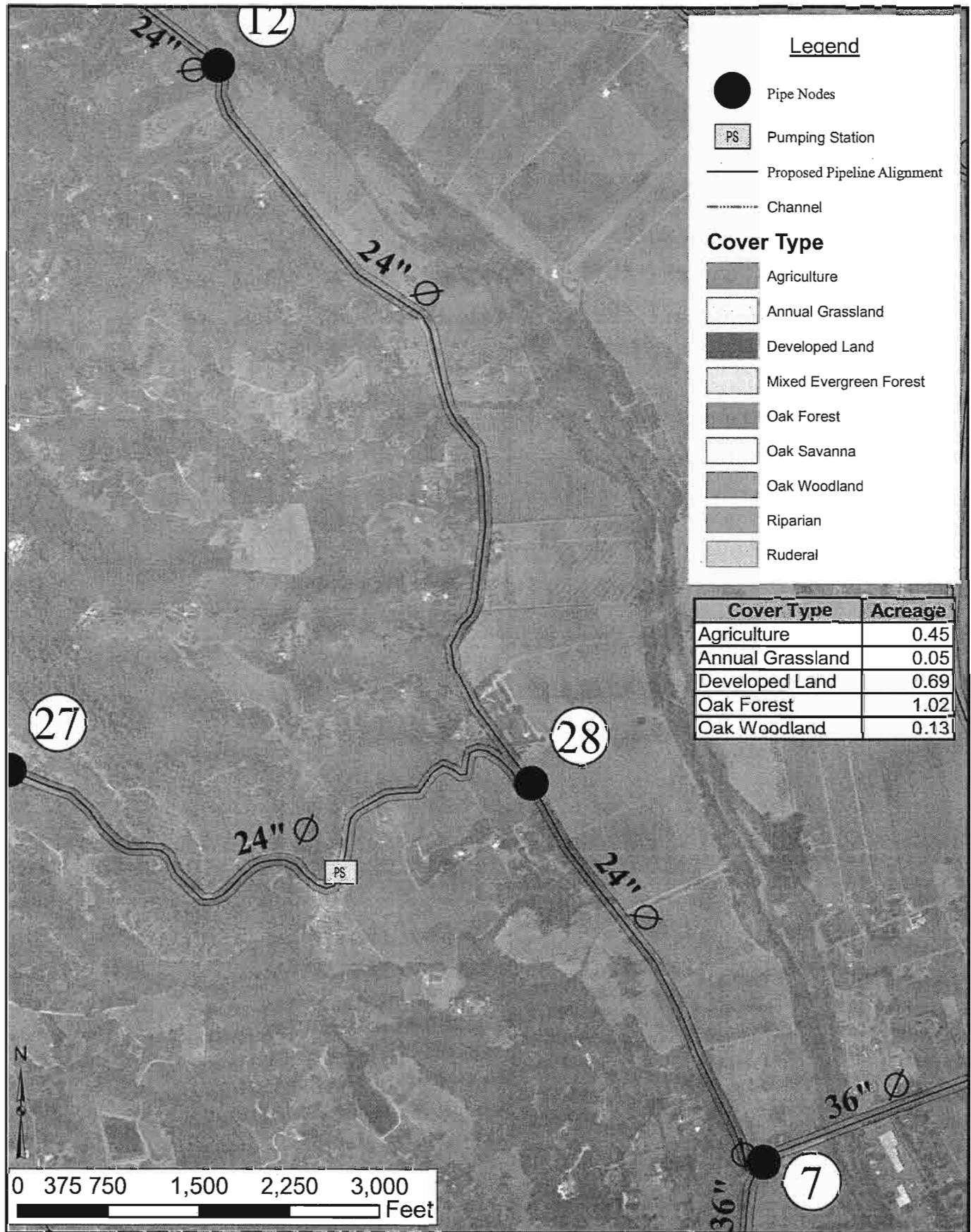


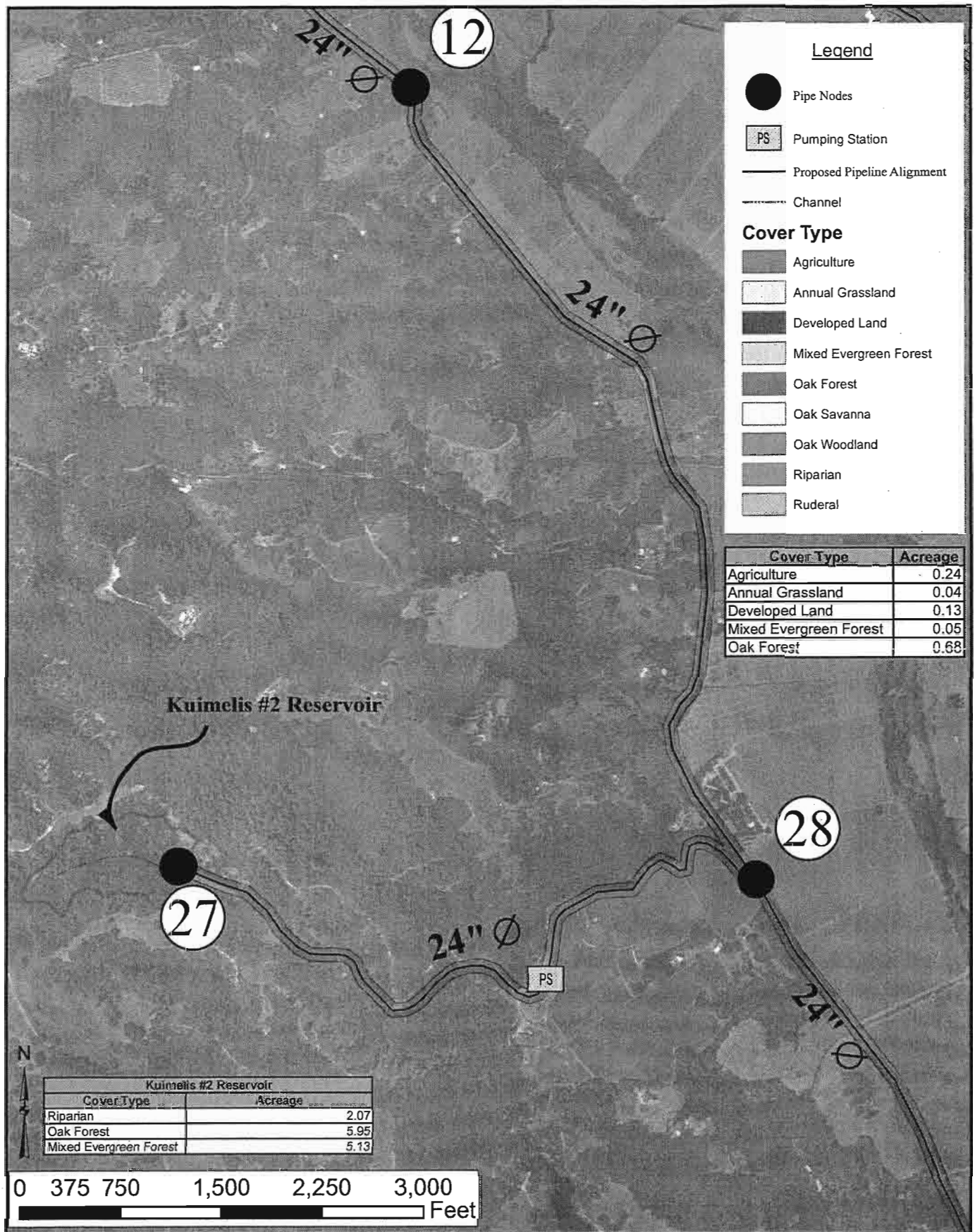




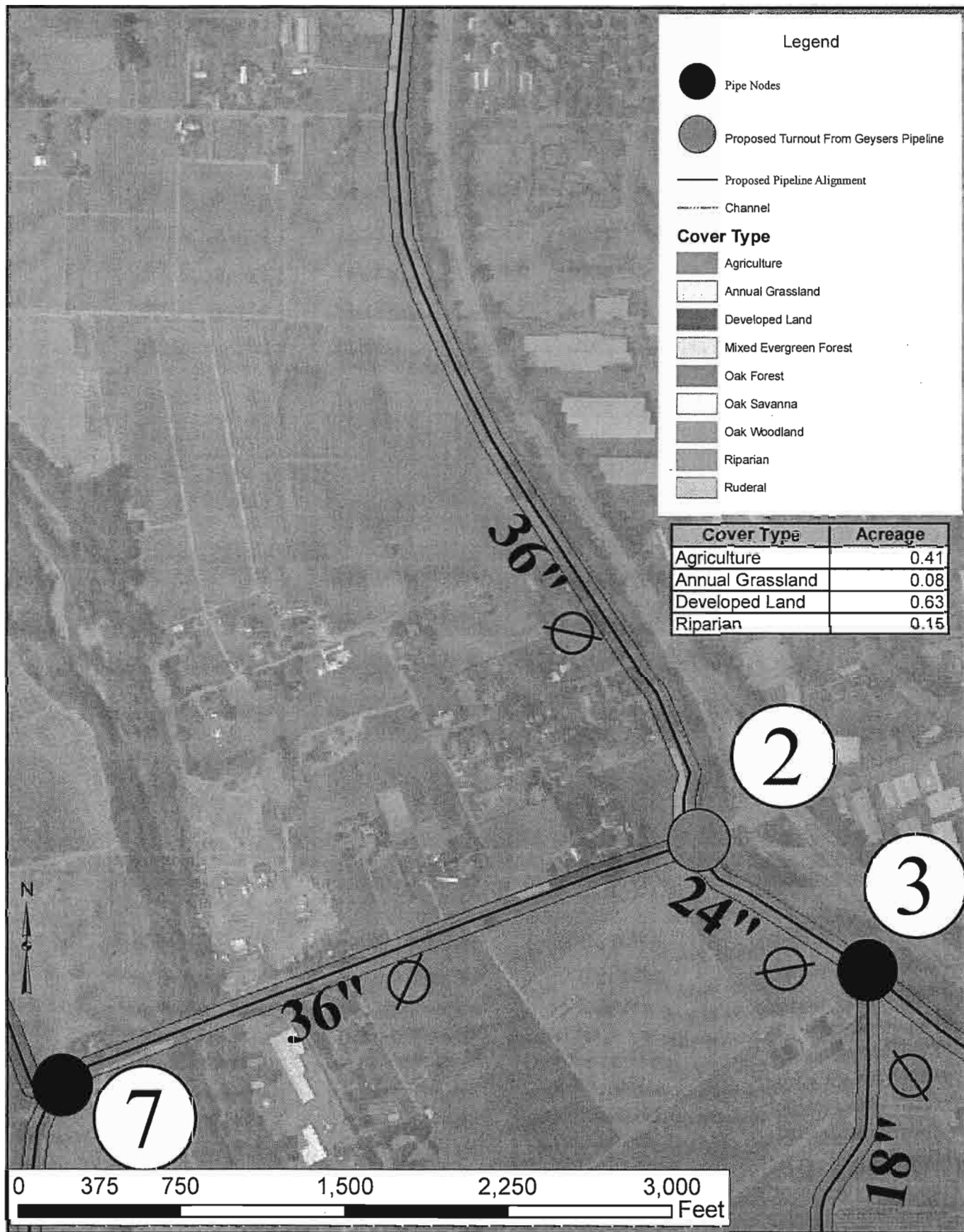


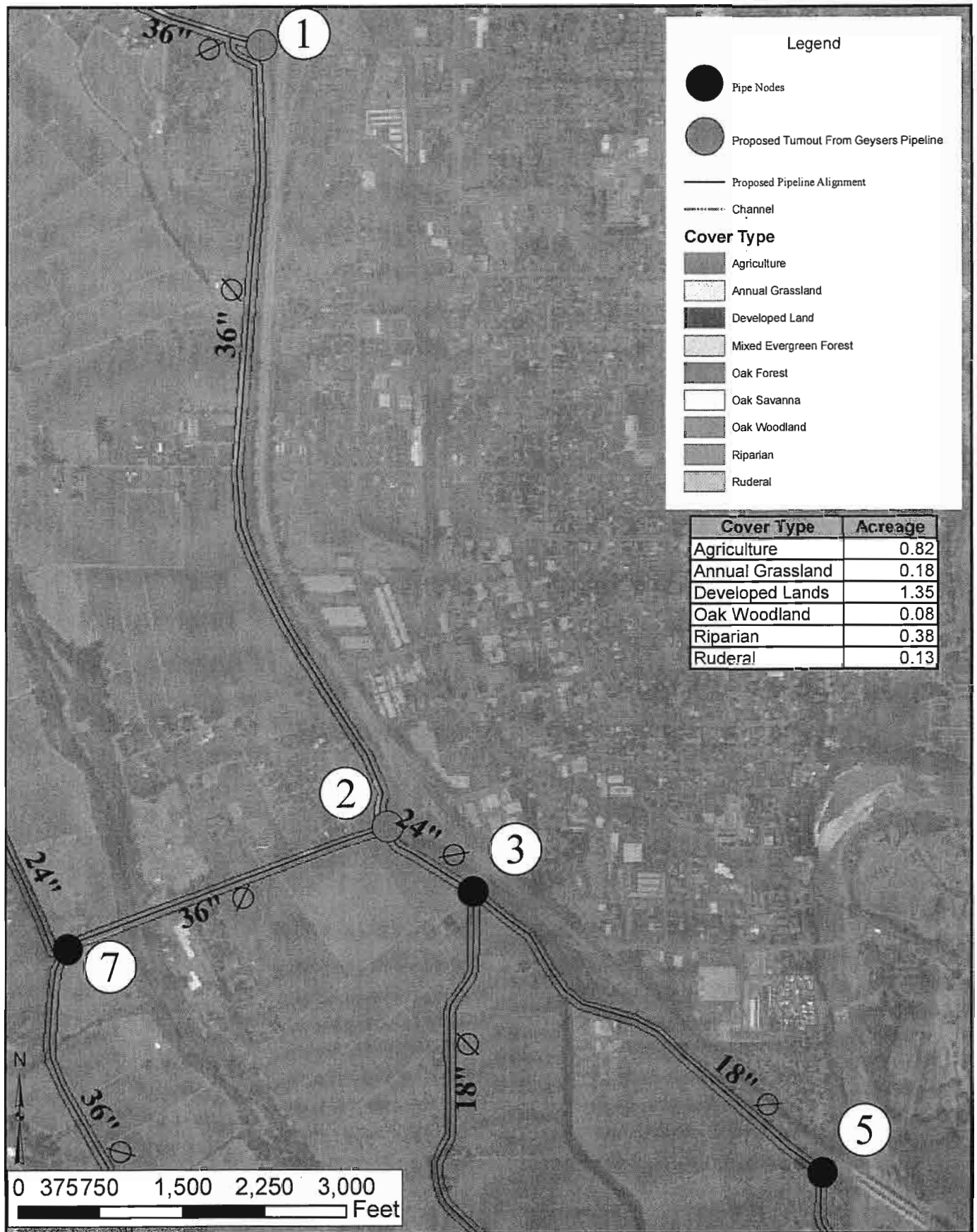


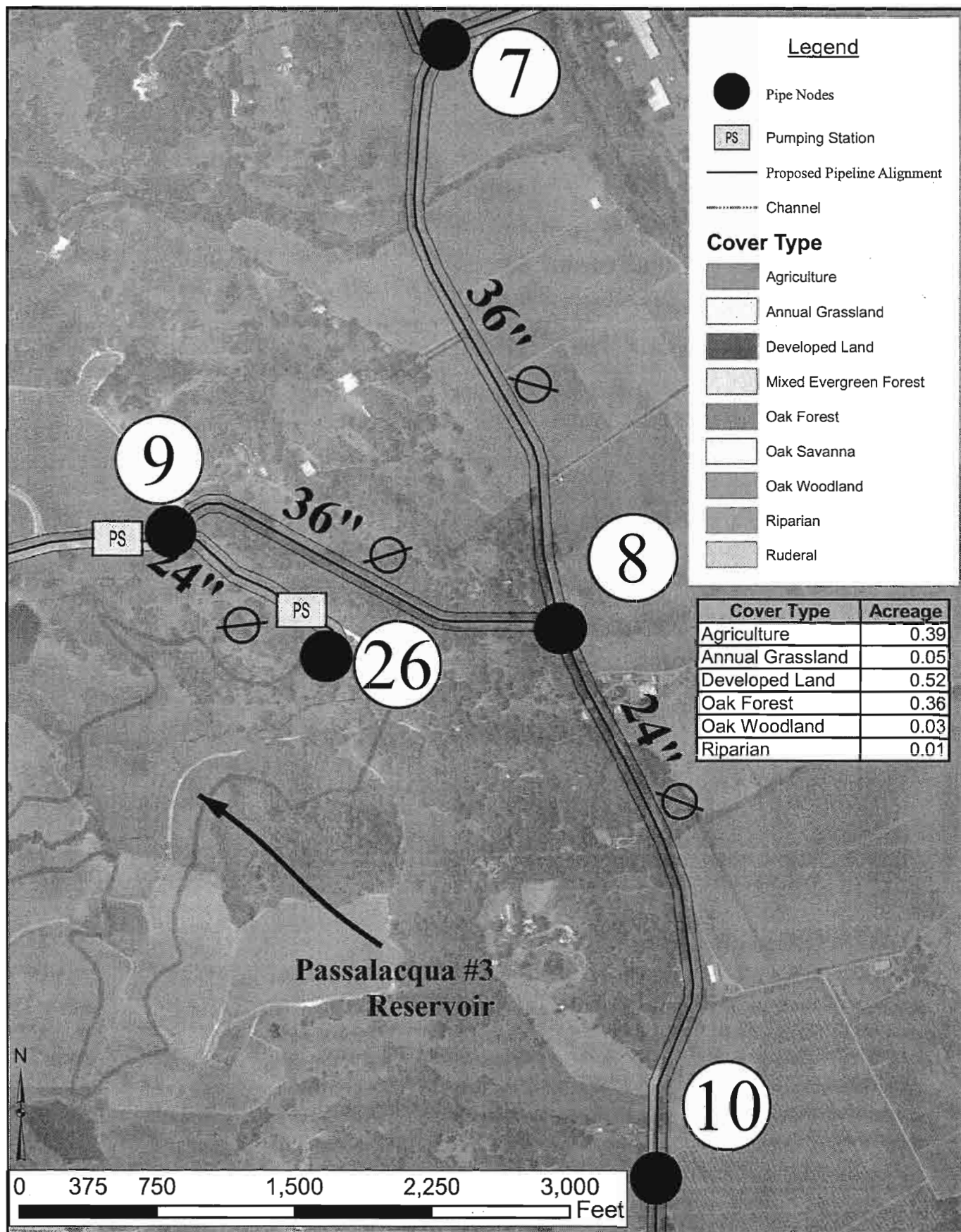




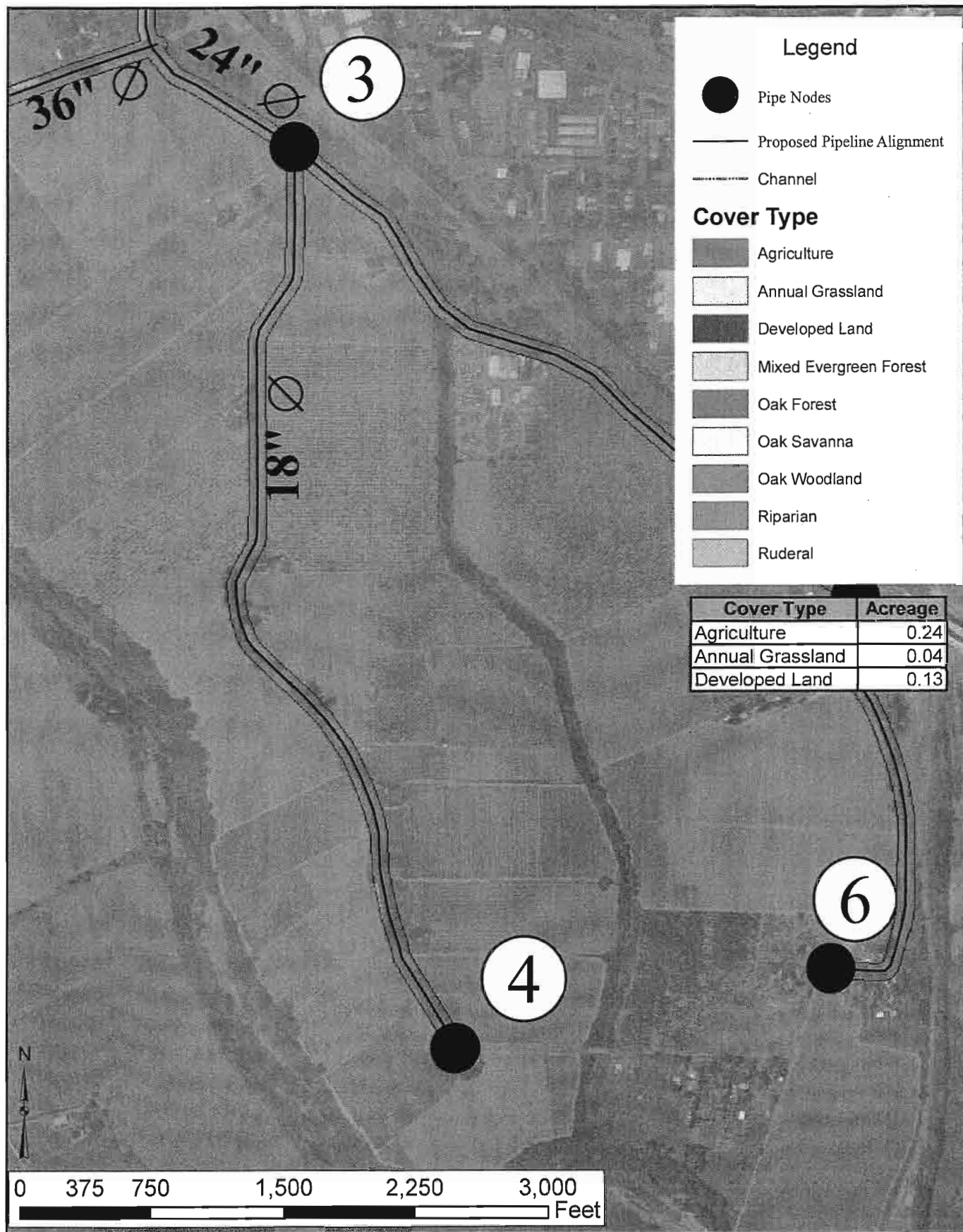


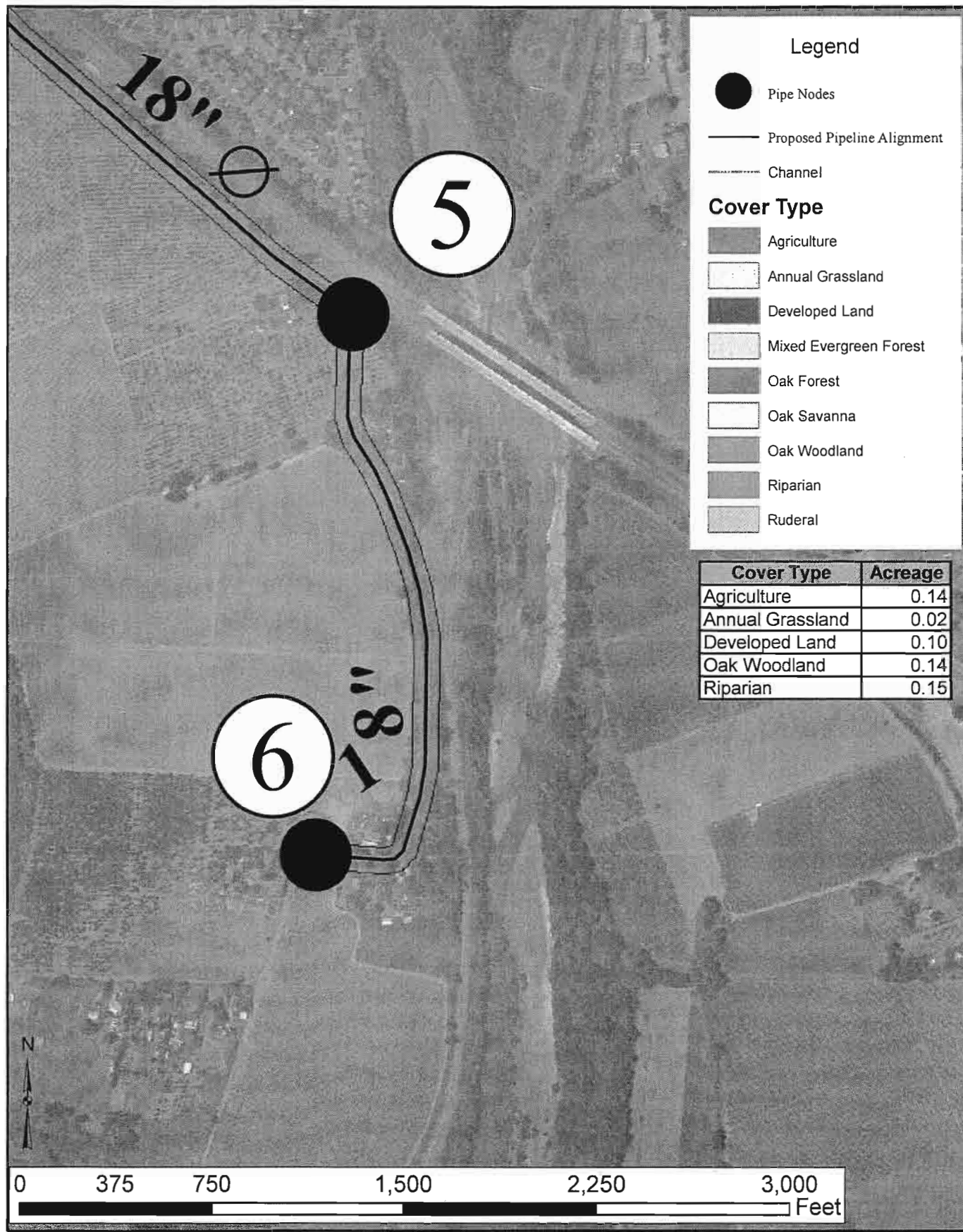


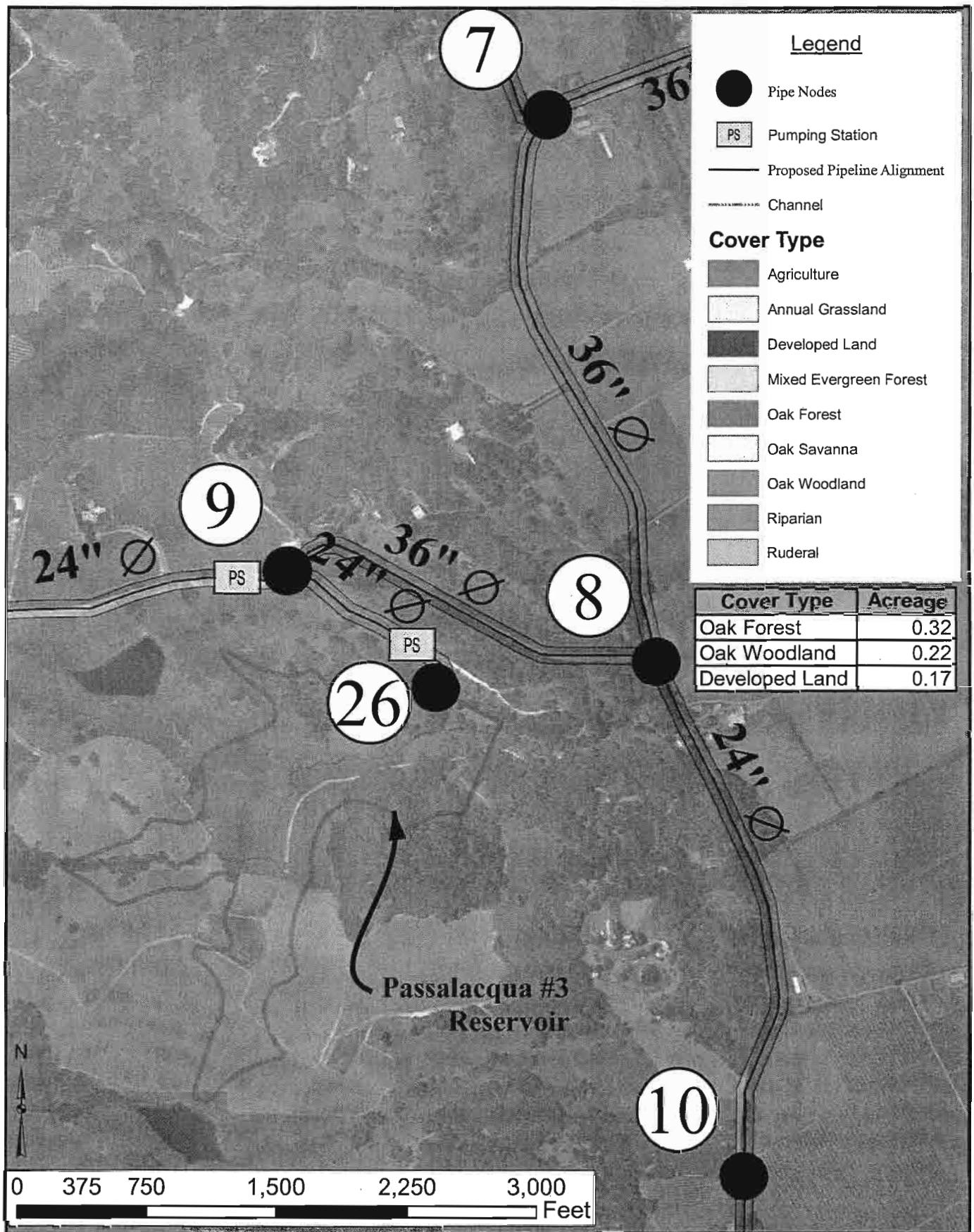




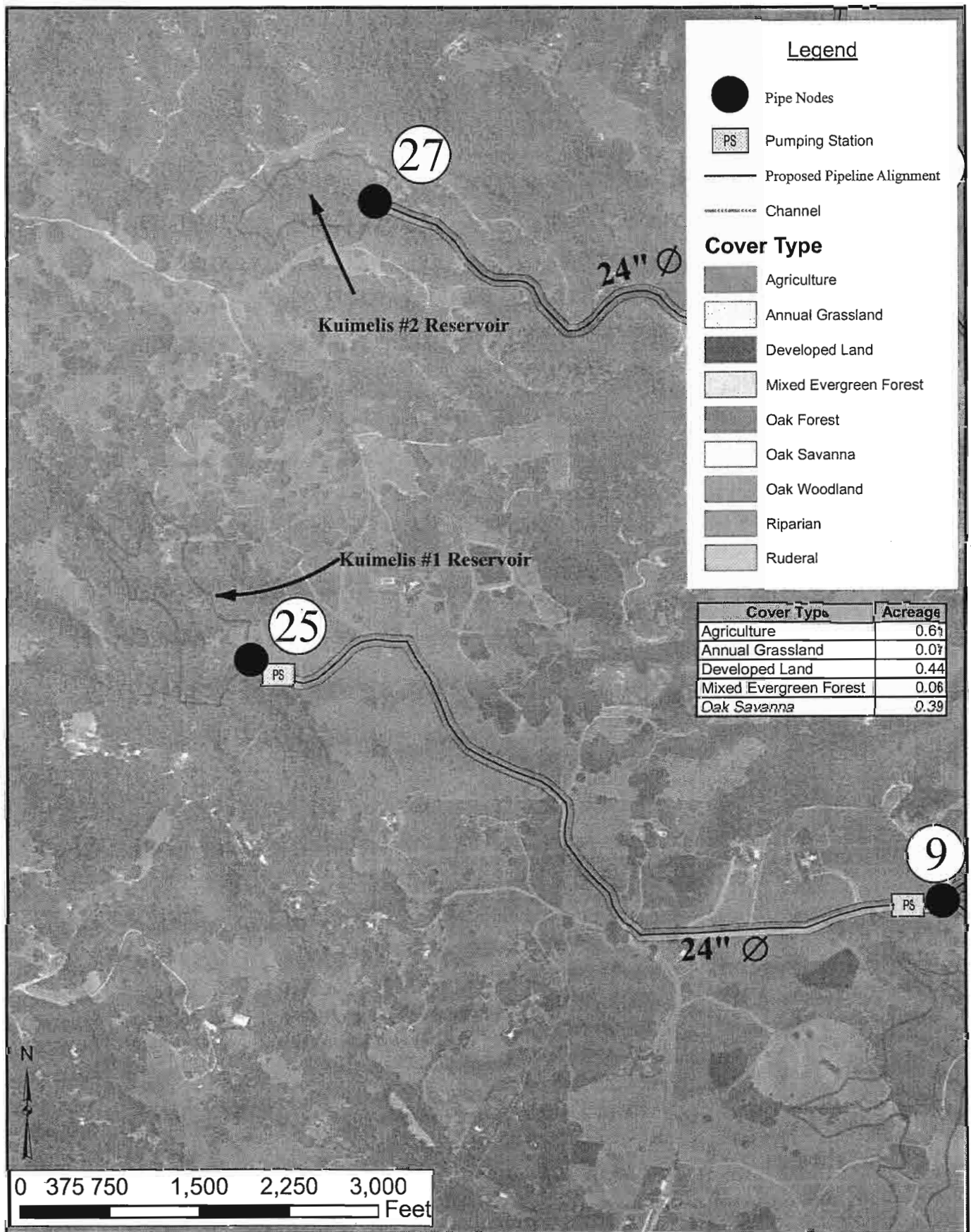




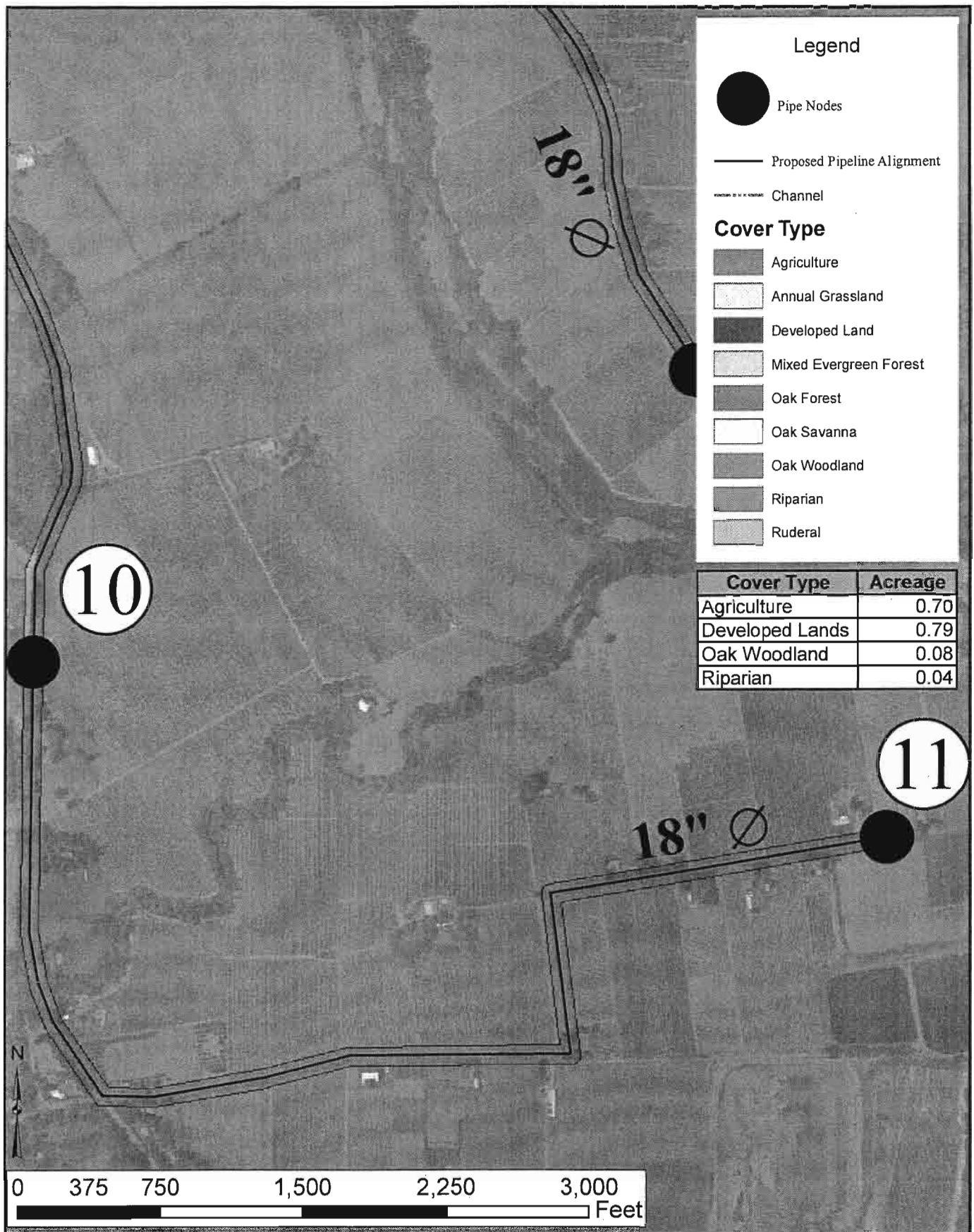


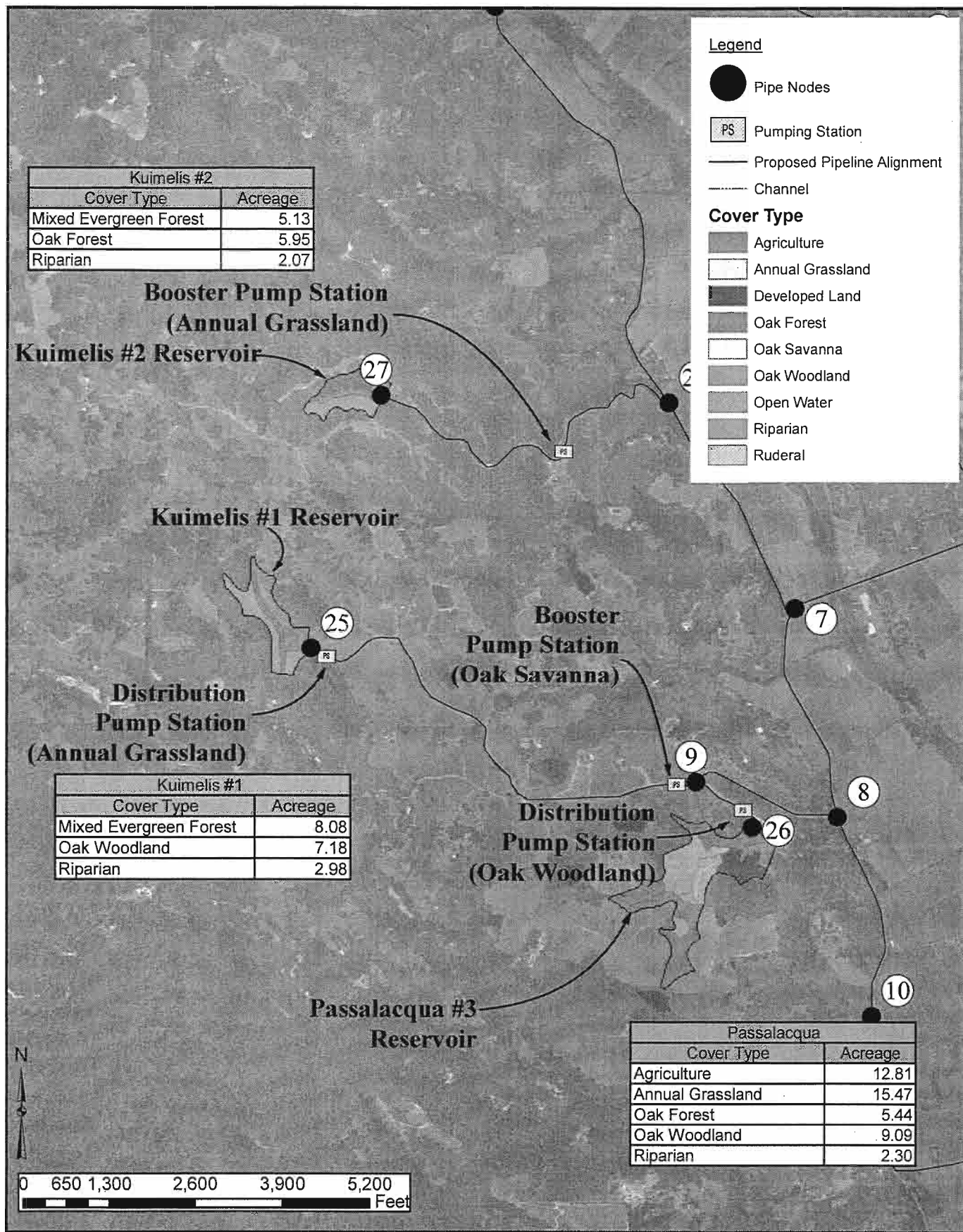


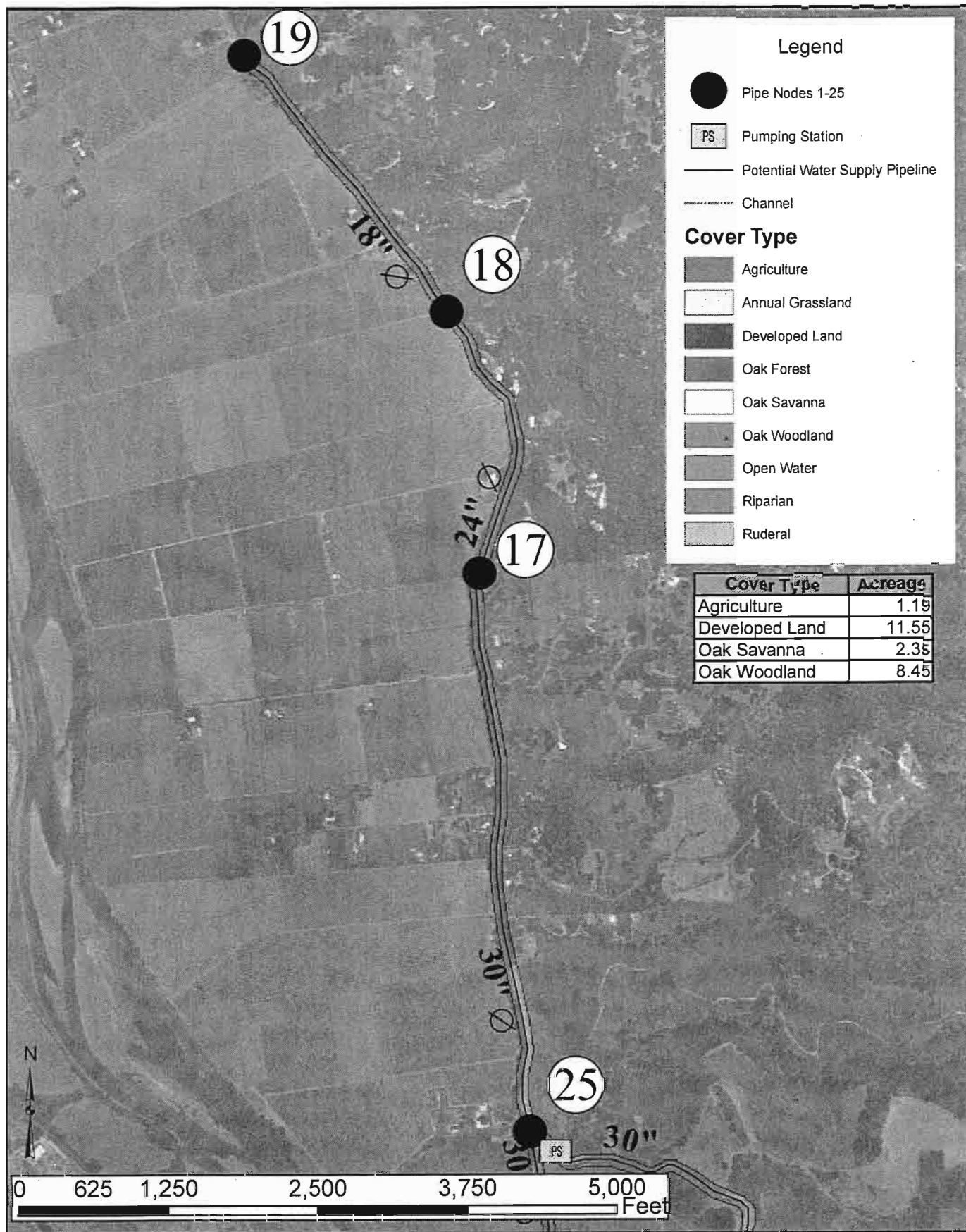




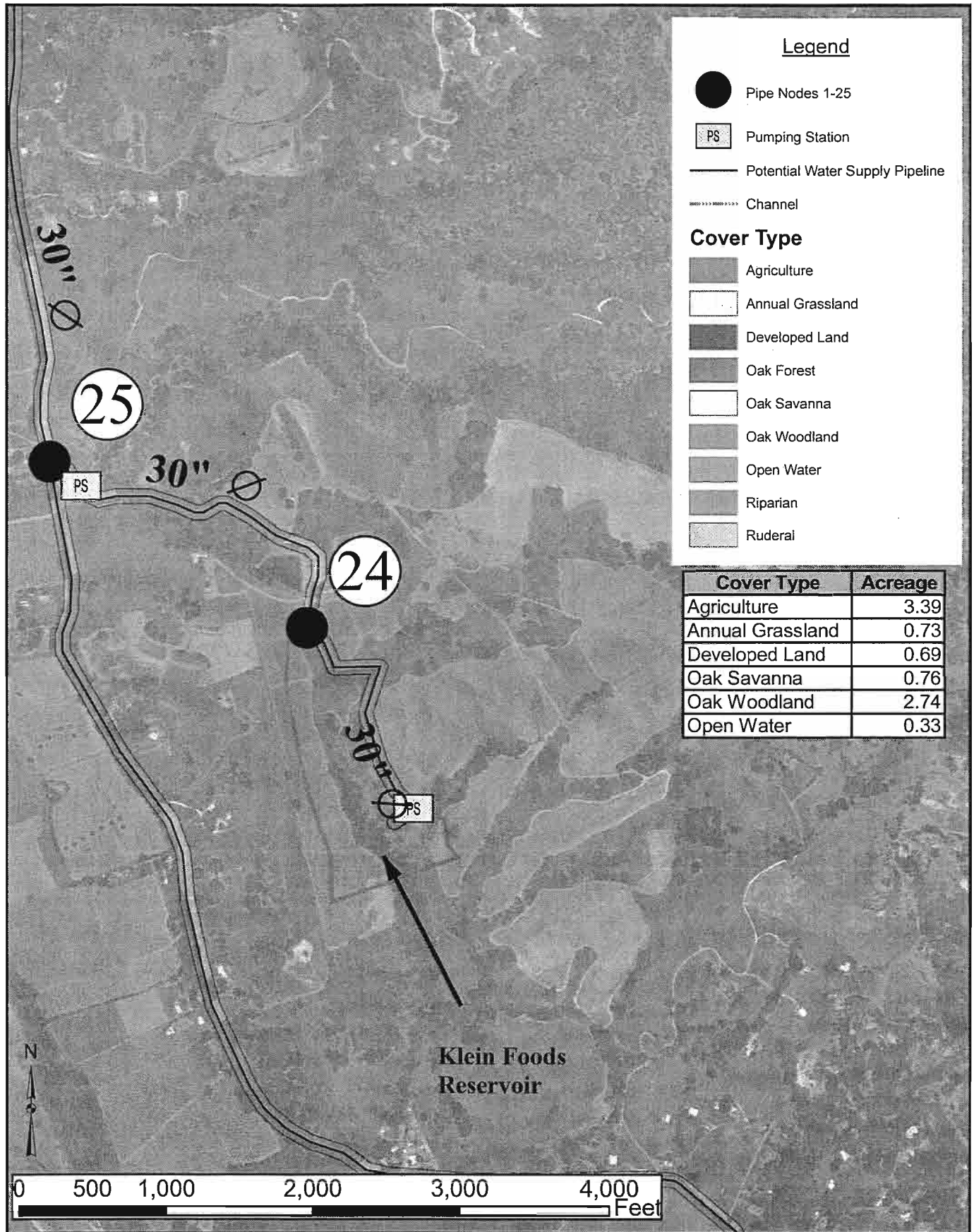


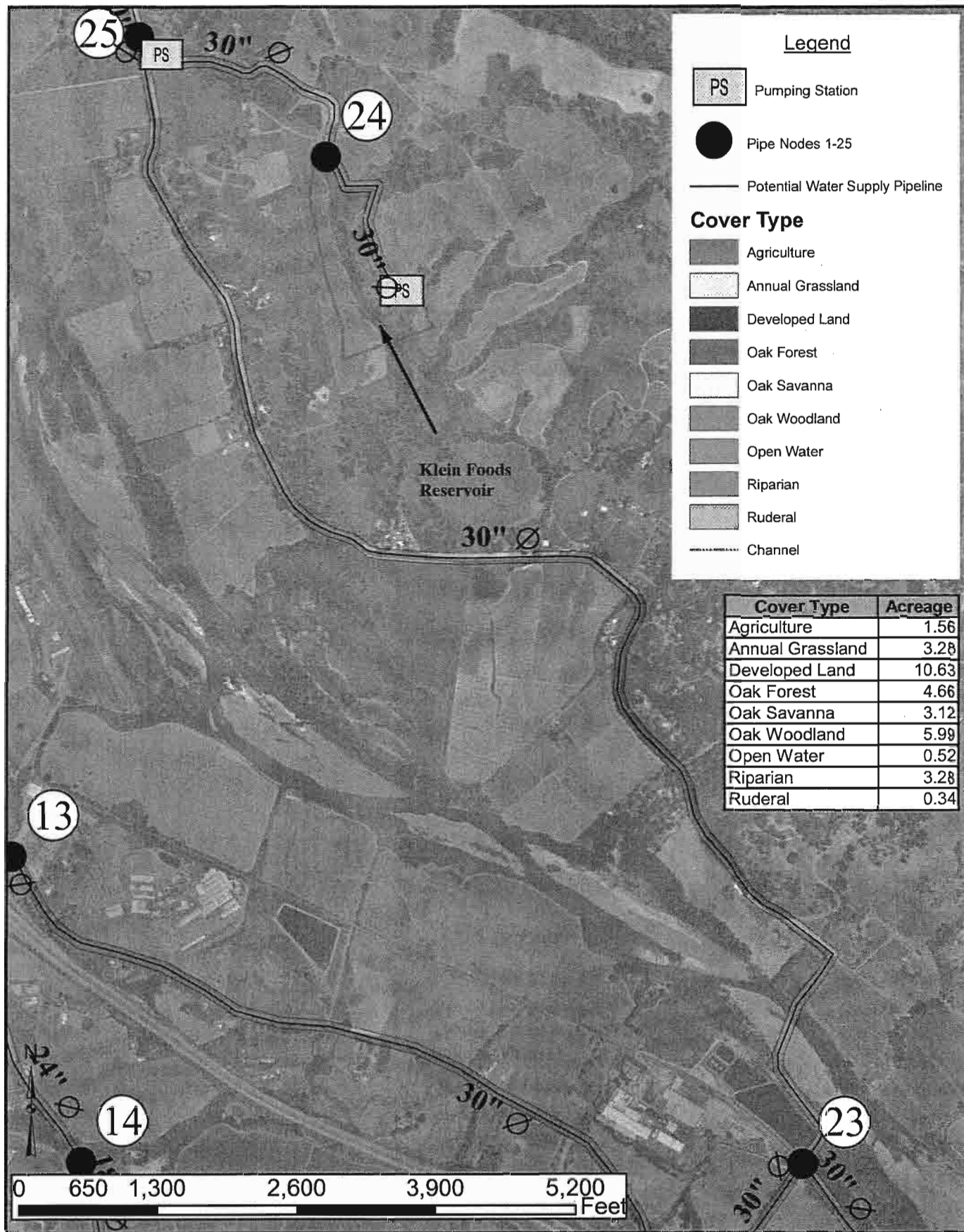


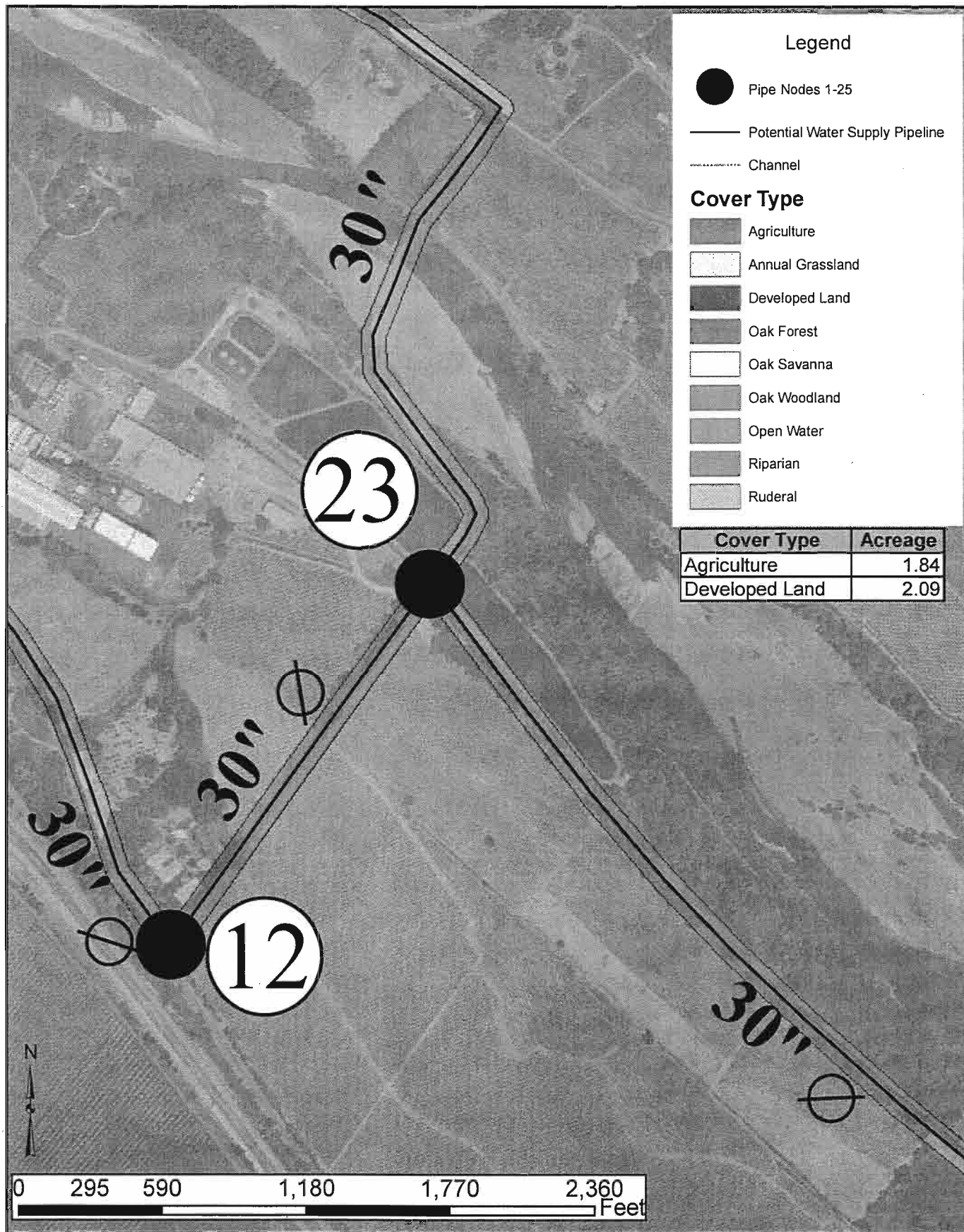














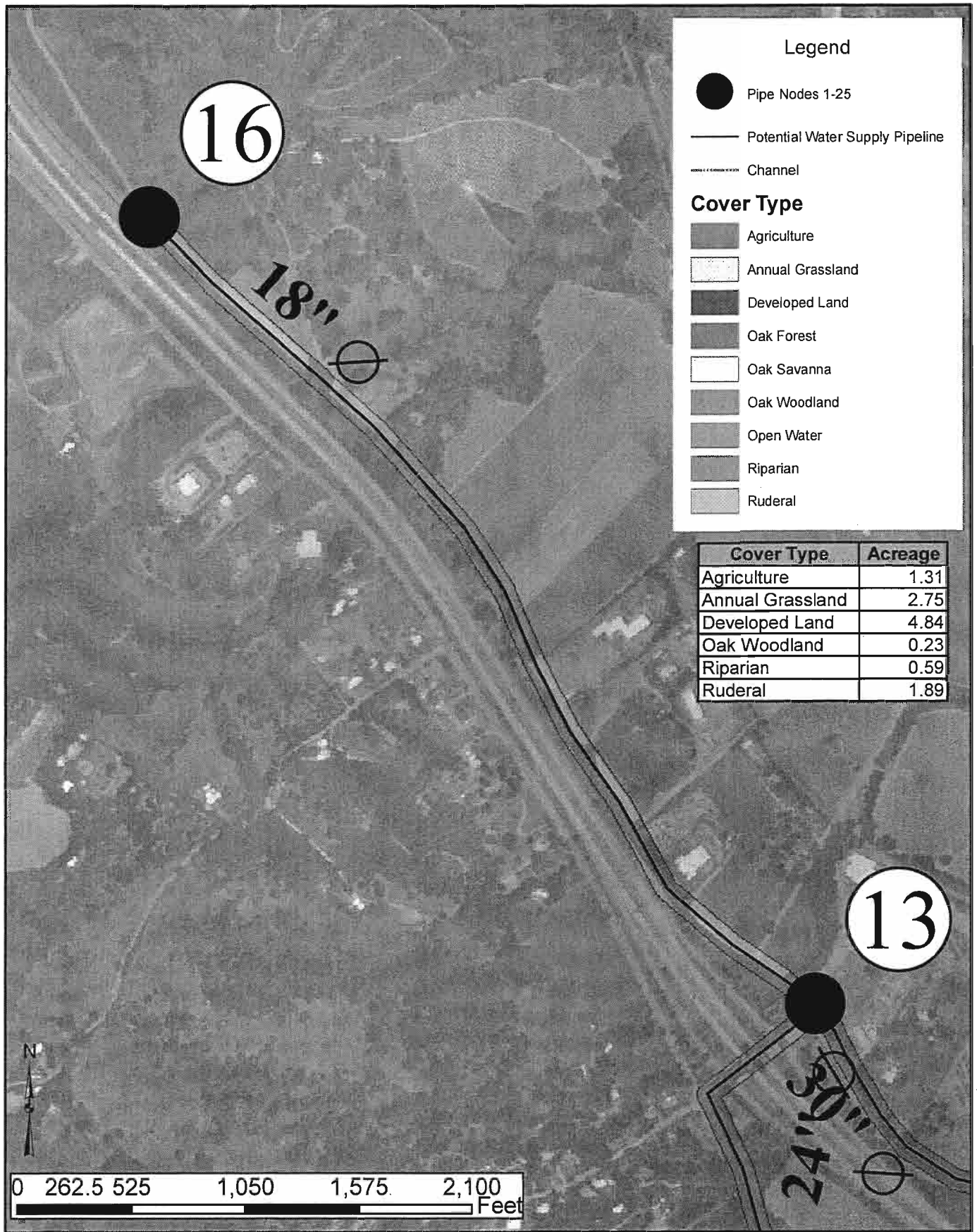
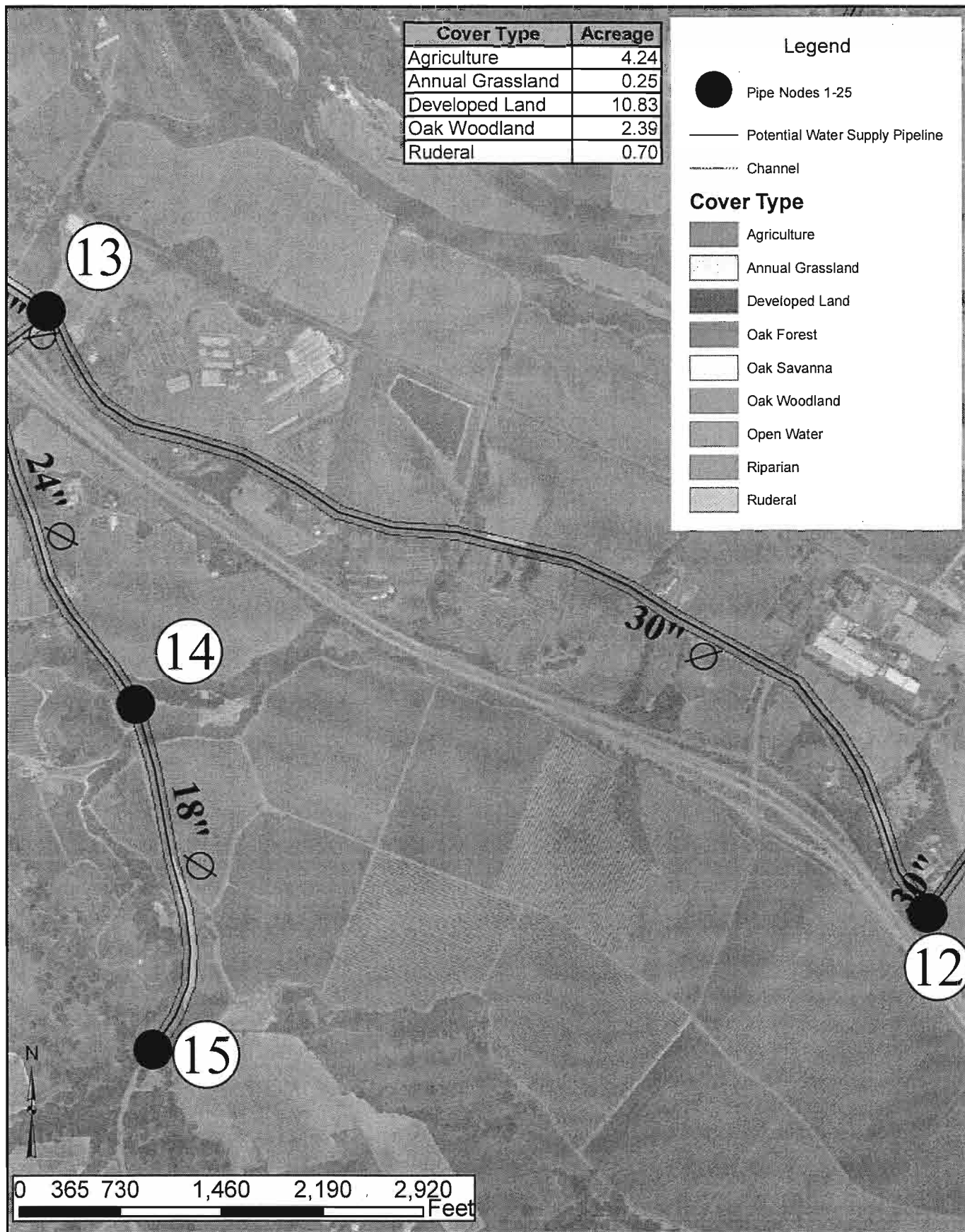
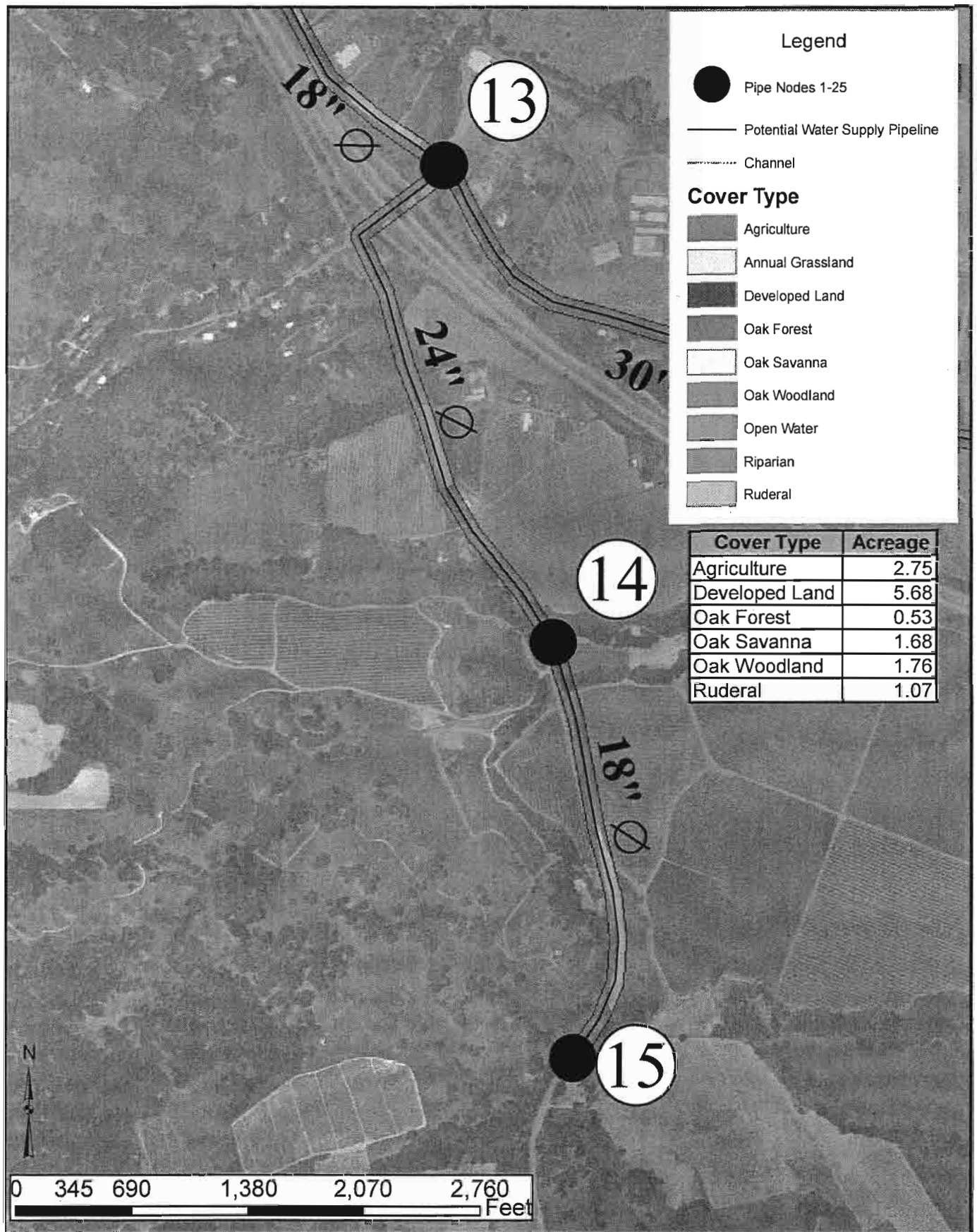
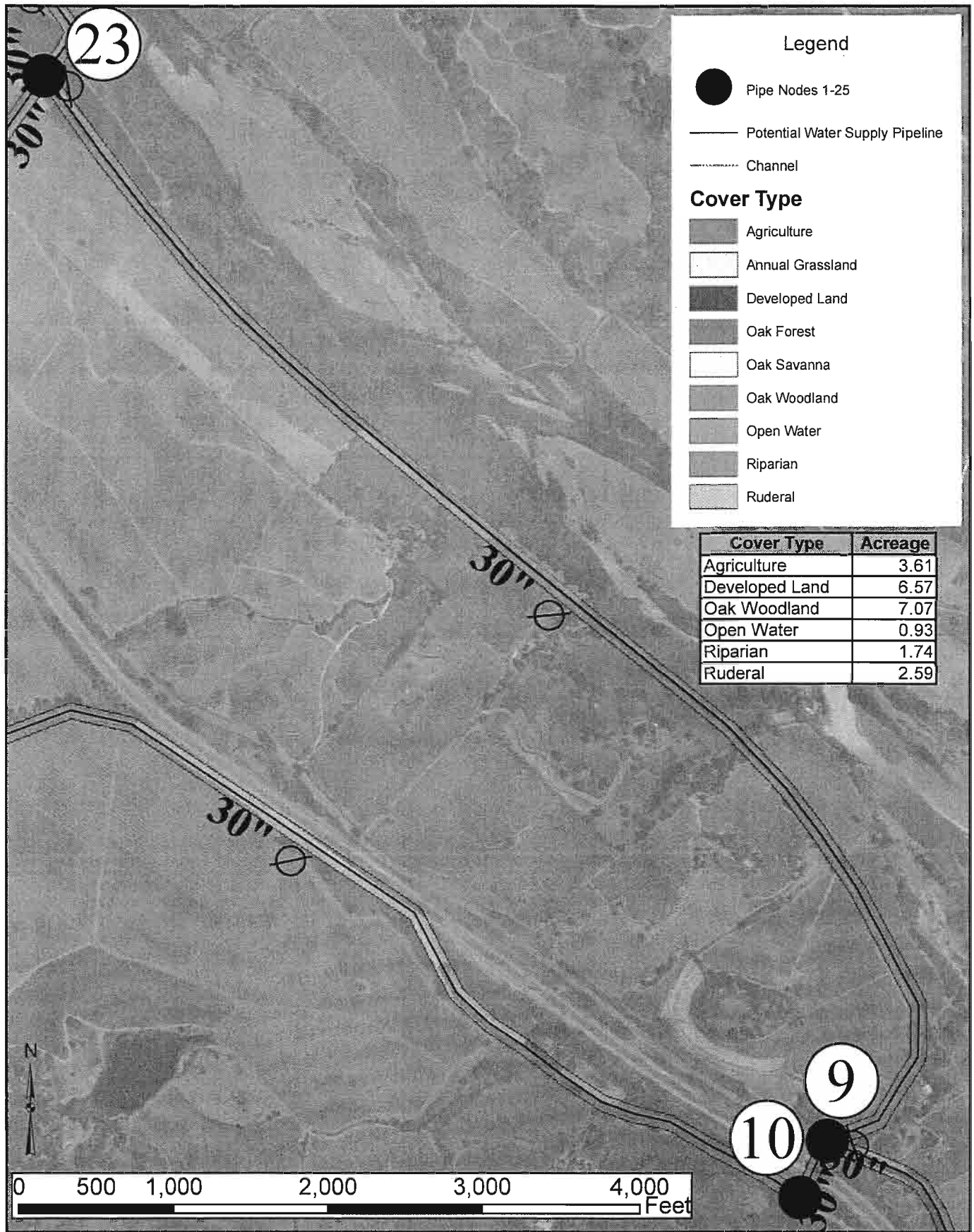


Figure NAV-5  
 Cover Types for Nodes 13-16  
 Northern Alexander Subarea

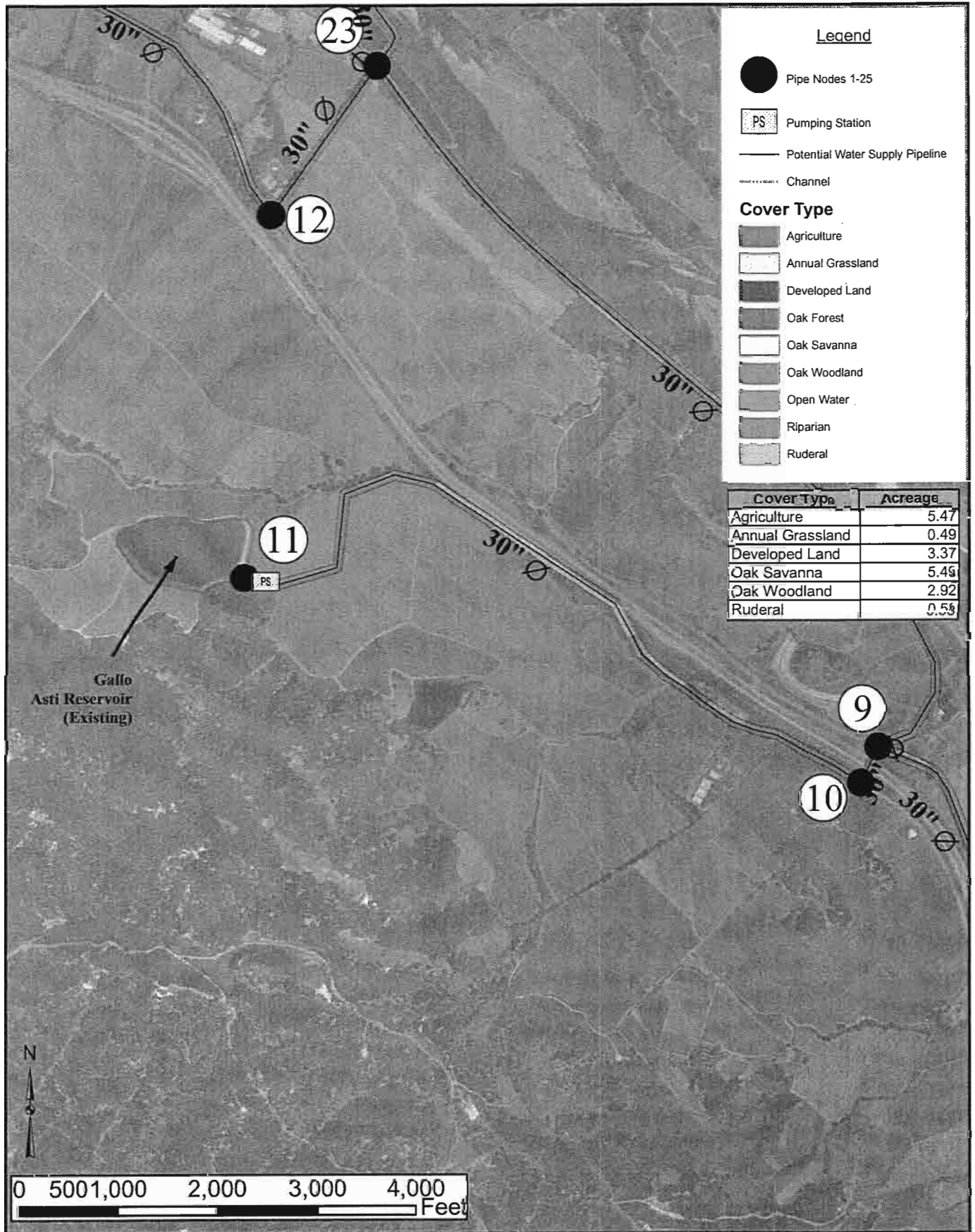


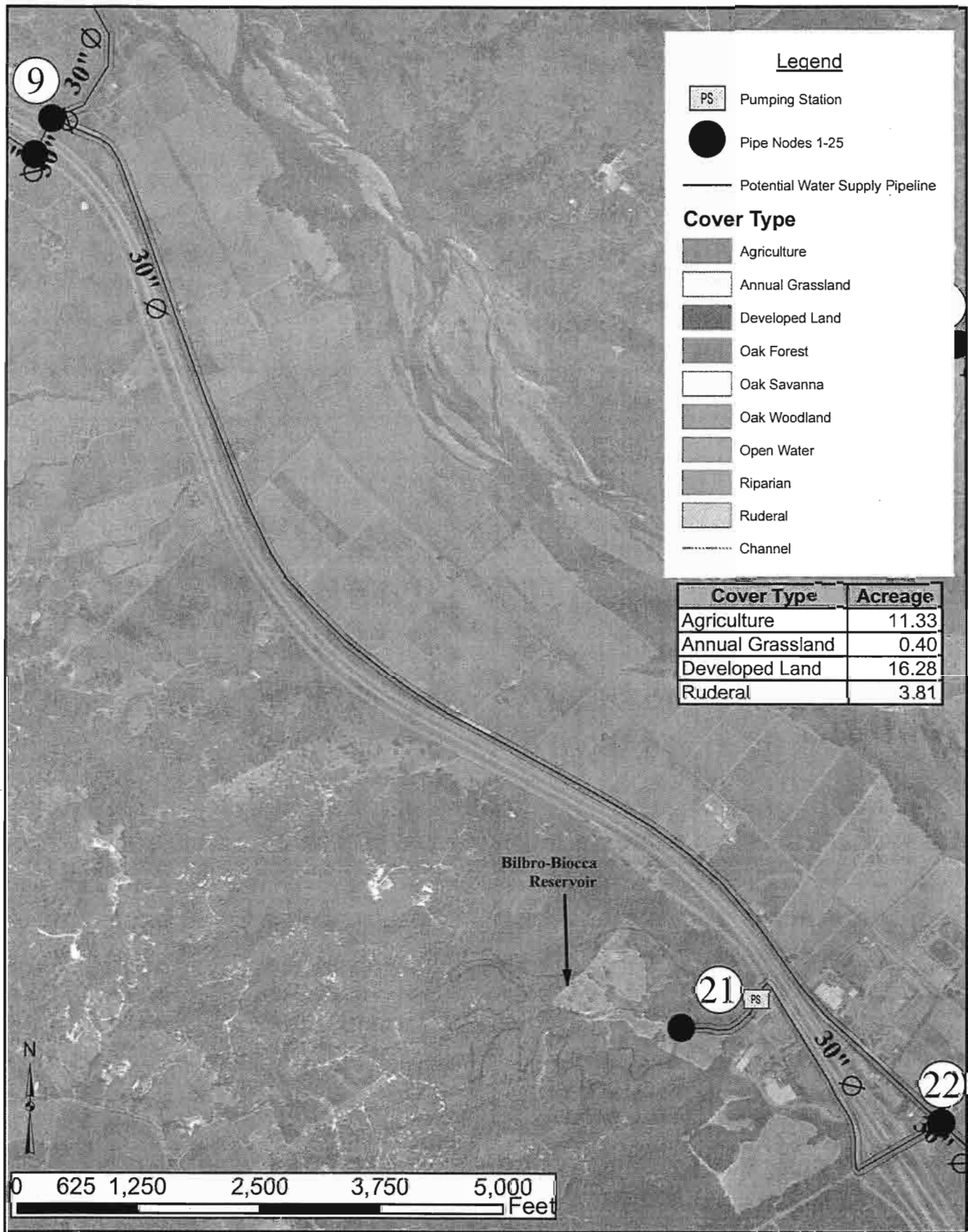


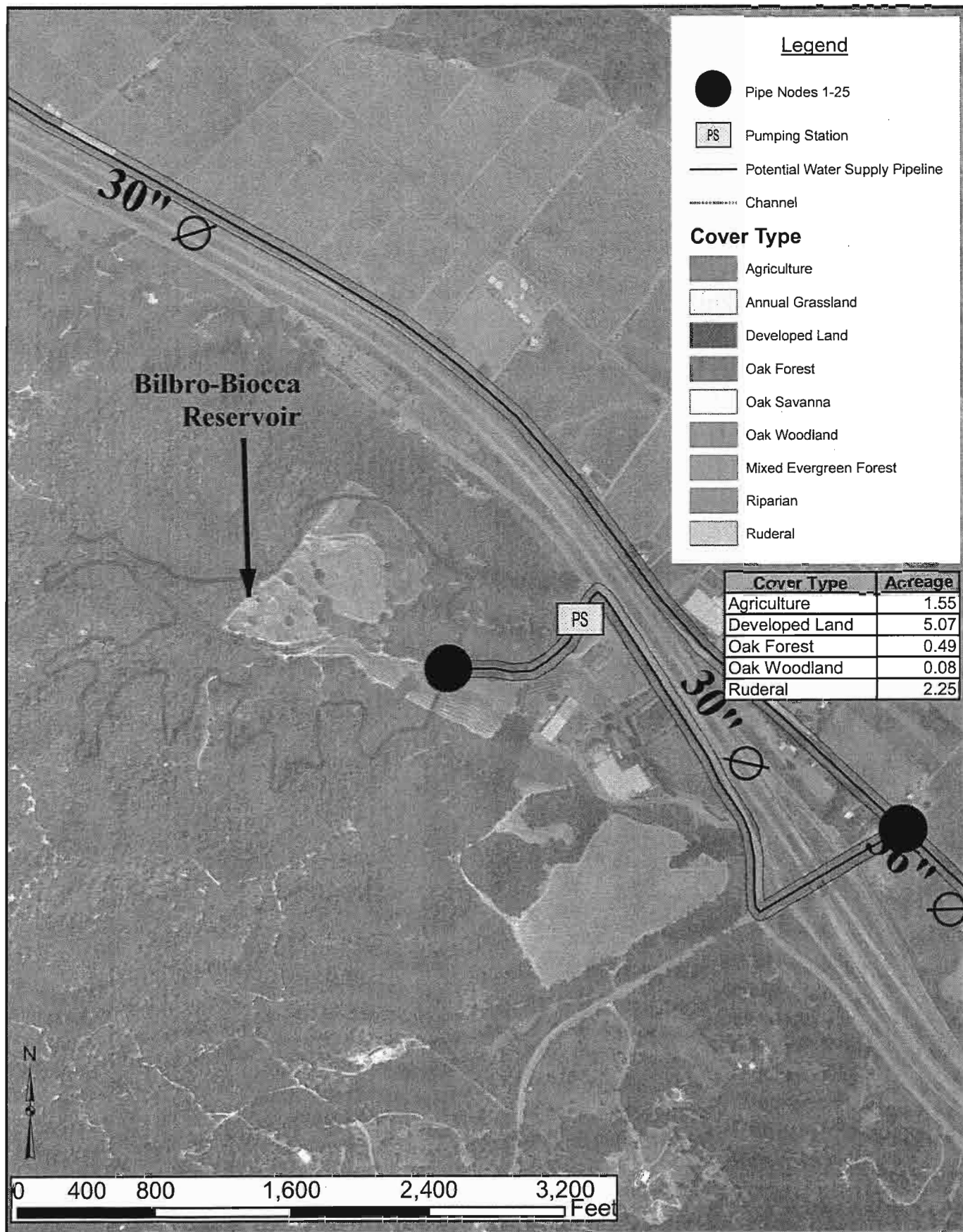




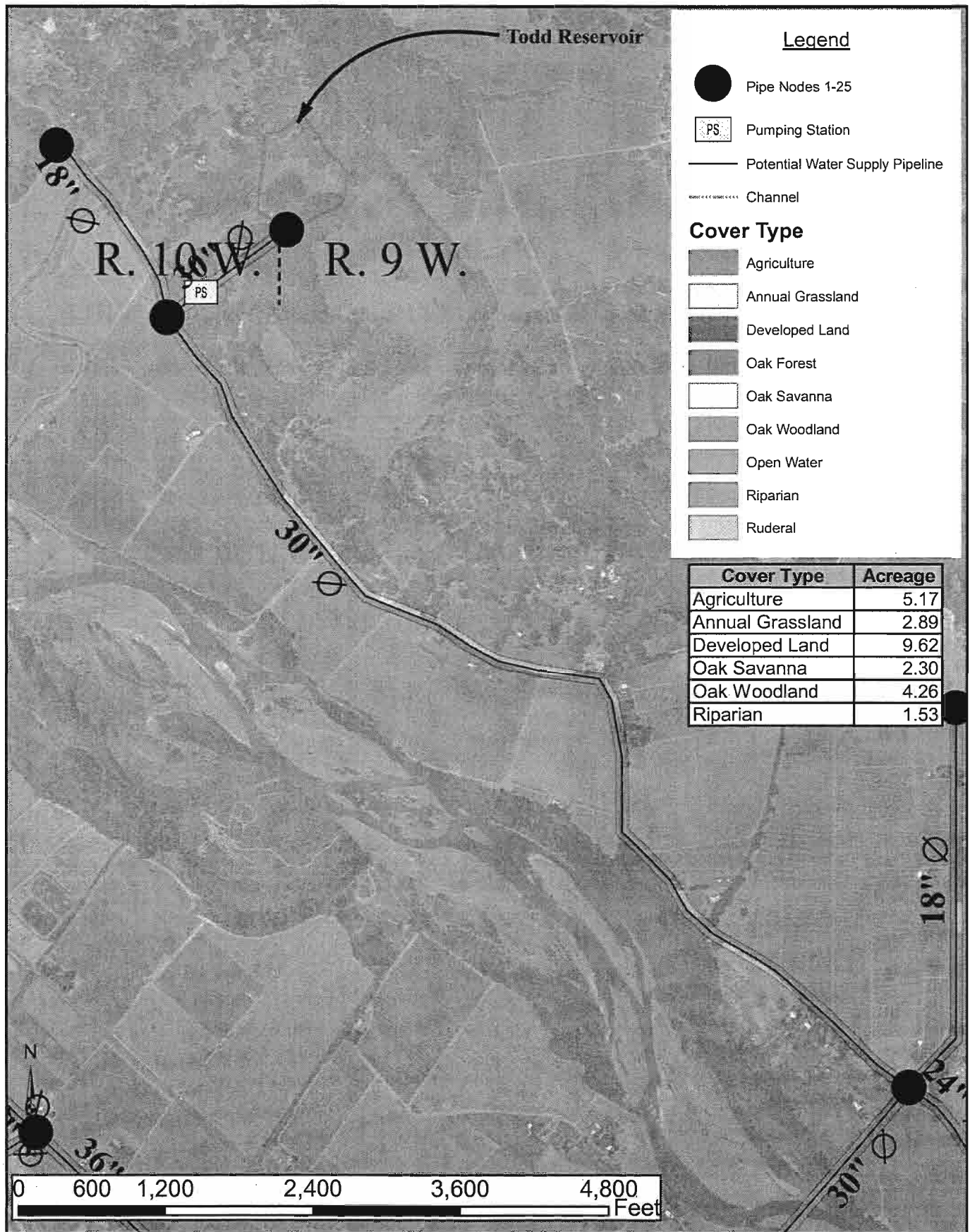


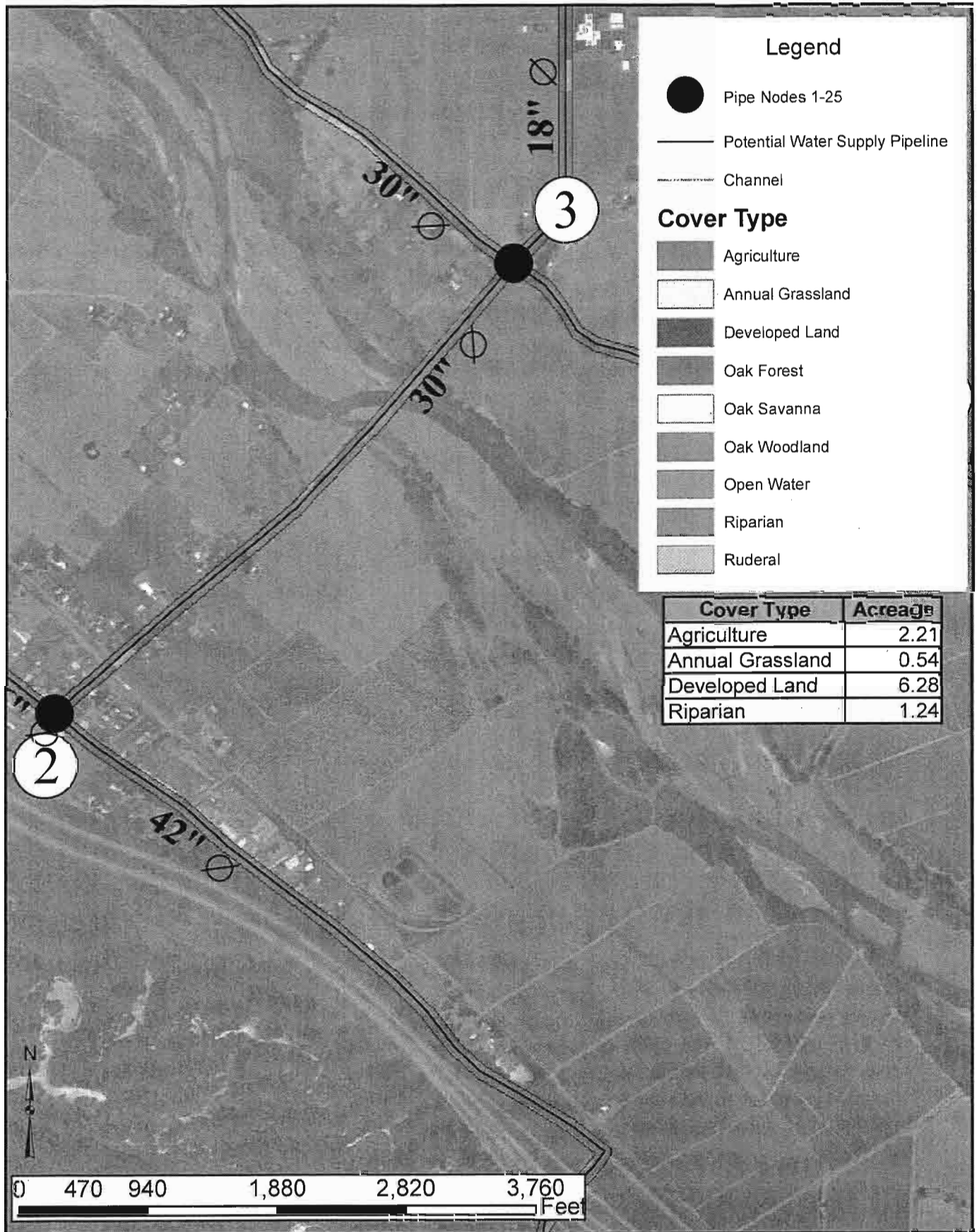


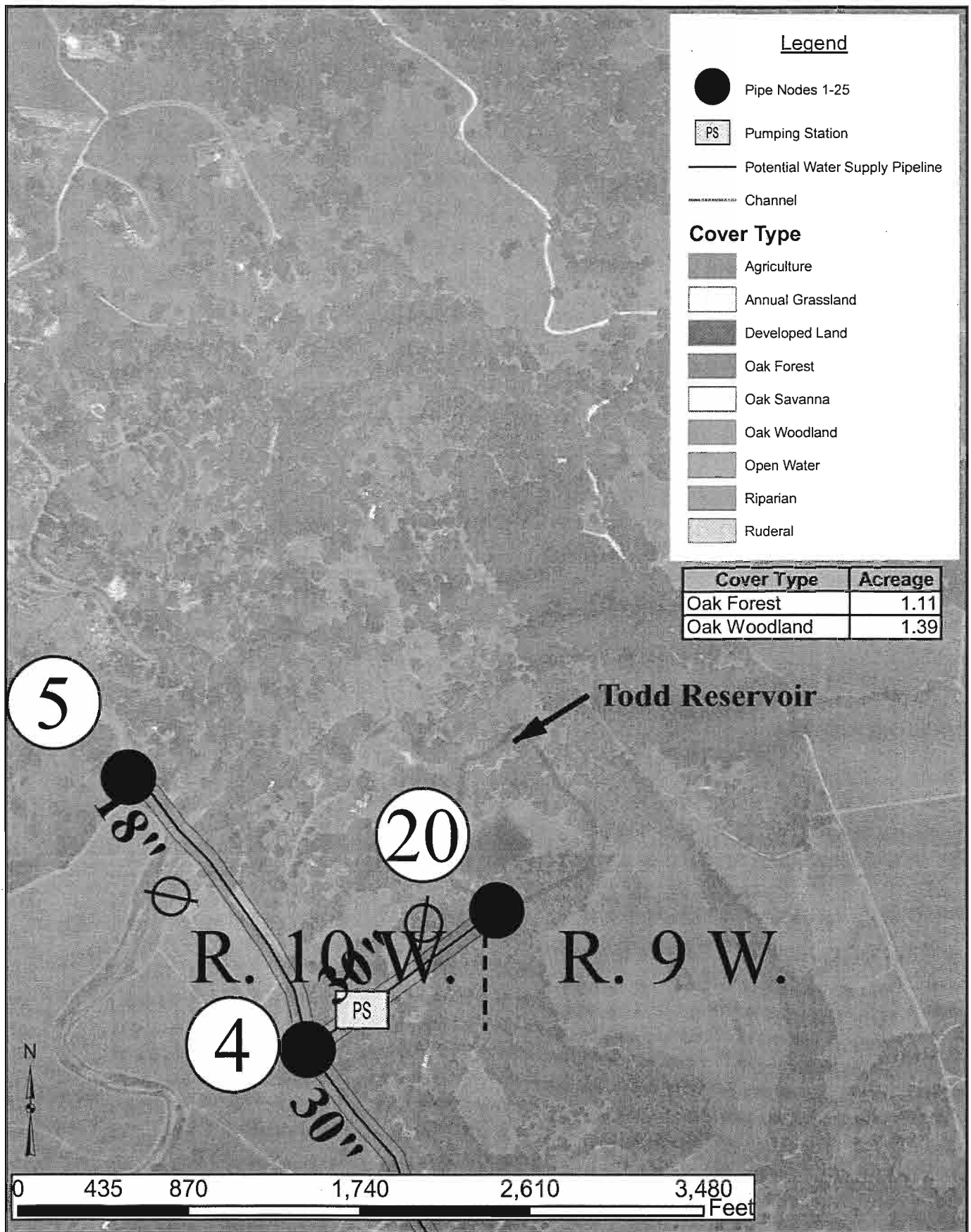




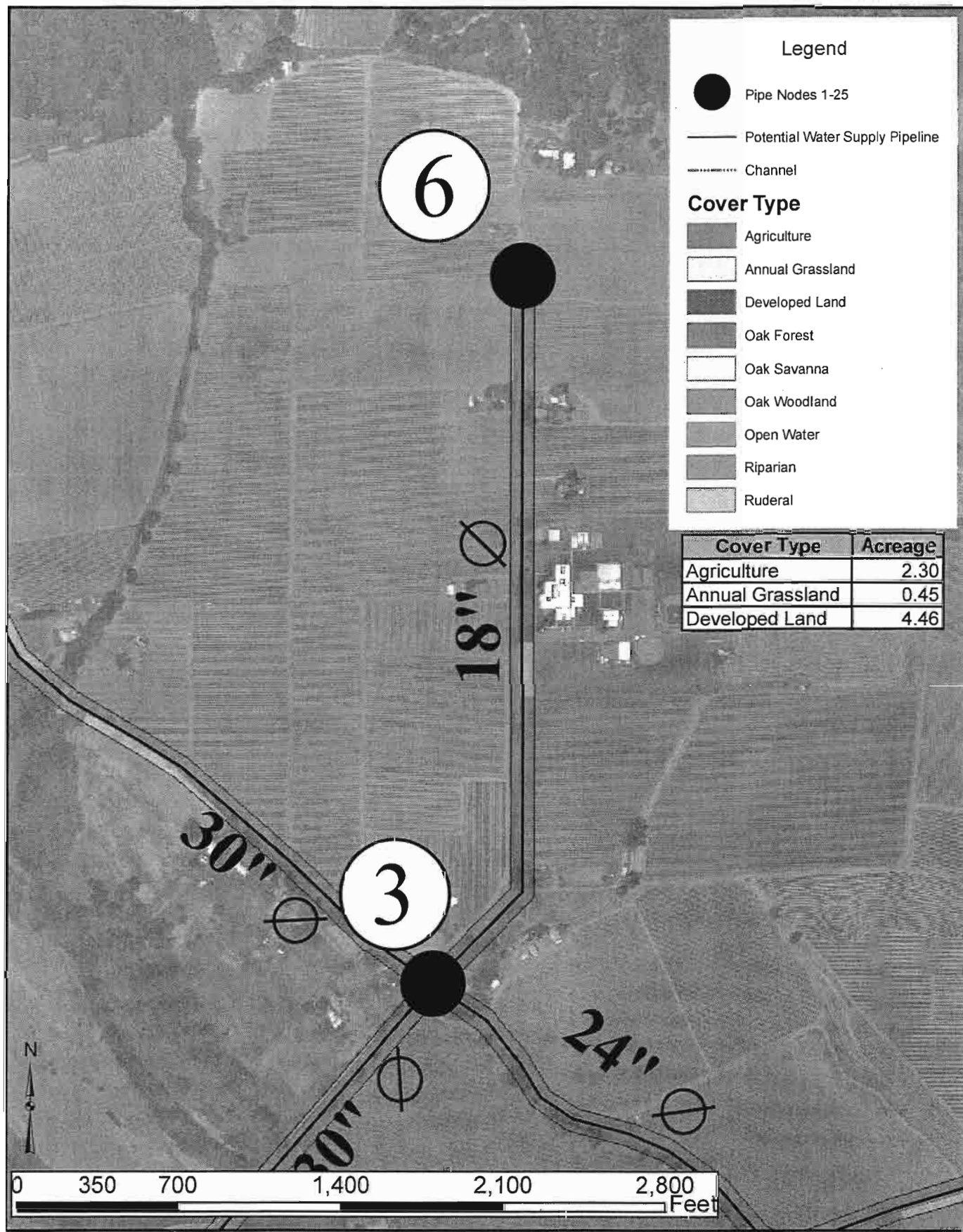


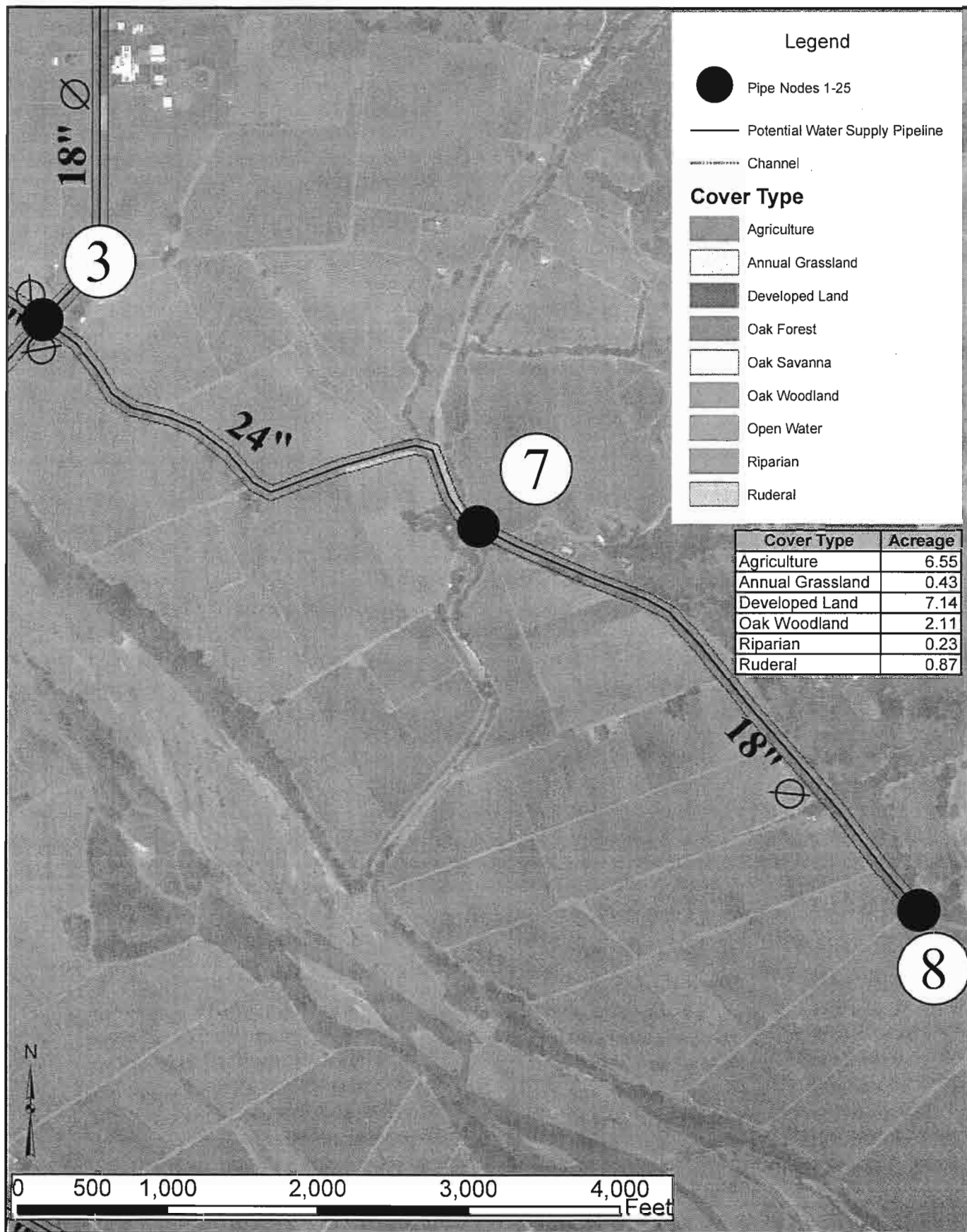


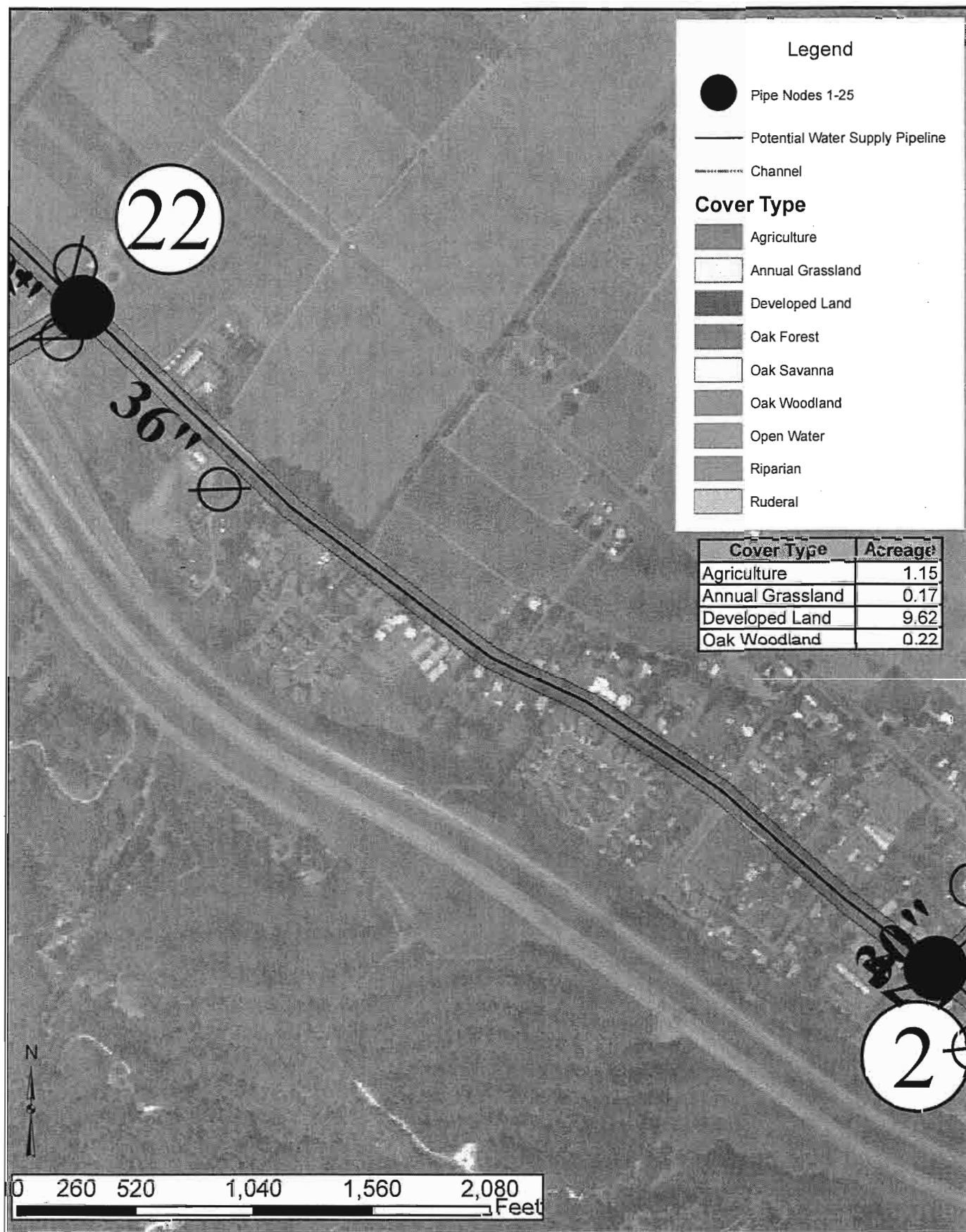




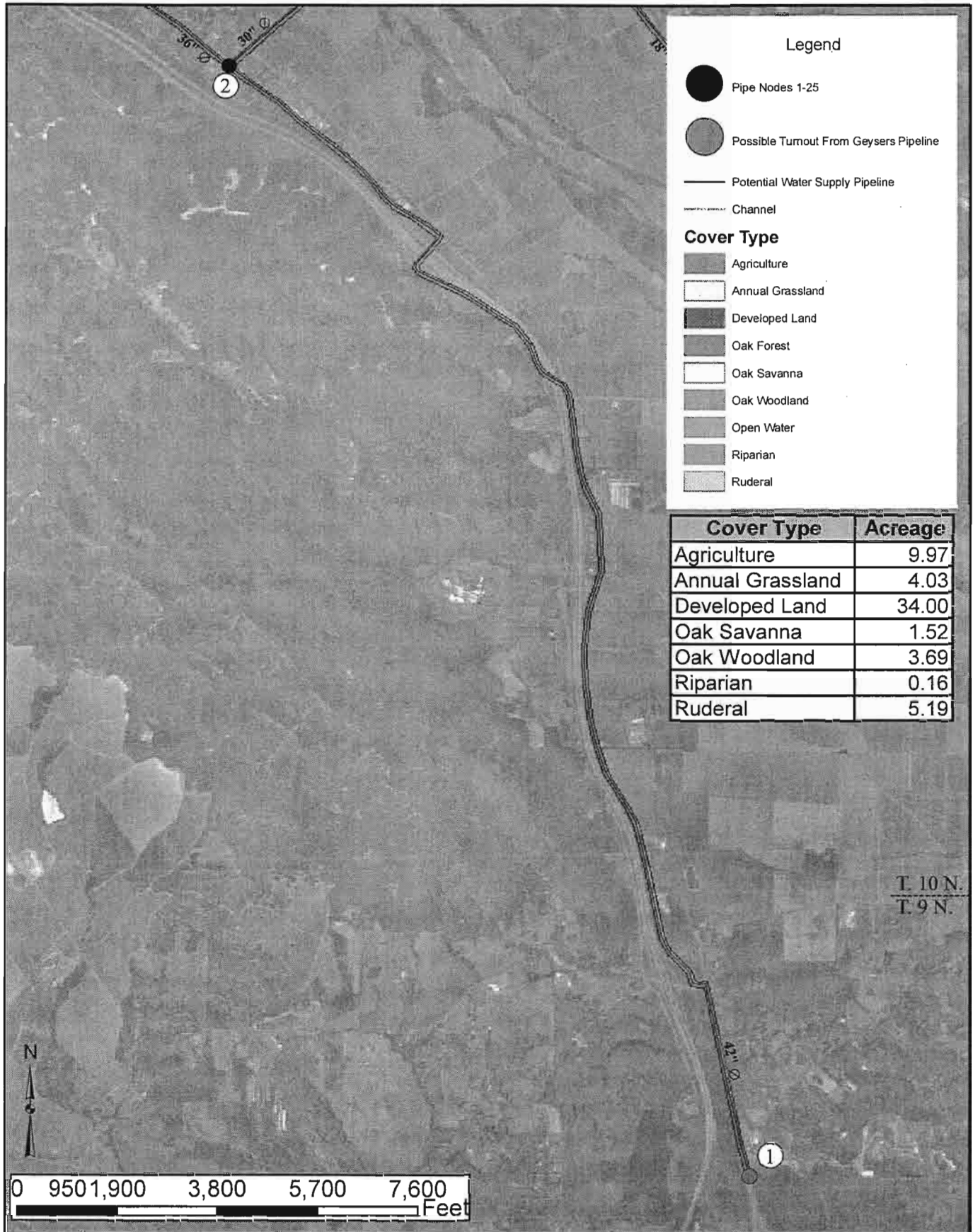


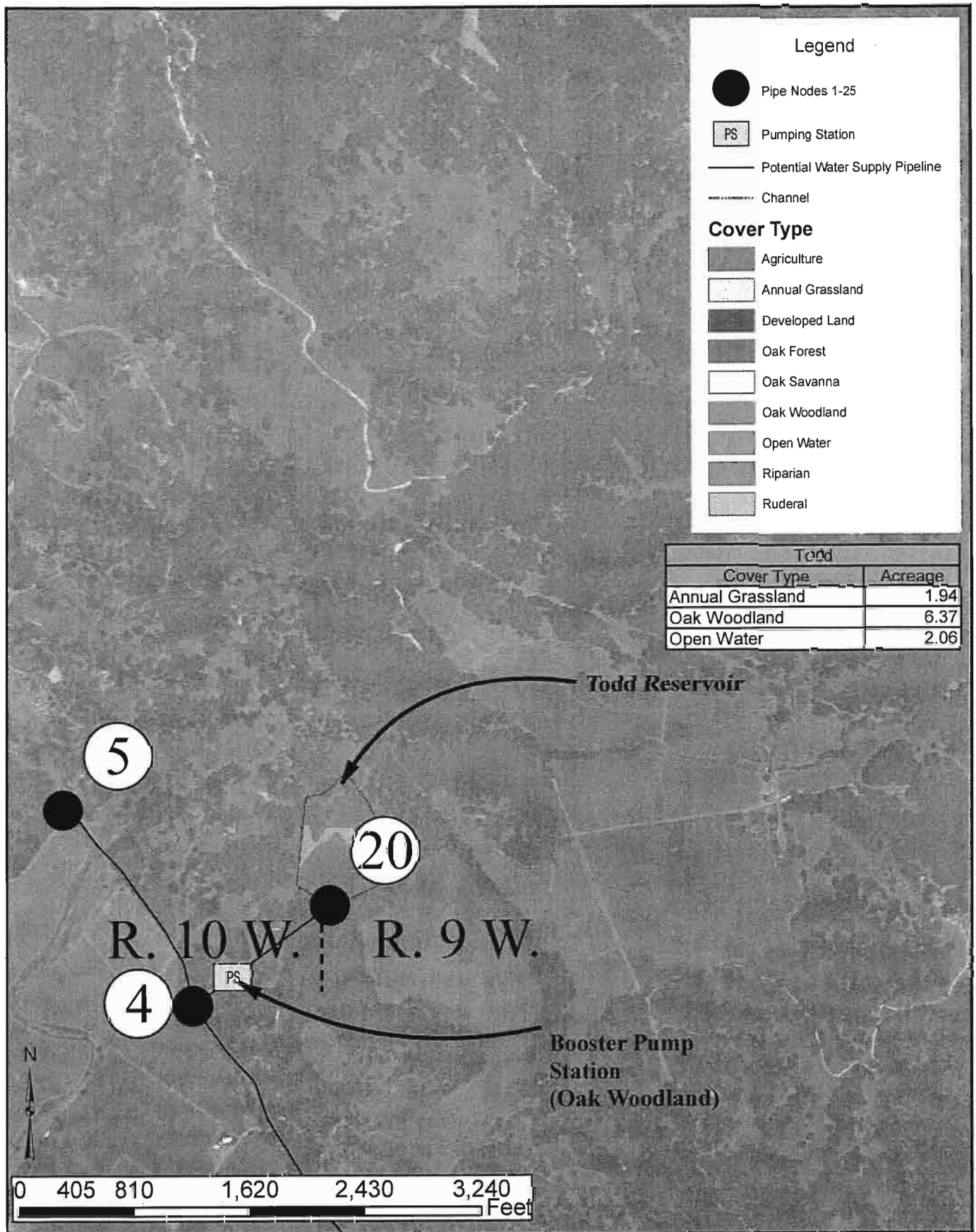


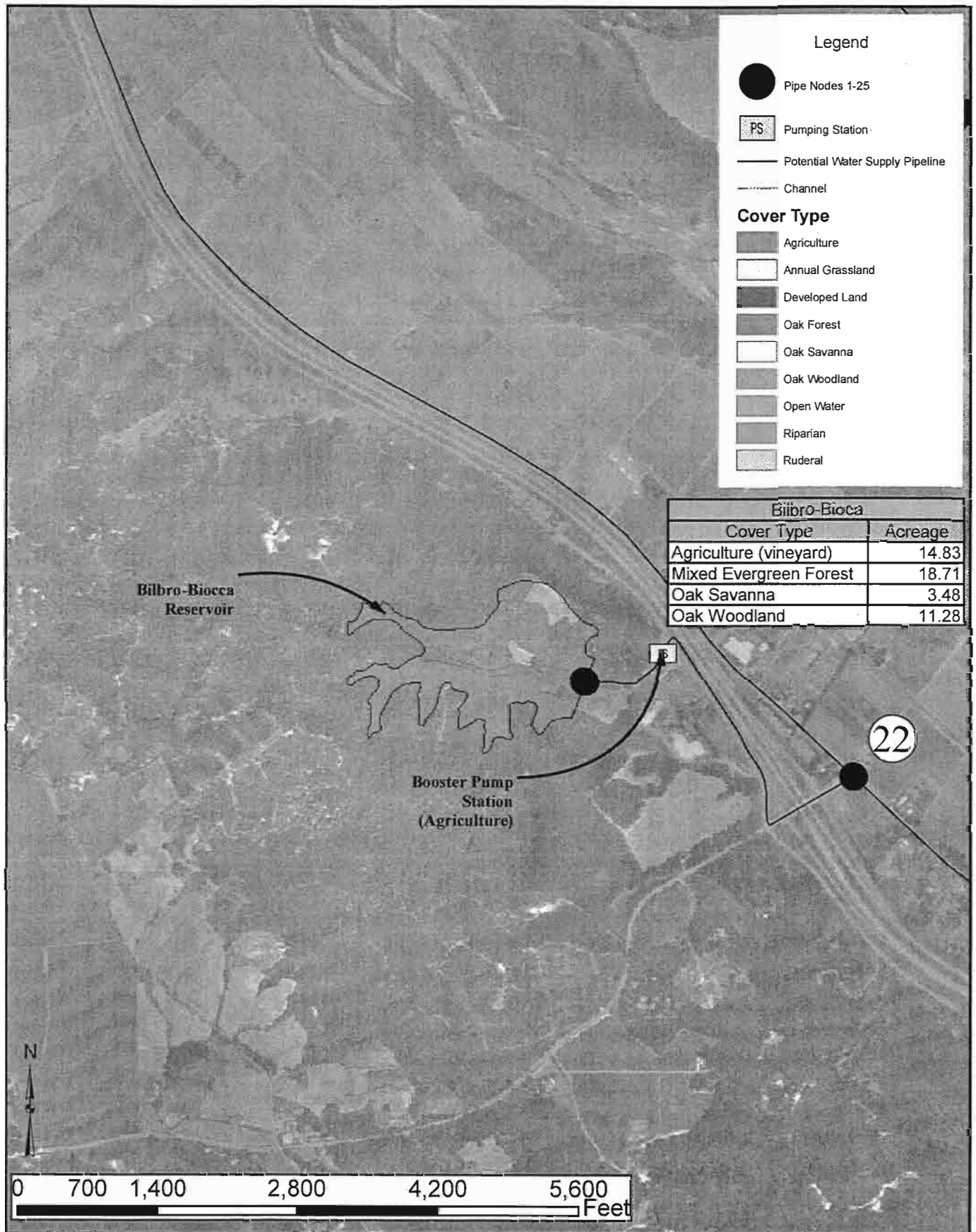




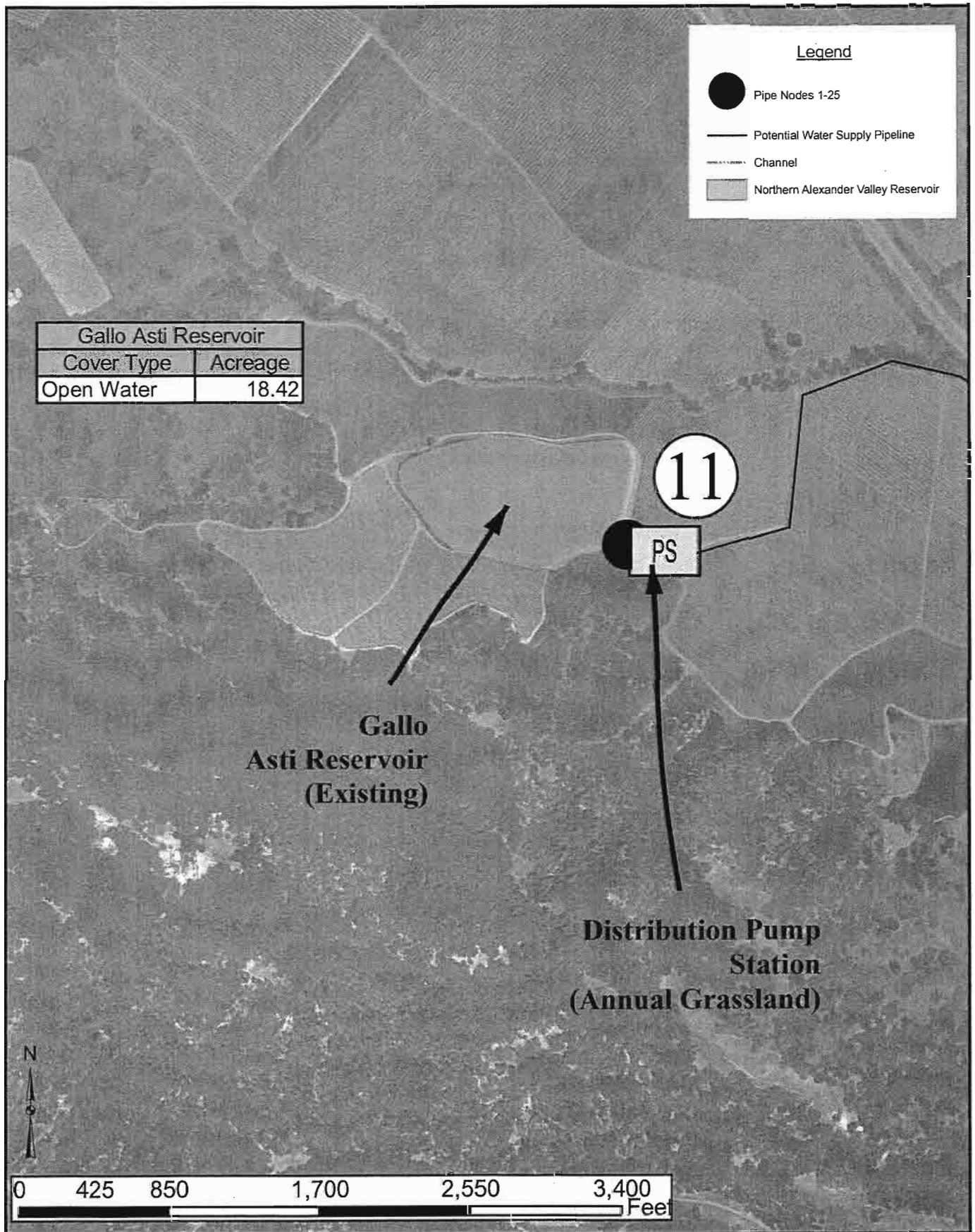


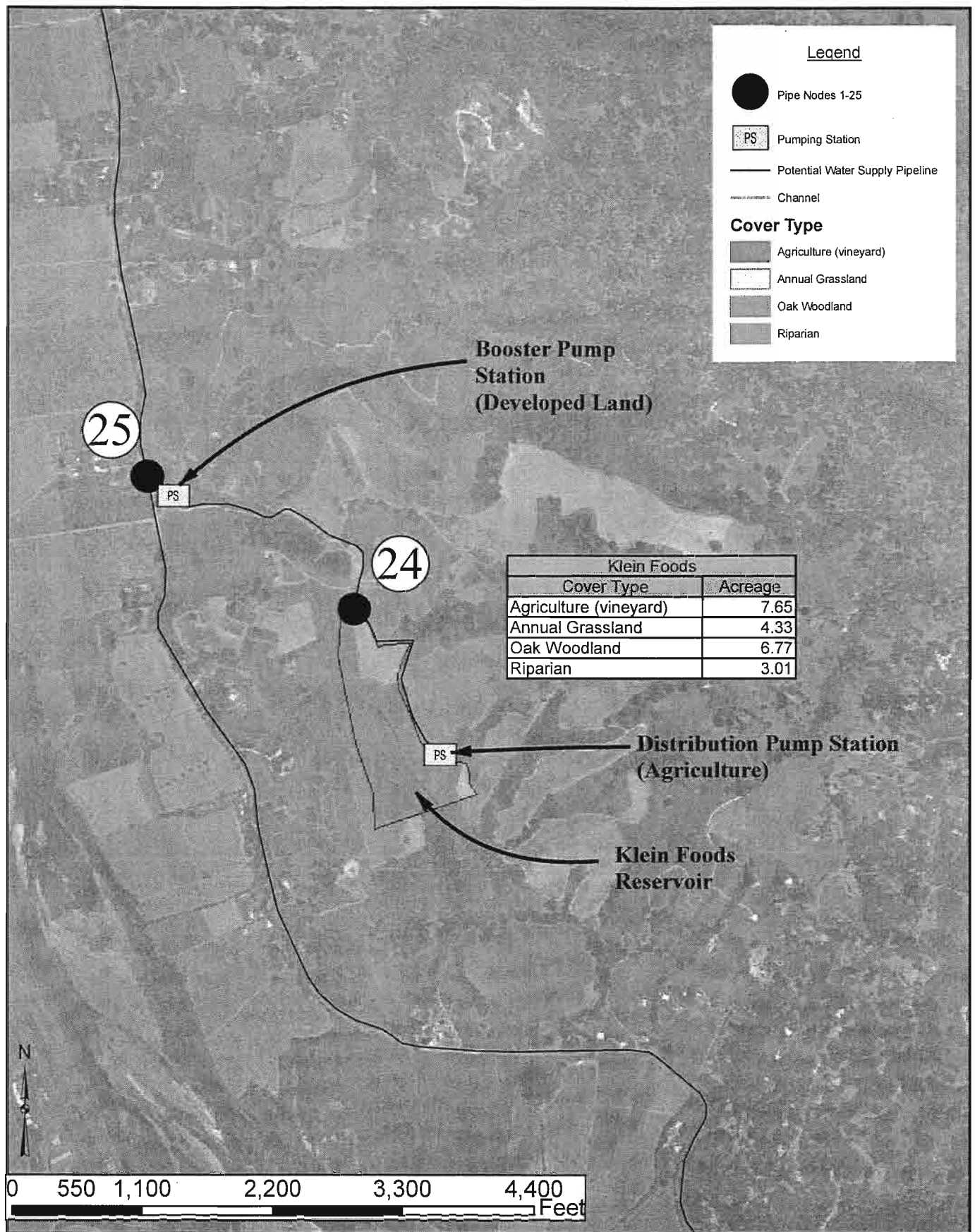


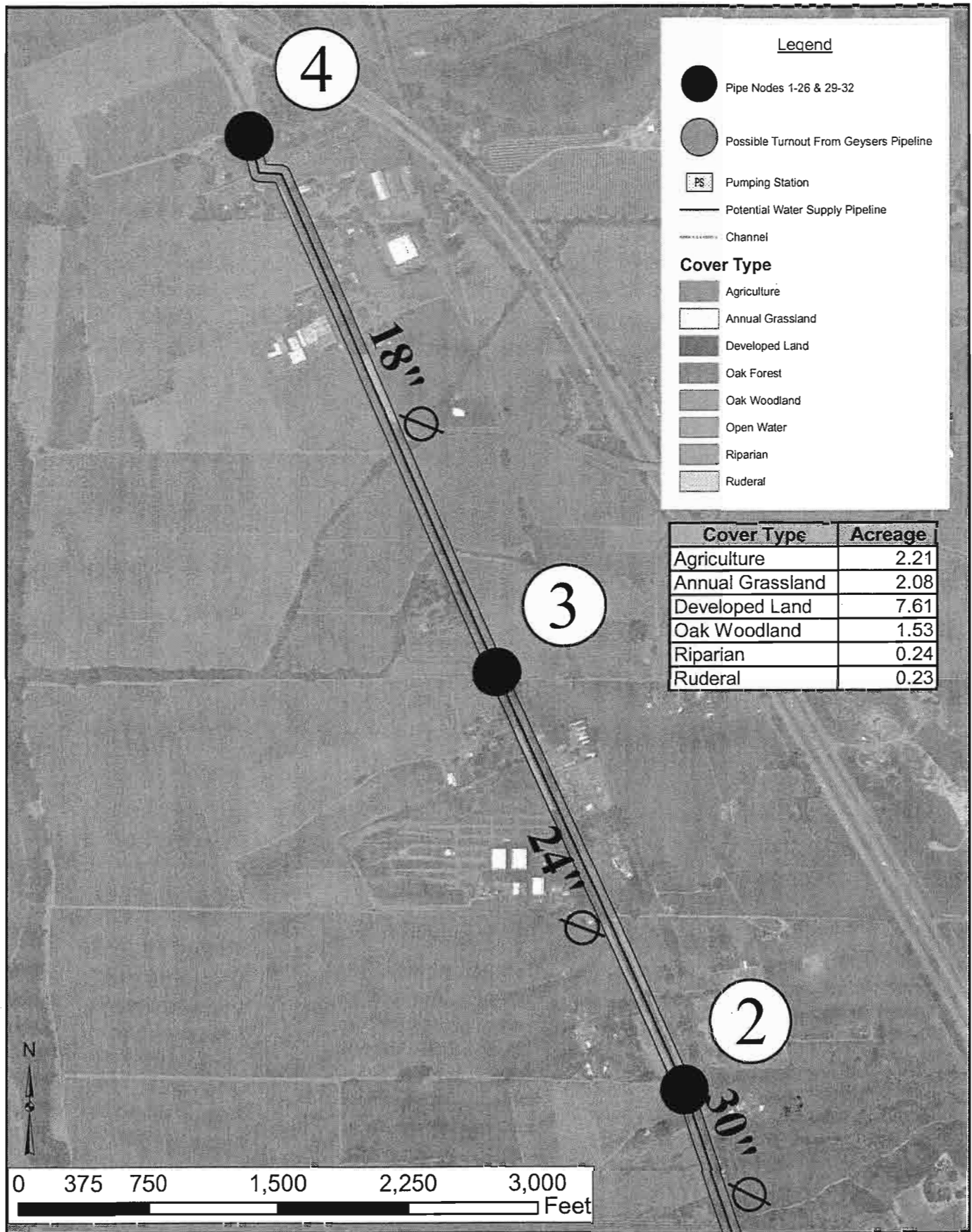




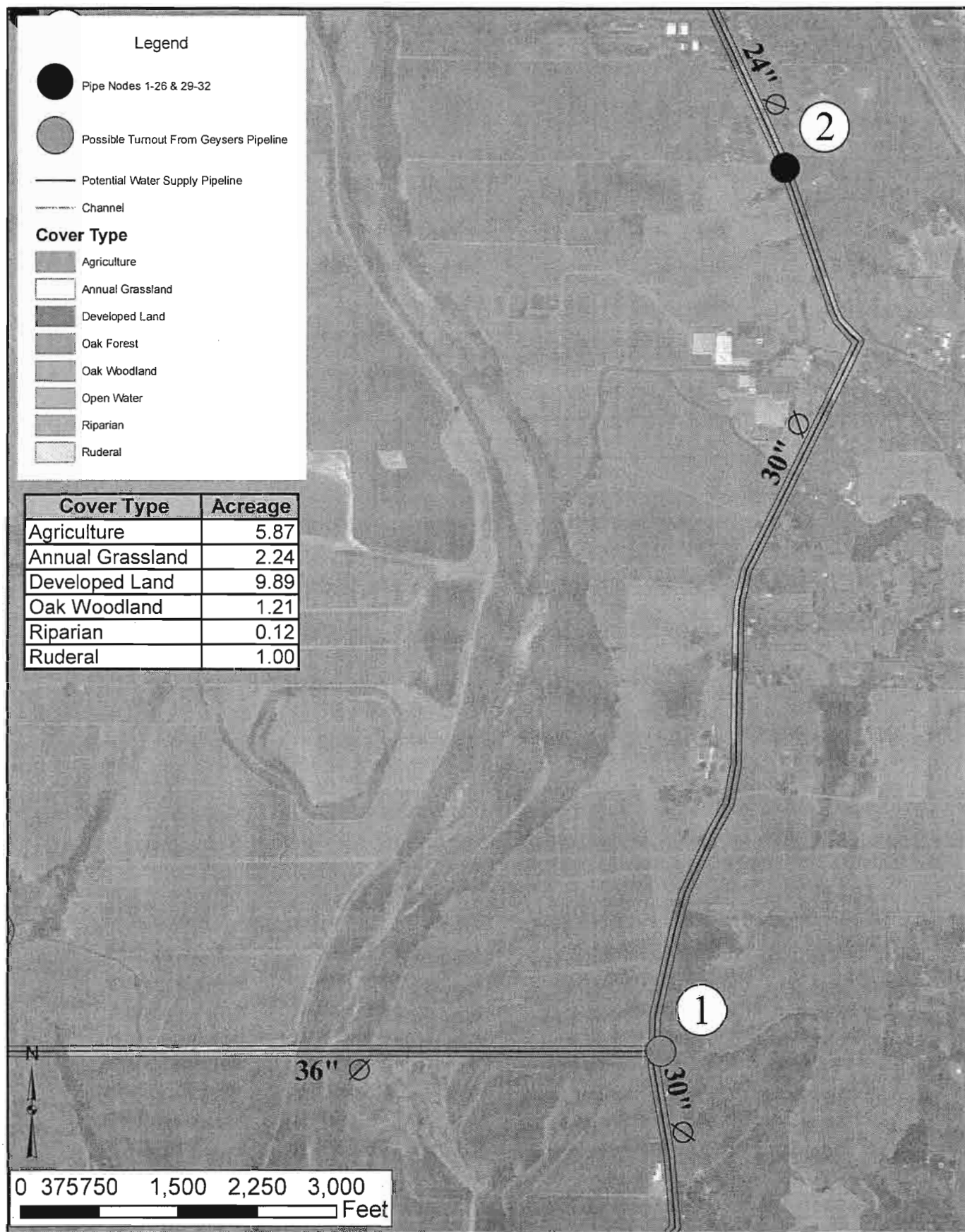


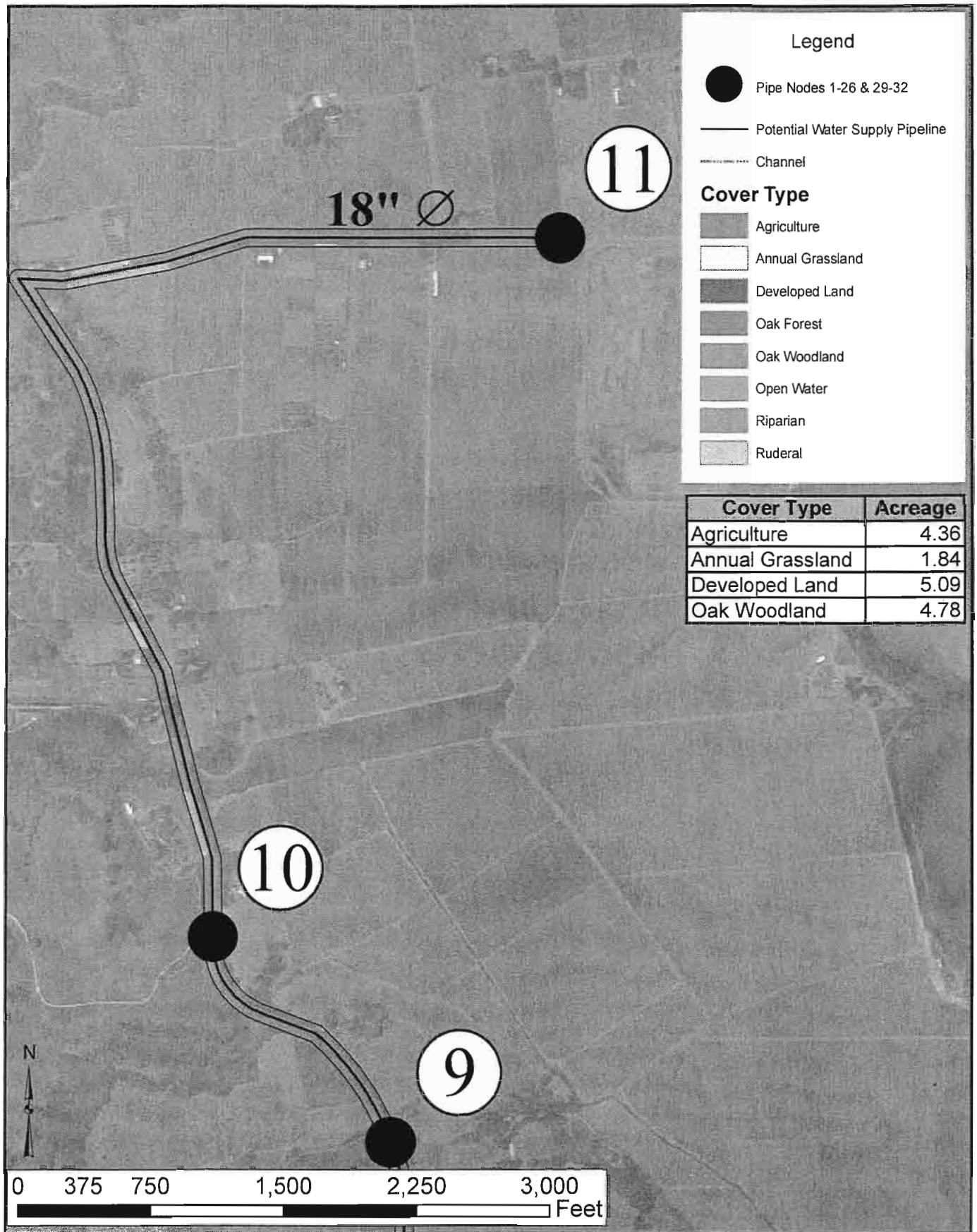


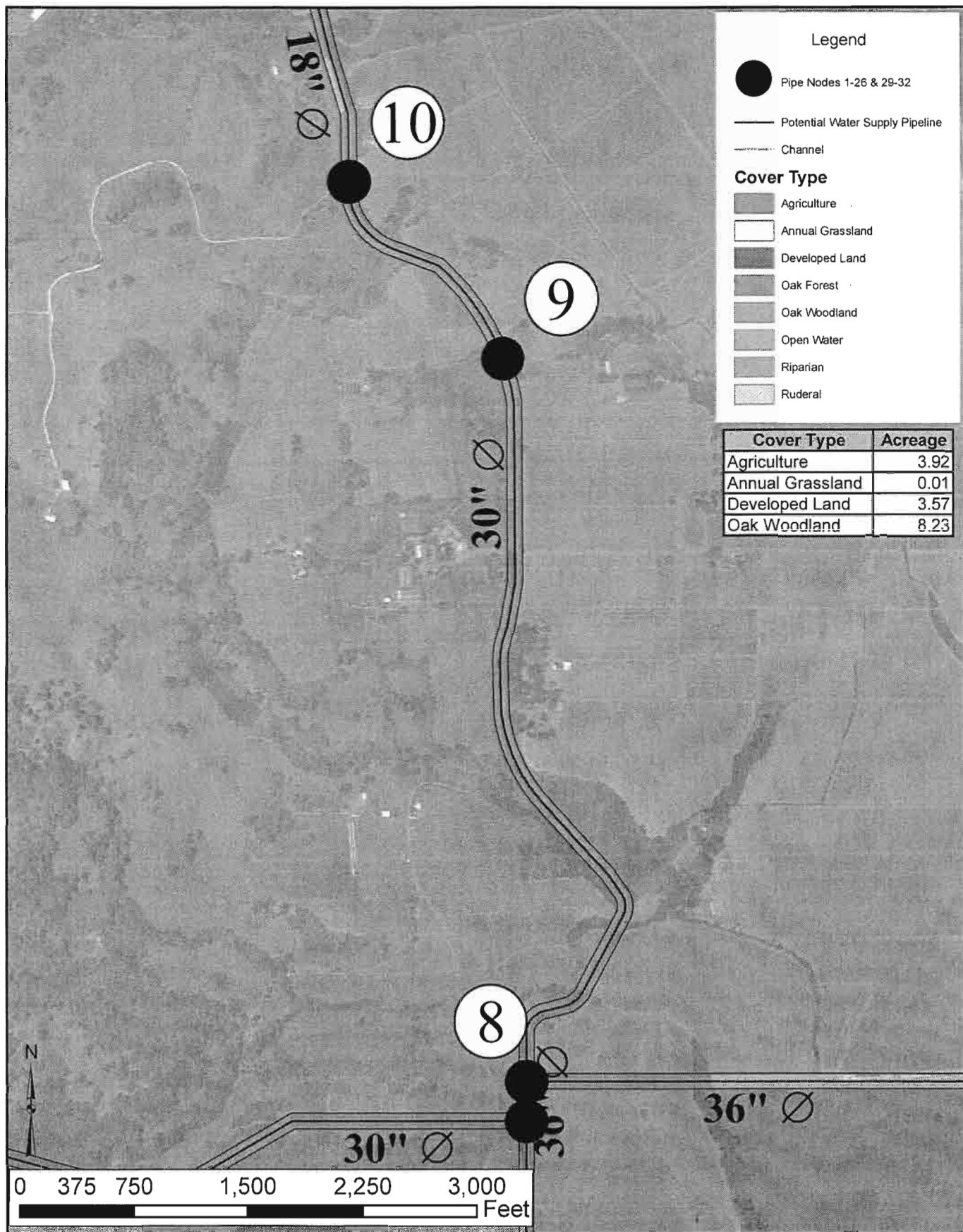




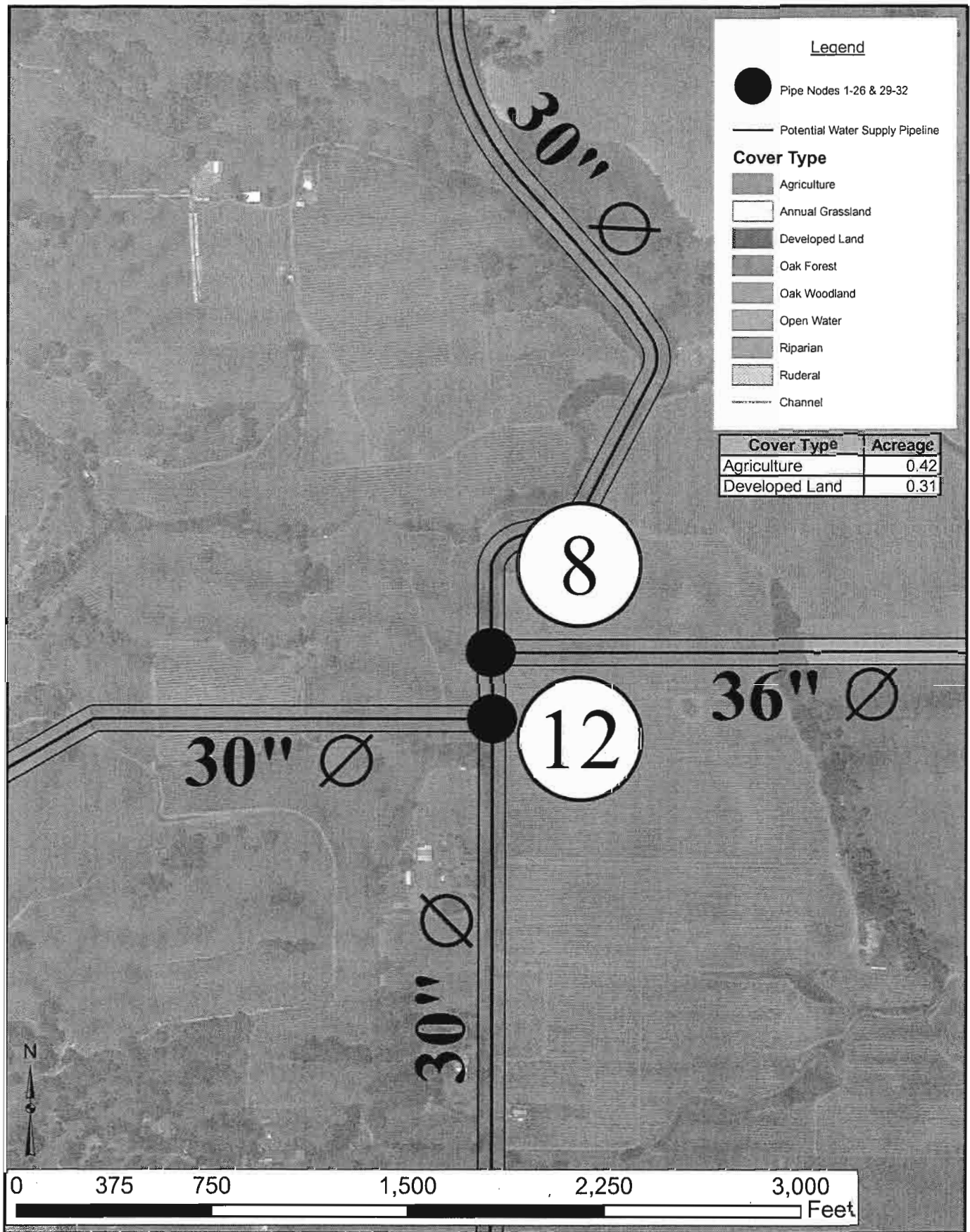


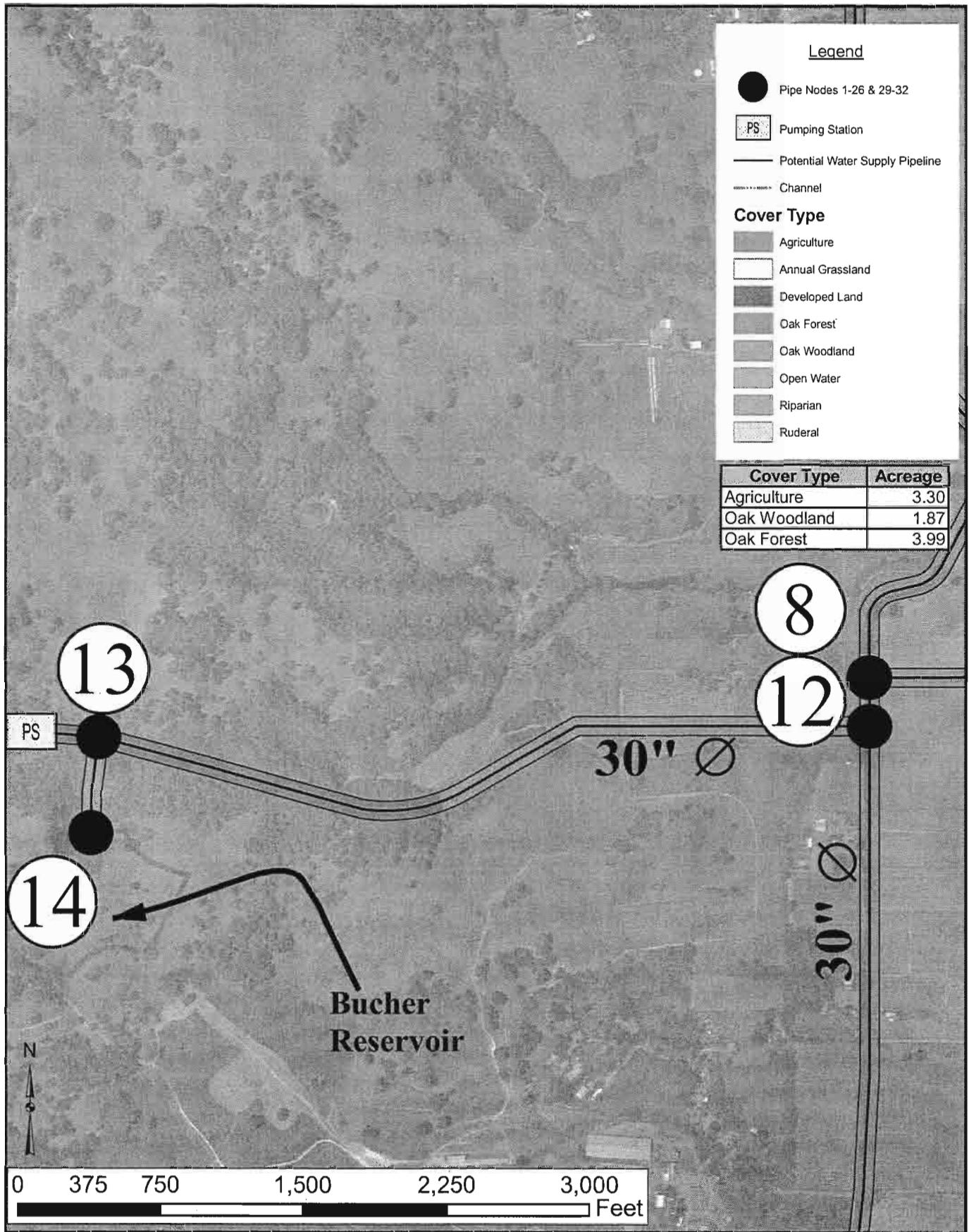


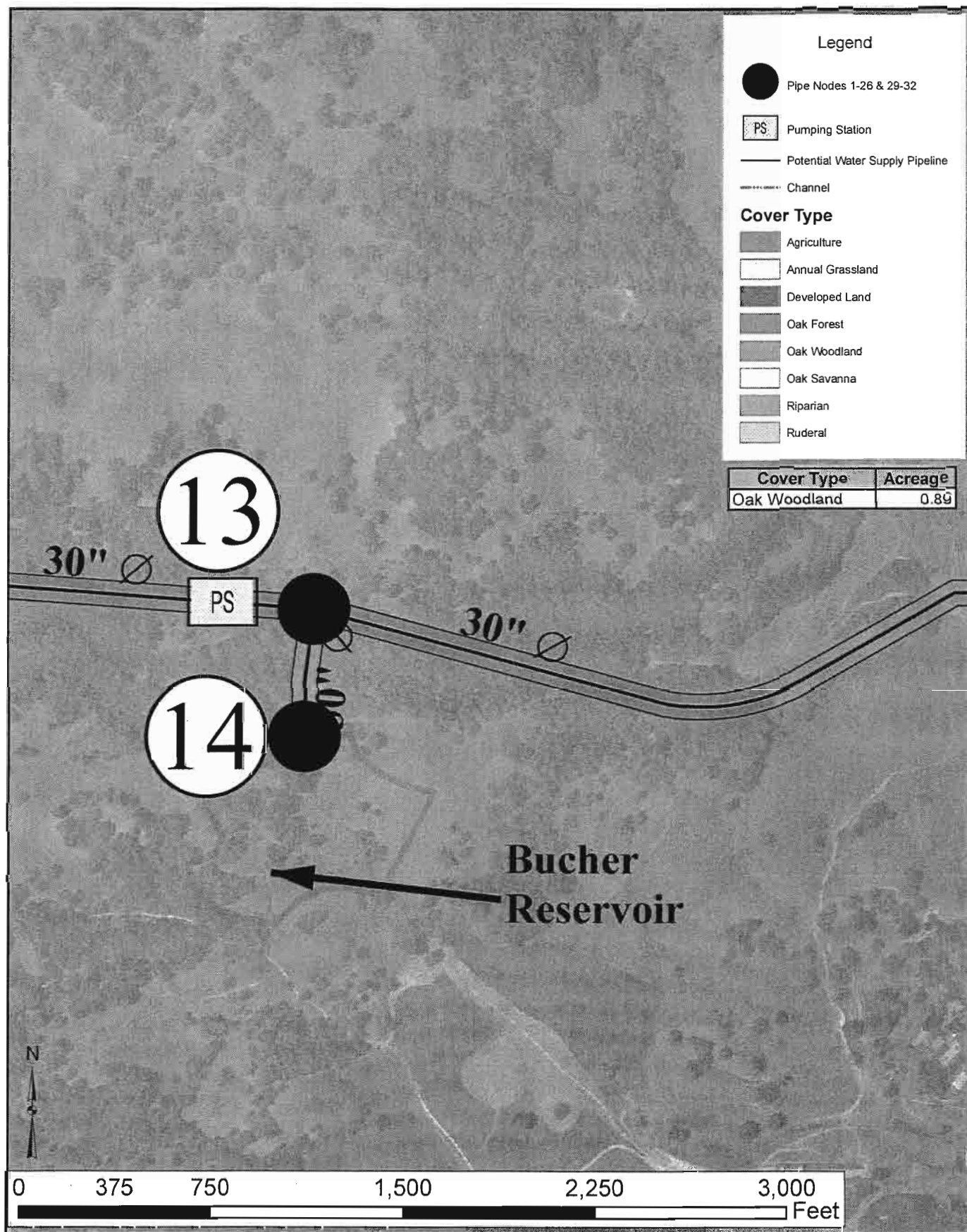




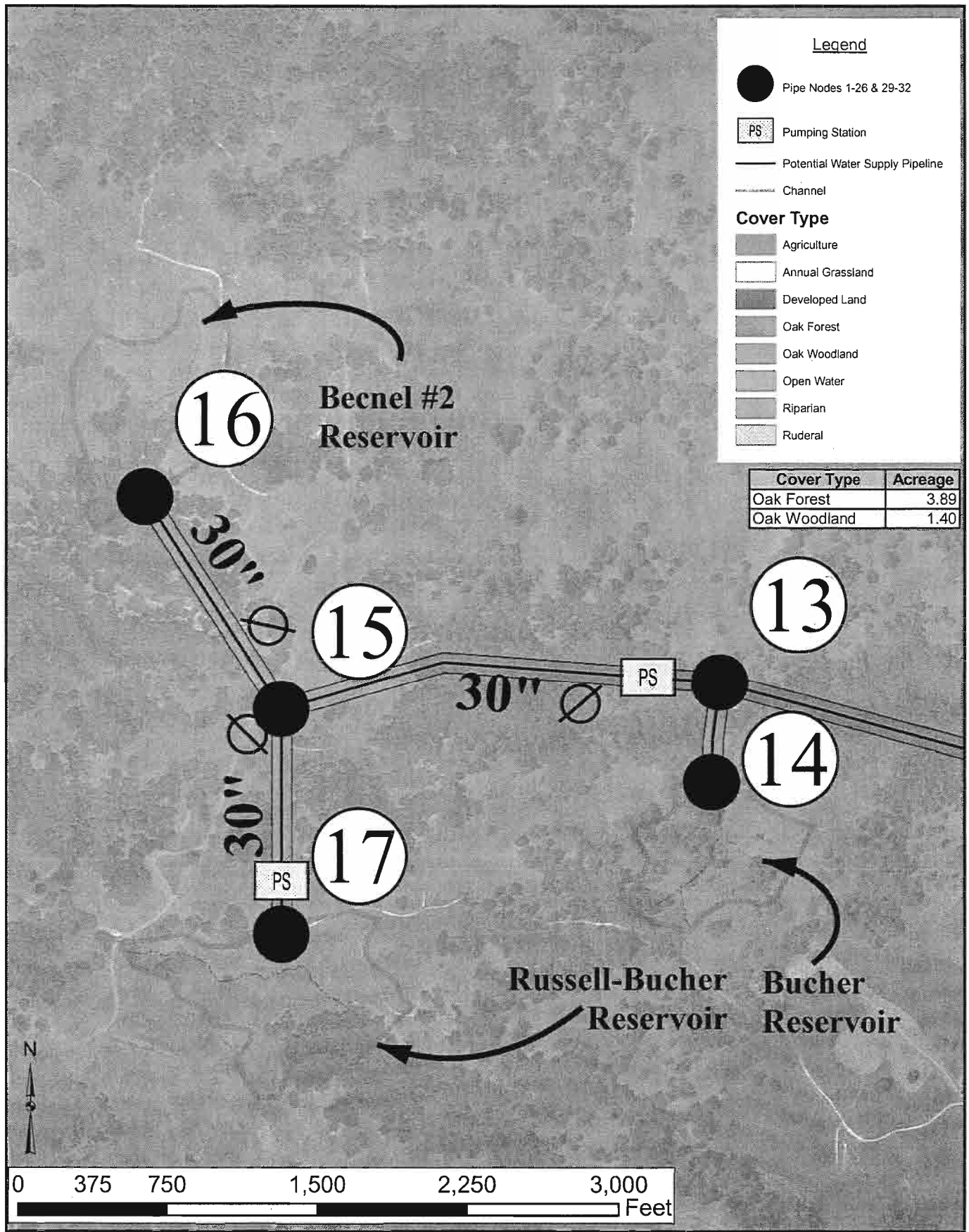


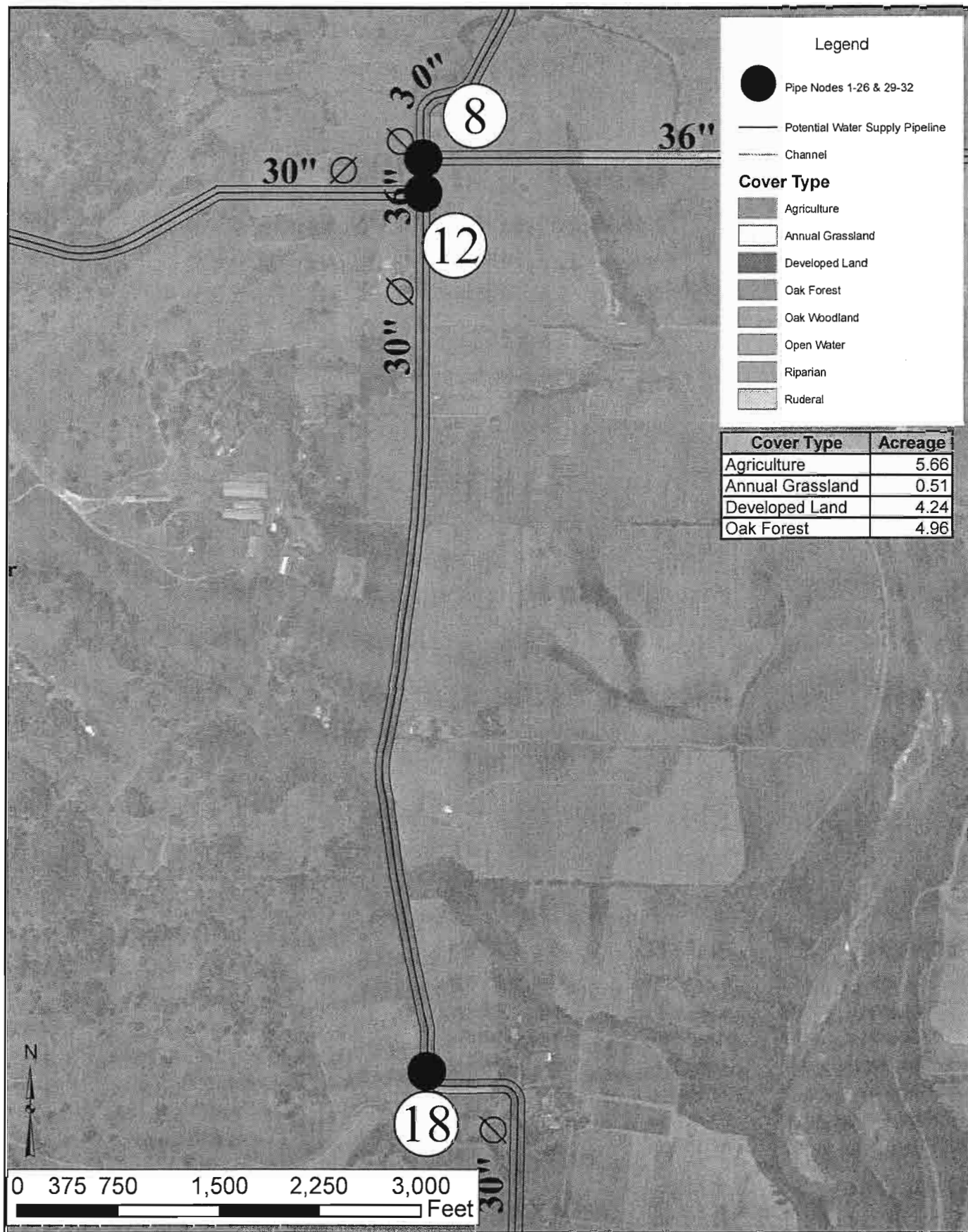


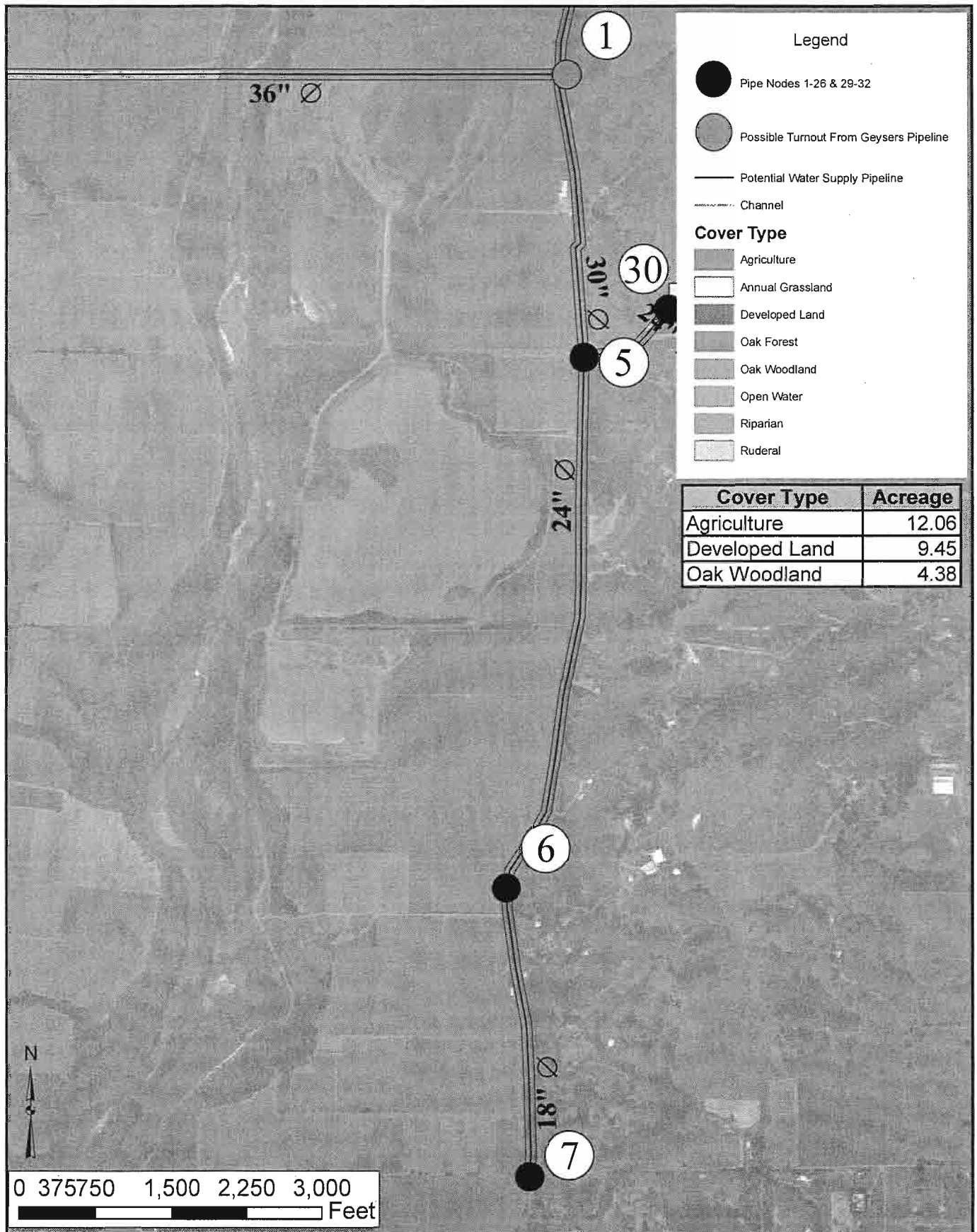




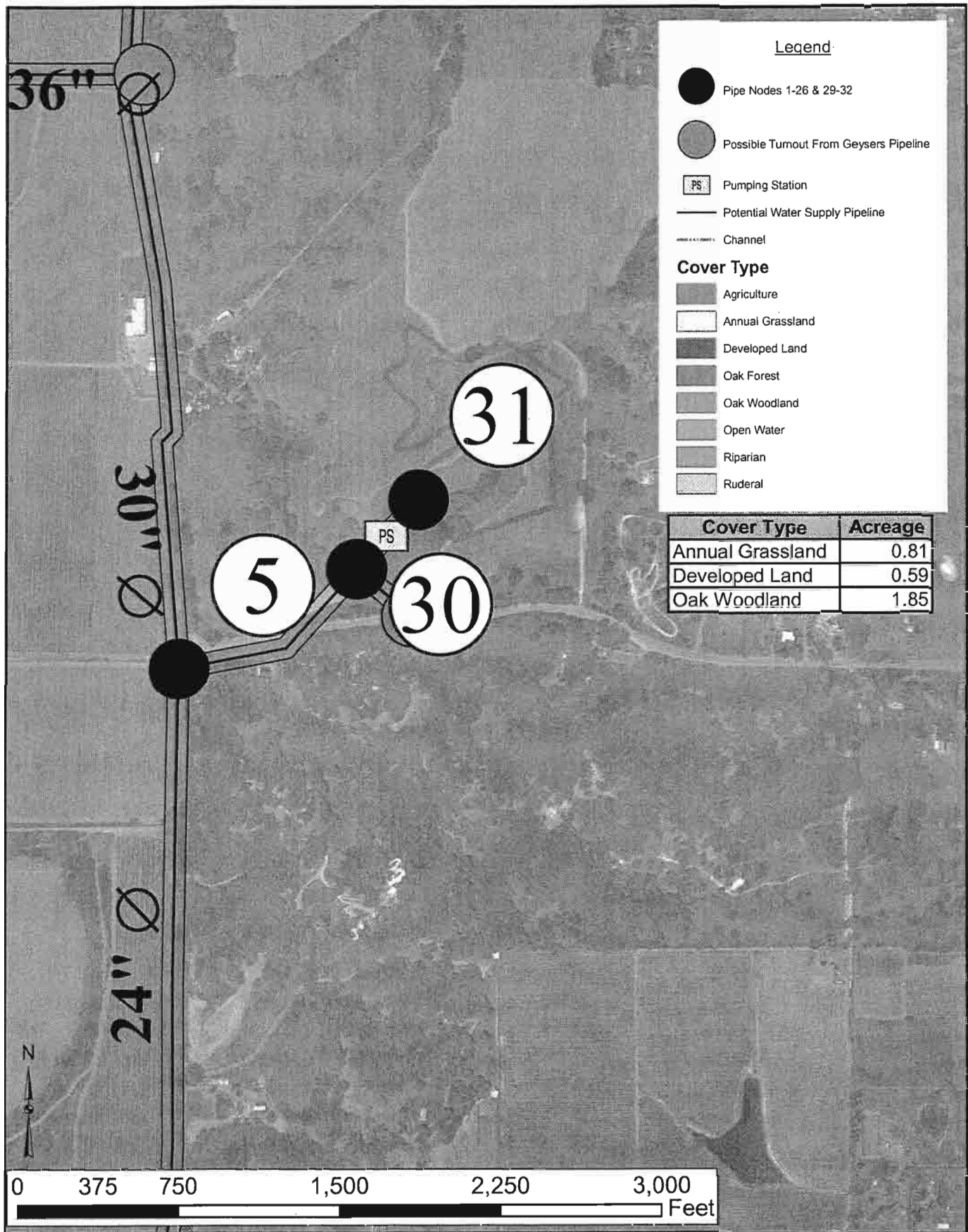


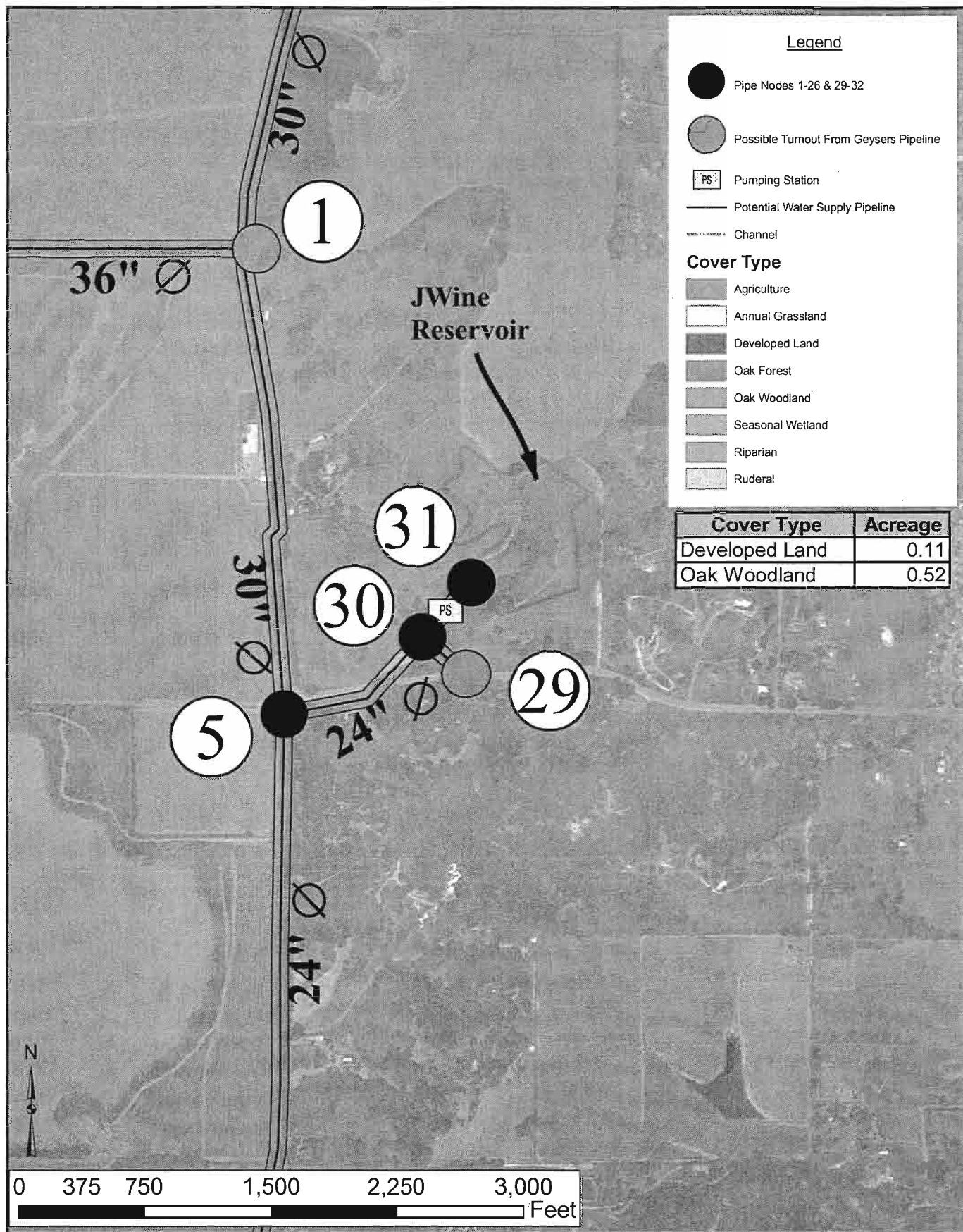


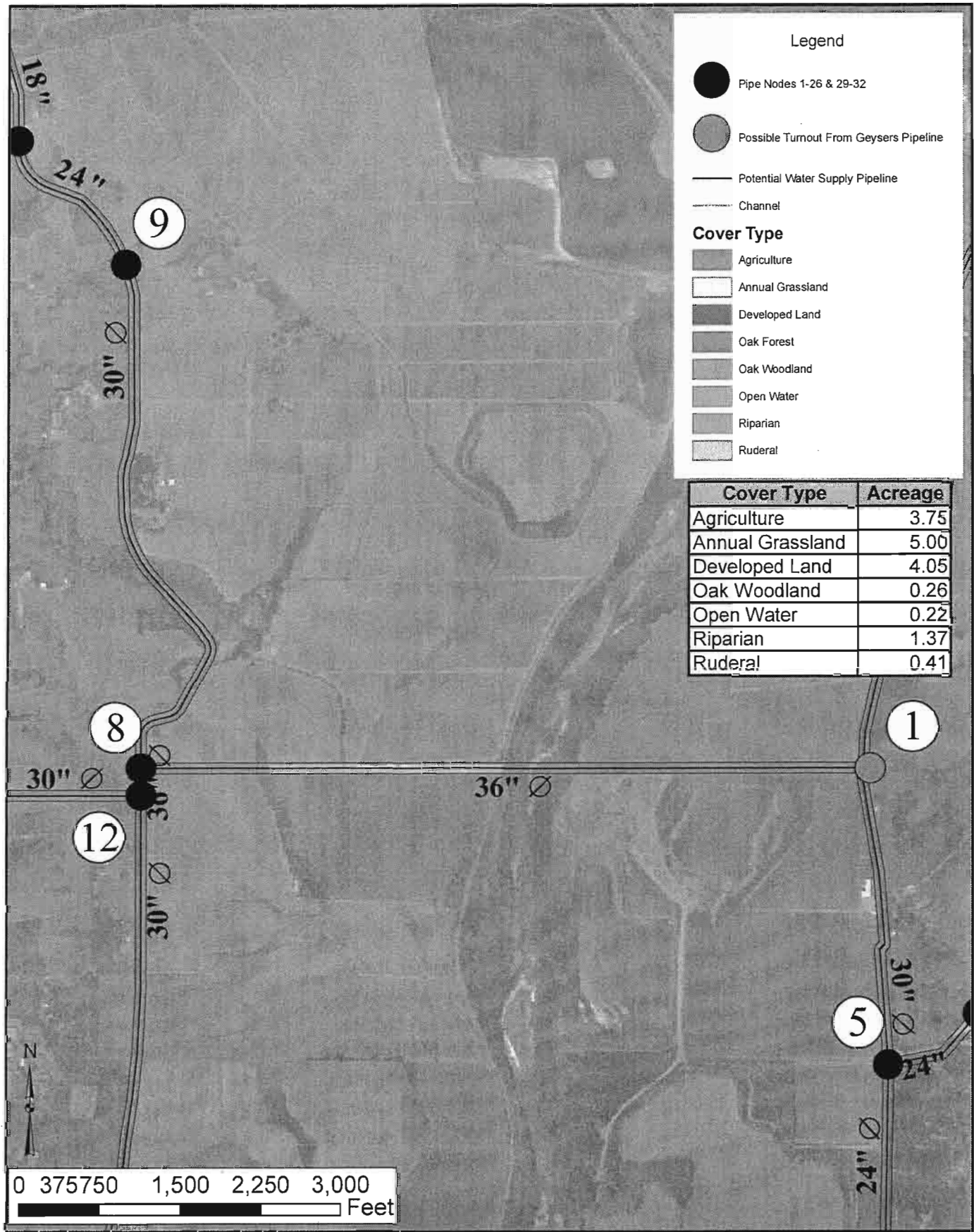




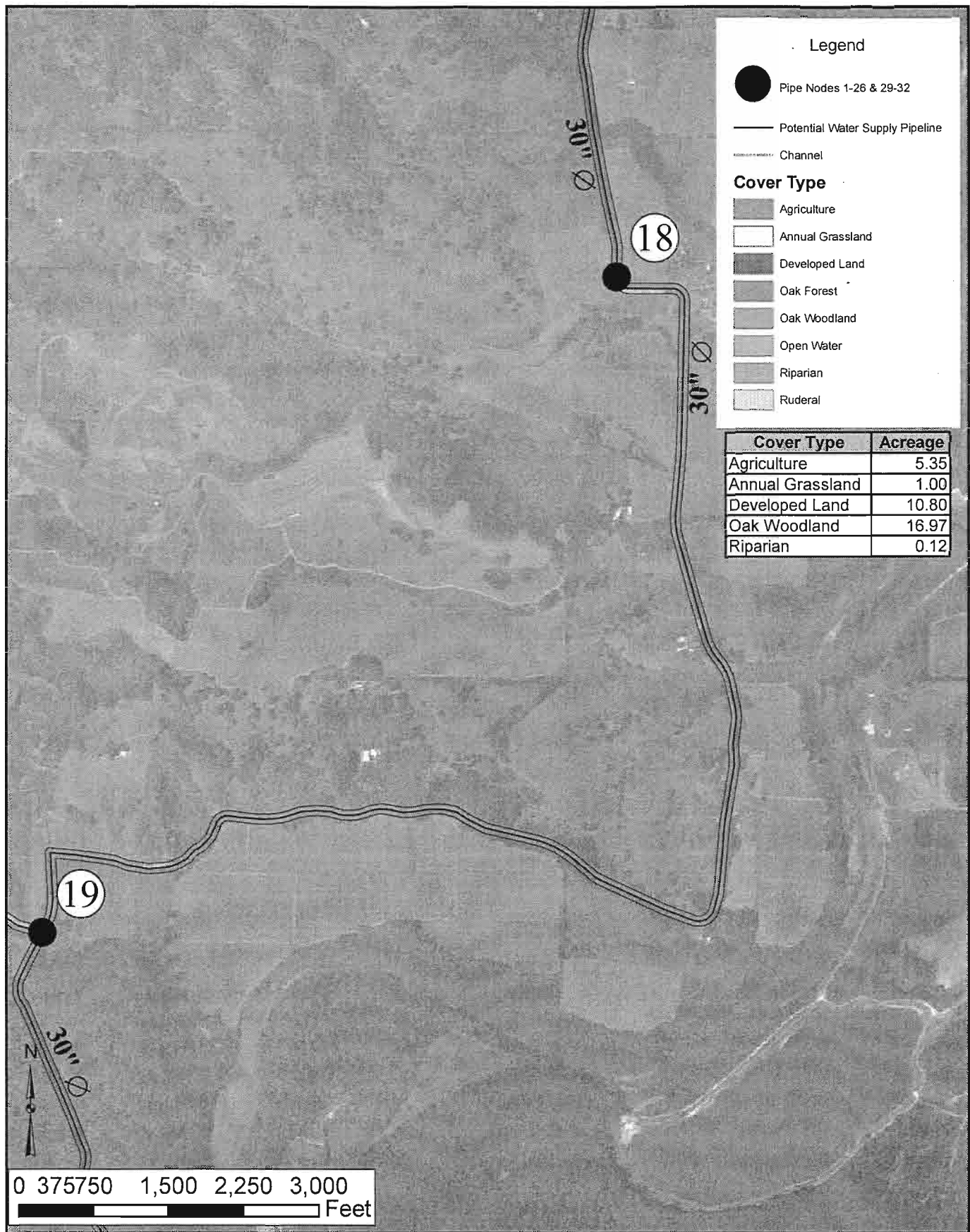


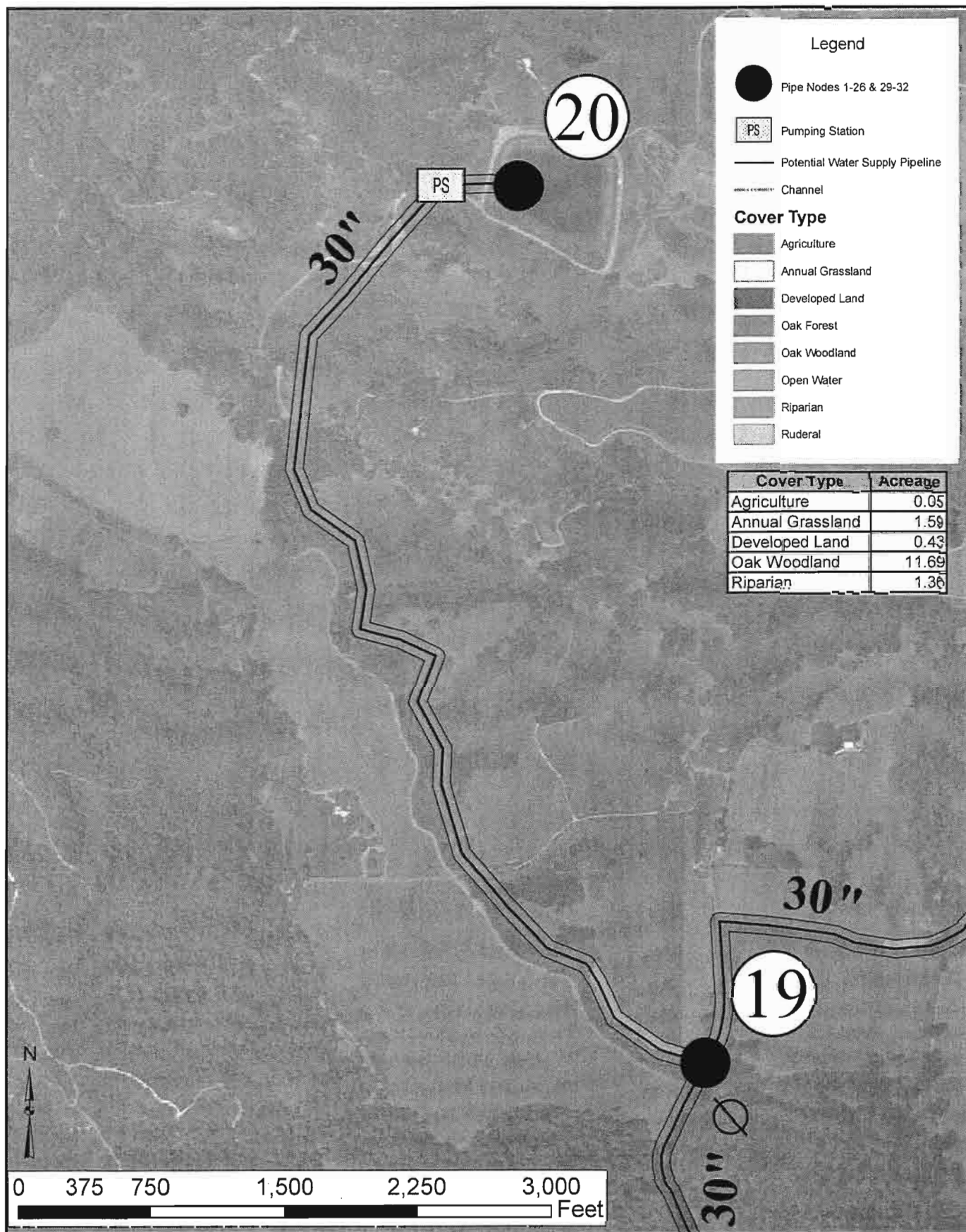


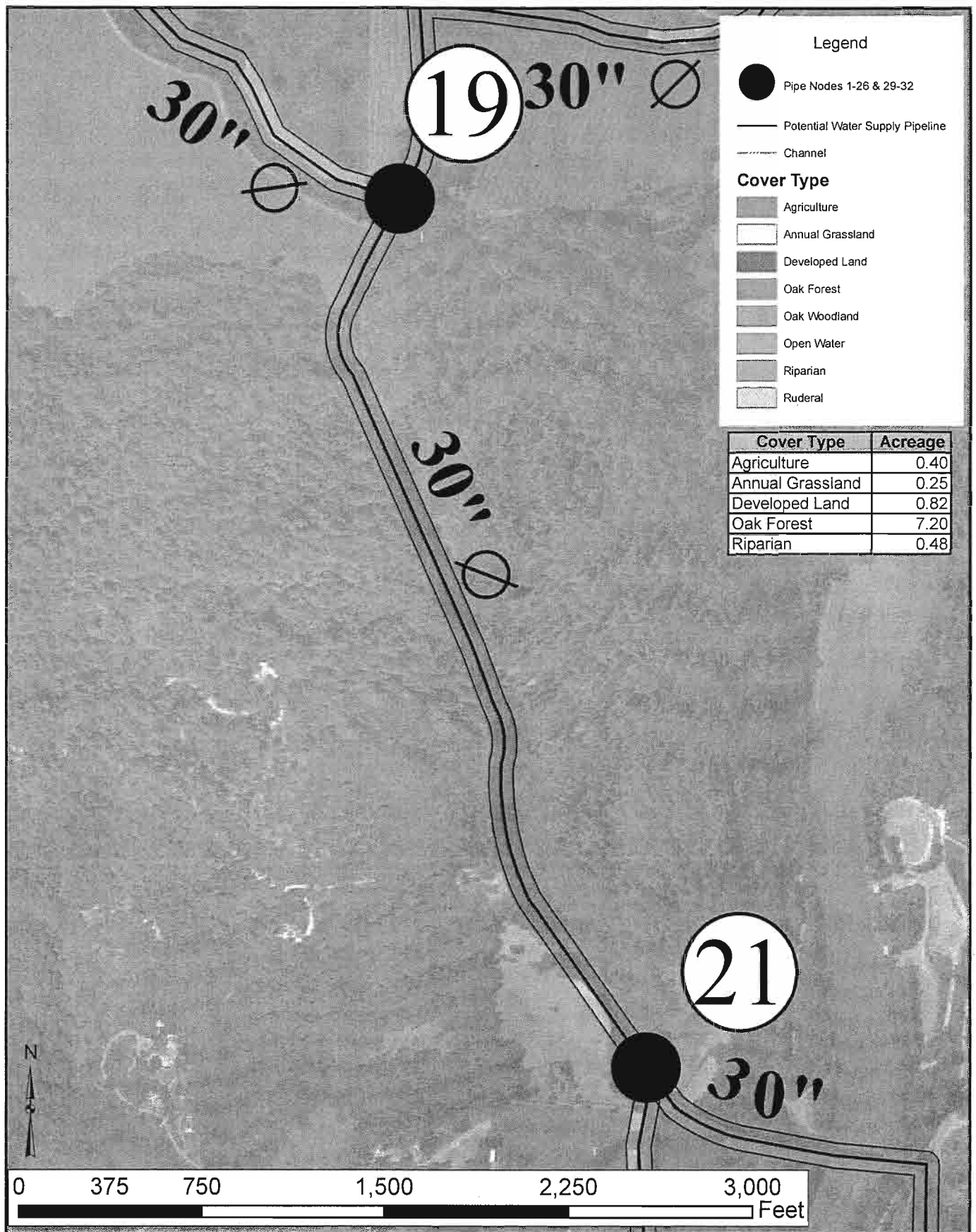




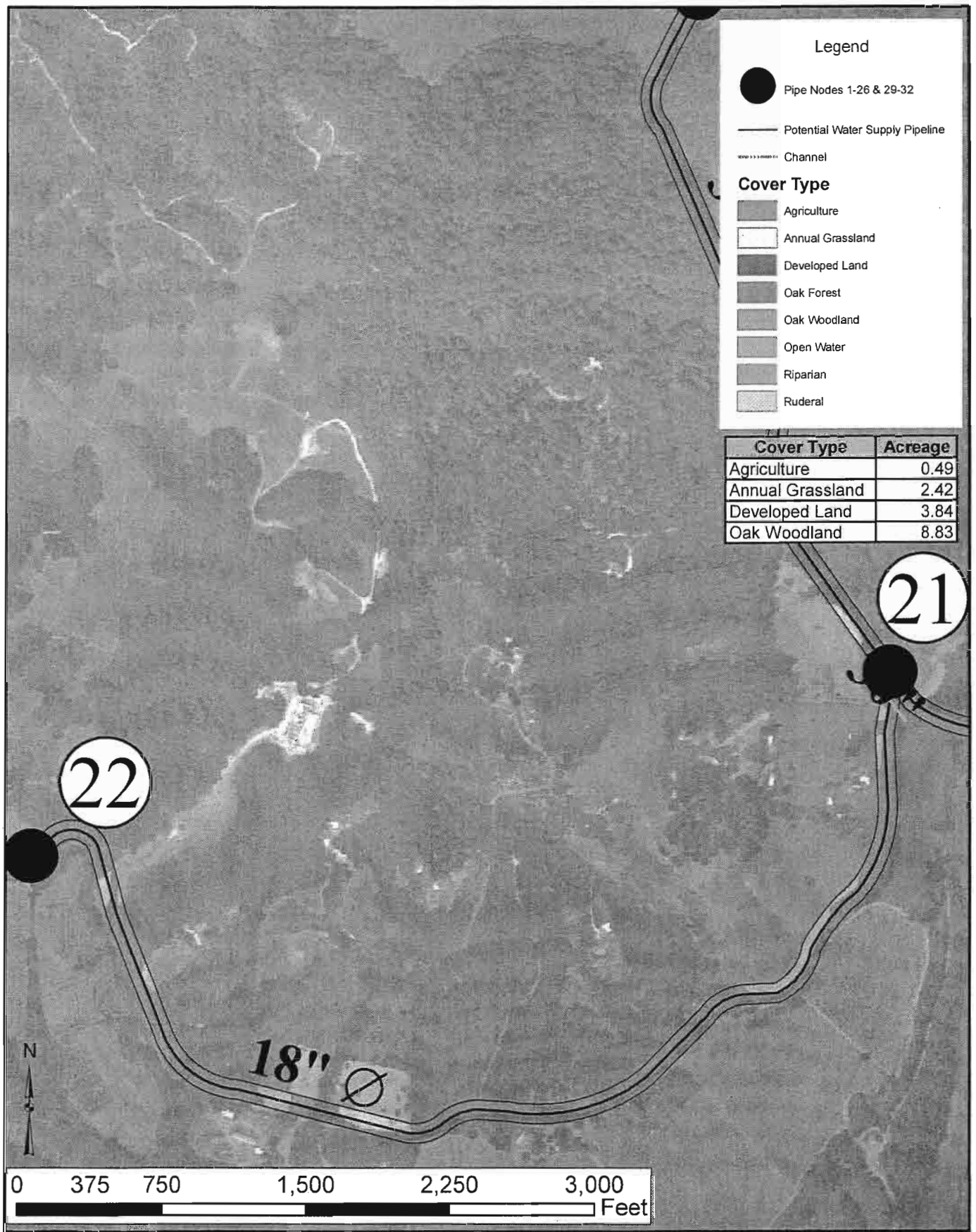


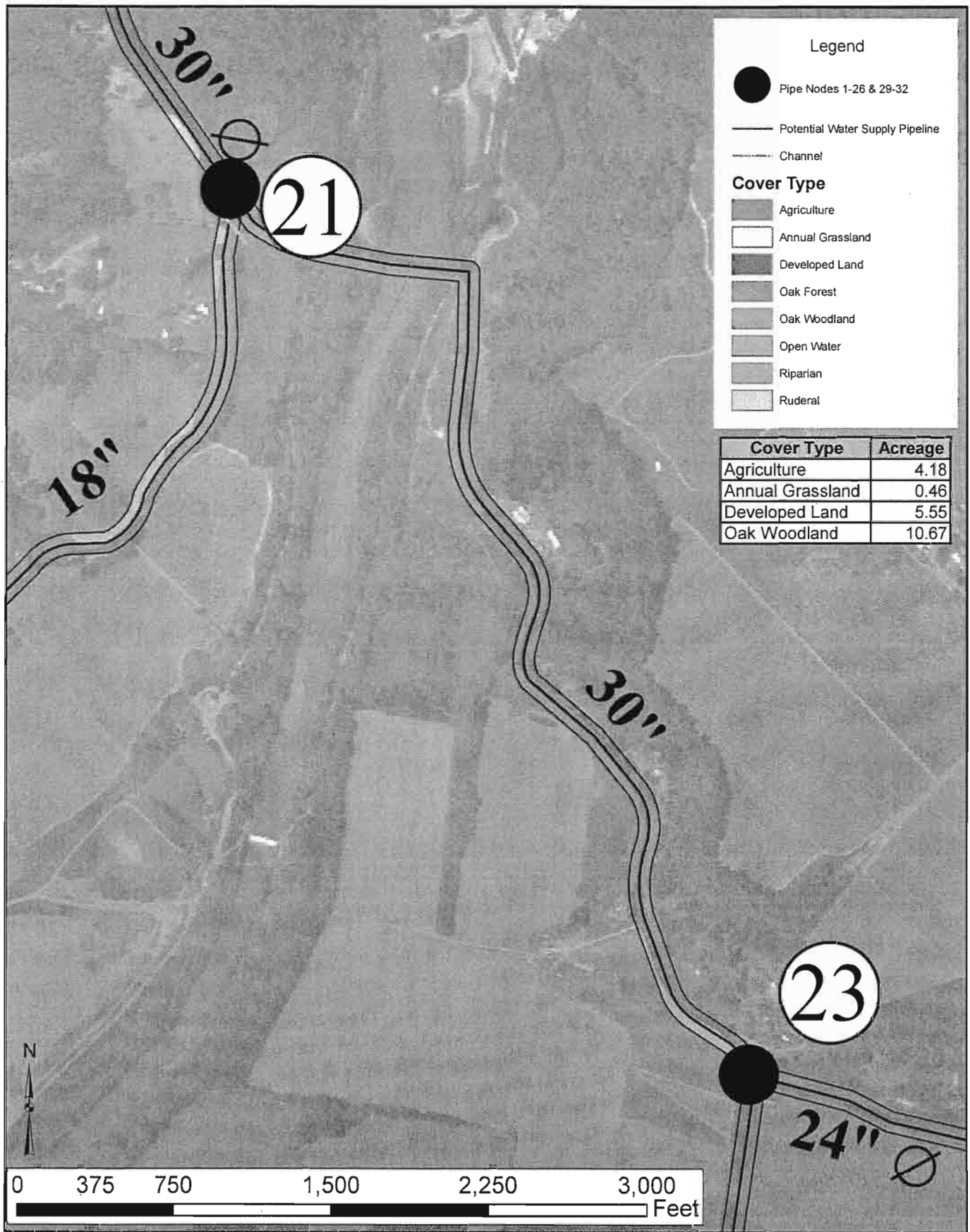




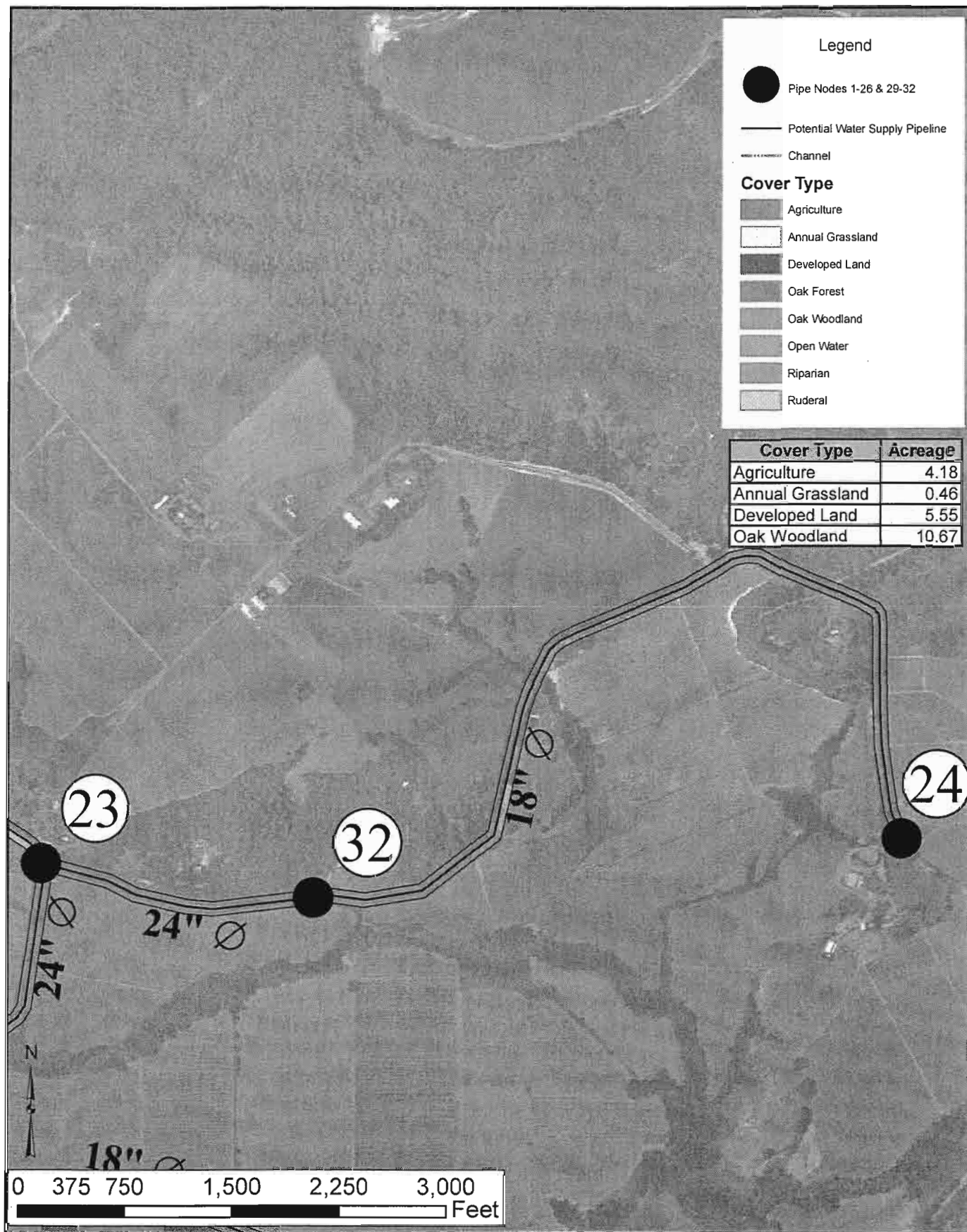


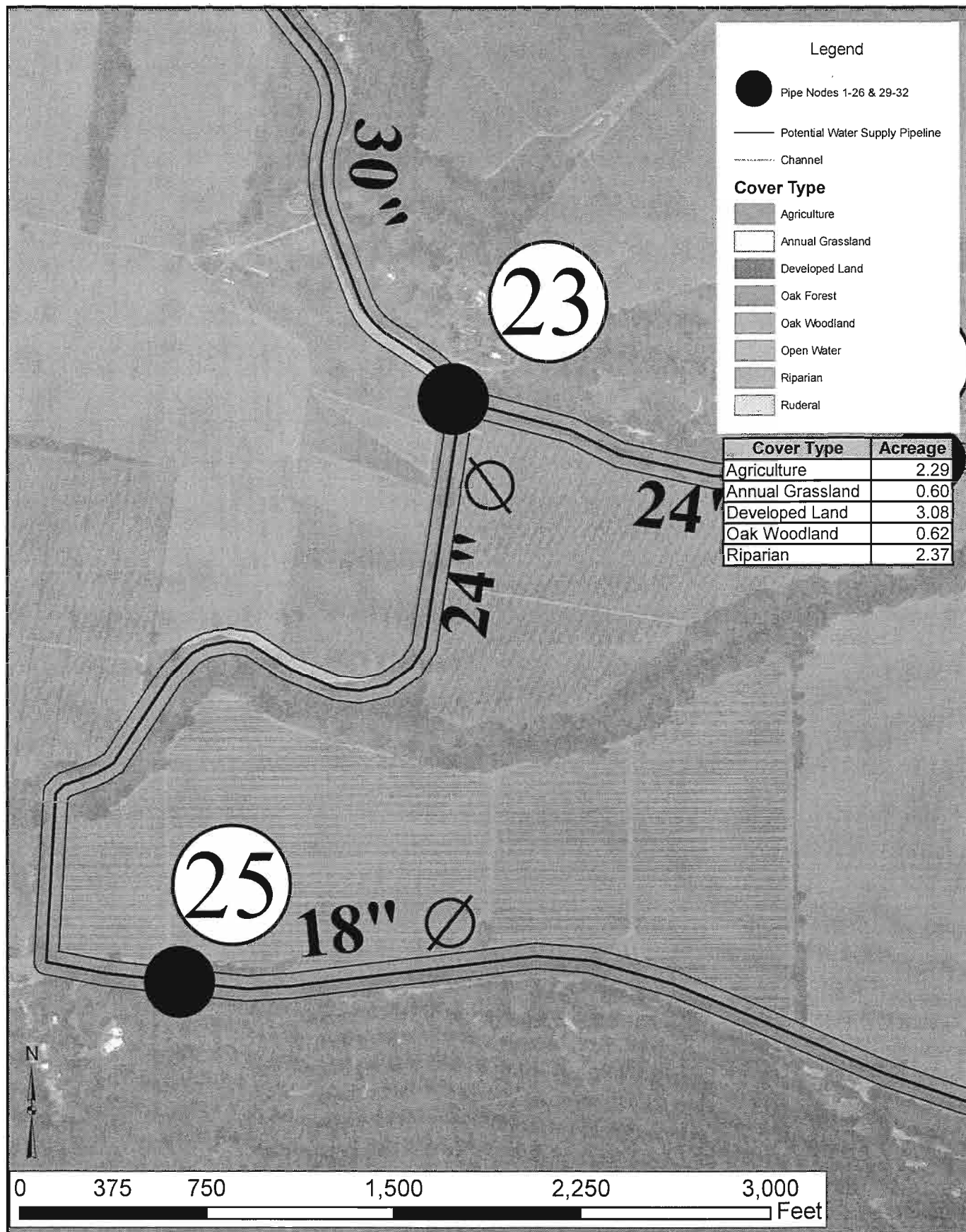


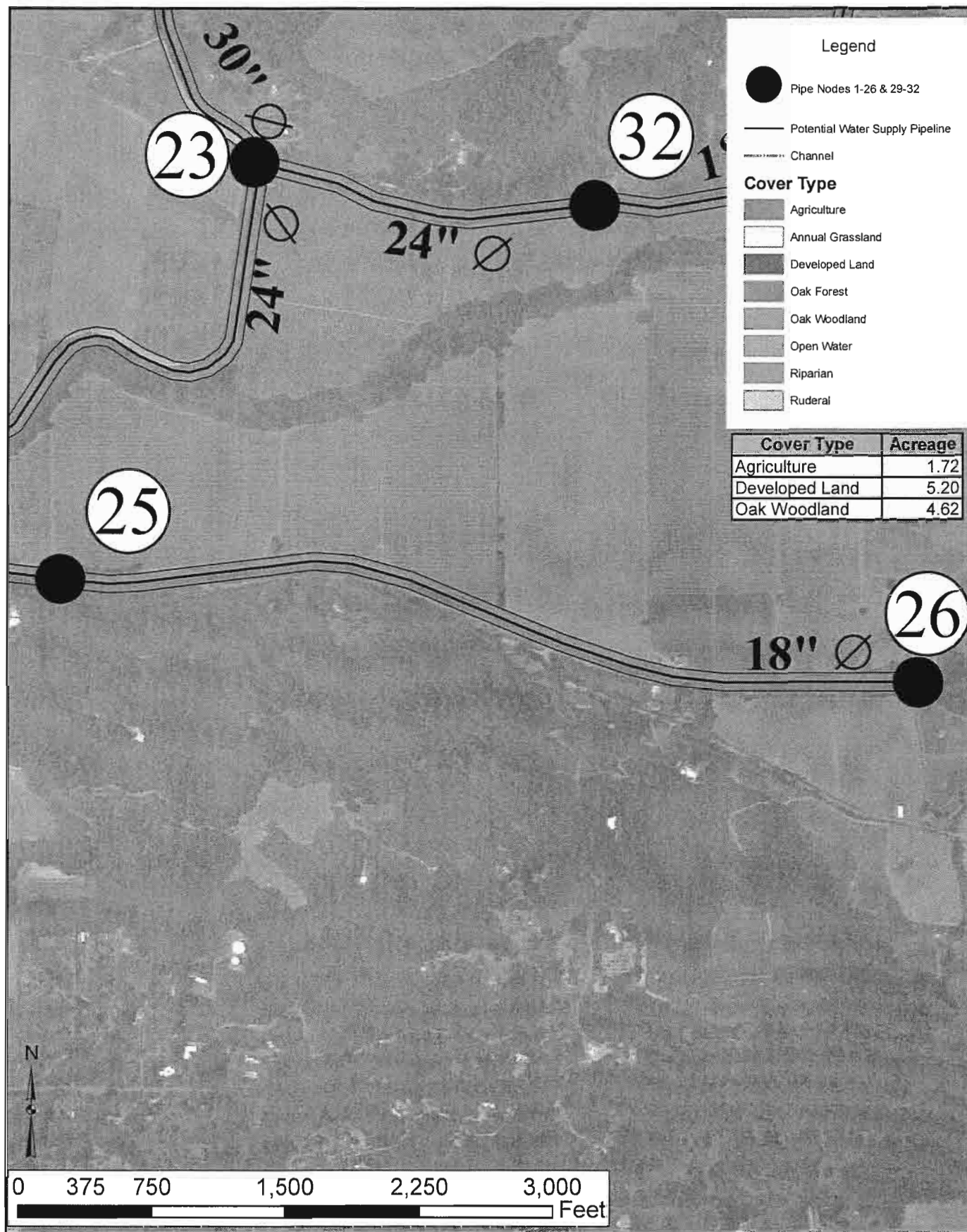




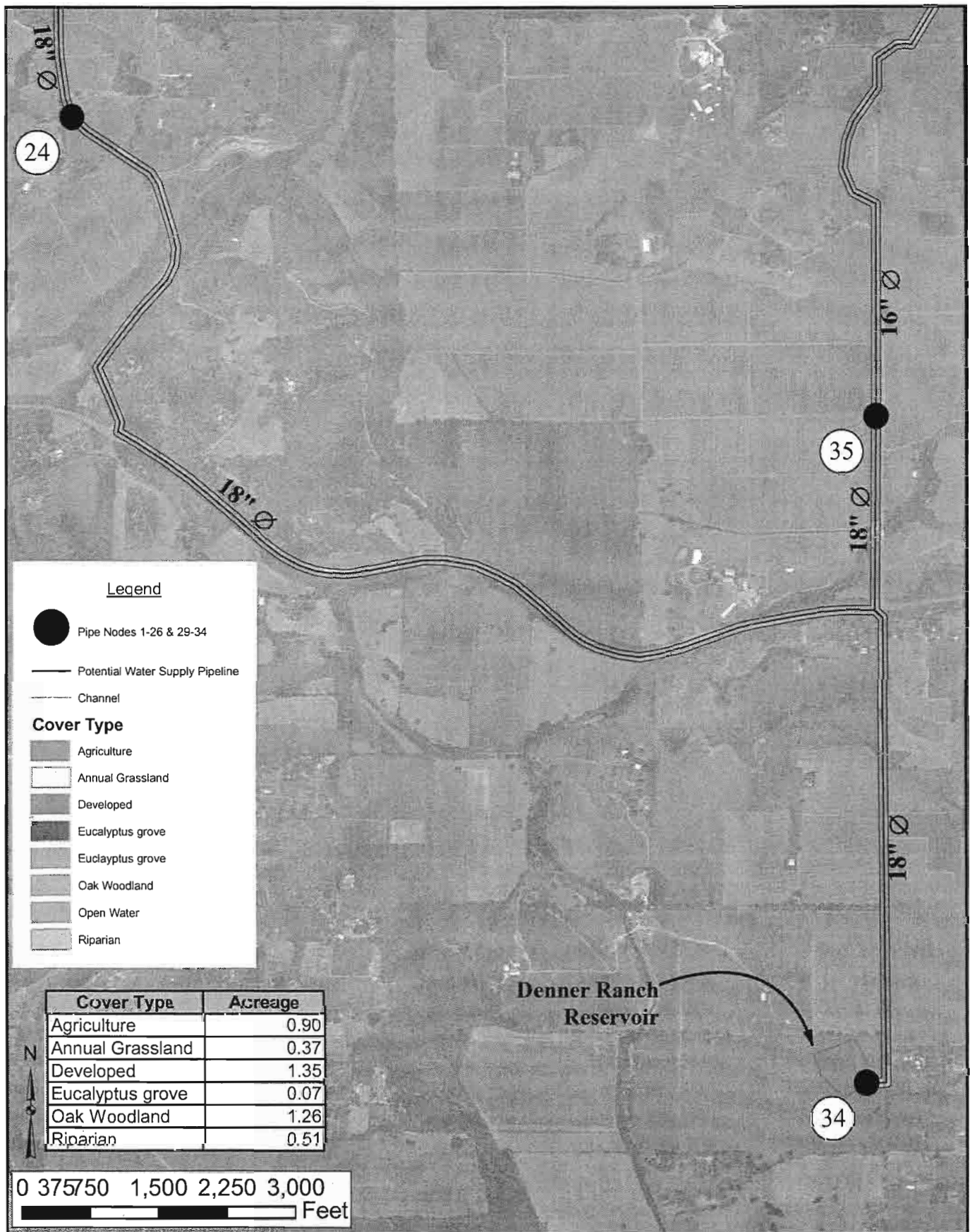


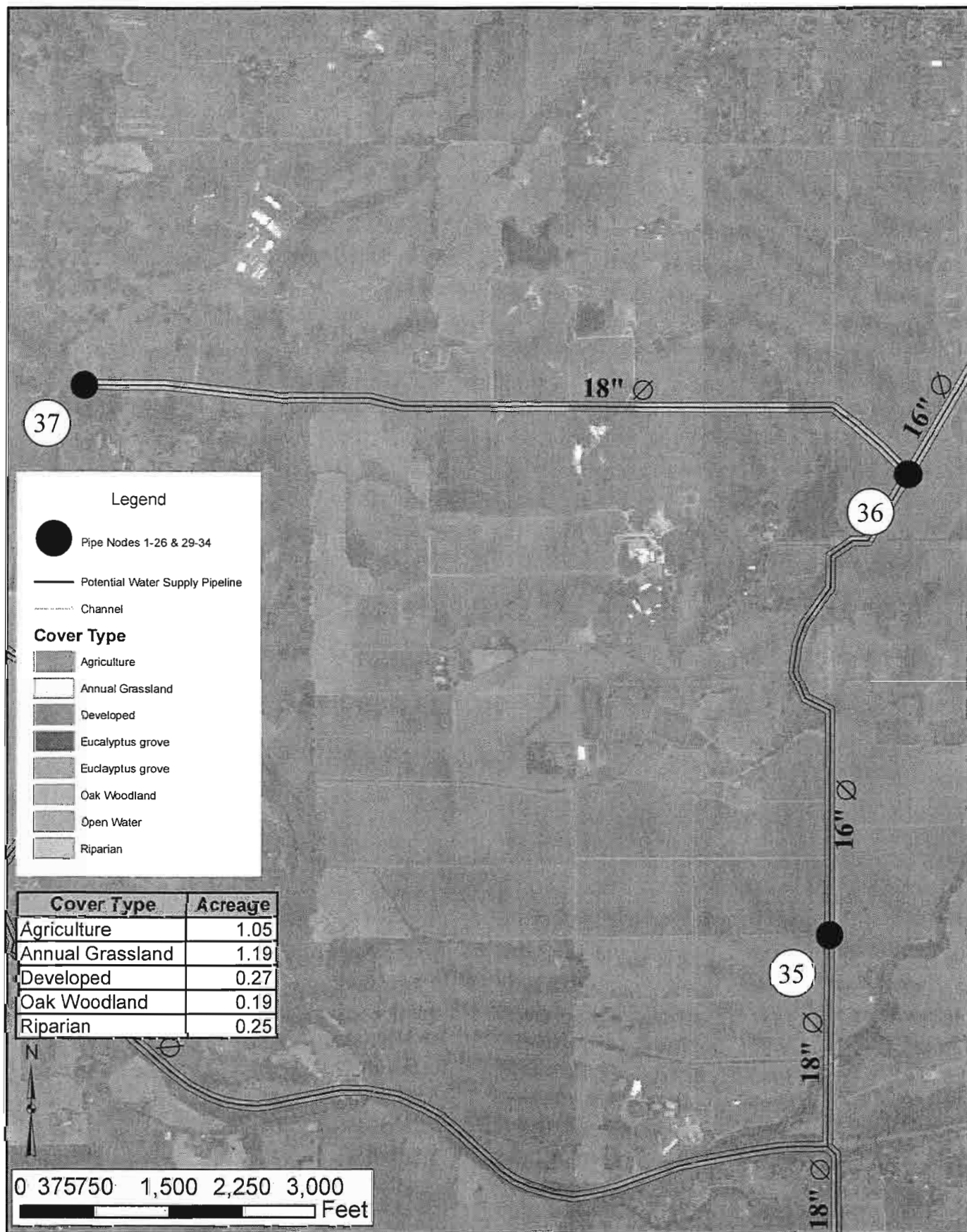




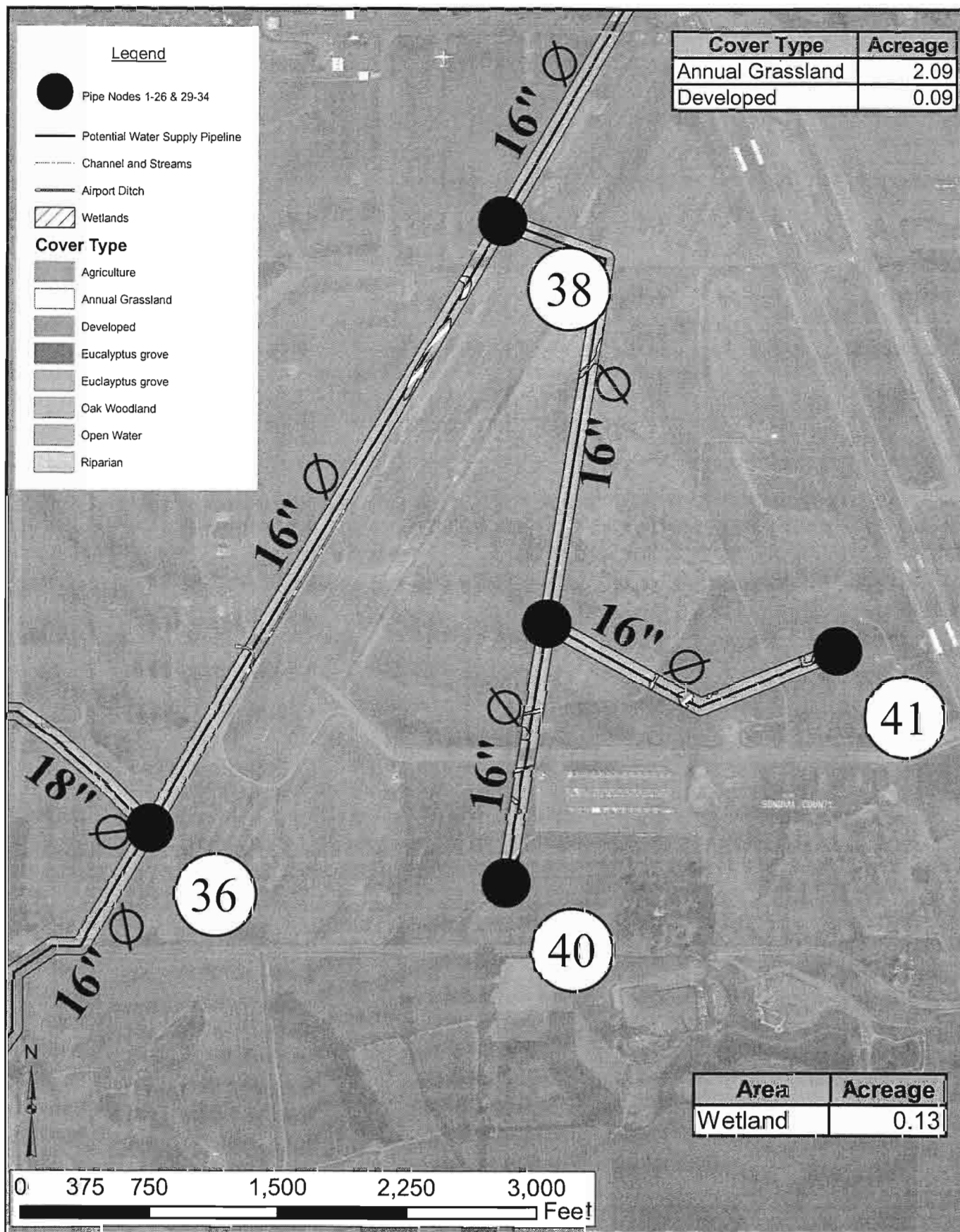












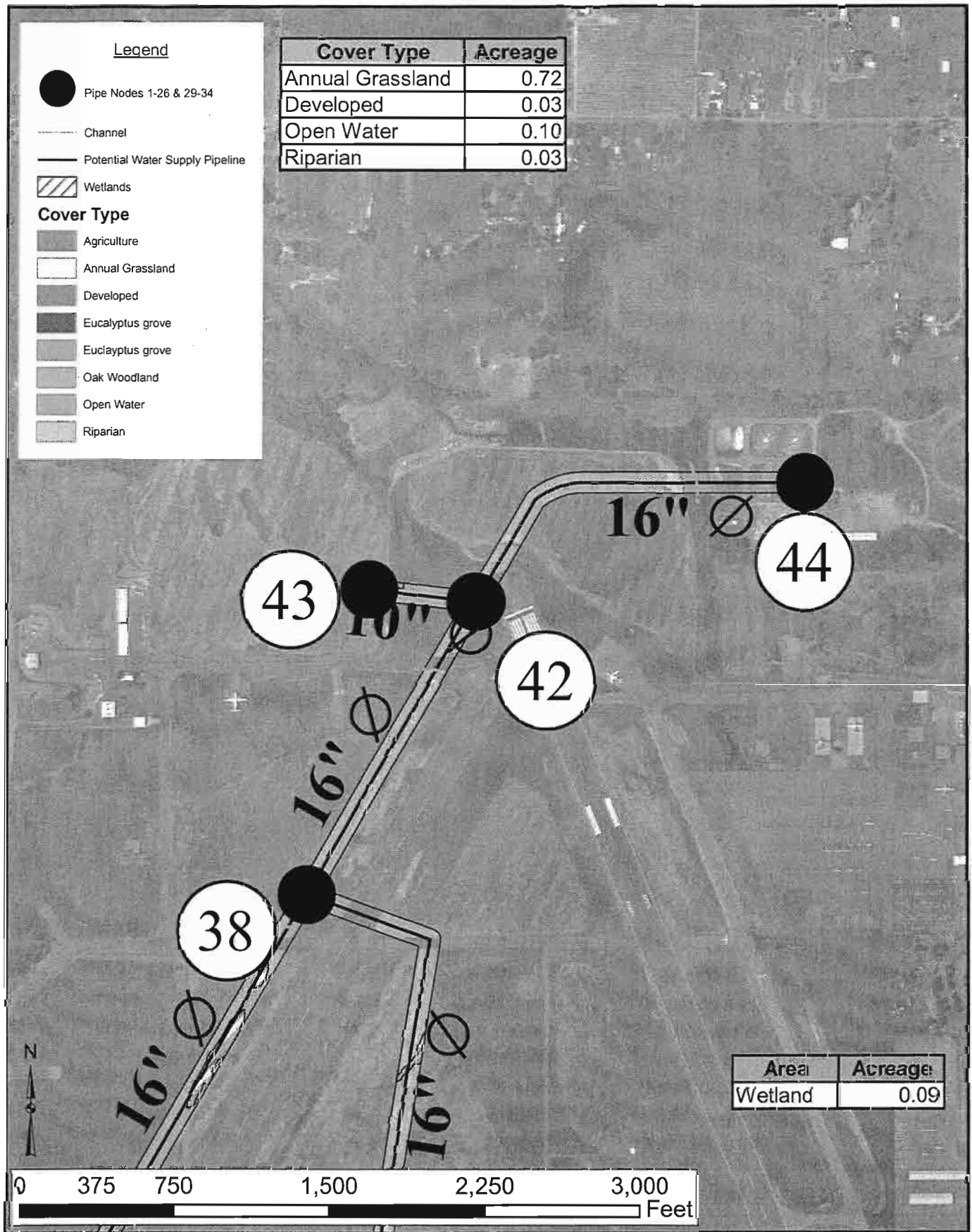
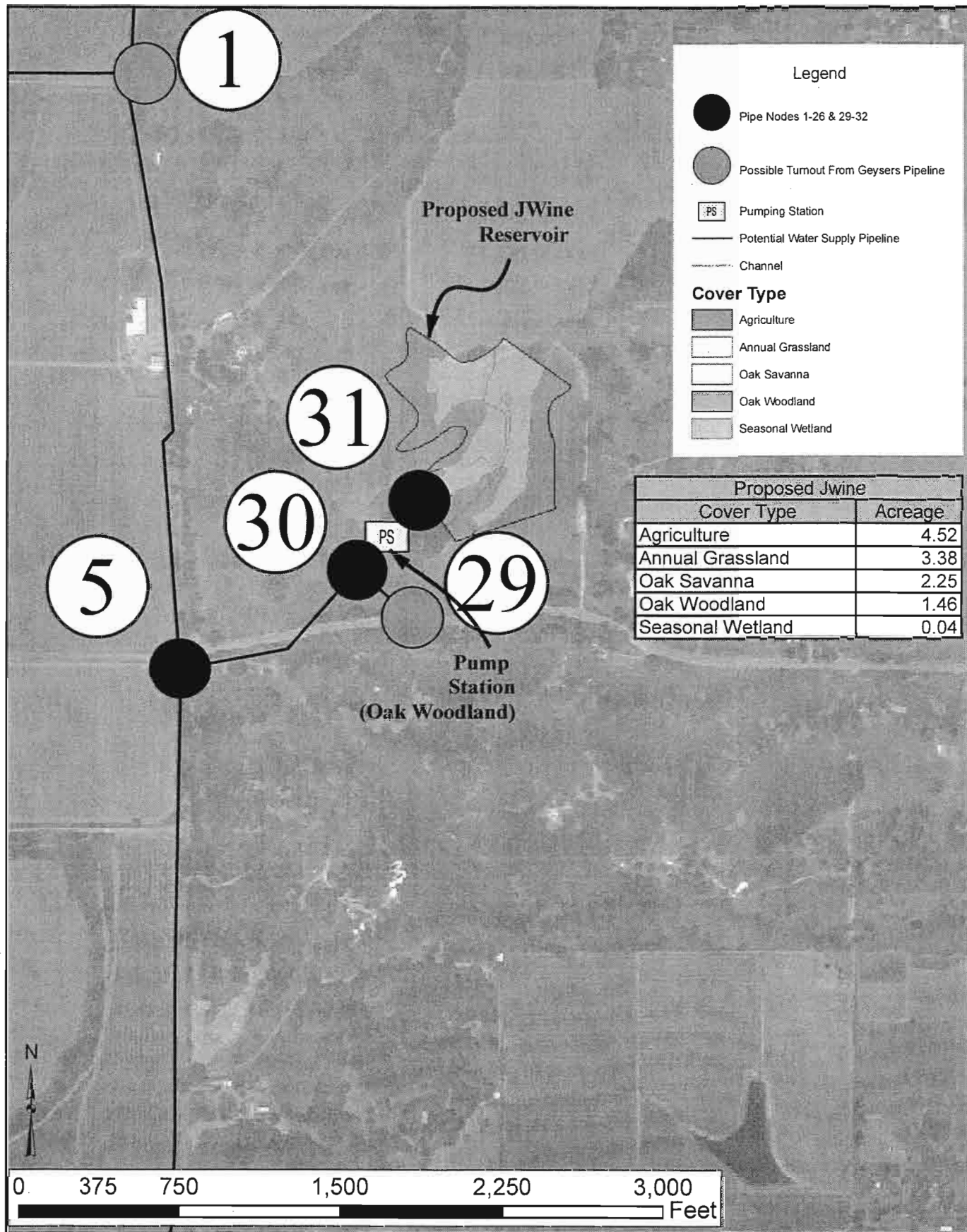
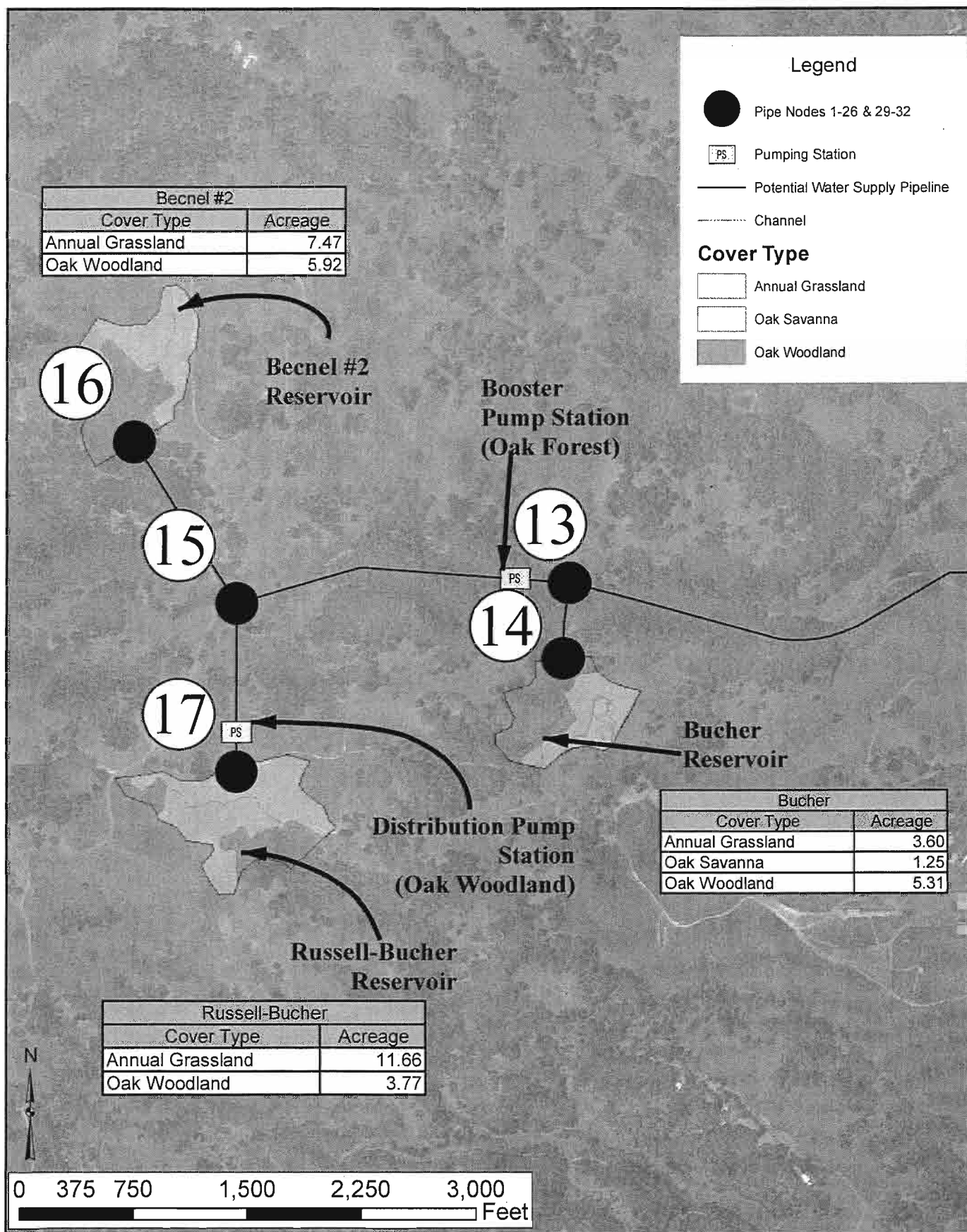
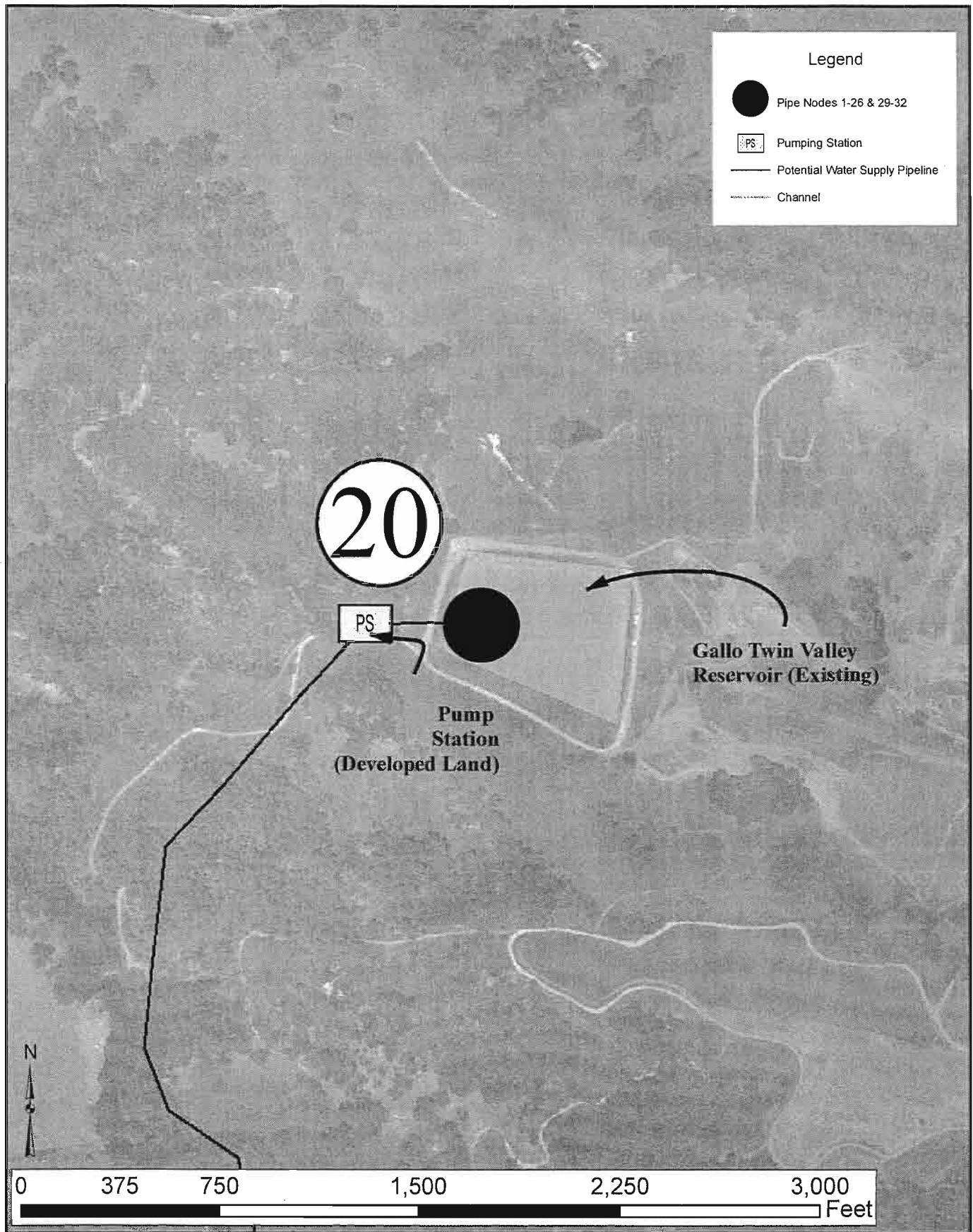


Figure RRV-25  
 Cover Type for Nodes 38-44  
 Russian River Valley Subarea

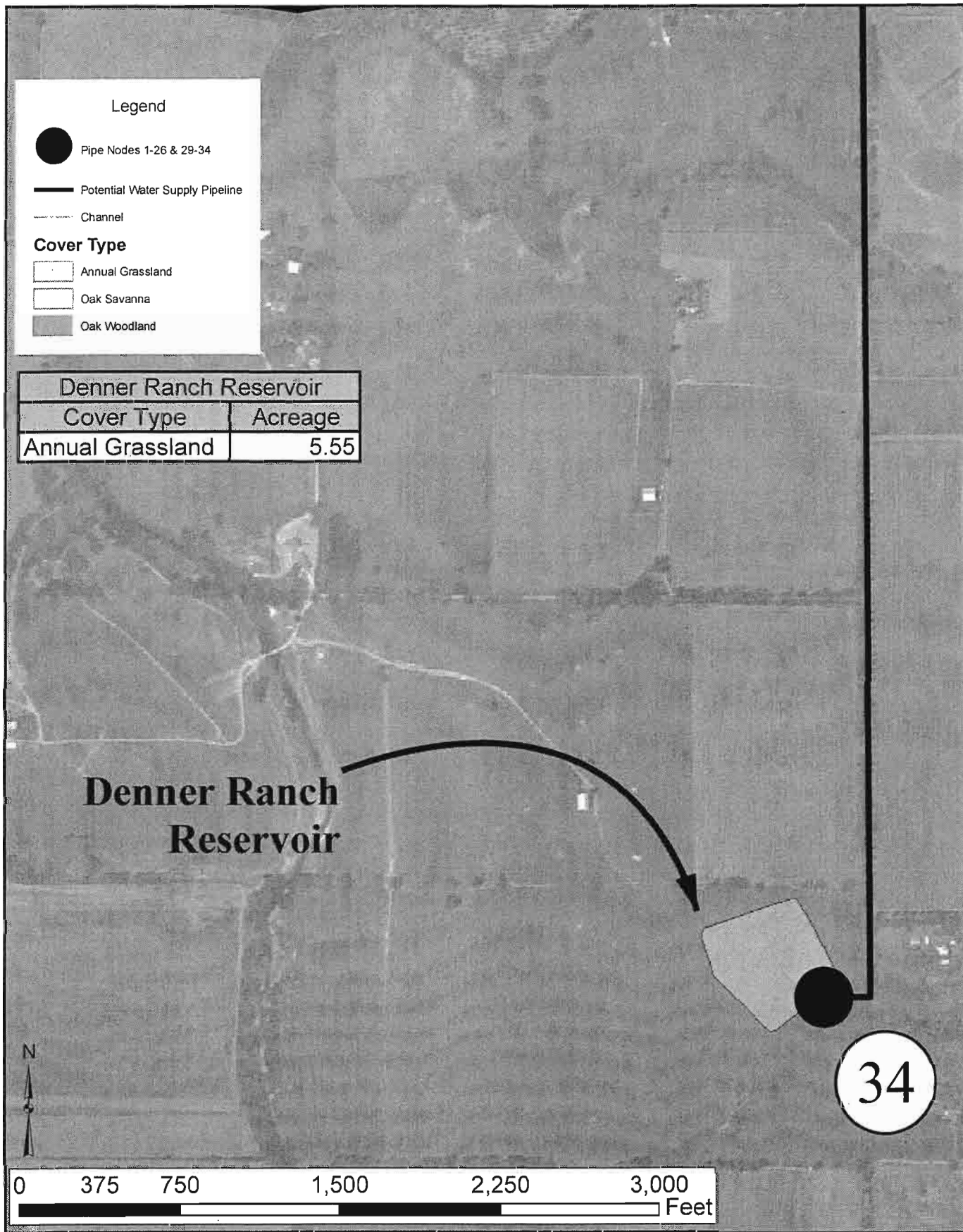




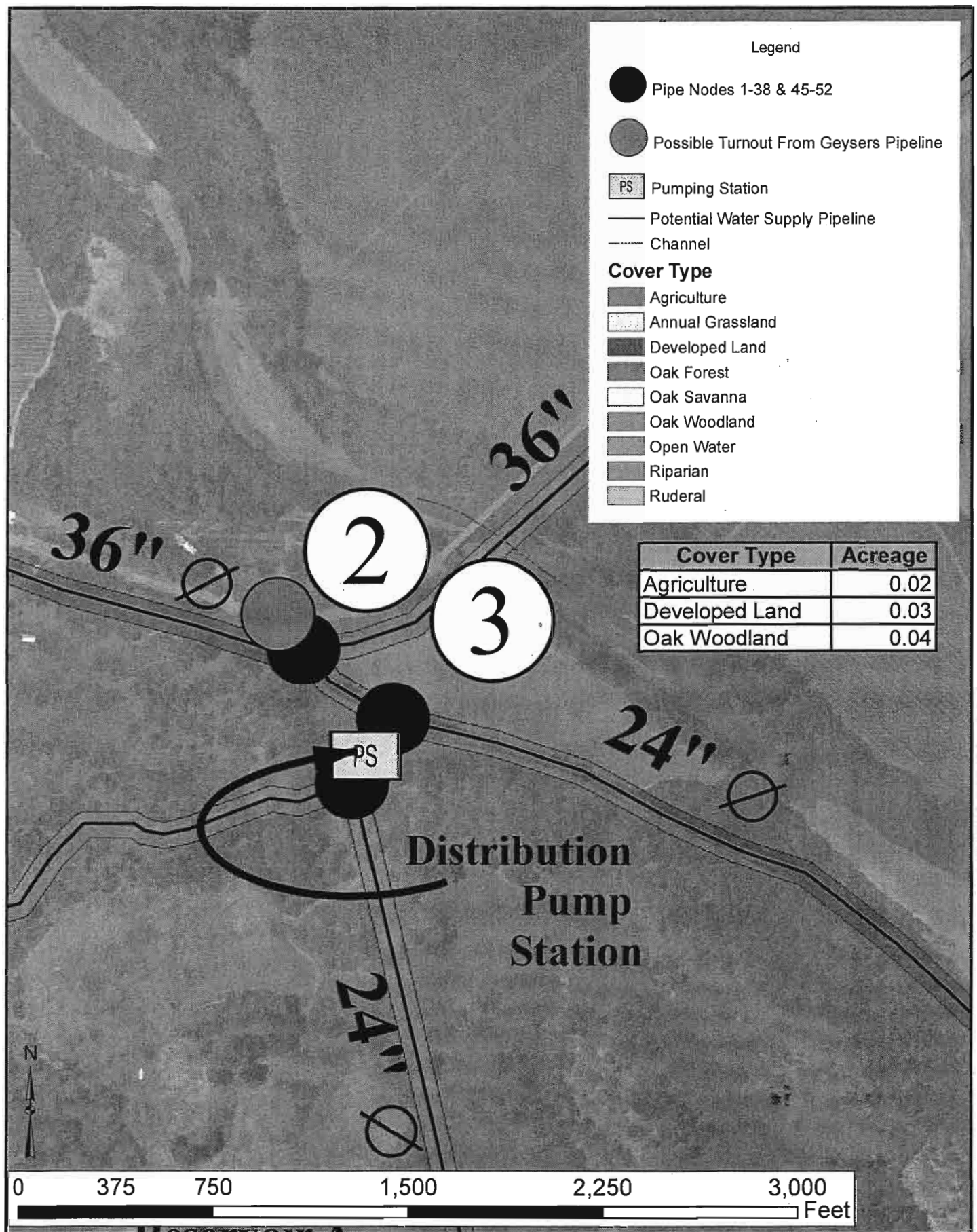


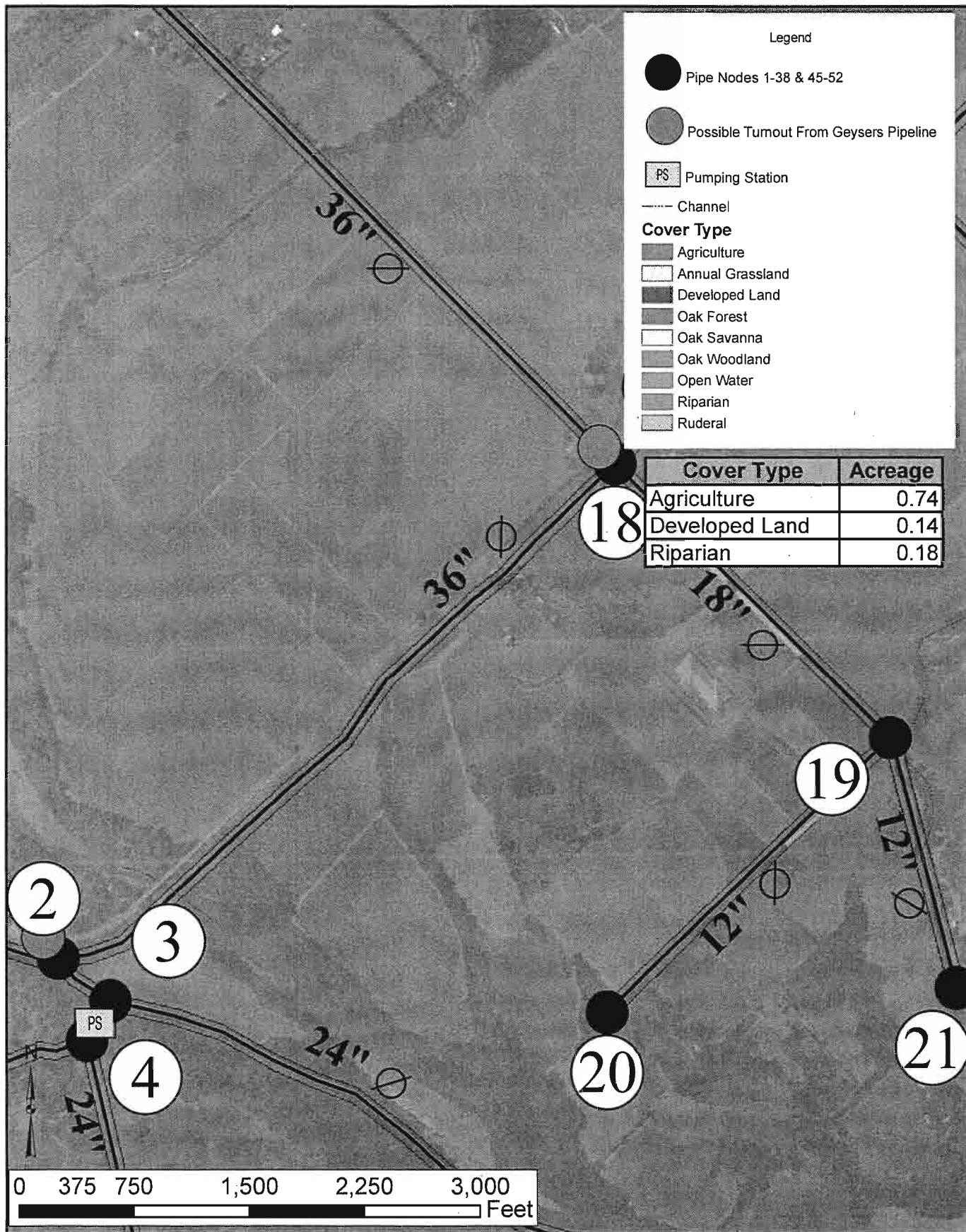




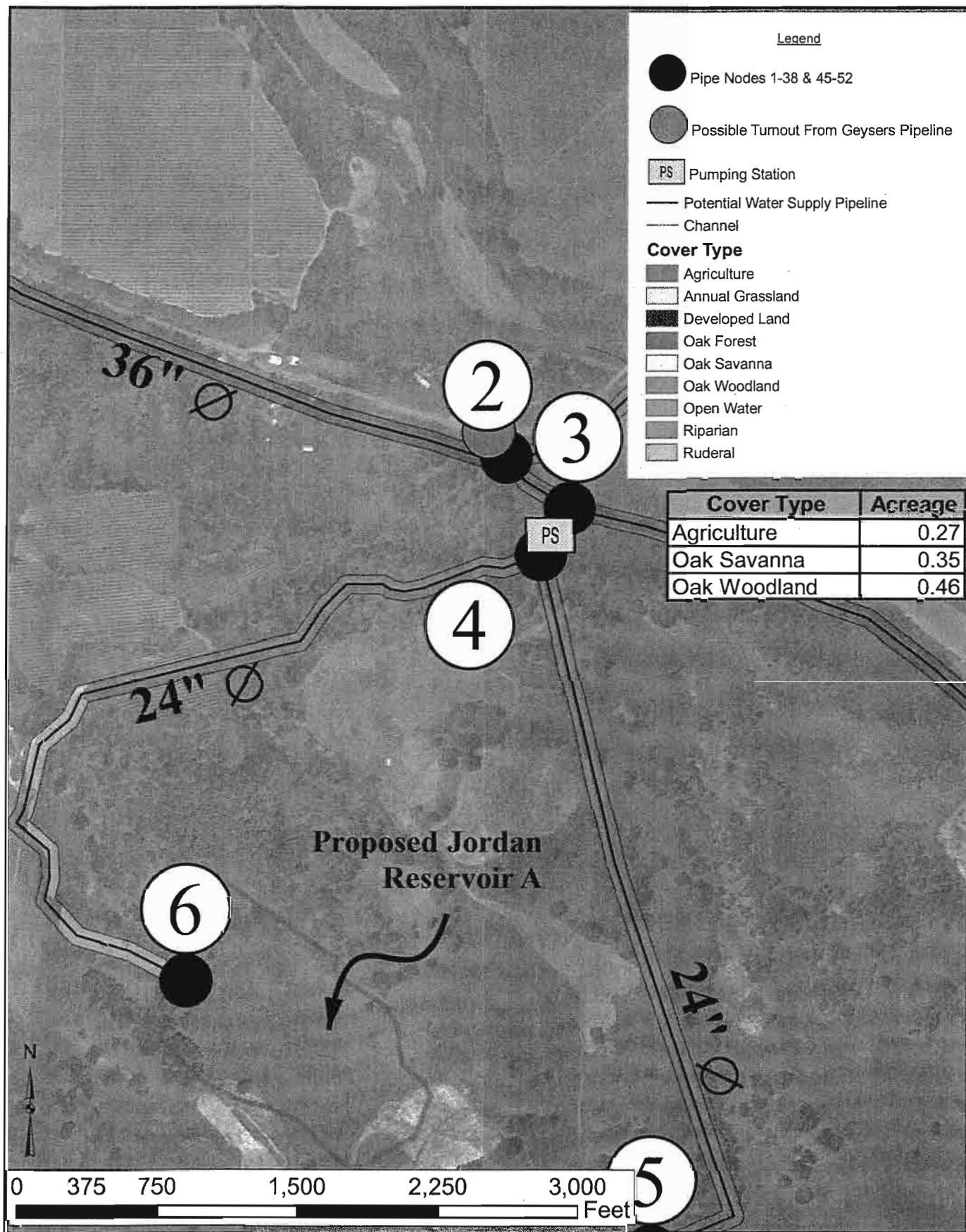














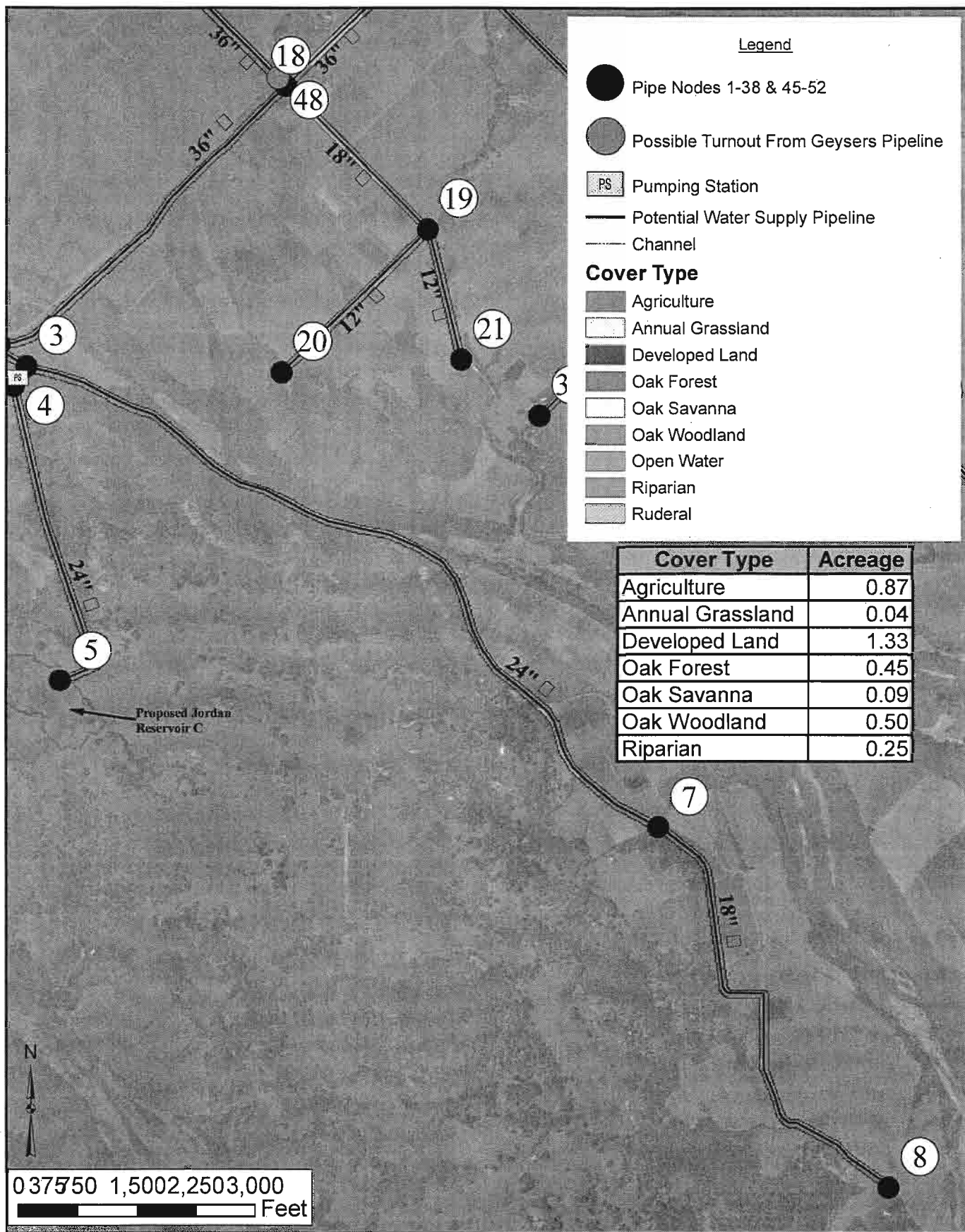


Figure AVJR-4  
 Cover Types for Nodes 3-8  
 Alexander Valley- Jordan Reservoir Subset

