THE Sparks Plan

CITY OF SPARKS

CONSERVATION AND NATURAL RESOURCES MASTER PLAN ELEMENT

DECEMBER 2008

HNTB

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SPARKS CONSERVATION AND NATURAL RESOURCES PLAN

INTRODUCTION

Why Do We Have a Conservation Plan?

The Conservation Plan is developed in accordance with the Nevada Revised Statutes that enable a city to prepare a master plan that can cover all or parts of a city and its sphere of influence. NRS 278.160 requires that all city master plans cover conservation, development, and utilization of natural resources. The underlying goal of the Conservation Plan is to identify, protect and enhance the natural environment for future generations to enjoy. As such, it takes collaboration and coordination between everyone who is concerned about the future of the natural environment.

What is the Conservation Plan?

The Conservation Plan is a big-picture guide that identifies key natural features, hazards, resources and habitats and provides goals, objectives and policies to protect and enhance these areas.

Plan Organization

The Conservation Plan is divided into the following elements:

- Water Resources: navigable waters, wetlands, streamways, drainage corridors, drainage basins, water quality, stormwater, low impact development and effluent.
- Aggregate Resources: aggregate extraction pits and operations.
- Wildlife Resources: native wildlife and plant species supported by key natural habitats and key migration corridors.
- Cultural Resources: archeological sites and cultural resources.
- Visual Character: significant ridgelines, rock outcroppings and viewsheds.
- Geology and Soils: soil constraints and steep slopes.
- Natural Hazards: wildfire, flooding, earthquakes, and landslides/debris flows.
- Air Quality: the management of pollutants which affect the air.
- Renewable Resources and Sustainable Development: use of renewable resources for energy, such as wind and solar along with "green" buildings and sustainable development.

Jurisdiction

The Conservation Plan encompasses the following areas:

- Existing City of Sparks Municipal Limits
- Sparks Sphere of Influence Area (SOI): Growth area defined by the ***Truckee Meadows Regional Plan*** (Regional Plan) for the next 20 years.
- Future Service Area (FSA): Growth area defined by the Regional Plan to accommodate growth beyond the next 40 years or build out.

Regional Coordination

Because the environment does not respect man-made boundaries, the City of Sparks needs to work with the City of Reno and Washoe County to develop a conservation plan that works hand-in-hand with the other jurisdictions.

Regional Plan

The *Truckee Meadows Regional Plan* (TMRP) was updated and approved by the Regional Planning Governing Board in 2007. It has, among its major objectives, the intent to preserve designated natural resources and open spaces to help support a sustainable and economically healthy region. The TMRP calls for all local governments within the region to prepare integrated plans to address natural resources and to preserve and restore sensitive land areas, wildlife habitat, open spaces and greenways, cultural and archeological resources, scenic resources, air quality, and water quality and quantity.

Washoe County

The *Washoe Regional Open Space and Natural Resource Management Plan* outlines a 20 year vision, direction and commitment to action for the future of the region's open spaces and natural resources. This Plan is comprised of three components:

- Inventory and Assessment: The Inventory and Assessment component is a compilation and evaluation of data and identification of issues that serve as the factual foundation for this plan.
- The Plan: The Plan presents a summary of issues, the long-term vision for open spaces and natural resources, the principles that are guiding planning for these resources, the long-term goals, and the public policies that Washoe County will follow as it seeks to achieve the plan's vision and goals.
- Implementation Plan: The Implementation Plan is the compilation and prioritization of actions to carry out the plan's policies, achieve its goals and realize its vision for the future. The implementation strategy is designed to be flexible in order to meet changing circumstances and to take advantage of future opportunities.

WATER RESOURCES

Water resources are sources of water that are available in sufficient quantity and quality to sustain the area's natural and built environment. Water resources that are identified and described within this section include the Truckee River, drainage corridors, wetlands, water quality, stormwater, low impact development and effluent.

Truckee River

The Truckee River, approximately 140 miles long, flows from Lake Tahoe to Pyramid Lake. This river runs through southern Sparks (south of I-80) and the East Truckee River Canyon area. Its waters are an important source for domestic use and irrigation within the Truckee Meadows. Most of the river water is fully allocated via water rights. Currently, a majority of the areas fronting the river along the East Truckee River Canyon within the Sparks SOI is rural/open space, while the areas within the existing city limits are industrial land uses.

In recent years, the Truckee River Flood Project, a joint coalition between Sparks, Reno, Washoe County and the Army Corps of Engineers, provided a forum for residents, businesses, community leaders, regulatory agencies and government officials to conduct an analysis of flooding issues and potential solutions. Based upon this six year effort, which involved more than 500 meetings and 20,000 volunteer hours, the Truckee River flood control plan was prepared. This plan includes a variety of flood protection measures and amenities including a river parkway with graded benches and terraces designed to slow flood waters, levees and flood walls that protect buildings adjacent to the river, a realigned North Truckee drainage conduit and open space. The sponsors of Truckee River Flood Project presented this plan to the US Army Corps of Engineers with the intent that the plan will be ultimately funded by Congress.

Wetlands

The United States Army Corps of Engineers (USACE) and the Environmental Protection Agency (EPA) jointly define wetlands as: Those areas that are inundated or saturated by surface or ground water 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. The USACE and US Fish and Wildlife Service (USFWS) have separately issued a series of generalized potential wetlands maps. As noted by the USACE, these maps should be used as a guide only in determining the presence of potential wetlands regulated by the USACE.

Developments within identified functional wetland areas are required by the USACE to mitigate potential impacts to these areas. A clustered development concept should be considered to allow higher densities outside of designated wetland areas in exchange for open space preservation within the identified wetlands. As development occurs, detailed field studies will determine actual wetland locations. Ideally, major wetland areas should be connected with open space/recreational use corridors.

Streamway and Drainage Corridors

Streamway and drainage corridors serve as important components of the stormwater management and water quality system. Streamway and drainage corridors also make ideal parks for passive recreational uses, open spaces and trails. Stream corridors serve a number of important roles including but not limited to the following:

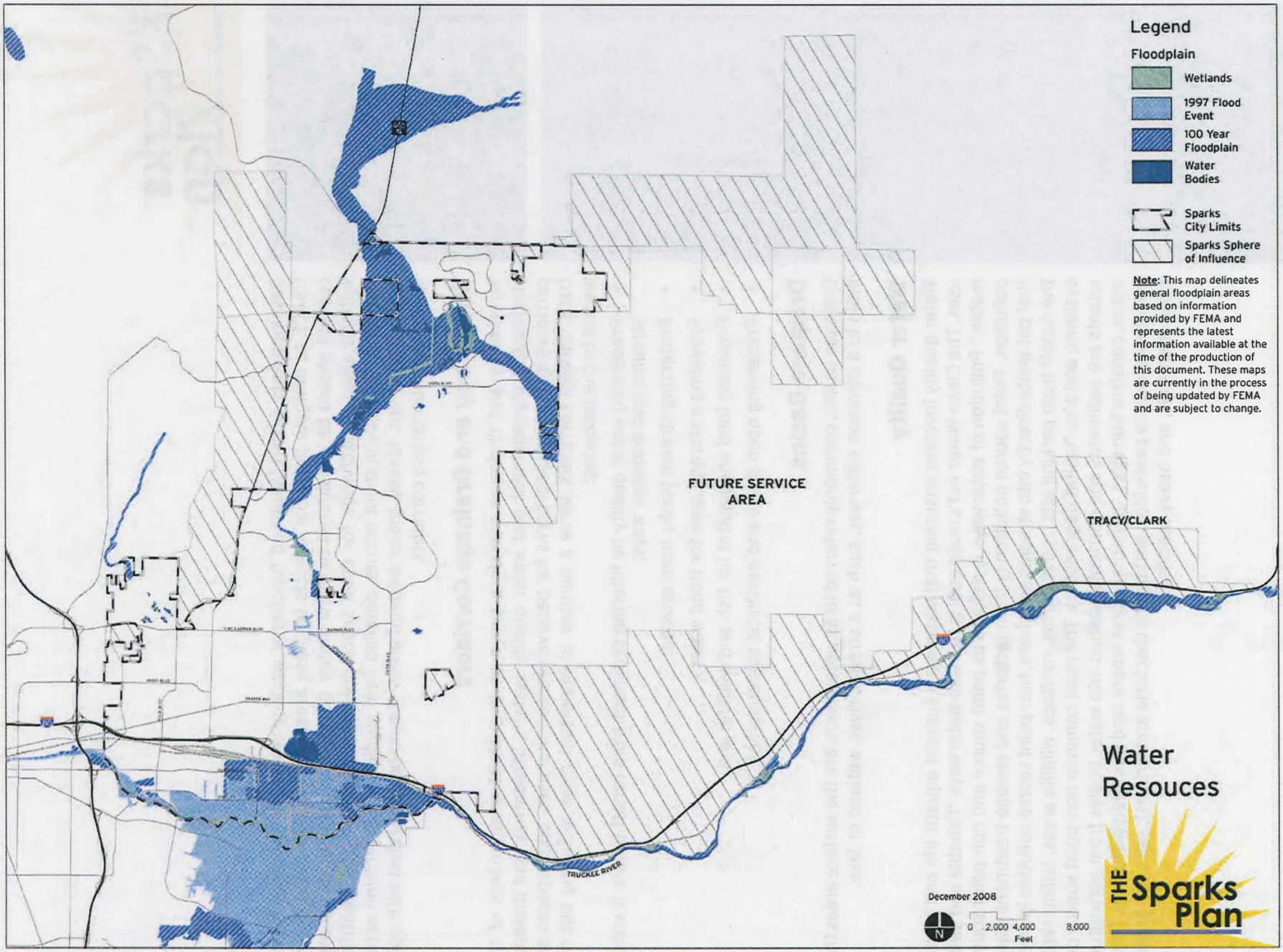
- Preserving water quality by filtering sediment from runoff before it enters streams and drainage ways;
- Protecting stream banks from erosion;
- Providing a storage area for flood waters;
- Providing food and habitat for fish and wildlife; and
- Preserving open space and aesthetic surroundings.

Drainage Basins

Drainage basins, commonly referred to as watersheds, are the surface areas that drain to a common waterway, such as a stream, river, wetland or lake.

Water Quality

Water quality involves ensuring that waterways support aquatic life and human uses. The Clean Water Act's main goal is to make waterways "fishable and swimmable." Pollution of waterways is defined as point source and non-point source pollution. Point source pollution is from factories and sewage treatment plants that put waste directly into streams and rivers. Non-point source pollution involves the runoff from parking lots, roads, farms, rooftops, wildlife areas, failing septic systems, and also habitat degradation. The most common non-point source pollutants are sediments and nutrients washed into water bodies from agricultural areas, construction sites, and other areas where land has been disturbed. Other pollutants include pesticides, pathogens (bacteria and viruses), salts, oil, grease, toxic chemicals, and heavy metals.


Legend
Floodplain
Wetlands
1997 Flood Event
100 Year Floodplain
Water Bodies
Sparks City Limits
Sparks Sphere of Influence
Note: This map delineates general floodplain areas based on information provided by FEMA and represents the latest information available at the time of the production of this document. These maps are currently in the process of being updated by FEMA and are subject to change.
FUTURE SERVICE AREA
TRACY/CLARK
TRUCKEE RIVER
Water Resouces
THE Sparks Plan
December 2008
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Stormwater

Stormwater is a term used to describe water that originates during precipitation events and/or water that originates with water runoff from natural systems, snowmelt, etc. Stormwater that does not soak into the ground becomes surface runoff, which either flows into surface waterways or is channeled into storm sewers.

Stormwater is of concern for two main issues: one related to the volume and timing of runoff water (flood control and water supplies) and the other related to potential contaminants that the water is carrying, i.e. water pollution. Because impervious surfaces (parking lots, roads, buildings, etc.) do not allow rain to infiltrate into the ground, more runoff is generated than in the undeveloped condition. This additional runoff can erode streams and rivers as well as cause flooding when the stormwater collection system is overwhelmed by the additional flow.

The City participates on the Truckee Meadows Stormwater Committee which insures compliance with the Nevada Department of Environmental Protection (NDEP) regarding stormwater runoff to the Truckee River.

Low Impact Development

Low Impact Development (LID) is a natural systems approach to stormwater management that emphasizes decentralized, small scale, Best Management Practices (BMPs) near the source of stormwater runoff. The cities of Reno and Sparks along with Washoe County are working together through the Truckee Meadows Regional Stormwater Quality Management Program to reduce poor water quality from urban stormwater runoff in the region. ***The Truckee Meadows Regional Stormwater Quality Management Program Low Impact Development Handbook*** has been created to implement practices at the site level to improve water quality and reduce stormwater runoff through regional policies, procedures, and guidelines.

Effluent

Effluent in the man-made sense is generally considered to be pollution, such as the outflow from a sewage treatment facility or the wastewater discharge from industrial facilities. In the context of waste water treatment plants, effluent that has been treated is referred to as secondary or treated effluent. The Truckee Meadows Water Reclamation Facility treats water runoff and wastewater for Sparks, Reno and portions of unincorporated Washoe County. Treated effluent from this facility is used in a wide variety of irrigation including but not limited to commercial landscape, roadway medians, golf courses, parks, common areas of subdivisions, construction water and other uses permitted by law. The City has published a ***Reclaimed Water Treated Effluent Design and Performance Standards*** for the design and construction for effluent distribution systems.

NATURAL RESOURCES

Natural resources are substances, such as soil, aggregate, oil, minerals, and other marketable goods that occur naturally and are extracted from the earth. The value of a natural resource is dependant upon its availability and consumer demand.

Aggregate Extraction Pits

Aggregate pits are located in areas on the west side of Pyramid Highway as well as areas within the East Truckee River Canyon. These pits are producing quality aggregate and are expect to continue producing beyond the 2040 scope of the Sparks Master Plan.

WILDLIFE RESOURCES

Truckee Meadows has a wide variety of native wildlife and plant species supported by key natural habitats and key migration corridors. These species, habitats and migration corridors are identified and described in detail for the southern portion of the County by the *Washoe Regional Open Space and Natural Resource Management Plan* and the *Washoe County Conservation Element*. Key descriptions from this plan are briefly summarized within this section.

Biodiversity

Biodiversity is the measure of vegetation communities and species present in a region. Biodiversity is how the landscape within the region supports the variety of animals and plants and maintains their healthy populations. There are a number of challenges facing biodiversity in the Sparks area. Urban and suburban development, recreational activities, alterations to fire regimes (the patterns that fire follows in particular ecosystems), construction of dams, regulation or diversion of stream flows, industrial discharge, aggregate operations, and livestock grazing can all alter key vegetation communities and can impair the habitat from supporting the species. These developments or environment altering conditions result in loss of native vegetation, introduction of invasive (non-native) species, soil erosion and pollution, decreased water quality and quantity, and habitat fragmentation. These all cause the conversion or loss of vegetation which directly affects the displacement or mortality of wildlife. Rare vegetation communities and species may be lost which can alter the aesthetics of the landscape within the area. Wildlife conflicts or encounters can also be a serious threat to both humans and wildlife. The most frequent type is vehicular collisions. They are increased or decreased as a result of the relationship and location of roads, habitat, water and how transportation and infrastructure interact with migratory routes.

Native species, habitats and migration corridors identified within the Sparks Planning Area include the following:

Antelope

This habitat is typically gentle rolling to flat, wide-open topography. Low sagebrush and northern desert shrubs are the preferred vegetation types. Areas such as these with low under-story allow antelope to see great distances and permit the animals to move quickly to avoid predators.

Chukar

This habitat is comprised of rounded grassy hills covered with sagebrush where there is no forest or dense cover. These nesting habitats are typically found in areas with sagebrush or perennial grasslands with Chukar roosting on the ground beneath sagebrush in the shelter of rock outcroppings.

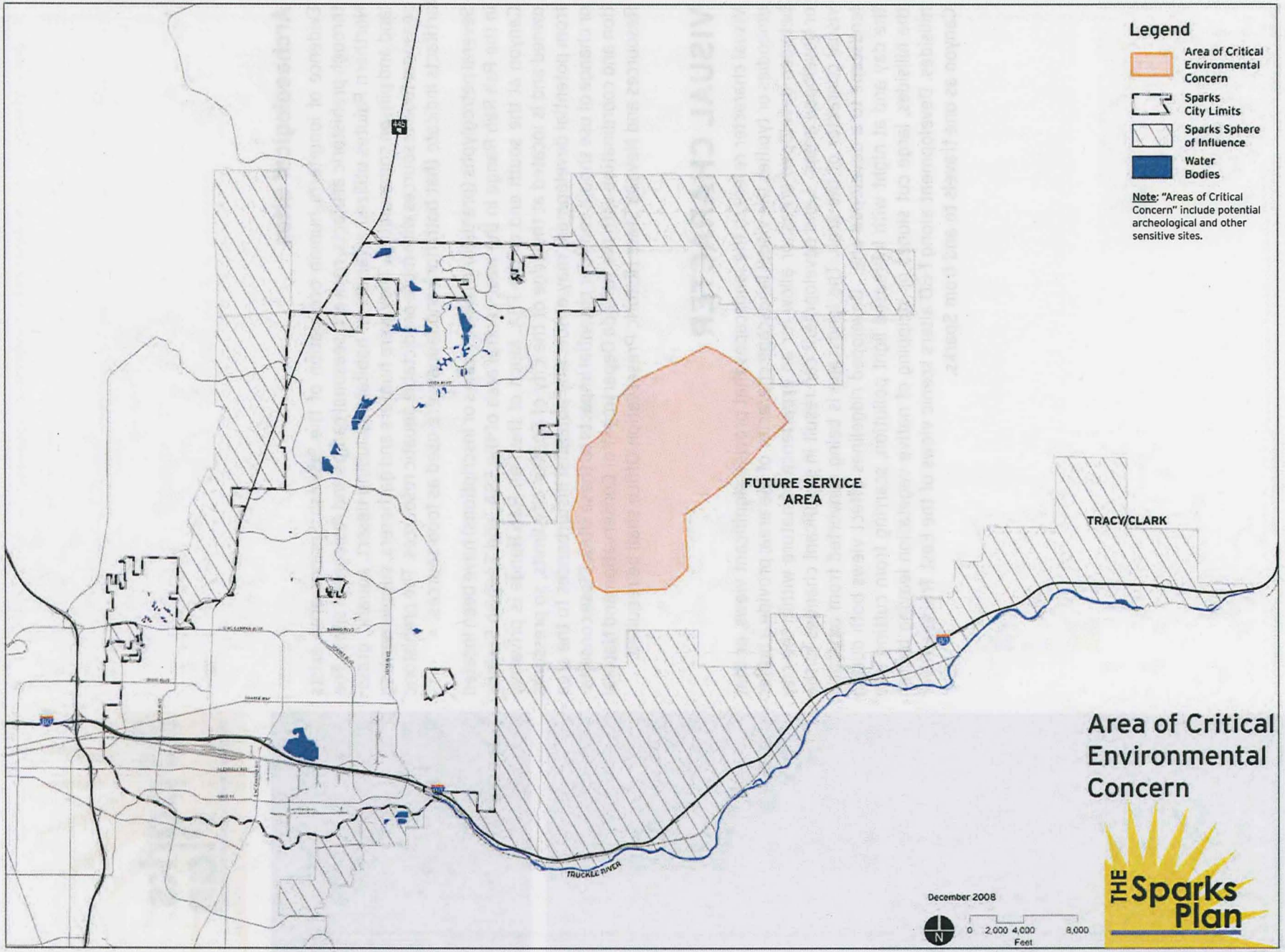
Mule Deer

These winter and summer habitats are typically in areas of higher elevations. In seasons of drought the plants toughen or dry up causing the loss of food sources. In addition, much of their habitat is being lost due land development and wildfires.

CULTURAL RESOURCES

Cultural Resources refer to areas previously inhabited by humans from prehistoric times to the immediate past. These resources include remnants of the built environment, settlement, or occupation. They encompass archaeological sites, where tools, rock rings, or petroglyphs might be found; fishing, hunting, gathering or camps, or wintering villages; historic buildings and structures; constructed landscapes, such as irrigation canals, gardens or windbreaks.

A major challenge for protecting these areas is that most cultural sites have not been mapped or surveyed and it would involve significant costs and resources to evaluate all the sites within the SOI and the FSA. A second challenge is private development within areas with significant concentrations of cultural resources because the current regulations do not require protection of these resources on private lands. A third challenge is unregulated recreational use. Unregulated off-road vehicles, hiking, etc. can cause degradation of the cultural resources or provide easy access for pot hunting or vandalism. A fourth challenge is the numerous agencies who are trying to preserve these resources.


Legend
Area of Critical Environmental Concern
Sparks City Limits
Sparks Sphere of Influence
Water Bodies
Note: "Areas of Critical Concern" include potential archeological and other sensitive sites.
FUTURE SERVICE AREA
TRACY/CLARK
TRUCKEE RIVER
Area of Critical Environmental Concern
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THE Sparks Plan

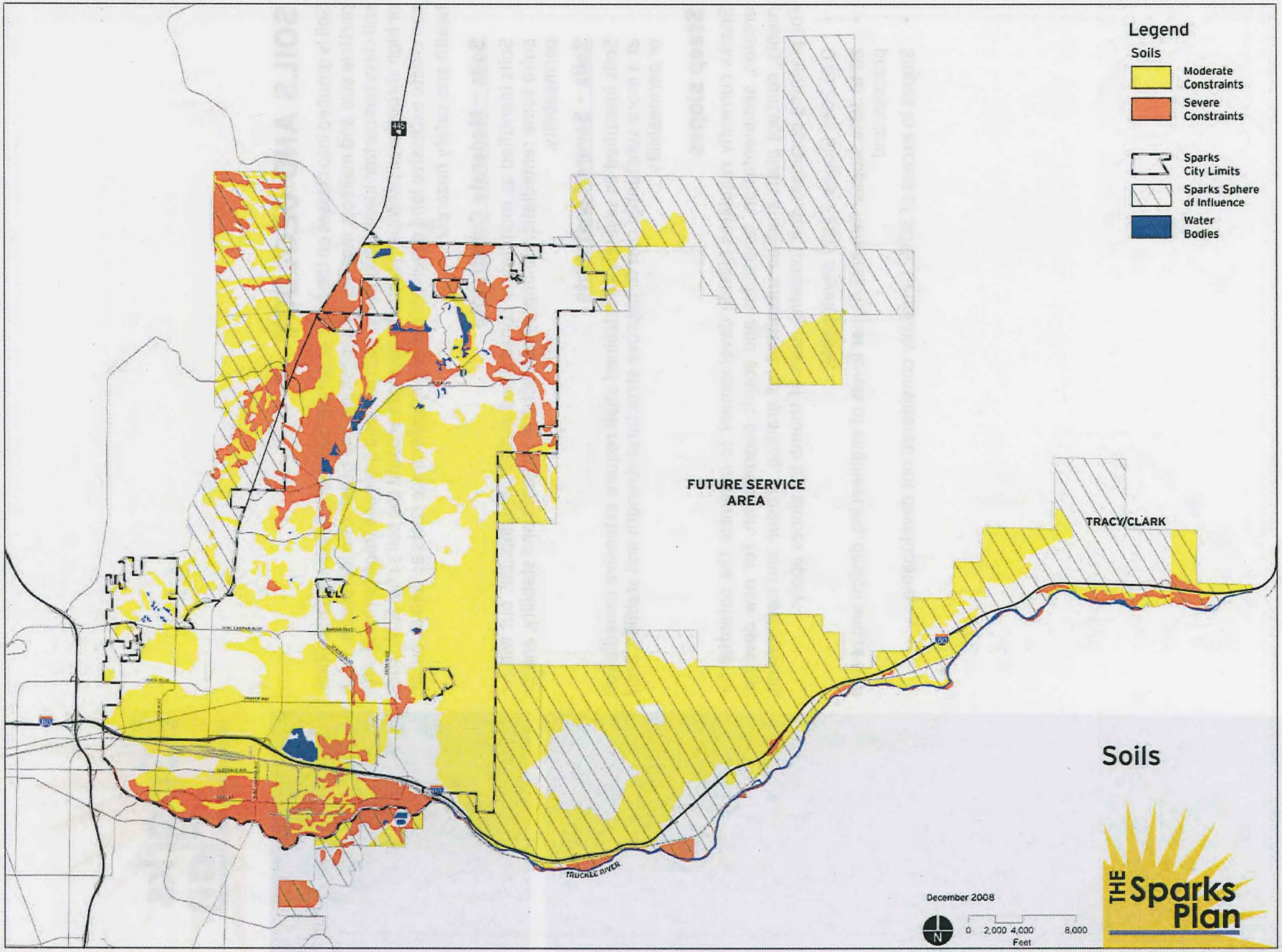
Archaeological Sites

Evidence of long-term human occupation of the Spanish Springs area exists through prehistoric artifacts, rock art, seasonal camps and residential sites. The Northern Paiutes utilized a variety of habitats including desert, aquatic, grassland and pinyon communities. They were hunters and gatherers, supplementing seasonal food resources with more predictable aquatic resources. The prehistoric artifacts indicate that both flora and fauna were used as food sources.

Several petroglyphs (prehistoric rock carvings or inscriptions) have been located in the Pah Rah Range in the west-central area of the FSA, and Spanish Springs Canyon at the south end of the FSA. Much of the Pah Rah Range is privately owned and is located at the edge of the City of Sparks' city limits, so pressures from potential development may ensue. Any potential disturbances to the area or change of use should consider potential impacts to these sites. Close consultation and coordination with the Nevada Department of Conservation and Natural Resources and Nevada State Historic Preservation Office shall be required.

VISUAL CHARACTER

Visual character refers to the landscapes that provide significant views, or that embodies or typifies the visual landscape character of the area; provide a buffer between developed areas; or allow for an experience of nature within the city or developed areas. Land development can result in significant changes to the visual character of the area. The landscape is being converted from a natural landscape to a developed one. Developed ridgelines affect views both during the day and at night with increased light pollution, scarring from cutting into the hillsides, large cut slopes or stripping of native vegetation leaving barren hillsides. Development along I-80 alters scenic views of the East Truckee River Canyon as one travels to and from Sparks.


Legend
Soils
Moderate Constraints
Severe Constraints
Sparks City Limits
Sparks Sphere of Influence
Water Bodies
FUTURE SERVICE AREA
TRACY/CLARK
TRUCKEE RIVER
Soils
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THE Sparks Plan

SOILS AND GEOLOGY

Soil is grouped into classes on the basis of parent material, chemical composition, particle size and makeup, manner of deposition and other considerations. Each soil class has certain identifying traits, such as good drainage (high permeability) or high shrink-swell potential. Failure to take into account the soil's characteristics can create excessive land development and maintenance costs as well as public health and safety hazards.

Soils - Moderate Constraints

Soils identified as moderately constrained remain developable, but will require some remediation to improve structural strength and stability, and/or permeability.

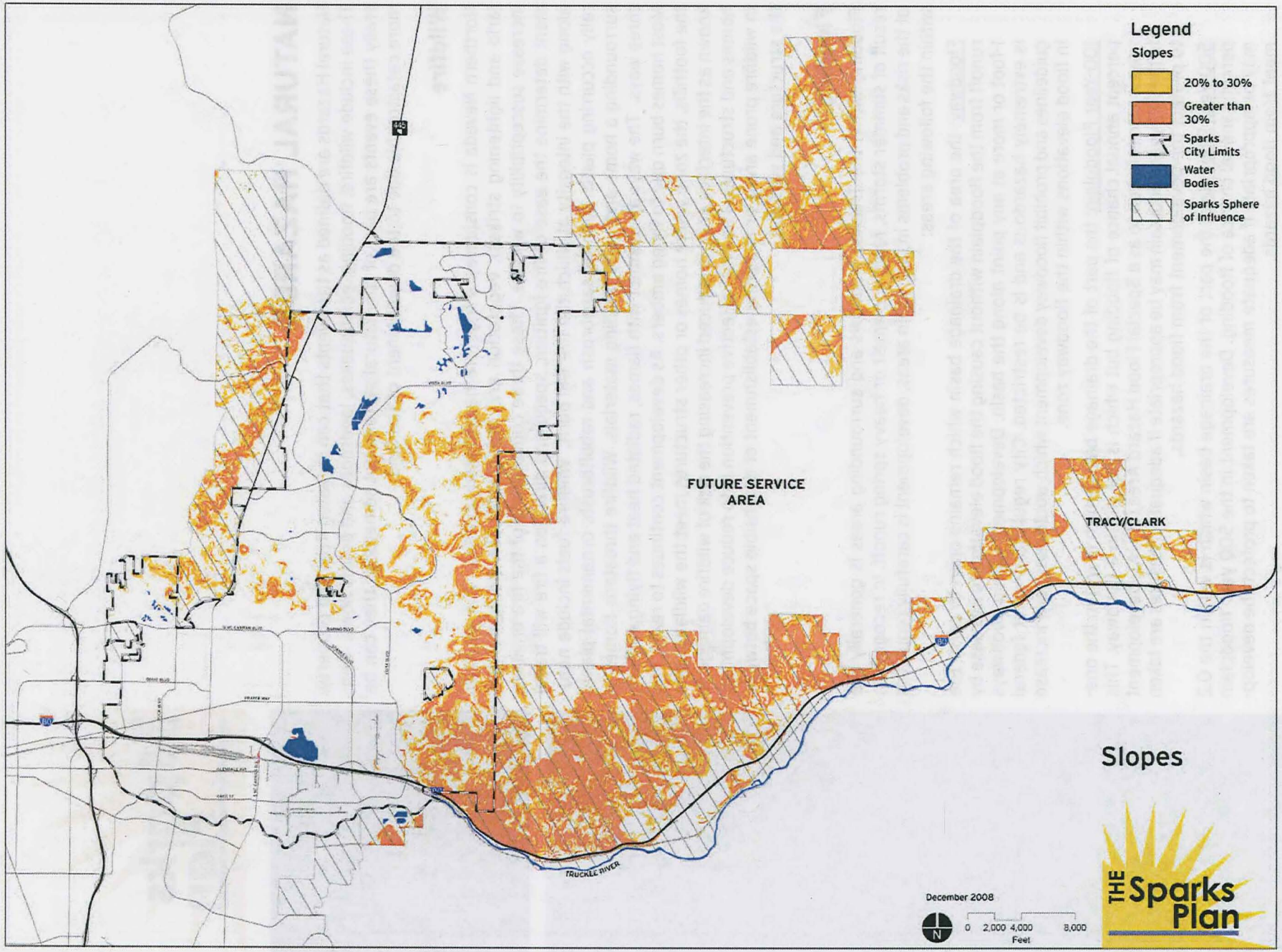
Soils - Severe Constraints

Soils identified as severely constrained shall require extensive remediation at a more substantial cost to improve structural strength and stability, and/or permeability.

Steep slopes

Sparks currently regulates hillside development to minimize the potential for erosion, sedimentation, landslides and scenic degradation. For new developments, concept plans shall be submitted for grading, erosion and landscaping. For planning purposes, the following rules of thumb for slopes apply:

- 0 to 20% Slopes: Easily developable;
- 20 to 30% Slopes: Requires higher levels of engineering, design and review process; and
- Slopes in excess of 30%: Generally considered not developable.


Legend
Slopes
20% to 30%
Greater than 30%
Sparks City Limits
Water Bodies
Sparks Sphere of Influence
FUTURE SERVICE AREA
TRACY/CLARK
TRUCKEE RIVER
Slopes
December 2008
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THE Sparks Plan

NATURAL HAZARDS

Natural Hazards are defined as the events that can threaten lives and property. These include wildfire, flooding, earthquakes, landslides and debris flows. Generally these events are part of the natural system, but sometimes they can be more catastrophic due to the development of the land.

Wildfire

Northern Nevada is considered a high fire hazard environment. The weather (arid and lightening strikes), vegetation and topography are elements that increase susceptibility to wildfire. These three components of the fire environment determine the ease of fire ignition, speed and direction a fire will travel along with the intensity at which the fire will burn. Wildfire fuels include naturally occurring plants such as sagebrush and rabbitbrush, ornamental plants surrounding a home and wood building materials. Wildfire threatens homes in three ways. The ways are contact with flames, radiated heat and flying embers. Most homes burn due to flying embers. As development continues to reach into the foothills, the zone where homes or other structures meet the wildland, also known as the interface area, is reduced increasing the risk of wildfire damage to homes and structures. The most effective prevention is to reduce development in wildfire prone areas or requiring establishment of defensible space between the structure and wildland.

Flooding

Flooding within the Truckee Meadows and surrounding areas is generally the result of summer storms, rapid snowmelt or heavy spring runoff. In recognition of the risks and problems in floodplain areas, development is carefully regulated within the following areas:

Floodway: the area of the drainage basin which remains open to carry the runoff from the floodplain without causing the flood elevation to increase by 1-foot or more at any point along the basin. Development within floodways is extremely hazardous and is be restricted. City regulations meet federal guidelines and prohibit floodway development which would cause any increase in flood elevations within the floodway zone.

100-Year Floodplain: the part of the drainage basin which is within the one-percent annual chance of flooding but which is not within a floodway. This area is also referred to as a Special Flood Hazard Area (SFHA). Development in the 100 year floodplain may be appropriate if adequate measures are taken to protect the development from flood hazards.

500-Year Floodplain: the part of the drainage basin which is within the 0.2 percent annual chance of flooding. Development in the 500 year floodplain may be appropriate if adequate measures are taken to protect the development from flood hazards.

A large portion of the floodplain areas within the City, SOI and FSA have been mapped. However, it shall be noted that detailed flood elevations have not been determined for all mapped 100-year floodplain areas because the Flood Insurance Study prepared by the Federal Emergency Management Agency (FEMA) used FEMA's approximate methods to determine some floodplains. Also, it should be noted that the analysis methods used for preparation of the Flood Insurance Study has not caused all localized floodplains to be identified. For these reasons, the City floodplain regulations require that persons subdividing or developing land within the floodplain study it to determine the floodplain elevations and flood restrictions on the property.

Dam and Flood Channel Improvements in North Sparks: this dam and associated channelization improvements are intended to significantly reduce the downstream impact of flooding. This project has significantly narrowed the flood prone areas within North Sparks opening up large areas for development.

Critical Zones: this is the area on the south side of the Truckee River and upstream of the confluence of the Truckee River and the Steamboat Creek that includes the maximum footprint and geographical limits and maximum flood elevation of the peak stage of the 1997 Truckee River flood event.

Geologic Hazards

Geologic hazards exist within the Truckee Meadows. The Nevada Bureau of Mines and Geology is the authority on geologic hazards issues within the area. In recognition of the risks and problems in geologic hazard areas, development should be carefully regulated to address the following hazards:

- Earthquakes: At the earth's surface, earthquakes manifest themselves by shaking and sometimes displacing the ground. Nevada is the third most active state in the United States for large earthquakes (5.5 or higher on the Richter scale). A large number of active earthquake faults have been identified and as reflected in the historical record, earthquakes are a hazard.
- Landslides / Debris Flows: Landslides/debris flows are common natural occurrences in Northern Nevada. Occurrences are typically associated with a heavy rainfall or rapid snow melt, worsening the effects of flooding. The areas prone to landslides/debris flows are steep slopes, bases of drainage channels and developed hillsides.

AIR QUALITY

There are four pollutants which affect air quality in this area: carbon monoxide, nitrogen oxide, ozone, and particulate matter which are typically the result of combustion engines.

The Truckee River Basin is on the leeward side of the Sierra Nevada Mountains, making temperature inversions a common phenomenon. During inversion periods, a layer of dense cold air settles in the basin, under a layer of lighter, warm air. Vertical mixing of the air column is inhibited. Without vertical mixing, emissions from cars, wood stoves, and other pollution sources can be trapped under the warm air and become concentrated. During inversion periods, the beautiful blue sky of Nevada is replaced with a brown haze hanging above the valley.

When inversions occur, air quality alerts are announced. A number of programs and policies have been initiated in the area to counteract the effect of temperature inversions and to improve air quality in the region. The Truckee Meadows Air Quality Implementation Plan has moved the region closer to attainment of its air quality improvement goals. An annual auto inspection and maintenance program, a ban on non-EPA certified wood burning stoves in residences, and traffic synchronization improvements are just a few of the specific programs to follow from the plan. In addition, a temperature inversion prediction system was developed in the early 1980's to serve as an early warning for those groups who are particularly affected by high levels of air pollution.

County Initiatives

The Washoe County District Health Department has an active air pollution control program and air pollution control officer. Some of the specific recommendations to be implemented include:

- Large fleet operators should convert to cleaner burning fuels such as natural gas. The City could take leadership in this area;
- Encourage passive and active solar energy in residential structures and developments;
- Aggressively implement requirements that all parking areas and roadways be paved;
- Synchronization of traffic signals and circulation system improvements;
- Stringent regulation of land grading, dust control and dirt hauling;
- Alternative fuels program;
- Vehicle inspection and maintenance program; and
- Wood burning color code program.

The Washoe County Regional Transportation Commission (RTC) initiatives include:

- Introducing alternative fuel vehicles into Washoe County's fleet;
- Introducing queue jumping;
- Developing Bus Rapid Transit along Prater Way and Pyramid Way;
- Replacing busses with more fuel efficient versions;
- Developing light rail along McCarran Boulevard;
- Develop more Park-and-Ride locations;
- Developing Ride-Share and Trip Reduction programs;
- Development of more pedestrian/bicycle trails; and
- Signal coordination.

RENEWABLE RESOURCES AND SUSTAINABLE DEVELOPMENT

Renewable resources are resources that are generated from sustainable sources. Renewable energy sources include solar power, hydroelectricity, wind generators and harnessing the earth's geothermal sources to generate energy. Northern Nevada, with an average of 300 sunny days per year, is a prime location for the use of solar energy. Northern Nevada also has significant wind and geothermal resources making this area prime for harnessing these renewable energy sources.

Sustainable development considers how development affects the Earth's environment. It is a pattern of resource use that aims at meeting current human needs while preserving the environment for future generations. Sustainable development practices emphasize efficient use of resources such as energy, water and building materials. The practice addresses building siting, design, construction practices, construction materials, operation, maintenance and removal. Sustainable development is designed to reduce overall impacts by:

- Efficiently using land, energy, water and other resources;
- Protecting community and building occupant's health;
- Reducing waste, pollution and environmental degradation; and
- Addressing quality of the environment people live in.

GOALS, OBJECTIVES AND POLICIES

The Conservation Plan's priorities are based upon a set of goals, objectives and policies to address key issues for each element and guide the overall implementation of the Plan.

Goals: Broad aspirations to guide city achievements.

Goals represent a vision for what the city wants to accomplish over the life of the plan. The Plan goals:

- serve as the framework for future land use decisions;
- identify needed public improvements and services; and
- establish priorities for public investment.

Objectives: Course of action required to achieve a stated goal.

The framework established by the Plan's goals is defined by objectives, which are steps and considerations to help meet the stated goal. Plan objectives:

- outline action steps; and
- are understood by both the decision-makers and the general public.

Policies: Statements that provide a framework for decision making.

Policies provide a framework for decision making based upon the goals and objectives. Plan policies:

- provide direction for decision-makers;
- are specific to issues identified throughout the planning process; and
- are consistently applied and implemented.

THE Sparks Plan

Goal 1.0: Ensure that sufficient water resources are available to support future growth as well as natural systems and habitats.

- **Objective 1.1**: As open space is acquired, the City should acquire any associated water rights.
  - Policy 1.1-1: Open space should not be owned by the City without a plan to acquire a water source to maintain its function.
- **Objective 1.2**: The City will work with the regional water agencies and municipalities to establish water conservation measures.
  - Policy 1.2-1: As a member of the local technical advisory committee, the City will participate in the establishment of water conservation measures.
- **Objective 1.3**: As new water sources are made available to replace Truckee River water (such as treated effluent), a portion of the water returned to the natural source should be dedicated to natural habitats and recreational use.
  - Policy 1.3-1: Work with the local, county and regional partners to ensure available water sources are allocated to serve natural systems and habitats.

Goal 2.0: Identify functional wetland areas to be protected from encroaching development.

- **Objective 2.1**: Ensure that local developments and projects do not significantly impact functional wetlands.
  - Policy 2.1-1: If any development impacts, degrades or destroys a functional wetland, the developer shall be responsible for repairing or replacing the wetland or mitigating the potential impact to the wetland.

Goal 3.0: Protect the Truckee River and adjacent lands to utilize for both recreational and non-recreational uses while also maintaining and enhancing the natural environment in the East Truckee River Canyon.

- **Objective 3.1**: Protect and preserve the Truckee River as a significant natural resource for the greater region.
  - Policy 3.1-1: The Truckee River Corridor shall be maintained through the East Truckee Canyon.
  - Policy 3.1-2: Scenic view areas of the Truckee River from I-80 shall be established.
  - Policy 3.1-3: The use of signs shall not detract from river views.

* Policy 3.1-4: Development shall incorporate high quality design and architectural features that complement the aesthetics of the surrounding environment and are compatible with and complement the Truckee River.
* Policy 3.1-5: Lighting on the Truckee River shall be minimal and shall mitigate non-natural light onto the riverbank or into the river.
* Policy 3.1-6: The Truckee River shall be protected from on-site hazardous materials.
* Policy 3.1-7: Setback and development standards shall be established to protect and preserve the Truckee River as a natural resource.
* Policy 3.1-8: The Truckee River Corridor shall incorporate a trail and open space system providing public access to the Truckee River.
* Policy 3.1-9: The City shall require new development to plan for trail and river access.
* Policy 3.1-10: Vegetation along the Truckee River shall be maintained and enhanced.
* Policy 3.1-11: Landscaping shall be required within streets right-of-ways, at project entries and intersections, along open space and trail systems.

- **Objective 3.2:** To enhance a community's quality of life by providing recreational opportunity and protecting an existing natural resource for future generations.
  * Policy 3.2-1: Parks and open space shall be designed to allow natural areas to maintain a physical and functional system of open space corridors, which protect environmental resources and ensure separation and buffers between land uses and wildlife habitat areas.
  * Policy 3.2-2: Development projects shall be coordinated with federal, tribal, state, regional and local agencies regarding acquisition of conservation easements, access, or other interest in public lands.
  * Policy 3.2-3: The City shall require development to coordinate with and accommodate the completion of Tahoe - Pyramid Bikeway.
  * Policy 3.2-4: Parks shall be designed and located to provide ease of access for pedestrians, persons with disabilities, bicycles, and vehicles.
  * Policy 3.2-5: The City shall require new development to incorporate any adopted trail and create an internal trail and open space plan.
- **Objective 3.3:** Ensure that future development does not exacerbate the harmful effects of flooding, and enhances habitat, aesthetics and recreational opportunities.

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* Policy 3.3-1: Prior to any Master Plan amendment for areas identified as "critical zones," projects shall demonstrate implementation of Truckee River management. A "critical zone" is the area on the south side of the Truckee River and upstream of the confluence of the Truckee River and Steamboat Creek on the Truckee River on the Steamboat Creek that includes the maximum footprint and geographical limits and maximum flood elevation of the peak stage of the 1997 Truckee River flood event.
* Policy 3.3-2: Protect the existing Open Space/Rural Reserve land use designation which has been assigned for areas identified as "Critical Zones".
* Policy 3.3-3: Any Master Plan amendment request for areas identified as a "Critical zone" shall be submitted with complete project details.
* Policy 3.3-4: Development within areas identified as "Critical Zones" shall be developed to the highest design standards including but not limited to site planning, architecture and landscaping.
* Policy 3.3-5: All development within areas identified as "Critical Zones" shall provide methods to address flood storage mitigations.
* Policy 3.3-6: All new development within areas considered "Critical Zones" shall meet the key elements of the Truckee River flood control plan including but not limited to:
    1. Creation of terraced river parkway.
    2. Replacement of the Sparks's industrial area levee and construction of a construction of a levee from Highway 395 to McCarran Boulevard on the south side of the river.
    3. Terracing the river channel at Vista Boulevard to reduce flood levels.
    4. Benching and a raised walkway at Rainbow Bend to contain increased downstream flows.
    5. Restoration of the Truckee River between Vista Boulevard and Wadsworth to create a healthier river, improving water quality and channel stability.
* Policy 3.3-7: Development within areas identified as "FEMA Regulation Zone AE Floodway" is prohibited. A floodway includes lands where the current carries a velocity during a flood event. Properties located in the built environment of the City of Sparks (west of Larkin Circle to Galletti Way south of Interstate 80) may propose new development and/or expansions within areas identified as "FEMA Regulation Zone AE Floodway" by obtaining a flood variance prior to or concurrent with submittal for entitlement review.

- **Objective 3.4**: To conserve, increase, and improve riparian habitats.
  - Policy 3.4-1: The City shall work with federal, tribal, state, regional and local agencies to identify and protect riparian habitats.
- **Objective 3.5**: To protect and preserve habitat within the East Truckee River Canyon including Mule Deer, Chukar, Fishery, Pronghorn Antelope, Bald Eagle and riparian habitat dependent species.
  - Policy 3.5-1: The City shall require development to incorporate mitigation methods which protect and preserve the wildlife.
  - Policy 3.5-2: The City shall require development to consult with federal, tribal, state, regional and local agencies to protect wildlife.

Goal 4.0: Maintain or improve water quality as development occurs.

- **Objective 4.1**: Improve groundwater quality through land use management that protects recharge areas from inappropriate disturbance and underground aquifers from leaking underground storage tanks.
  - Policy 4.1-1: The City of Sparks shall adopt design and construction standards for new development adjacent to surface water systems, natural drainage and recharge basins to protect water quality, minimize erosion and sedimentation, and preserve or improve these systems.
  - Policy 4.1-2: The City of Sparks shall carefully regulate development which places underground storage tanks or septic tank systems near hydrological systems which supply water for urban use, recreation or wildlife habitat preservation.
  - Policy 4.1-3: Prepare an inventory of septic tank locations within the SOI and prepare a report on the feasibility of converting to sanitary sewer as a means to protect ground water quality.
  - Policy 4.1-4: The City shall continue to require existing development using septic tanks to hook up to centralized sewer facilities as they become available in order to phase out septic tank systems in an economically feasible manner.
  - Policy 4.1-5: The City of Sparks shall support research efforts for the reclamation and/or treatment of poor quality waters.
- **Objective 4.2**: Reduce pollutant levels in stormwater runoff through waste disposal standards, erosion control and stormwater management.
  - Policy 4.2-1: The City of Sparks shall implement "Best Management Practices", including but not limited to, Low Impact Development Practices (LID) to control urban stormwater runoff.

* Policy 4.2-2: The City of Sparks shall exercise strict control over waste disposal practices and other sources of land and water contamination (i.e. fertilizers, chemical dumping or construction activity) which lead to the pollution of stormwater runoff, streams, ditches, recharge basins or other wetlands whether natural of man-made as a best management practice focusing on prevention.

- **Objective 4.3**: To protect and preserve water quality.
  * Policy 4.3-1: The City shall work with federal, tribal, state, regional and local agencies to monitor water quality standards and implement BMP's for water quality.
  * Policy 4.3-2: Stormwater run-off from developed areas will not degrade the water quality of the Truckee River.
  * Policy 4.3-3: Development shall work with federal, tribal, state, regional and local agencies for regulatory requirements and operating agreements.

Goal 5.0: Preserve and enhance natural resources and open spaces through flood management.

- **Objective 5.1**: Actively work with local, state and federal agencies to implement and maximize open space and restoration improvements along the Truckee River.
  * Policy 5.1-1: Continue to actively participate with local, county, state and federal agencies to implement the full Truckee River flood control plan or other flood control measures.
- **Objective 5.2**: Minimize development within existing floodplain areas to protect human life from the effects of flooding; manage the flood potential on existing and future development; protect downstream water quality from the harmful effects of flooding; and ensure that future development does not exacerbate the harmful effects of flooding, and enhance habitats, aesthetics, and recreational opportunities.
  * Policy 5.2-1: New developments within the floodplain shall be carefully evaluated in terms of their impacts to surrounding properties.
  * Policy 5.2-2: Improvements to existing businesses as well as redevelopment and infill projects within the floodplain shall not adversely impact the drainage of adjacent properties.
  * Policy 5.2-3: Work with local, county, state and federal agencies to acquire flood prone areas for stormwater management and natural habitat restoration.
  * Policy 5.2-4: Expand the existing linear park and trail system along riparian corridors for recreational use including hiking and biking.

Goal 6.0: Allow aggregate resources to be extracted to provide an adequate supply of materials for the future while minimizing adverse environmental impacts and conflicts with adjacent land uses.

- **Objective 6.1**: Ensure the supply of aggregate resources for future extraction.
  - Policy 6.1-1: Aggregate resources within the Sparks' city limits and SOI shall be allowed to be extracted.
- **Objective 6.2**: Ensure the operation and expansion of aggregate resources is minimizes impacts on adjacent land uses now and in the future.
  - Policy 6.2-1: All requests for an aggregate operation and expansion of existing aggregate resource facilities shall require review by the City.
  - Policy 6.2-2: All requests for an aggregate operation and expansion of existing aggregate resource facilities shall be accompanied by a detailed operation plan addressing safety and environmental concerns, maintenance, fencing, signage, storm drainage, stockpiling of topsoil, erosion control, vegetation, wildlife restoration plans and reclamation plans with performance schedules.

Goal 7.0: Protect and enhance natural habitats and migration corridors.

- **Objective 7.1**: Identify key natural habitats and migration corridors
  - Policy 7.1-1: Use the *Inventory and Assessment* component of the *Washoe Regional Open Space and Natural Resource Management Plan* as a reference tool in identifying areas for preservation.
  - Policy 7.1-2: Use information obtained from the US Fish and Wildlife Service, Bureau of Land Management, Nevada Department of Wildlife, the Nevada Department of Conservation and Natural Resources to identify and monitor threatened natural wildlife species and habitats.
  - Policy 7.1-3: Compile a local Geographic Information Systems (GIS) database delineating wildlife habitats and migration corridors for preservation in the undeveloped areas within the Sparks' city limits and SOI to serve as a resource for public officials, city staff, property owners, developers and residents. Share GIS data and resources with county, regional, state and national agencies.
- **Objective 7.2**:Minimize the encroachment of development and potential impacts within identified natural habitats and migration corridors.
  - Policy 7.2-1: Maximize infill and redevelopment opportunities within the existing City limits. Support higher densities along major transportation corridors, downtown and other appropriate areas.

* Policy 7.2-2: Direct new development within the SOI to areas that can be served with adequate infrastructure. Establish site review procedures within these areas to ensure that natural habitats and migration corridors/trails are preserved and buffered as development occurs. The impacts could be minimized through clustering, maintaining open space areas and/or intensity of land use patterns.
* Policy 7.2-3: Work with county, state, tribal and federal agencies to develop programs that minimize potential impacts to natural habitats and migration corridors.

- **Objective 7.3**: Provide incentives for private developers to voluntarily protect natural habitats and migration corridors.
  * Policy 7.3-1: Consider providing incentives for new development to preserve natural habitats and migration corridors by clustering or other methods.
- **Objective 7.4**: Preserve and protect natural amenities, unique landscape features (e.g. rock outcroppings and drainage ways), and other natural features.
  * Policy 7.4-1: The City shall require new development to preserve and protect natural amenities, unique features (e.g. rock outcroppings and drainage ways) and other natural features.

Goal 8.0: Protect cultural resources.

- **Objective 8.1**: Identify cultural resources.
  * Policy 8.1-1: Use information provided by the Bureau of Land Management Nevada State Historic Preservation Office, tribe and the Nevada Department of Conservation and Natural Resources to compile an inventory of cultural resources.
- **Objective 8.2**: Promote the protection and minimize potential impacts on cultural resources within the City's jurisdiction.
  * Policy 8.2-1: Identify opportunities to partner with local, county, tribal, regional and federal agencies to acquire sites with cultural resources through conservation easements, long-term leases or other appropriate means.
  * Policy 8.2-2: Require appropriate setbacks, buffers or other methods into the site review processes to afford the protection of cultural resources.
  * Policy 8.2-3: Continue to work on conducting the historic building inventory.
  * Policy 8.2-4: Support land dedications, exchanges, or acquisitions to add cultural resource sites to public ownership.

* Policy 8.2-5: Work with county, state, tribal and federal agencies to develop programs that minimize potential impacts to cultural resources.

- **Objective 8.3:** Participate in the ongoing development of policies and tools for the management of cultural resources within the City and SOI.
  * Policy 8.3-1: Review the current development review processes to improve the protection and buffering of cultural resources.
  * Policy 8.3-2: Work towards the establishment of a historic district.
  * Policy 8.3-3: Establish the City as a Certified Local Government.

Goal 9.0: Manage development so that it does not detract from an area's visual features, amenities, architectural character or neighborhood integrity.

- **Objective 9.1:** Incorporate an area's visual features and amenities in the development review process.
  * Policy 9.1-1: The City will identify the scenic view points within the East Truckee Canyon area and work with the Nevada Department of Transportation (NDOT) and the Regional Transportation Commission (RTC) to protect these scenic view points within the East Truckee Canyon area.
  * Policy 9.1-2: Setbacks shall be established during development review when the proposed development is near a prominent natural feature.
  * Policy 9.1-3: Each development proposal shall address mitigation of the effects on visual appearance, scarring of hillsides, and the impact of increasing access in roadless areas.
  * Policy 9.1-4: Signs and utility structures that visually create clutter along the I-80 corridor shall be discouraged during development review. Utilities shall be placed underground where possible.
  * Policy 9.1-5: Work with utility companies to minimize visual impacts of cellular towers and above ground utilities.

Goal 10.0: Manage development near known active faults and landslide/debris flow areas.

- **Objective 10.1:** Comply with the city building codes, state and federal standards for development near active faults and/or landslide/debris flow areas.
  * Policy 10.1-1: All new developments shall evaluate the geologic hazards.

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Goal 11.0: Minimize and protect development in wild land interface areas from wildfires.

- **Objective 11.1**: Protect and preserve the urban/wild land interface from wildfire hazards.
  - * Policy 11.1-1: The City shall require development to incorporate fire safe landscaping and design standards and comply with defensible space guidelines.
  - * Policy 11.1-2: Development in interface areas shall be designed to reduce intrusion into the fire prone area by clustering or other methods.

Goal 12.0: Improve air quality through local efforts

- **Objective 12.1**: To protect and preserve air quality.
  - * Policy 12.1-1: The City shall require development to work with federal, state, regional and local agencies to monitor air quality standards.
  - * Policy 12.1-2: The City shall require development to work with federal, state, regional and local agencies for permitting of stationary sources.
  - * Policy 12.1-3: Development with low point source emissions shall be encouraged.
- **Objective 12.2**: Meet the minimum state and federal air quality standards.
  - * Policy 12.2-1: All new developments shall include provisions for pedestrian and bicycle connections within the site as well as to the city and potentially regional network.
  - * Policy 12.2-2: Alternative energy sources that do not degrade air quality should be given preference over resources which do degrade air quality. The City will lead by example by integrating alternative energy sources into future municipal buildings as well as the City vehicle fleet.
  - * Policy 12.2-3: Educate residents about the benefits of reducing vehicle miles traveled (VMT) to reduce air pollution through carpooling and alternative transportation modes including public transit as well as walking and biking.
  - * Policy 12.2-4: Seek opportunities to improve a city-wide pedestrian and bicycle trail system to connect neighborhoods to businesses and major activity centers.
  - * Policy 12.2-5: The City will encourage higher densities along major transportation corridors including Transit Oriented Development (TOD) opportunities to support an enhanced transit system such as bus rapid transit (BRT).

- **Objective 12.3**: Promote the use of transportation demand management plans as a method to reduce vehicular air emissions.
  * Policy 12.3-1: Require employers of 100 or more employees to have an employee trip reduction (ETR) plan as part of their project approval.
  * Policy 12.3-2: The City will work with local agencies to decrease the number of vehicles on the roads through programs that provide alternative transportation modes such as walking, bicycling and public transit and trip reduction strategies such as car pooling, allowing flexible work hours/schedules or other similar programs.

Goal 13.0: Foster sustainable development and use of renewable energy resources.

- **Objective 13.1**: The City will foster the use of renewable energy resources and sustainable development.
  * Policy 13.1-1: The City shall foster and facilitate the placement and use of renewable energy resources throughout the community.
  * Policy 13.1-2: The City shall establish standards by 2014 that require new development to be constructed using sustainable building techniques.