

CITY OF RENO
WETLAND AND STREAM ENVIRONMENT POLICY

DATES OF APPROVAL

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Approved September 24, 1991

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INTRODUCTION

Wetlands are characterized by soils and vegetation which have been permanently altered by, or adapted to the presence of water. Stream environments encompass the channel of perennial and intermittent streams which support riparian vegetation on the adjoining upland area. Both of these habitats are limited in size and extent in the City of Reno and its immediate environs.

Wetlands and stream environments are the most productive wildlife habitats, providing food, shelter, and cover to a variety of species. These habitats are environmental systems which filter impurities from water, reduce flood hazards, and provide groundwater recharge. Natural areas improve the quality of life for all residents, offering educational opportunities, recreation, and relief from urban views.

Potential wetlands and stream environments have been identified and mapped on the basis of soil type, vegetation, presence of surface water, and local knowledge. Development permits requested in these mapped areas may require additional review, technical surveys, and design modification.

A primary goal of the program is to achieve "no net loss" of these habitats. Incentives have been developed which promote preservation: allowing development on the property to be clustered away from the wetland area without a reduction in density, allowing wetland habitats to qualify as a portion of the required landscaping, offering financing and tax breaks.

The Wetland and Stream Environment Policy is made up of three components:

Council Resolution No. 4785 adopting policies in the Master Plan which protect wetlands, stream environments and other hydrologic resources;

Ordinance No. 4156 establishing review procedures for development activity proposed in these areas; and

The Administrative Manual for Implementation of the Wetland and Stream Environment Policy.

Water dependent habitats are extremely limited in size and extent in arid environments. The Wetland and Stream Environment Policy is a means to protect these environmental resources for future generations.

ADMINISTRATIVE MANUAL FOR IMPLEMENTATION OF THE WETLAND AND STREAM ENVIRONMENT POLICY

Section 1. Findings of Fact and Purpose

1.1 Wetlands, stream environments and other water related habitats are an indispensable and fragile natural resource which may have significant development constraints due to high groundwater, flooding, erosion, and soil limitations. In their natural state, wetlands, stream environments, playads, spring fed stands of riparian vegetation, and small aquatic habitats serve humans and nature. They provide habitat areas for fish, wildlife, and vegetation, food chain support; groundwater recharge, groundwater discharge; water-quality maintenance and pollution control such as sediment trapping, nutrient retention and removal, flood control and storage; erosion control including bank stabilization; natural resource education; scientific study; open space; heritage value and recreation opportunities.

A considerable number of these important natural resources have been lost or impaired by draining, dredging, filling, excavating, building, pollution, and other acts generally associated with urban development activities. Piecemeal or cumulative losses may, over time, destroy remaining wetlands, stream environments, and other regional resources of significance. Damaging or destroying these water related habitats threatens the health, safety, and welfare of residents of the City.

It is therefore necessary for Reno to ensure maximum protection for wetlands, stream environments, playads, spring fed stands of riparian vegetation, and non 404 wetlands by discouraging development activities within those areas that may adversely affect the system's ability to maintain wetland associated functions and by encouraging restoration of already degraded or destroyed systems.

Section 2. Definitions.

2.1 Definition of Federally Significant Hydrologic Resources- Wetlands (FSHR).

Wetlands are those areas that are inundated or saturated by surface or groundwater at a frequency or duration sufficient to support, and that under normal conditions do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands typically include swamps, marshes, bogs, springs, seeps, and similar areas.

Wetlands are lands transitional between terrestrial and aquatic systems where the water table is usually at or near the surface, or the land is covered by shallow water. "Wetlands" for the purpose of this classification means an area where all of the following attributes exist:

A. Hydrophytic vegetation as specified in the Federal Manual. (See Exhibit C for information on wetland plant species in Nevada).

B. Hydric soil as specified in the Federal Manual. (See Exhibit D for a list of hydric soils).

C. Hydrology as specified in the Federal Manual. (Regional Plan Exhibit 3)

2.2 Definition of Regionally Significant Hydrologic Resources.

2.2.1 Stream Environment Zone.

That region: 1) which surrounds a stream, including major streams, minor streams, and drainage ways, which owes its biological and physical characteristics to the presence of water; 2) which may be inundated by a stream; 3) land located within the normal high water mark; or 4) in which actions of man or nature may directly or indirectly affect the stream. A stream includes small lakes, ponds, and marshy areas at its headwaters or through which the stream flows.

Stream environment zone specifically excludes man made irrigation or road ditches.

2.2.2 Playas.

Closed basin lakes such as Silver Lake, Swan Lake, and Whites Lake. Evaporation and infiltration are typically the only means of discharge from a playa. Playa includes that area subject to periodic inundation and that area within fifty feet (50') of the normal high water mark.

2.2.3 Spring Fed Stands of Riparian Vegetation.

Riparian and/or hydrophytic vegetation which is supported by or dependent upon a natural spring. Examples of spring fed riparian can be found on Mt. Peavine along natural drainages and streams.

2.2.4 Non 404 Wetlands.

Wetlands which meet the definitions in the Federal 404 regulations but which have not received Federal 404 permits; or Wetlands which as a result of their size, extend on one parcel, or area subject to impact from urban or other activities would not be protected under Federal programs. (Regional Plan Exhibit 3)

2.2.5 Potentially Significant Hydrologic Resources- Potential Mitigation Sites.

Areas suitable for off-site mitigation efforts, expansion or rehabilitation. Potential mitigation sites may be characterized by the presence of water (groundwater, surface water, springs), location along or near a water body, ability to trap sediments, store or detain floodwaters; plant life which is retaining, consuming or removing pollutants from area water ways; lands

adjoining a wetland, playa, stream environment that with intervention could provide significant public value and/or wetland functions.

2.3 Urban.

Urban land use is development at three or more residential dwelling units per acre, and comparable non-residential and public development.

2.4 Suburban.

Suburban land use is development at one to three residential dwelling unit per acre, and supportive non-residential and public development.

2.5 Development Permit.

The term "development permit" as used herein, includes, but is not limited to:

- A. Building permits, grading permits, drainage plans;
- B. Tentative subdivision or parcel map applications;
- C. Master plan amendments, zoning map amendments, special use permits.

2.6 Primary Permit.

A primary permit is the first development permit associated with a specific land development proposal on a lot, or parcel requested from the City.

Section 3. Standards.

3.1 Classification.

Significant hydrologic resources shall be segregated into three classes according to value.

A. Class I - Prime resource providing exceptional public value as described in the Reno Master Plan or at least two of the following characteristics:

- 1. Rare or endangered plant or animal species,
- 2. Salmonids,
- 3. Riparian vegetation,
- 4. Important year round or seasonal nesting, resting, feeding or breeding grounds as determined by Nevada Department of Wildlife and U.S. Fish and Wildlife,
- 5. Playa,
- 6. Water at or near the soil surface,
- 7. Continuous habitat area of at least 5 acres.

B. Class II- Less than prime habitat meeting one or more of the characteristics (1-7) described above.

C. Class III- Compromised, deteriorated, or impacted habitat, which by virtue of its location, surrounding land use, chemical contamination or structural composition is no longer meeting any of the functional characteristics identified on Exhibit B.

3.2 Quality of Effluent.

Effluent discharged to wetlands must meet requirements for secondary treatment: Bio Chemical Oxygen Demand equal or less than 30 mg/l, suspended solids equal or less than 30 mg/l.

Discharge must also comply with State water quality standards which may exist for a particular water body or may have to be adopted on a site specific basis that would be protective of the most sensitive surface use. The discharge must not degrade the receiving water, negatively impact native groundwater supplies or cause harm to users of land within the hydrologic effect of such a discharge.

3.3 Discharge to Sensitive Waters.

Effluent from flow through wetlands shall not directly discharge to sensitive waters; i.e. Truckee River, Pyramid Lake, Truckee Canal, tributaries to these waters, or other sensitive waters as determined by the Nevada Division of Environmental Protection. Drainage basins where effluent may flow through to surface water bodies are shown on Exhibit E.

Flow through wetland as used herein is defined as a wetland with a direct discharge to surface water. "Flow through" does not include terminal wetlands which discharge to the groundwater or atmosphere, or artificial wetlands which discharge to natural wetlands.

Section 4. Implementation.

4.1. Location of Significant Hydrologic Resources (SHR).

Significant hydrologic resources in Reno are delineated on Exhibit A titled "Potential Wetlands, Stream Environments and Regionally Significant Hydrologic Resources". Potential stream environments are listed on Exhibit A-1 as a companion document to the graphic.

4.2 Requests for Development Permits Within or Adjacent to Significant Hydrologic Resources.

Within or adjacent to areas depicted on Exhibit A as significant hydrologic resources, any request for a development permit shall be accompanied by technical surveys sufficient to determine whether a SHR is present, its classification and value, need for protection, and

appropriate design techniques or mitigation measures which should be incorporated into the project or permit approval. (Regional Plan policy 11m)

4.3 Requests for Development Permits Adjacent to SHR's.

The requirement for a technical survey may be waived by the administrator when the land owner or developer sets aside as open space any lands involved in the development permit request which have been identified on Exhibit A.

4.4 Technical Surveys.

Except as specifically modified by this policy, technical surveys should be based on field methods described in the Federal Delineation Manual.

Technical surveys may be prepared in advance of development applications. Technical surveys in compliance with this policy may be submitted to Reno for incorporation onto Exhibit A. On the basis of the technical survey, lands which do not meet the definition of FSHR and RSHR, shall be removed from the map.

Lands which only meet the definition of potential mitigation sites (2.2.5) shall be so noted on the map and shall not trigger additional surveys or protection at the time of development unless voluntarily protected through the use of incentives, or other desires of the property owner, actively targeted for off site mitigation efforts or acquisition by the public or non profit organization.

4.5 Exemptions.

4.5.1 Activities Which are Exempt From the Policy:

A. Development projects, or permit applications which do not involve overcovering of additional land area (i.e. signs, interior remodels, master plan amendment to open space);

B. Development projects which have been approved, or are substantially approved as determined by the administrator or his or her designee.

C. Normal farming activities as described in Section 404 (f) of the Clean Water Act as amended from time to time.

4.5.2 Exemption for Small Scale Disturbance.

Development of lots or parcels in existence prior to the effective date of this policy shall not be required to meet the requirements of 4.2 provided that all of the following criteria are met:

A. The stream environment, playa, spring fed stand of riparian vegetation or non 404 wetland to be impacted is one half acre or less,

B. The property is surrounded by urban or suburban development along 75% of its periphery.

C. Off site mitigation, or in lieu fees are provided in accordance with 4.7.

4.6 Incentives Available for Protection of Regionally Significant Hydrologic Resources.

To effectuate preservation of regionally significant resources, these incentives are available:

A. Landscape Credit: Allowing select natural vegetation to qualify as "landscaping".

B. Cluster Development: Allowing development to be shifted on a parcel to facilitate preservation of environmental features.

C. Assessment District: A mechanism for financing improvements.

D. Property Tax Relief: A reduction in property tax as an incentive to preserve sensitive habitats.

E. Excess Land Dedication: Lands which are transferred or conveyed with potential wetlands or regionally significant resources, may be considered as part of the habitat preserved.

F. Other incentives will be considered upon mutual consent of the City and property owner.

To effectuate preservation of Federally protected resources (Corps of Engineers jurisdictional wetlands) the excess land dedication may be used.
(Regional Plan policy 11e, 11g)

4.6.1 Landscape Credit.

Qualifying habitats preserved on site may qualify, on an acre for acre basis for up to 50% credit towards landscaping required by code or other discretionary permit.
(See Reno Municipal Code 18.06 "Landscaping and Screening")

4.6.1.1 Qualifying for Credit.

To qualify for credit, the potential wetland, or regionally significant resource must be designated on the Potential Wetland, Stream Environment and Regionally Significant Hydrologic Resources Map, meet one or more of the functional values listed in Exhibit B, or be recommended for preservation by a Resource Agency of the State of Nevada, Federal Government, or Local Government.

4.6.1.2 Application of Credit.

Qualifying habitats preserved or rehabilitated for landscape credit may be located within or in the immediate vicinity of the land proposed for development. Lands remaining in the development area shall be landscaped at the rate required by code or other discretionary permit less the landscape credit. Under no circumstances shall any individual project contain less than 50% of the landscaping required by code or permit. Landscaping shall be distributed throughout the site in a manner which improves the view of the project from public rights-of-way.

4.6.2 Cluster Development.

Cluster development by special use permit is a tool to preserve, expand or rehabilitate water related habitats located on site. Variations in lot size and width may be permitted upon approval of a special use permit for cluster development. Cluster development shall only be used as a means to preserve potential wetlands and regional resources of significance on, or in the immediate vicinity of the development project. The special use permit for cluster development shall not increase the number of dwelling units, floor area ratios or development potential permitted under existing zoning.

4.6.3 Assessment District.

Assessment districts, formed and financed by local governments, will be evaluated as a tool to assist developers with front end capital costs associated with land development. Formation of these districts will only be considered when the financial risk to Reno is minimal or nonexistent, and the potential wetland, or regional resources of significance preserved on site are of significant size and value. All costs associated with preservation of these habitats including but not limited to: mitigation plans, alternative analysis, and maintenance, shall be borne by the assessment district.

Additional information on assessment districts is available from the City of Reno Public Works Department, engineering division.

4.6.4 Property Tax Relief.

Property owners of lands designated as on the "Potential Wetland, Stream Environment and Regionally Significant Hydrologic Resources Map" as potential wetland, playa, riparian vegetation or streams are eligible for property tax relief pursuant to Nevada Revised Statutes 361A.170.

Additional information on property assessment is available from the Washoe County Assessor.

4.6.5 Excess Land Dedication.

Lands which are transferred or conveyed with potential wetlands or regional resources of significance for purposes of making the transferred parcel more regular, maintain access, water supply, or other legitimate need, may be considered part of the habitat preserved for purposes of calculating credits enumerated in 4.6. Excess land so dedicated must meet the requirements of 4.8.

4.7 Mitigation.

Impact to wetlands, stream environments, playas, spring fed riparian, and non 404 wetlands shall be mitigated. Mitigation measures are defined in the National Environmental Policy Act and listed in the order of preference:

- A. Avoiding the impact altogether by not taking a certain action or parts of an action;
- B. Minimizing impacts by limiting the degree or magnitude of the action and its implementation;
- C. Rectifying the impact by repairing, rehabilitating, or restoring the affected environment;
- D. Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action;
- E. Compensating for the impact by replacing or providing substitute resources or environments.

(Regional Plan Objective 11.3)

4.7.1 Acceptable Mitigation Plan.

Where a FSHR or RSHR is destroyed or substantially altered by development, an acceptable mitigation plan shall include at the least:

- A. Replacement of the same or better class of wetland, stream environment, playa, spring fed riparian or non 404 wetland providing the environmental benefits lost by reason of the proposed development as follows:
 - 1. Two acres of replacement habitat shall be provided for each acre of Class I habitat impacted.
 - 2. One and one half acre of replacement habitat shall be provided for each acre of Class II habitat impacted.
 - 3. One acre of replacement habitat shall be provided for each acre of Class III habitat impacted.

- B. Specific design requirements based upon conditions of the site and type of habitat to be created or restored; and
- C. Periodic monitoring to remove exotic and nuisance vegetation; and
- D. Monitoring and replacement to ensure a specified survival rate of the vegetation for a specified period of time; and
- E. Conservation and maintenance in accordance with 4.8.; or
- F. Water rights or monies for purchase of water rights dedicated to a State or Federal Resource Agency, Land Trust, Conservancy etc. sufficient to maintain acre for acre replacement of the same or better class of habitat lost by reason of the proposed development; and
- G. Monies necessary to build or maintain conveyance structures for a period not to exceed five years to deliver the water to the area of concern as deemed necessary by the Nevada Department of Wildlife; and
- H. Removal of grazing, or use of prescribed grazing within wetlands, stream environments, playas, areas of spring fed riparian vegetation or non 404 wetlands; and
- I. Conservation and maintenance in accordance with 4.8.

4.7.2 Location of Mitigation Efforts.

Mitigation shall occur on site, or in the immediate vicinity of the proposed development wherever possible. Off site mitigation may be considered when:

- A. An alternatives analysis has been prepared indicating avoidance or on site mitigation is not feasible;
- B. The public interest is better served by contribution and or participation in the purchase, improvement or development of a SHR in another location of the community;
- C. The SHR is encouraging bird flights across or adjacent to an airport;
- D. The SHR is creating conflicts between wildlife and humans;
- E. The SHR is Class III and surrounded or compromised by development.

Offsite mitigation shall occur where it best benefits the resource in the planning area. Proposed off site mitigation shall not detrimentally impact other valuable riparian areas or the hydrology of individual hydrographic basins.

4.7.3 Other Mitigation Considerations.

A. Wetlands require adequate supplies of water for survival. Establishment or expansion of wetlands in areas of natural groundwater discharge is encouraged. Establishment or expansion of wetlands will only be permitted when adequate supplies of water have been permanently allocated to the wetland.

B. Siting and or expansion of existing wetlands and stream environments should not occur where a public hazard will be created. For example, location of a wetland to cause birds to fly across the runways at Reno Cannon International Airport shall be prohibited.

C. Resource Agencies (US Fish and Wildlife Service, Nevada Dept. of Wildlife, Nevada Dept. of Agriculture, Nevada Dept. of Environmental Protection) shall be provided the opportunity to comment on any mitigation plan, or development proposal containing a water feature.

D. Mitigation shall include design features to encourage separate or compatible use of resource areas by wildlife and humans. Consideration shall be given to limiting predation by domestic animals in wildlife habitats.

E. Sufficient water control structures shall be installed where necessary to minimize mosquito production and outbreaks of botulism.

4.7.4 Mitigation Fees.

Upon adoption by Ordinance of the City Council of the City of Reno, mitigation fees shall be assessed at a rate to replace destroyed or impacted habitat with the same quality of habitat in accordance with 4.7.1.A.

4.7.5 Administration of Fees.

Mitigation fees shall be deposited into a separate trust account for the Wetland and Stream Environment Policy.

4.7.6 Expenditure of Fees.

Fees may be expended on the purchase, construction, expansion, or rehabilitation of SHR anywhere in the Wetlands Planning Area. Expenditure of fees shall comply with Master Plan Policies regarding priorities for public acquisition. Expenditure of monies generated by mitigation fees shall be in accordance with an approved habitat improvement and acquisition plan. Expenditure of fees shall be directed to, or the rehabilitation effort shall achieve the same or better class of habitat which had been impacted, in as much as possible.

Fees which have not been expended or encumbered within 10 years shall be transferred to a public agency currently maintaining a SHR in the community for improvement of the resource.

4.8 Management Responsibility.

Potential wetlands and regional resources of significance which have been preserved as a result of landscape credit, cluster development, or assessment district shall be maintained in perpetuity. Acceptable preservation measures include, but are not limited to: conveyance of conservation easements or donation in fee title to a Local Government, Resource Agency, Land Trust, or Nature Conservancy.
(Regional Plan policy 11o)

4.9 Amendments to the Policy and Map.

Significant Hydrologic Resources may be added to or deleted from the Potential Wetlands, Stream Environments and Regionally Significant Hydrologic Resources Map as more information becomes available. Technical surveys prepared in compliance with this policy and accepted by Reno shall be reflected on the map. Other revisions to the map and text shall be processed as a Master Plan Amendment.

EXHIBIT A-1
POTENTIAL STREAM ENVIRONMENTS

Alum Creek
Boynton Slough
DR1 4, 5, 6, 7, 8, 9, 10, 11, 15, 16 on Peavine *
Dry Creek
Evans Creek
Evans Creek block "N"
Hunter Creek
Red Rock Creek
Skyline Wash
Steamboat Creek
Thomas Creek
Truckee River
Unnamed - T20N, R19E, sec 23, 26, 35
Unnamed - T20N, R19E, sec 23, 22, 21, 27, 34
Unnamed - T20N, R19E, sec 21, 28, 29, 33
Unnamed - T20N, R19E, sec 31; T19N, R19E, sec 5, 6
Unnamed - T20N, R18E, sec 25, 36; T20N, R19E, sec 31; T19N, R19E, sec 6, 8
Unnamed - T20N, R18E, sec 23, 25, 26, 35, 36
Unnamed - T19N, R18E, sec 2
Whites Creek

* Cochran, G.F. , et al. Peavine Mountain Study, Desert Research Institute. Publication 41103, October 1986.

EXHIBIT B

RESOURCE VALUES AND FUNCTIONAL REQUIREMENTS OF SIGNIFICANT HYDROLOGIC RESOURCES

1. Wildlife and Vegetation

Habitat diversity of existing and future developed wetlands is required for maintenance of associated resource values. Wetlands, riparian corridors, and other water dependent habitats should include microhabitats within habitats supporting a variety of vegetation, terrain (submerged, terrace) and water depths (and temperature). Habitat includes structural components of depth, natural or artificial cover and suitable water quality. If suitable habitat is provided, the resource will develop with minimal management.

By way of example, shallow water areas, 18" in depth provide emergent and submergent vegetation for dabbling ducks; deep pond areas of 5' with emergent and submergent vegetation provide habitat for diving ducks; shorebirds prefer mud flats, and riparian areas with multiple canopies support a variety of species.

Water bodies and streams should have complex shorelines, maximizing the ratio of shoreline length to surface area. The greater the shoreline length, the greater the productivity of the water body. Riparian areas provide temperature control and food for fisheries, food and shelter for wildlife. Species diversity will increase with the size of the habitat area. For birds particularly, habitat width is critical.

Lands adjoining the riparian area or playa can be managed to increase their use by providing nest boxes, nest platforms, log piles and large rocks. Wildlife will use these facilities for nesting and cover.

In high elevation upland areas such as Mt. Peavine, spring fed riparian vegetation may be the only water related habitat within range for wildlife. The vegetation provides necessary food and cover, the spring may be the only water source available.

2. Natural Water Purification

Because of their location between land and water, wetlands, and small aquatic areas are particularly good water filters, intercepting runoff from both land and water. Wetlands of all sizes filter nitrogen and phosphorus from flood waters and drainage preventing eutrophication or over enrichment of natural waters. Wetlands slow the velocity of water passing through them leading to deposition of sediments. Sediments often transport absorbed heavy metals, pesticides, and other toxins that pollute the water supply.

3. Groundwater Recharge

Some wetlands store water and release it slowly to groundwater deposits. Other wetlands discharge water to streams and water bodies. Recharge often occurs in alluvial soils on the valley floor, but may also occur in mountain blocks, above valley fill. The point of discharge can be a valuable source of public drinking water. The importance of the recharge function is dependent upon the location of the wetland relative to the water table, fluctuations in water table, geology including type and depth of substrate, permeability of substrate, size of wetland and depth. Aquifer storage capacity, and groundwater flow should also be considered.

4. Flood Control or Protection

Wetlands along streams, rivers, and in large drainage basins have the capacity to intercept storm flows and store large volumes of water. Storm flows are redirected into vegetated areas, where water velocity slows, and sediments are deposited. Retention of flood flows desynchronizes flood peaks in tributary channels so flood waters do not all reach the mainstem river at the same time. Reducing flood flows in the main channel minimizes flood hazards. This function becomes increasingly important in urban areas where development has increased the rate and volume of surface-water runoff, the potential for flood damage, and the numbers of persons and properties exposed to flood flows.

Playas, as closed basin lakes receive the majority of all runoff generated by snowpack, precipitation, and urban uses in the basin. They are a natural flood control facility with a capacity. If the capacity of the playa is reduced from importation of fill, or demand for capacity is increased as a result of urbanization, the result could be increased flood hazards for persons and property.

5. Natural Drainage

Wetlands are components of natural drainage systems. Retention of these areas benefits the public by: minimizing the need for large engineered drainage systems, reducing costs associated with drainage, providing open space, recreational areas, and wildlife habitat.

6. Erosion Control

When located between watercourses and uplands, wetlands help protect uplands from erosion. Wetland vegetation, and riparian vegetation found along stream corridors and springs, reduce shoreline and bank erosion in several ways: binding sediments to roots increasing sediment durability and retention, dampening waves through friction, and reducing the velocity of the current through friction. Erosion control reduces the potential for mass wasting and failure of land forms with attendant water quality problems and suffocation of fish. Erosion control protects man made structures such as bridges and levees from catastrophic failure.

7. Effluent Disposal

Natural and artificial wetlands are able to provide a cost effective, high level of waste water treatment. Artificial wetlands are engineered systems that have been designed and constructed to employ wetland type vegetation to treat wastewater in a more controlled environment than occurs in natural wetlands.

Wetland water treatment systems have been found to lower BOD, total suspended solids, and total nitrogen concentrations by 80 to 90 percent. Effluent can be used to create, maintain and enhance wetlands by providing a needed source of water and nutrients for the ecosystem.

8. Aesthetics

Wetlands and riparian corridors in or near developed areas provide needed definition to communities by providing a sense of space and boundary. Natural open space can be used to accentuate a community's unique features such as ridgelines, prominent peaks, and water bodies. Natural terrain and habitat offer visual relief from urbanization.

9. Health

With proper design, water supply and management, wetlands and riparian habitats improve environmental quality. However, three potential health hazards have been associated with wetlands: botulism, mosquitos and waterfowl fecal matter. Poor water quality flowing into wetlands (heavy nutrient loads from sediment, septic tanks, agricultural operations) can promote anaerobic conditions leading to an outbreak of botulism. Water control structures (low flow channels, weirs) can be used to reduce mosquito breeding areas.

The final health issue which must be taken into consideration is the fecal dropping of waterfowl. Migratory birds will be attracted by water related development. These developments need to be planned in such a way that human/wildlife conflicts are minimized.

10. Recreation

Many recreational activities take place in and around wetlands. Hunting and fishing are popular sports. Nearly all freshwater fishing is dependent upon wetlands. Pyramid Lake and the Truckee river support excellent fisheries. Recreational uses of wetlands and streams generate significant resources for local economies. The Department of the Interior estimated that in 1985 visitor days at Pyramid Lake totaled 560,000 persons, generated 600 jobs, 3 million in direct income and 7.1 million in recreation based expenditures.

Other popular recreation areas based in wetlands include Scripps Wildlife Area and Oxbow Park.

11. Education

Parks developed in wetland and riparian areas foster environmental awareness, giving visitors a chance to increase their understanding and appreciation of the natural world. Such parks are "living laboratories" promoting the care of important water associated habitats, and the quality of our water.

EXHIBIT C
WETLAND PLANT SPECIES IN NEVADA

Source Materials:

U.S. Department of the Interior, Fish and Wildlife Service. National List of Plant Species that Occur in Wetlands: Intermountain (Region 8). Biological Report 88 (26.8) May 1988.

U.S. Department of the Interior, Fish and Wildlife Service. Wetland Plants of the State of Nevada 1986, In Cooperation with the National and Regional Wetland Plant List Review Panels.

EXHIBIT D

HYDRIC SOILS IN THE WETLAND POLICY AREA

Hydric soils are those identified by the Soil Conservation Service. Soil names and identification numbers correspond to the Washoe County Soil Survey.

Southern Washoe County

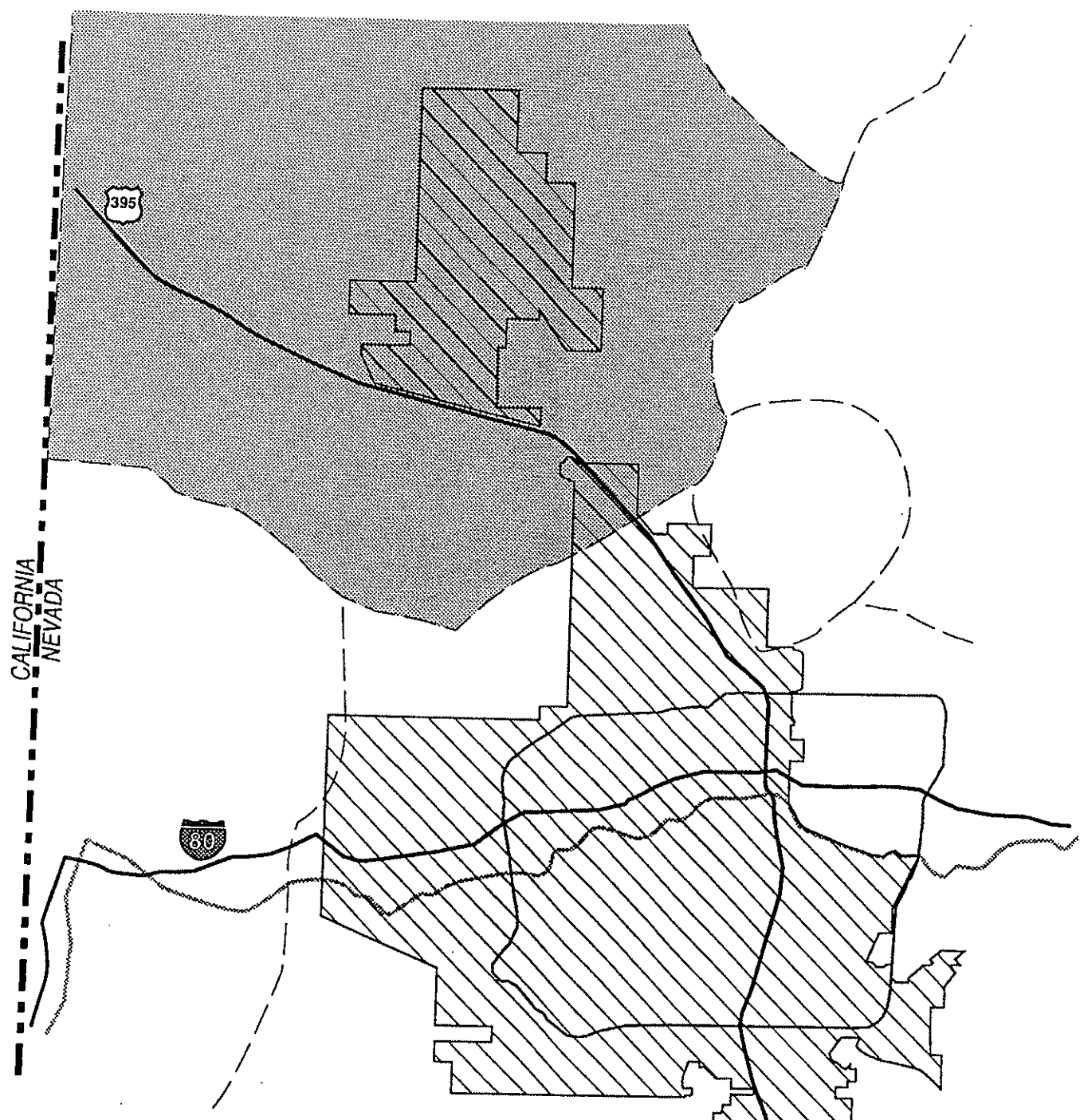
0230	Cradlebaugh loam
0430	Sagouspe varient
0431	Sagouspe varient wet
0440	Jubilee sl
0441	Jubilee clay loam
0442	Jubilee gr-s
0443	Jubilee ls
0450	Voltaire loam
0451	Voltaire loam, sli sal
0452	Voltaire loam, str sal
0514	Settlemeier
0740	Blackwell sl
0820	Marla ls, 4-8%
0821	Marla ls, 0-4%
0993	Haplaquolls, nearly level
1480	Macareno-blackwell-carioca


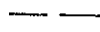

Central Washoe County

0240	Umberland
0242	Benin-umberland-umberland (mod wet) complex
0810	Voltaire-truckee association
0811	Voltaire-fluvaquents-holbrook association
1280	Xerix torrifluvents-fluvaquents association
1400	Dedmount-umberland (dry)-umberland association
1440	Umberland-umberland variant complex

Other soils determined to be hydric upon field investigation.

Exhibit E Potential Areas for Flow Through Wetlands



- Wetland Policy Area**
-  Policy Application Boundary
 -  Drainage Basins
 -  Drainage Basins where flow through wetlands may be requested

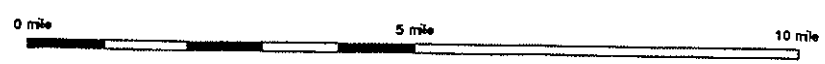


EXHIBIT F
CRITERIA FOR SELECTION OF A
WETLANDS DELINEATION CONSULTANT

The City of Reno encourages a team approach to delineating wetlands. A team should include specialists in wetland hydrology, ecology, biology, botany or soils. However, when a team approach is not feasible because of time or if the project is not of sufficient size to warrant a team, a candidate consultant should meet the first two criteria and one of the remaining criteria:

1. Familiarity with Great Basin and Sierra Nevada wetlands ecology to include hydrophytic soils and/or plants demonstrated by education or experience in the region.
2. Demonstrated understanding of federal wetland manual regulations and application of those regulations to delineations, restoration and evaluation.
3. A Ph.D. or an M.S. with 3-5 years of practical experience, or a B.S. with 5-10 years of practical experience in wetlands ecology, biology, hydrology or soils with authored articles in peer review journals or recognized work from consulting (listed EA's or EIS's, technical reports and feasibility studies, etc.)
4. A certified member of the Ecological Society of America.
5. A member of the Society of Wetland Scientists.

The point is to show a demonstrated technical basis and a knowledge of functional values through practical experience in wetland delineation, restoration and evaluation.

The City shall announce its intention to develop a list of wetland consultants using the above criteria. Each candidate shall submit a resume/vita to include experience under the listed criteria and to demonstrate his/her knowledge of wetland functions. A candidate may be added to the list at any time, provided he/she meets the minimum criteria.

EXHIBIT G

WETLANDS CHECKLIST

	YES	NO
APPLICANT		
1. Is there a river, stream, creek, slough or other water feature on or within 20' of your property boundary?	_____	_____
2. Are areas of the property marshy, or poorly drained?	_____	_____
3. Is the property subject to flooding, or seasonal high groundwater elevations?	_____	_____
4. Are any soils on the property grey or black?	_____	_____
5. Do any of the following plants grow on the property: bentgrass, ferns, onions (wild), foxtail, asters, milkvetch, saltbrush, birch, sedge, rush, monkeyflower, or willow?	_____	_____
6. Is the property within 20' of an "area of concern" on the Potential Wetland and Stream Environment map on file in the planning dept.?	_____	_____
STAFF		
1. Check Potential Wetland, Stream Environment and Regionally Significant Resources Map.	_____	_____
2. If property is within or near a mapped area, trigger wetland policy.	_____	_____
3. If applicant checks yes to two or more of the questions above, yet the property is not shown as an area of concern, pull topographic quadrangle sheets and soil survey for additional details.	_____	_____

EXHIBIT H

AD HOC WETLANDS POLICY ADVISORY COMMITTEE

Kathryn Wishart, Chairman	Reno City Council
Bob Junell	U.S. Army Corps of Engineers
Harriet Hill	U.S. Environmental Protection Agency
Cheryl McGovern	U.S. Environmental Protection Agency
Bob Hallock	U.S. Fish and Wildlife Service
Linda Kerly *	U.S. Fish and Wildlife Service
Jim Cooper	Nevada Dept. Environmental Protection
Terry Retterer	Nevada Dept. of Wildlife
Sue Smith	Reno City Council
Glen Godfrey	City of Sparks
Leonard Crowe	Washoe County Dept. of Comprehensive Planning
Douglas Coulter	Washoe County District Health
Richard MacDougall	Washoe-Storey Conservation District
John Ludwig	Ducks Unlimited
Susan Lynn	Public Resource Associates
Rose Stricklund	Sierra Club
Barbara Curti	Nevada Farm Bureau
Alex Fittinghoff	CFA
Greg Doerr	Taywood-Dermody
Bob Squires	Westpac Utilities
Dave Kiley	Rancher
Carol Powell	Citizen

Staff to Committee:

Laura M. Tuttle	Reno Department of Planning and Community Development
Debi Peebles	Reno City Clerk's Office

* Resigned

EXHIBIT I

Wetland and Stream Environment Goals and Policies excerpted from the Reno Policy Plan, an Element of the Master Plan.

I.C.39 Protect Significant Hydrologic Resources in the Planning Area.

Identify all SHR's in the planning area and protect those meeting the definition of wetlands, stream environments, playas, spring fed riparian, and non 404 wetlands as defined in the Administrative Manual for Implementation of the Wetland and Stream Environment Policy. (Regional Plan objective 11.1, policy 11e)

I.C.40 Protection of Habitats with Special Value.

It is Reno's policy to protect, and where appropriate designate as areas of significant environmental concern those wetlands, stream environments, playas, spring fed riparian, and non 404 wetlands having special public value in terms of the following:

A. Natural value (areas valued for their fragile character as habitats for plant, animal, or aquatic life, or having endangered or threatened plant or animal species as listed by Nevada Dept. of Forestry, Nevada Dept. of Wildlife, or US Fish and Wildlife Service).

B. Public safety and welfare (municipal water supply, watersheds, flood water storage areas, vegetation necessary to stabilize river banks, stream channels and slopes).

C. Educational Research value (ecologically and scientifically significant lands; areas which are a complete self-sustaining wetland or riparian unit; Scripps Wildlife Area, OxBow Park).

D. Recreation value (areas with developed recreation facilities and/or high visitor counts).

E. Economic value (Truckee River in downtown Reno).
(Regional Plan policy 11i)

I.C.41 Priorities for Public Acquisition.

Class I and Class II wetlands, stream environments, playas, spring fed riparian, and non 404 wetlands which are in immediate danger as a result of surrounding land use, development proposals or other human interference, shall receive the highest level of protection through public acquisition, and application of land use and zoning controls. Acceptable preservation includes, but is not limited to, purchase by the public from a willing seller, voluntary conveyance of conservation easements, or donation in fee title to a local government, resource agency, or land trust.

(Regional Plan policy 11o)

II.B.28 No Net Loss.

There shall be no net loss of wetlands, stream environments, playas, spring fed stands of riparian vegetation, and non 404 wetlands in the Planning Area, in terms of both acreage and value. The goal of no net loss shall be achieved in one or more of the following ways: designation of lands for resource or open space use, avoidance of these areas, mitigation of impacts on site, mitigation off site.

(Regional Plan goal 11, policy 11c)

II.B.29 Review of Development Proposals.

The review of any development proposal which includes wetland, stream environment, playas, spring fed riparian or non 404 wetlands shall follow the procedures and policies identified in the "Administrative Manual for Implementation of the Wetland and Stream Environment Policy".

II.B.30 Administrative Manual.

The Administrative Manual for Implementation of the Wetland and Stream Environment Policy is hereby adopted for the purpose of providing guidance in the administration of these policies. This manual may be amended only after a public hearing by the Planning Commission and adoption of a Resolution by the City Council.

II.B.31 Use of Effluent in Wetlands.

The use of effluent to create, maintain, restore or enhance wetlands is supported when in compliance with the Administrative manual for Implementation of the Wetland and Stream Environment Policy.

(Regional Plan policy 11k, 11l)

II.B.32 Operation of Sewage Treatment Plants.

Operation of sewage treatment plants should be reviewed, and where technically, economically, and legally possible modified so that the effluent is used to create, maintain, restore, or enhance wetlands.

(Regional Plan policy 11k, 11l)