



South Platte Park...

a Natural Area

MANAGEMENT PLAN

DRAFT OCT 2016



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ABBREVIATIONS

CAEE	Colorado Alliance for Environmental Education
CBCN	Chatfield Basin Conservation Network
cfs	cubic feet per second
Center/CNC	Carson Nature Center
CPW	Colorado Parks and Wildlife
CHEERS	Chatfield Environmental Education Resource System
CWSD	Centennial Water & Sanitation District
District	South Suburban Park & Recreation District
IGA	Inter-governmental Agreement
LACs	Limits of Acceptable Change
Lake 1	Blackrock Lake
Lake 2	Eaglewatch Lake
Lake 3	Redtail Lake
Lake 4	Ladybug Lake
Lake 5	Bufflehead Lake
MCGT	Mary Carter Greenway Trail (originally Arapahoe Greenway Trail)
NDIS	Natural Diversity Information Source
Park	South Platte Park
PFD	Personal Floatation Device
RTD	Regional Transportation District
Shop	Maintenance facility
SPP	South Platte Park
SSPRD/District	South Suburban Park & Recreation District
SCFD	Scientific and Cultural Facilities District
USACE	United States Army Corps of Engineers

KEY TO LAKES

Some Historic documents reference the lakes by their original number:

Lake 1 = Blackrock Lake
Lake 2 = Eaglewatch Lake
Lake 3 = Redtail Lake
Lake 4 = Ladybug Lake
Lake 5 = Bufflehead Lake
Olsen Lake became Cooley Lake
Kewitt Pond became South Platte Reservoir

INTRODUCTION

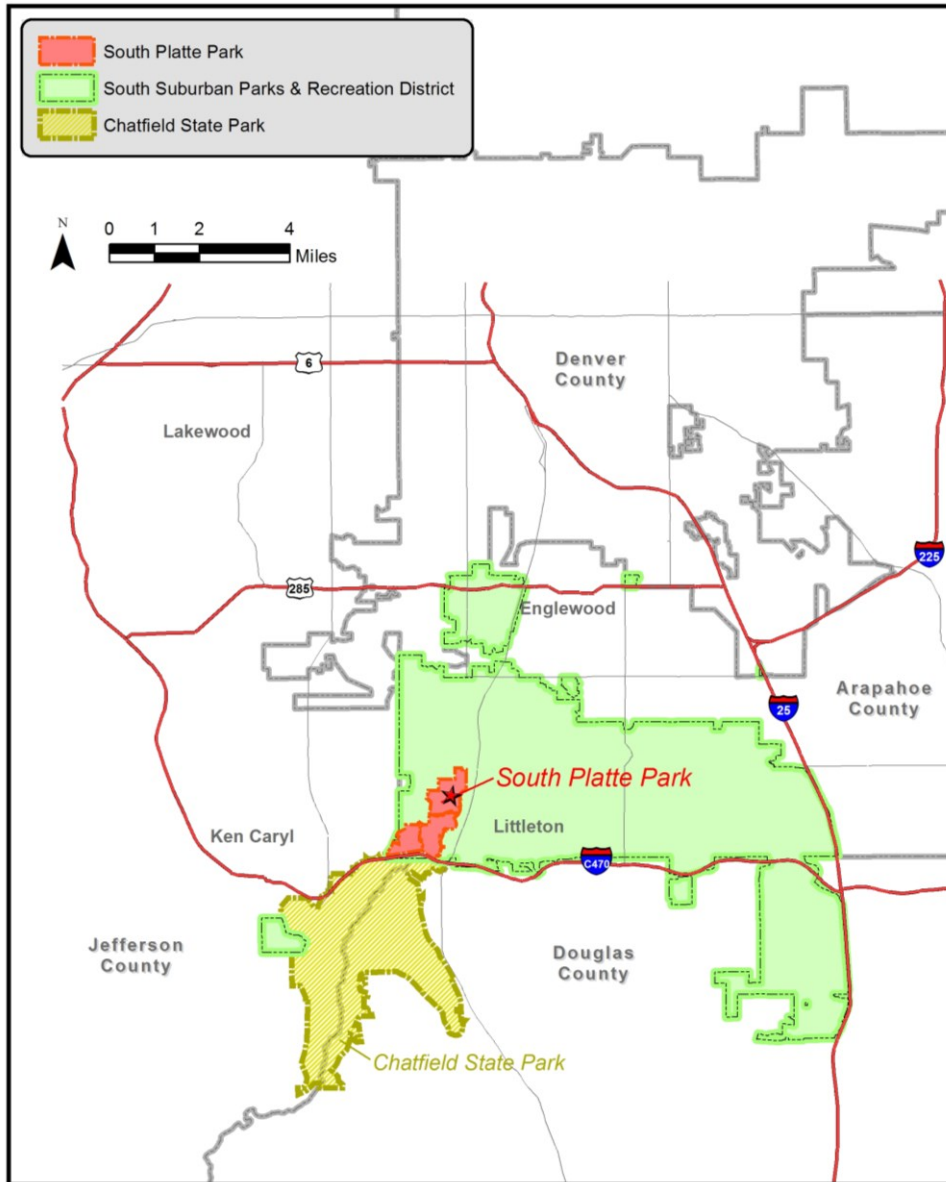
South Platte Park claims its origins in the aftermath of the catastrophic flood in 1965 and the subsequent federal plan to channelize the river as part of the Chatfield Flood project. Littleton fought to maintain a natural floodplain for use as a public park and claims credit for precedent-setting legislation to allow this option. South Platte Park is the result of the hard work of numerous individuals and groups to maintain the natural beauty and function of the Platte River Valley. The vision for the Park was defined in a 1983 Master Plan (revised in 1988), to balance visitor use with preservation of the resources. That plan states the intent of this Park is to “capture the essence of a natural river valley and . . . allow for visitor opportunity while providing an undisturbed area for wildlife retreat.”

This management plan provides direction to meet the goals and objectives of the Master Plan in the current urban environment and using the best modern practices. This plan provides land use guidelines, summarizes water rights and property agreements, identifies important wildlife habitat, and addresses policies to protect the wildlife, vegetation, and wetland resources. The plan details visitor management policies including parking and access, trails, and facility development along with defining appropriate types of use. Interpretation and education are addressed as important aspects, due to their ability to enhance the visitor experiences and impact visitor behaviors, and the importance of the role of volunteers put forth in the Master Plan is embraced.

South Platte Park (herein referred to as the Park) is a natural area of approximately 880 acres located in Littleton, Colorado (Figure 1, Vicinity Map). The City of Littleton owns the majority of the Park and South Suburban Park and Recreation District (herein referred to as the District or SSPRD) manages it (Appendix 1, South Platte Park Management Agreement, **as amended in 2016**). The Park consists of approximately 644 acres of title-held property and 236 acres under lease or management agreements. An additional 47 acres on 13 additional parcels are held under conservation easements on private property, managed as contiguous buffers, or have not yet been formally annexed into the South Platte Park (Figure 2, Management Sites). They are addressed under this plan to provide consistent management of contiguous habitat. Currently 927 total acres fall under the management attention of the Park staff.

Commented [SAL1]: The amendment will be added to Appendix 1 if it is adopted concurrently with this plan.

Figure 1: Vicinity Map



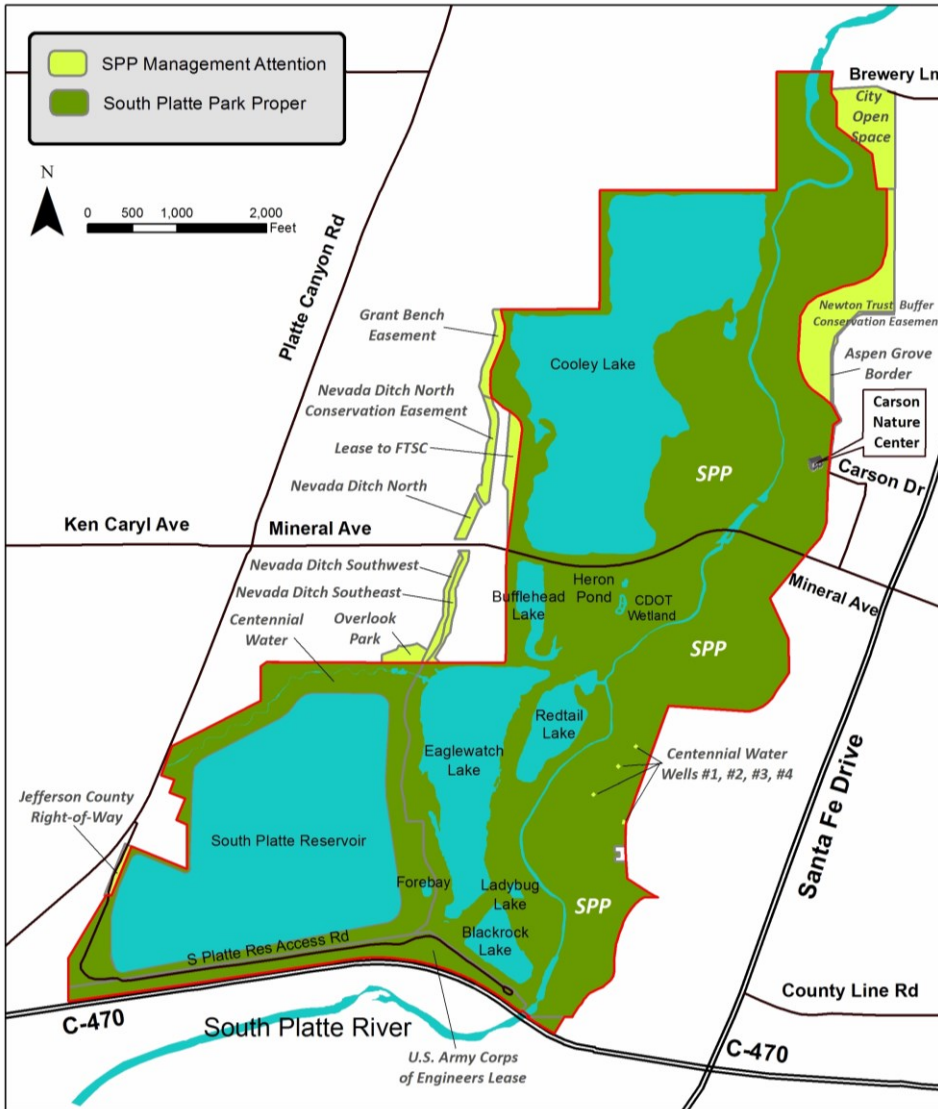
South Platte Park holds a designation from the National Audubon Society as an Important Bird Area for both its summer breeding habitat quality, with 66 species of birds confirmed to have bred here, as well as its value as a wintering area for more than 31 species of North American waterfowl and their kin. South Platte Park is open to a wide variety of public uses from a number of access points, with the exception of several designated wildlife areas or revegetation zones. Hikers, horseback riders, and bicyclists are encouraged to stay on trails but have the freedom to explore off of them. The Park is a heavily-used natural open space within an urban area, which makes it vulnerable to overuse and disturbance, so it must be managed wisely. Some areas of the Park that will not withstand impacts from major human intrusion or if impacted could decrease the habitat value of the Park overall. Sections of this plan, such as the Resource Management and Visitor Management sections will identify these areas and recommend management direction.

It is the intent of the City of Littleton and SSPRD to provide for visitor safety and enjoyment, provided it falls within what is needed for the protection of the natural resources within the Park. The 1983 Master Plan outlined a type of zone management for low, moderate, and high use areas with seasonal closures that is still commonly used in natural area management today.

The Master Plan recommended a concept of carrying capacity (a pre-determined number of people that the Park could accommodate) to guide the management decisions. Modern park management techniques recognize numerous variables that can increase capacity without increasing impacts. The Master Plan was written when much of the Park was an active gravel mine or undergoing restoration, when there were few residential developments nearby, and the when a one-day count of 183 visitors triggered concern for potential overuse. In 2016, trail counters recorded 530 visitors in one hour using the trail, and yet the habitat quality remains high.

This update to the management plan moves toward a concept of Limits of Acceptable Change (LACs) to determine use and resource impact based on desired visitor experience and habitat quality. In conjunction with estimated use numbers, specified LACs would trigger management actions when undesirable conditions begin to appear that could change the character of the park.

Figure 2: Management Sites



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The fact that this Park is in the middle of a metropolitan area means constant demands and disturbances. A number of compromises have already been made since the Park was first conceptualized, including the bisection of the Park with Mineral Avenue, a number of utility easements crossing the park, and the growth of the Park's use and popularity. The Mary Carter Trail has developed into a regional commuter connection, and as a consequence it operates on a schedule outside the park hours. Snow plowing was extended south of Mineral on this trail, so trail use that once dropped in the winter now remains high. Each of these change the number of people and the types of uses which ultimately impact habitat, wildlife populations, and visitor experience.

While certain aspects of the Master Plan require updating, the goals remain unchanged (Appendix 2, South Platte Park Goals and Objectives). This plan also serves to capture and leave clues of the numerous agreements that impact managing the Park. The Management Plan and all of its periodic updates have been prepared by the District, reviewed by City of Littleton staff, and approved both by both the SSPRD Board of Directors and the Littleton City Council in a public forum. The IGA between the agencies states they will revisit the plan "from time to time" and staff generally prepare revisions approximately every five to eight years or as changes dictate.

To insure the goals and objectives of the 1983 Master Plan are attained, it is imperative the policies, procedures, and management techniques in the Management Plan are implemented to achieve a balance between visitor use and the preservation of the natural resources.

LAND USE CONCEPTS

The ecosystem in South Platte Park is classified into four major ecological community types. These communities each have land use guidelines and management practices that maximize the protection and conservation of habitat. These practices include the restoration of native plants, control of invasive weeds, management of water quality, erosion control, fish stocking, wildlife monitoring, and wildlife population control. The South Platte Reservoir is uniquely managed for municipal water supply with an intergovernmental agreement with Centennial Water and Sanitation District (CWSD); and it also serves as an important habitat for waterfowl and shorebirds.

PROPERTIES MANAGED

Three different variables affect what happens in management areas of the Park: if a parcel is within the formal boundaries of South Platte Park (Figure 2, Management sites), who owns the property (Figure 3, Ownership), and the city, county, or federal rules in effect (Figure 4, Jurisdictions).

Properties are designated by the Littleton City Council as being officially within the boundaries of South Platte Park, which then fall under all aspects of this management plan. Additional areas such as essential buffer properties, conservation easements, or adjacent properties are considered Management Sites that are inspected and maintained by South Platte Park staff, but may have different rules and restrictions, and projects are funded separately from the Park.

In general, any construction actions within the Park – including facility construction or cut and fill operations require approval from the US Army Corps of Engineers (USACE) to ensure it does not impede flood conveyance. Additionally, approvals are needed from the Colorado Water Conservation Board, which has ultimate authority for recreational use of the river corridor from the USACE, the City and County Jurisdictions the project falls in, and the property owners which vary from governmental to private entities. Appendix 4, List of Agreements, may provide further insight into the status of particular parcels. Final approvals of any actions may require public process and joint approval of both the Littleton City Council and the South Suburban Board of Directors.

Commented [SAL2]: This new section adds significant detail to description of the properties managed, easements, and Park borders, plus management sites and jurisdictional zones.

Figure 3: Ownership

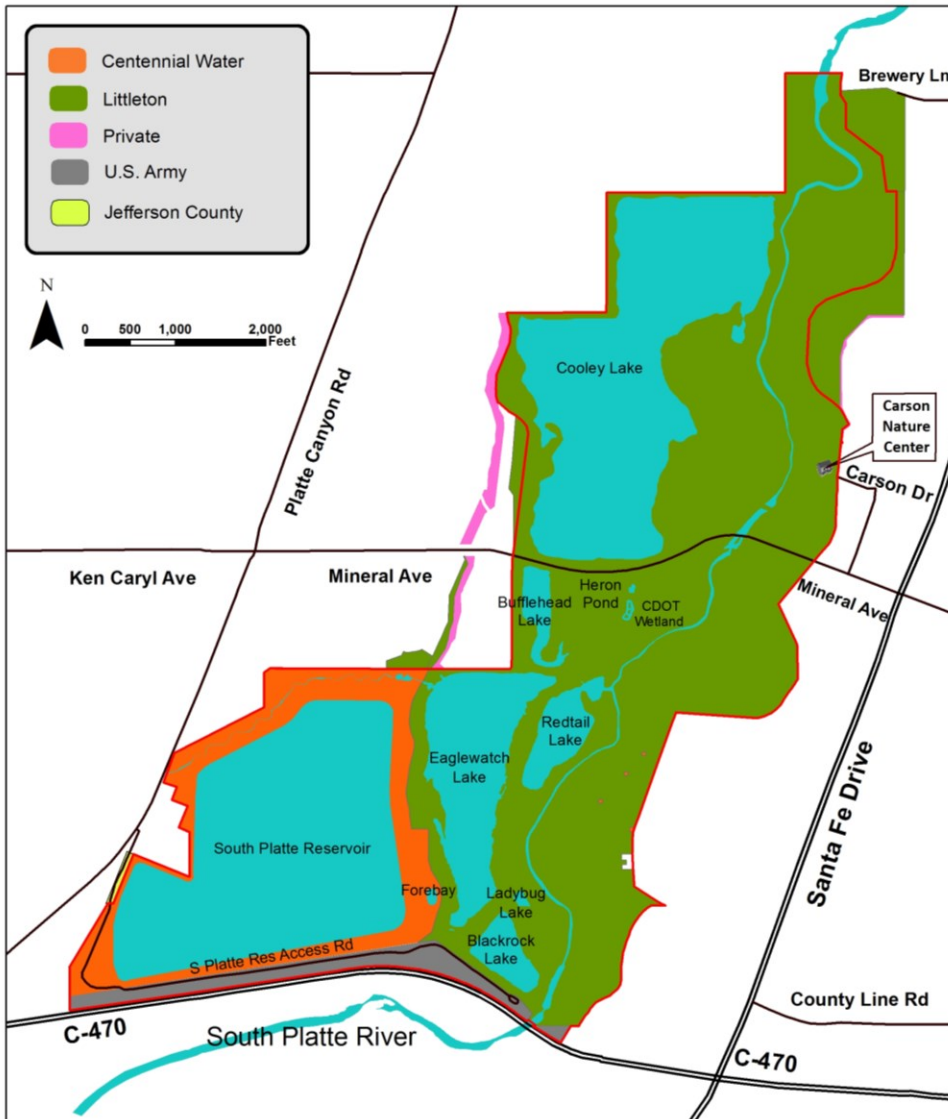
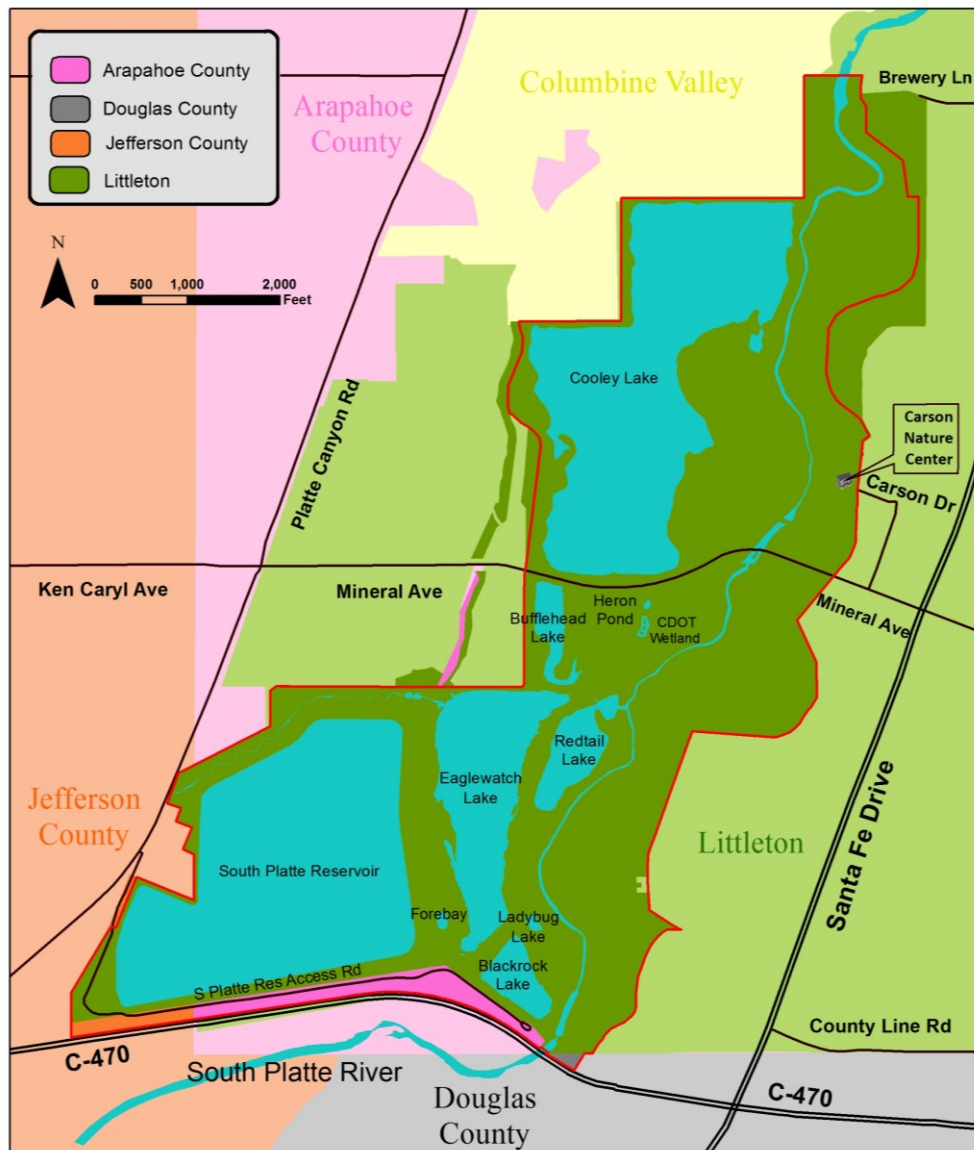


Figure 4: Jurisdiction



A formal conservation easement is in place for the Newton Trust Buffer, held by Colorado Open Lands, and for the Ensor Buffer parcel, held by South Metro Land Conservancy. These are inspected annually. In addition, several conservation easements protect the Nevada Ditch that are currently held by the City of Littleton. The area is inspected each year for management needs.

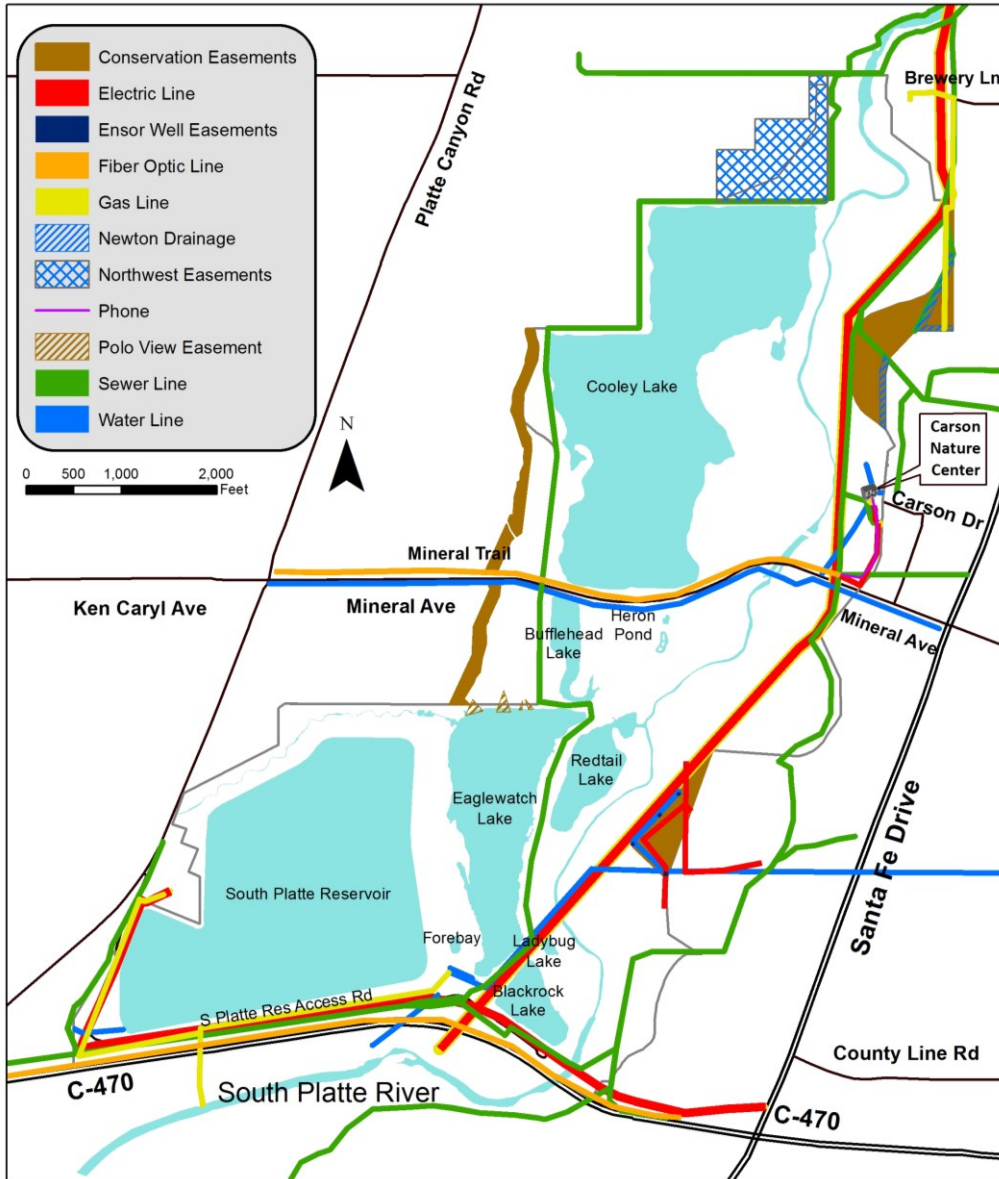
At the southwest entrance to the Park, the chain-link gate and park sign are near Platte Canyon Rd, but the first hundred yards beyond the gate are still Jefferson County Right of Way and not formally in Littleton or the Park. The road and parking lots lie on federal land leased from the Army Corps of Engineers. Another area worth noting is the border with the Aspen Grove apartments. The property border officially lies in the center of the swale, but by agreement the fence was built at the top of their side of the swale as an access barrier. South Platte Park staff maintain the property on the Park side of the fence as contiguous habitat, even though that strip is privately owned.

LAND MANAGEMENT PROCEDURES

South Platte Park is owned by the City of Littleton and managed by SSPRD. Both agencies place high priority on managing according to sound ecological principles. The day-to-day operations are referenced in operating procedure manuals maintained by staff supervisors at the Park. Outside entities that need to work within the Park must obtain temporary access permits that hold them responsible to maintain the standards set for the property.

The Temporary Access Permit fee schedule is established by SSPRD, who also manages the application process and monitoring. South Platte Park is crossed by over a dozen utility easements (Figure 5, Easements). Some of the major easements include sewer lines for Littleton, Roxborough, Ken Caryl, and Southwest Metro Wastewater Districts, Xcel Energy power lines and natural gas lines, City of Littleton and Denver Water water lines, fiber optic lines, the C470 right of way, and others. Entities that hold a permanent easement must be provided access to their utilities, however, they are required to make contact with Park staff prior to work, acquire permits when appropriate, and if doing any work that disrupts the surface conditions in their easement, they must meet the Park's standards for restoration or mitigation.

Figure 5: Easements



Park staff inspect the boundaries of the Park regularly for dumping and encroachment. New homeowners will sometimes dump yard waste over their fences into the Park, or attempt to add new gates or private landscaping that are not allowed. These individuals are contacted by Park Rangers in accordance with the encroachment and dumping policies of SSPRD. In the Wolhurst Community on the southeast boundary of the Park, the structures and ornamental plantings of twelve mobile homes are documented as allowed encroachments. Agreements between the City of Littleton and homeowners were made for non-replacement of these structures when they fail or are removed. Native trees and plantings on the encroachment are under ownership of the Park, but maintenance of the property as private backyards is currently allowed due to historic conditions. It is important that new staff, City and District Directors, and the Wolhurst Management remain aware of this border situation.

ECOLOGICAL COMMUNITIES

Four major ecological communities exist within South Platte Park: (Figure 6, Ecological Communities). Aquatic habitat and Upland Grasslands form the majority of the Park (Table 1).

Upland Woodland - Upland woodlands in South Platte Park primarily consist of cottonwoods in scattered groves within the riparian-prairie transitional zone and floodplains. Most woodlands now show significant stress and decline from changes in groundwater, reduced river flows, and a lack of regeneration tied to natural flood cycles.

Upland Grassland – These consist of meadows or fields dominated by grasses and forbs. A forb is any soft-stemmed, broad-leaved, flowering plant. Some of these areas are infested with non-native species for which control is mandated by the State of Colorado. Weed control and re-vegetation prescriptions are implemented to favor native species.

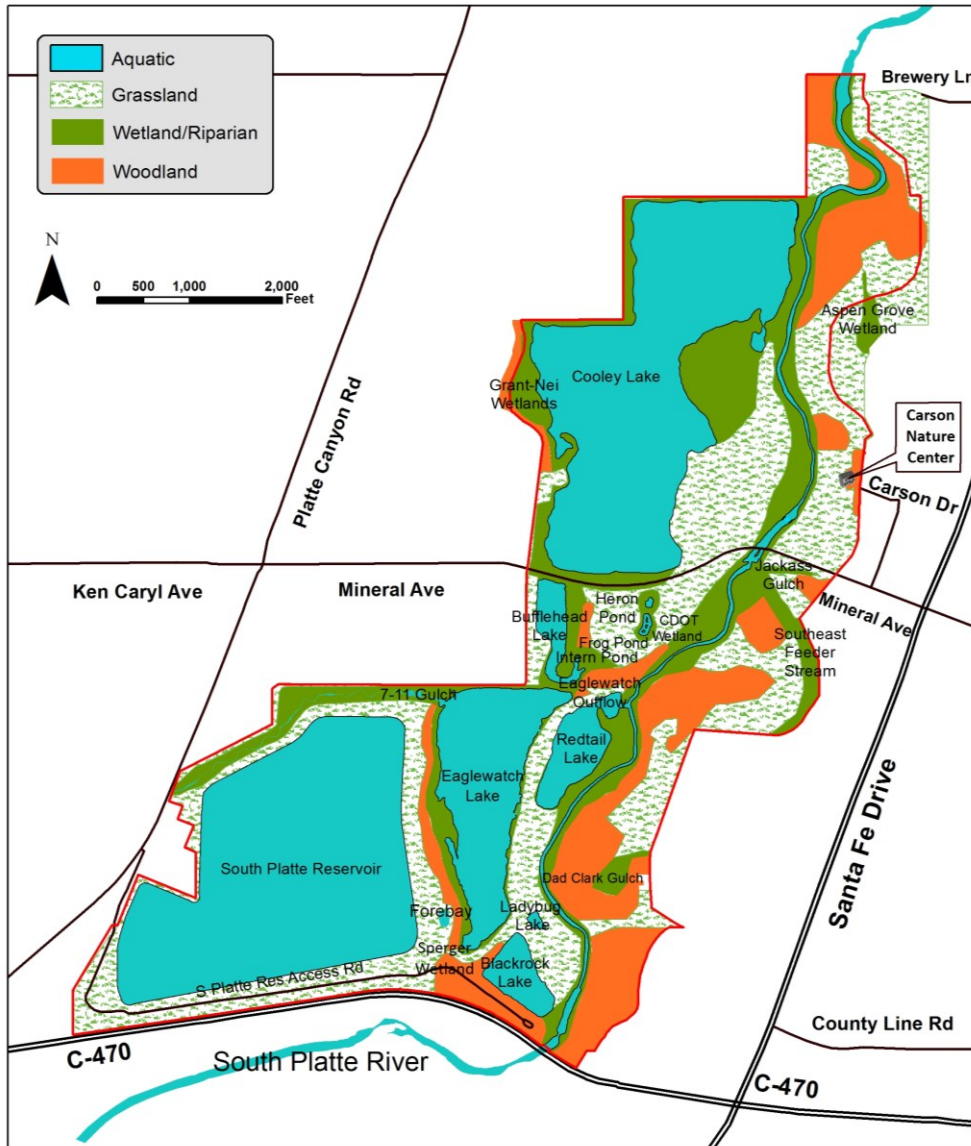
Aquatic – Warm water ponds and lakes, cold water lakes, the river, and tributary streams make up the aquatic community. More than one-third of the area of South Platte Park is surface water, including 2.5 miles of the South Platte River.

Wetland and Riparian – Wetlands, as defined by the U.S. Fish and Wildlife Service, is where the water table is at or near the surface of the land or where the land is covered by water up to six feet deep some time during the growing season each year, while having some wetland type soils and specific wetland plants. Riparian areas are transitional areas between upland and wetland or aquatic environments, also with unique plant communities.

Table 1. Ecological Communities in South Platte Park

Community	<u>Acreage</u>	<u>Percent of Park Area</u>
Upland Woodland	124	14
Upland Grassland (includes 10 acres of Mineral ROW)	216	24
Aquatic	375	43
Wetland and Riparian	165	19
Total	880	100

Figure 6: Ecological Communities



PROTECTION OF CONTIGUOUS HABITAT

With a high-volume trail bisecting the Park, and the physical boundaries of C470, Mineral Avenue, and surrounding developments, the Park has become a nearly closed-off natural system from what was initially envisioned as a rural open space park. It is imperative to assertively protect the resources in the Park from further degradation as its ability to rebound is limited. This includes the vegetation, wildlife, geological, and hydrological components, as well as the ecological processes necessary to maintain healthy, sustainable, functioning ecosystems. For example, the Mineral Avenue extension created an impact on the wildlife in the Park since opening May 1988. The road runs east-west, disrupting the north-south migration patterns of mammals, reptiles, and amphibians. To protect drivers on the road, a deer fence was completed along Mineral Avenue in 1990, creating a nearly complete barrier between the north and south sides of the Park. The trails under Mineral Avenue have the potential to serve as a wildlife corridor when the Park is closed, and this function would be disrupted by increased night visitation.

MANAGEMENT GUIDELINES

To continue good conservation practices, South Platte Park management will adhere to City of Littleton ordinances, and general rules and regulations adopted by SSPRD. Special areas of concern addressed SSPRD or by the 1983 Master Plan are as follows:

Pollution - Disposal of solid waste (trash/litter/residential yard clippings), sewage, and chemicals, as well as the environmental degradation of air, water, and soil are prohibited in the Park.

Wildlife Areas - A variety of Wildlife Areas will be designated, protected, and enhanced to insure a perpetuation of native plants and wildlife. Some areas may have restricted use and may be accessed only on staff-led interpretive hikes and organized resource management activities.

Chemicals - The Master Plan raised concern about the misuse of chemicals which could harm the environment if improperly used. Herbicide formulas and integrated pest management have evolved significantly. All herbicides, pesticides, fertilizers and other chemicals are stored and applied only according to State and EPA regulations by licensed applicators.

Removal of Trees - Removal of living trees, snags, or dead wood is not permitted except when trees might pose a safety hazard to property or Park visitors. Non-native, weedy tree species such as Russian olive, buckthorn, and tamarisk, as well as diseased trees may be removed.

Commented [SAL3]: Updated, master plan only discusses "roundup" and "atrazine" which are rarely used now.

Trees over 4-inches in diameter require a permit from the Littleton, and staff is required to call the City forester before undertaking such a removal. Contractors removing trees for any purpose in the Park must obtain their own permit and are typically require to plant two trees for each one removed.

Collecting Natural Materials - Collecting natural materials is prohibited except for educational purposes, recreational fishing, propagation programs, resource management, and scientific study by permit from the South Platte Park staff. City code addresses collecting of plants and animals, and in South Platte Park, this designation is expanded to include minerals and wood as well. Gold panning by individual Park users or groups not coordinated through the Nature Center is not permitted.

Commented [SAL4]: This is a new definition in 2016 in response to lack of clarity on the gold panning situation along the river.

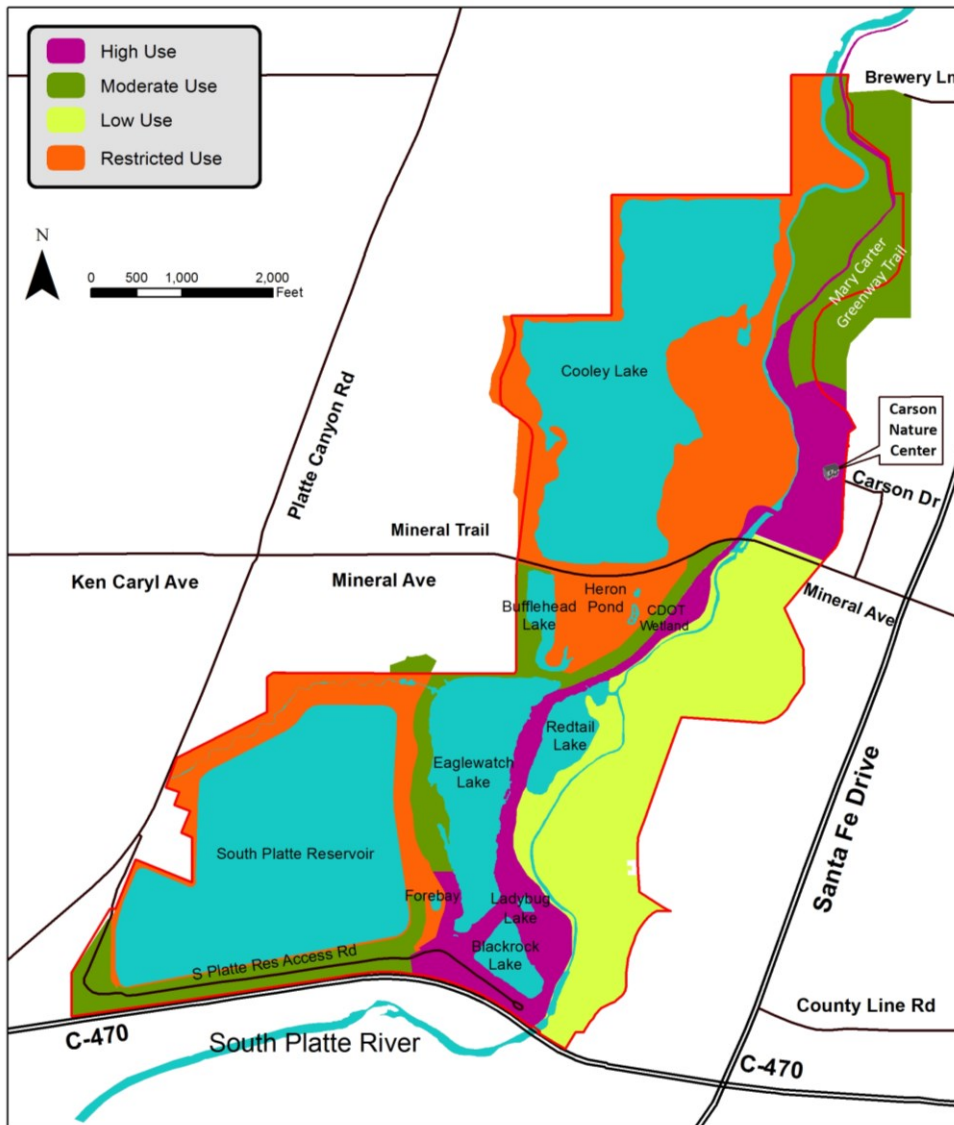
Hunting and Trapping - Hunting of birds and wildlife within the Park is prohibited. Hunting and trapping are permitted for management or educational purposes only under guidance and supervision of South Platte Park staff. Trapping of crayfish is not described as a sport fishing method in city code, and therefore is only permitted under special permit.

Commented [SAL5]: This is a new interpretation intended to limit commercial or large volume collection in the park.

CORE HABITAT AND USE ZONES

The 1983 Master Plan introduced the concept of a core habitat area, protected by areas of low or restricted use transitioning into areas of heavier recreational use. This concept minimizes the impact of heavy recreational use on the wildlife and habitats of an area. The initial core area was identified as the Lakes area south of Mineral Avenue. At the time, these were restored gravel pits and Cooley was an active mining operation. At hearings on the master plan, the public response was to request the 'natural areas' of the park be opened for fishing and trail use now, so a conscious decision was made to identify the future Cooley Lake area as the core habitat zone in exchange for creating moderate to heavy use areas around the lakes. Figure 7, Visitor Use Zones, shows the arrangement of low, moderate, and heavy use areas that help inform management activities and trail types. Appendix 5, Cooley Lake Policy, gives more detail on the value and reasoning behind the Cooley Lake core habitat area concept.

Figure 7: Visitor Use Zones



WILDLIFE AREAS

Specific areas in the Park are designated as Wildlife Areas (Figure 8). These areas contain important and highly productive wildlife habitat. Some are a direct fit with the land use zones and others are subsections of those zones. Wildlife Areas are defined as those areas documented, through studies and observations, to have primary importance in providing habitat (food, water, shelter, and space) for a diversity of plants and animals. They are important for resting, reproduction, forage, and refuge from human activity, especially for species sensitive to disturbance. Some Wildlife Areas do not allow dogs whether they are on or off leash. The adjacent Chatfield State Park and nearby Wynetka Ponds Park offer off-leash dog areas. Additional acreage may be added or deleted to these areas upon recommendation of CPW, SSPRD, and approval by the City of Littleton. Staff shall, from time to time review Wildlife Area boundaries; re-define or designate new areas; order seasonal closures; and grant easements, license agreements, permit or lease with appropriate mitigation measures and approval from SSPRD. Recreational activities in these areas are limited to passive activities such as wildlife watching and hiking and to official Park programs. Interpretive and access trails may enter these areas but are subject to closure by the South Platte Park staff if deemed necessary to protect wildlife.

The following areas are presently designated as Wildlife Areas:

1. **East Trail Wildlife Area** – This area of the Park comprises an area south of Mineral and east of the river; the area west of Wolhurst Lake, and north of C-470. It is primarily riparian habitat with a remnant cottonwood forest testifying to the South Platte River's historic meandering. It provides nesting habitat for owls, ducks, rails, and a variety of songbirds. It is a prime migration stopover and nesting area for neotropical songbirds such as warblers, thrushes, and flycatchers. It is one of the Park's core areas of activity for deer and coyote. Additionally, the area is potential habitat for the federally-listed Preble's meadow jumping mouse. Studies related to the Chatfield Reallocation project deemed this area not to be Preble's mouse habitat, however, the species was positively identified during studies in the 1990's so further investigation is necessary in this area. The area can be accessed by a spur trail that runs the length of the area and dead-ends at the C470 overpass. Residents of the Wolhurst trailer community use two access points and two additional access points are anticipated for the future Santa Fe Park development (Ensor property) for pedestrians only. This wildlife area faces significant threat of overuse based on the current zoning for Santa Fe Park. Access point and trail design must be carefully considered to prevent degradation of the area.
2. **Cooley Lake Wildlife Area** – This is the area north of Mineral Avenue and west of the Platte River. Cooley Lake offers valuable wildlife habitat. At least 16 animal species have been

Commented [SAL6]: This section adds some background on the decision and process for Cooley area management, and recommends continuing current policies. It condenses several separate appendix documents and previously considered management alternatives into the existing text.

recorded in the Cooley Lake area and seen nowhere else in South Platte Park, including the least tern, which is on the federal Endangered Species List. Additionally, another 23 species are seen only rarely in other parts of the Park, but can be found more regularly in the Cooley Lake Area. Deer raise fawns in the Cooley delta area, and the grasslands host larger groups of deer during the autumn rut season. Cooley consistently serves as a home for beaver. The expanse of undisturbed cattails on the delta area serve as a significant shelter area for migrant birds. The Cooley grassland areas have native wildflowers re-established better than most other areas in South Platte Park, and the noxious weed infestations are largely under control. The lake shores, free from social trails and fishing impacts, provide nesting habitat for ducks, rails, shorebirds, and a variety of songbirds. Wetlands along the lake contain uncommon species that rank high in conservation value. The lake surface is a prime migration stopover for waterfowl, grebes, loons, and shorebirds, and it is an important winter, loafing, and forage habitat for bald eagles and a wide variety of waterfowl. The public can access this special area by attending free, monthly, staff-led, interpretive hikes, educational programs, or organized resource management activities. More detail is available in Appendix 5, Cooley Area Policy.

3. **Nevada Ditch Wildlife Area** – The Nevada Ditch runs west of the lakes in South Platte Park and east of South Platte Reservoir from C-470 to the north end of Cooley Lake. The Ditch also serves as a natural buffer for the Park to housing further west. The Ditch is inhabited by the a diversity of nesting songbirds equal to any place in the Park. It serves both as prime habitat for migratory songbirds, as well as a movement corridor for terrestrial wildlife. Additionally, because the Ditch was constructed in 1862, it has local historical significance. Parts of the Ditch are outside of Park boundaries and Littleton city limits. A conservation agreement is in place for the Ditch and a majority of the Ditch's edge falls under the management of SPP staff. The future of this habitat is vulnerable to decommissioning of the Ditch by Denver Water, which would significantly alter water available to the trees and shrubs here, potentially leading to a significant loss of habitat quality.

Commented [SAL7]: Adds concern to make efforts to maintain flow in Nevada Ditch to maintain historic vegetation.

4. **Bufflehead Lake Wildlife Area** – The area is south of Mineral, west of the MCGT, and east of Bufflehead Lake. It includes Heron Pond, CDOT wetland mitigation area (incurred in 2005), a maturing cottonwood grove, and a wetland-meadow successional area which includes a cattail wetland. This area has restricted access to the general public, except on staff-led walks and programs and organized resource management activities. It offers excellent breeding habitat for a variety of wetland birds, woodland birds, and amphibians.

5. **Northern Wildlife Area** – This is the forested areas on both sides of the river along the northern Park boundary, west of the MCGT, and east of the Tuck property. The area consists of a declining mature cottonwood gallery forest east of the river, a late seral stage cottonwood forest west of the river, and an old river bed. This is the core area of activity for white-tailed deer in the northern sector of the Park and is also a fawning area for them. This area provides nesting habitat for owls and a variety of songbirds. It is a prime area for migratory songbirds such as, warblers, thrushes, and flycatchers. Wintering Bald Eagles regularly use this area to perch and fish. This area can be publicly accessed via a loop trail through the area.

FUTURE BUFFER RECOMMENDATIONS

A 1996 Task Force by the City of Littleton created a plan to evaluate surrounding properties and set priorities for additional parcels that could add value to South Platte Park (Appendix 6: Littleton Open Space Task Force Recommendations). Of the five parcels mentioned in this plan, the Tuck parcel on the north side of Cooley has not yet been addressed. Options include purchase, conservation easements, or working with future development designs to enhance the border and open space continuity. On the Ensor property from this recommendation document, 7.9 acres of the 19 acres addressed have been purchased, and work with the development designs is encouraged to continue to reduce impacts on the remaining critical acres. All other parcels in this plan have been successfully addressed. Additionally, Park and District staff should strive to remain involved in discussions regarding the continued operation of the Nevada Ditch as a water transportation utility or negotiate for mitigation of the Nevada Ditch corridor if the historic water source is removed, because of its value as wildlife habitat.

Commented [SAL8]: New section updates 20 year old buffer recommendations and identifies a few areas to direct attention to.

ANTICIPATED DEVELOPMENTS

Santa Fe Park is a zoned for a Planned Development for the Ensor turf farm area. It is likely this area will develop in the next 10 years, and this plan recommends no more than two controlled access points from that community onto the East Trail, maintaining the East trail as a 40" natural surface interpretive trail, maintaining the restriction on bicycles, and becoming more assertive with leash-enforcement on pet owners along this trail. Every effort should be made to avoid creating a loop trail that would attract additional trail users into the East Trail Wildlife Area. When the Ensor property was annexed into the City of Littleton, the agreement established an access easement for Park Staff along the current Dad Clark service road for now, and the route to remain Park access as part of the next phase of development. Regional planning agencies are recommending a trail under Santa Fe connecting neighborhoods from the east to the river. Care must be taken to ensure this does not deliver a high number of regional users into a low-use zone of the park with no outlet, and designs should account for

Commented [SAL9]: New section recommends direction for some of the surrounding property development designs.

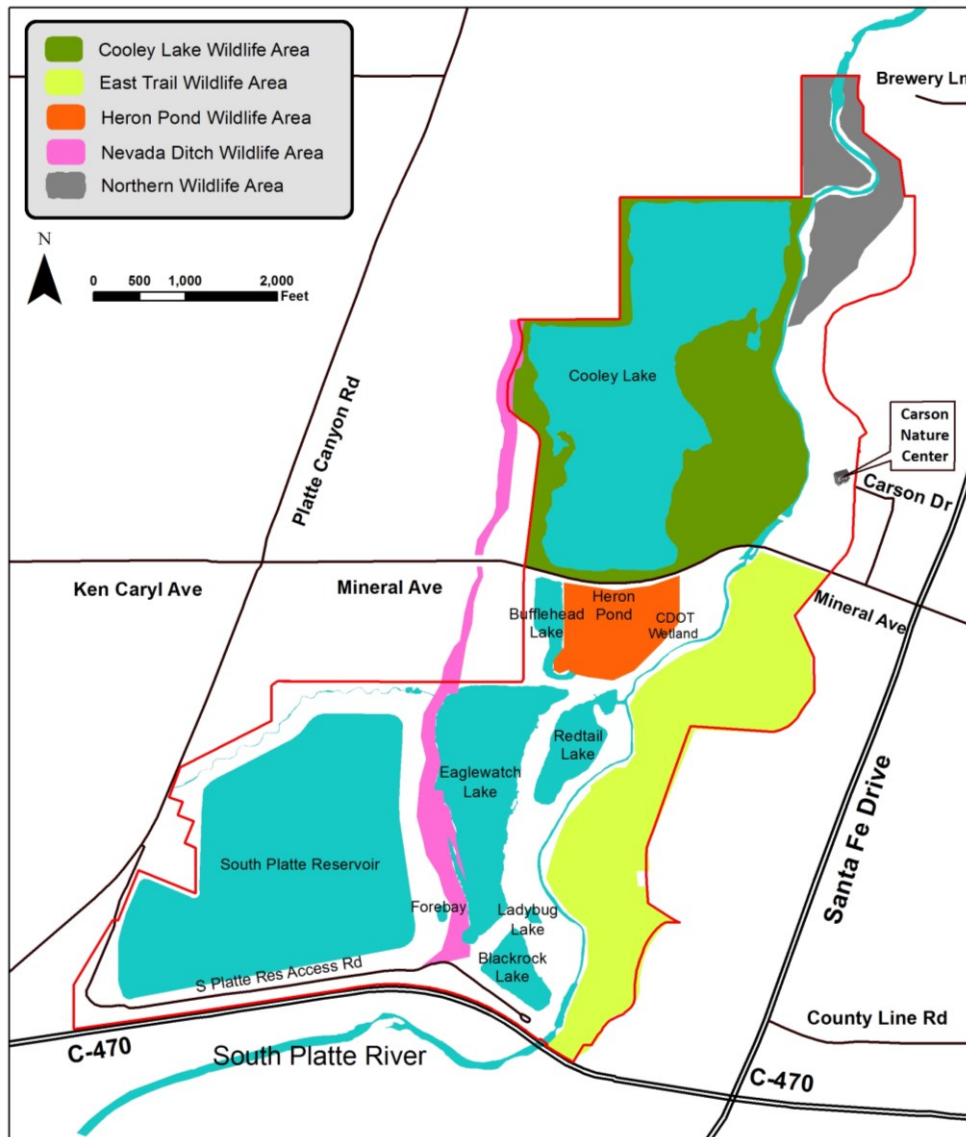
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ways to move those users easily to high-use zone while maintaining the habitat quality of the East Trail area.

A nimble user can scramble under C470 to connect to the trails in Chatfield from the East Trail, and access a nearby bridge across the river. C470 will be widened in 2017-2018 and the new bridge design will accommodate wildlife passage in this area, with no plan to improve this trail for formal access. Discussion with the managers of Chatfield indicated they were not interested in a formal trail connection here as they do not feel the need to encourage more free users into their Park. Pursing this connection could also significantly change the impacts and use of the East Trail and its surrounding wildlife habitat, the types of use and use violations on this trail.

Another border likely to develop soon is the north and west side of Cooley Lake. The Tuck/Wild Plum Farm property is in Columbine Valley. City and Park officials have been in communication and at this point, no formal connection is recommended from that property into the Park. Potential developers are encouraged add a drainage or landscape swale between their property and the Cooley Lake restricted use area, follow recommendations on fencing and signage, and install visual barriers of vegetation to help maintain the wild feel of Cooley lake.

Figure 8: Designated Wildlife Areas



RESOURCE MANAGEMENT

VEGETATION MANAGEMENT

Reclamation and re-vegetation of South Platte Park require time due to the xeric nature of the Park and the sandy and clay soils. This may at times take precedence over visitor use. Areas of the Park are occasionally closed to the public to allow vegetation adequate time to re-establish. Limits of Acceptable Change provide guidelines to continue monitoring and to establish decision points to close heavily used areas help reduce the cost of total re-vegetation. Procedures for closing areas include signing, fencing, and barrier plantings.

Trees, shrubs, forbs, and grasses appropriate for planting in the Park are identified in Appendix 7, Recommended Re-vegetation Plant List, and Appendix 8, Recommended Grass Seeding Mixes and Rates.

Upland Woodland Management

The climax cottonwood forests of South Platte Park are a declining system. This is a major departure from the 1983 Master Plan in which they were described as “self-maintaining, self-reproducing, and relatively permanent.” Cottonwood forests typically require a flood cycle to establish and thrive. That flood cycle has been eliminated except for within the active river channel itself, so few areas in South Platte Park have naturally establishing groves of any significant size. The mature forests are dying out rapidly as the 50- to 100-year age class is succumbing to the stress of altered groundwater flows, elimination of natural river migration, severe drought years in the early 2000’s, and hard freezes and prolonged submersion in 2014 – 2015. Many healthy middle-aged trees grow in the moisture zone around each lake and in a few low swale areas. Further research and ideas for maintaining woodlands or developing a vision for the future without the woodlands of today are recommended. The Chatfield Reallocation project, described later, may offer opportunities to address this.

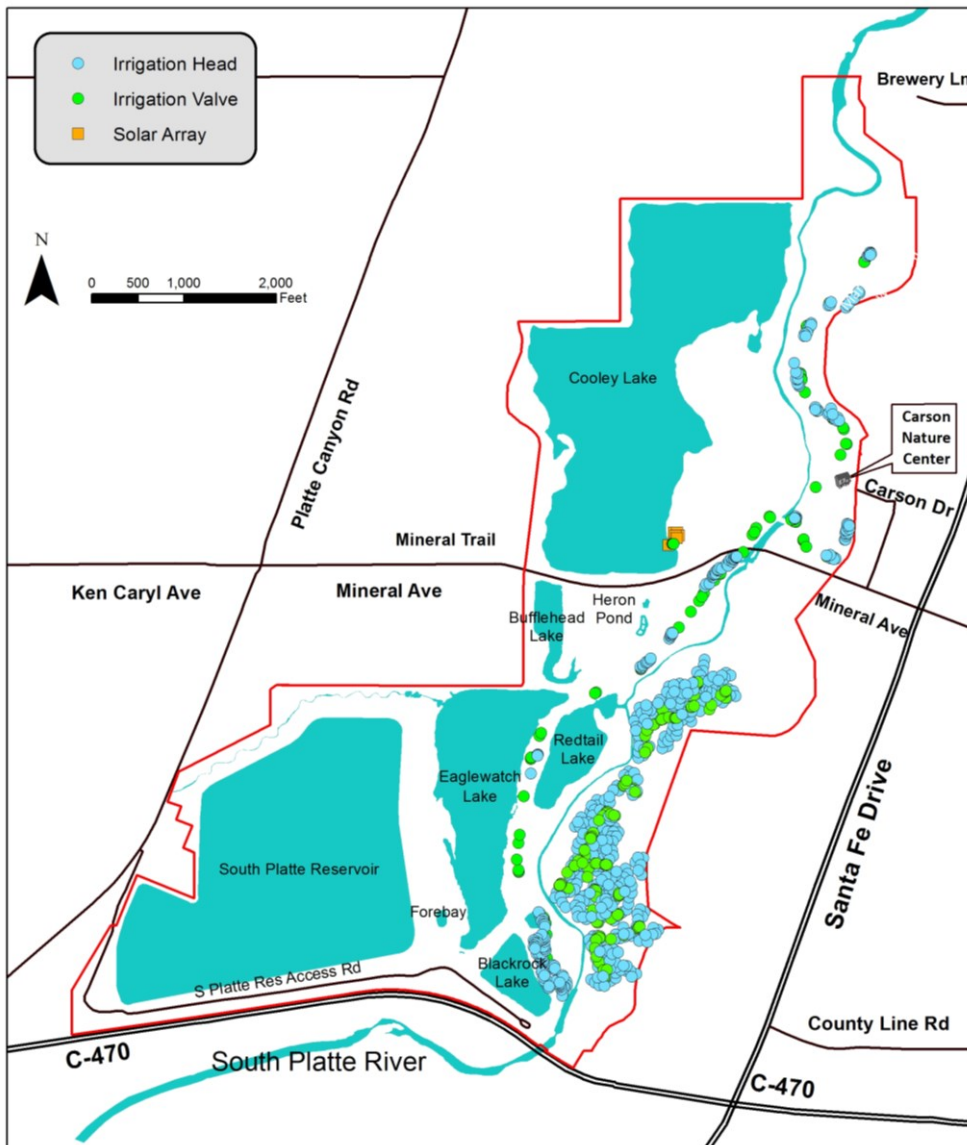
The existing woodlands get inspected after any major rain, wind, or snow event for tree failures or hazardous situations along trails, and periodic inspections and branch removals may be required between storm events. In general, standing dead trees will be retained as habitat unless they pose a hazard to users, may fall across trails, or threaten facilities. As the amount of deadfall increases in the Park, some habitat brush piles might be considered, but plans for woody debris reduction might become necessary.

Commented [SAL10]: Expanded to address the decline and future loss of the riparian forests due to altered ecological processes

Replacement trees can be planted intentionally, though with careful thought for placement for long-term survival. It is recommended that tree and shrub plantings take place in the early spring (March/April) to take advantage of spring rains. Trees need to be watered thoroughly once or twice a week for at least the first two growing seasons or until they are established. During droughts, winter watering is required. Manual watering is currently accomplished by transporting water in tanks pumped from Cooley and debited from surplus shares available for the 10,000 Trees irrigation system (as described in the water resources section). However, once native plant materials are established, manual watering should be eliminated. Plants requiring more than 2 – 3 years of manual watering, other than those on established irrigation systems, will be carefully weighed for the benefit vs cost of labor to keep them alive. Several plantings have been abandoned rather than manually maintained after the first few years.

Several areas of vegetation are maintained by long-term irrigation systems, as shown in Figure 9, Irrigation. In April of 1991, the 10,000 Trees planting project was completed through South Platte Park along the MCGT. The project trees are watered by a solar-powered irrigation system that draws water from Cooley Lake. These trees and the irrigation system are maintained by the South Suburban Forestry Department. Water for this system is addressed in the water resources section. Another irrigation system covers a large section of the East Trail. See the Ensor Wellfield Section under Water Resources for further details.

Figure 9: Irrigation



Federal standards for powerline easements have given Xcel Energy and their contractors the directive to clear all woody vegetation from within the powerline easement or that could fall into the easement. This has led to a large cleared swath through the center of the Park. Low-growing tree and shrub species are permitted to grow in this area and it would help to create contiguous habitat by encouraging this growth. Root treatment to prevent regrowth of the taller trees is required of these subcontractors doing removals, but has not been consistently implemented, resulting in more frequent disturbances than necessary. Staff must carefully supervise their work for this reason and to minimize overly-aggressive cutting.

General guidelines for tree and shrub planting within each section are prioritized and established as follows:

Commented [SAL11]: Added some operational experience in restoration plantings to avoid repeating past failures in tree establishment.

Physical Conditions

1. Proper moisture regime: Plant trees in areas that are naturally irrigated such as natural depressions or drainage ways. Willows and cottonwoods will be planted into areas that are periodically flooded, with care to provide sufficient diversity of shrub vs grass areas to accommodate ground-nesting waterfowl,
2. Drought tolerant species and alternative water sources are considered wherever possible,
3. Proper soils: See 1983 Master Plan pages 29-32 (copies are stored in the Nature Center library and the Park Manager's office).

Planting Patterns These vary depending on the goal described below, which are identified before deciding to implement any new planting projects.

4. For general revegetation, plant in random clumps of 6 to 12 trees to establish a grove effect, taking into account mature canopy diameters,
5. Plant trees and shrubs together to re-create forest layers and vertical diversity,
6. Create habitat patches by looking to connect separated groves of trees or establish contiguous wildlife corridors,
7. Barrier plantings: plant in double rows, per the 1983 Master Plan, to reduce sound and hide unwanted views of roads, powerlines, or buildings. These barriers can also provide habitat corridors for wildlife movement, and create landscape buffers along property lines. Such living fences also mix varying height shrubs with trees and can serve as a visual barrier for prairie dog control.

*Note: On the north side of Eaglewatch Lake, the living fence created issues with neighbors. Through negotiations, homes along that border were granted 'view easements' where gaps would be maintained. This border continues to have vegetation management issues and gates directly into the

Park, and because of this no new view easements or private access points will be permitted into South Platte Park.

8. Maintain trees on edges, not within the grasslands to ensure unbroken grassland habitats remain.

Aesthetics

9. Maintain Scenic Vistas: Plant trees where mountain vistas are already blocked.
10. Beautify the MCGT and other trails within the Park.
11. Screen man-made structures.

Locations

12. Safety of Trail Users: Do not plant on the inside of curves, in high use areas, within 10 feet of transport trails, or within five feet of interpretive and access trails. Keep mowing clearance in mind – both height and distance from trail
13. Maintain accessibility for watering.
14. Control erosion.

Upland Grassland Management

The largest grass fields are selectively mowed once the dominant grasses establish themselves. The tall and mid-range grasses form excellent cover for small animals and are a good source of food. Mowing is used to help the grasses establish and to control noxious weeds, and on occasion to mimic grazing and promote diversity. No more than a twenty inch border is mowed along each side of trails to better identify and maintain them. A lack of mowing along trails in some areas may be a tool to help combat trail-widening from over use by discouraging side-by-side travel.

Fire is used as a management tool to maintain grasslands in many natural areas, and has been used previously in South Platte Park.. A scheduled burning of fields on a rotation basis would help re-establish grasses and increase soil quality. Burns must be scheduled and done by Littleton Fire/Rescue, Open Land Department. As of 2015, concerns about air quality, traffic safety, cost, and training experience made prescribed burns unlikely. Littleton was seeking an expert to write burn plans, and prefers to help with large-acreage mountain fires for training experience. Appendix 8 provides Recommended Grass Mixes and Seeding Rates for South Platte Park.

A complete floral inventory of the Park has been in development. Information gathered includes species present, when they flower, where located, percentage of total population and for many a pressed mount of each species to use to educate staff and the public. Park staff maintain inventory records. Attempts will be made to propagate and enhance plant species noticeably absent to

vegetative communities common to nearby native landscapes, and for species of state concern for this region.

Mowing may be conducted along some borders of the Park where native vegetation encroaches on fence lines and private property, as well as along the roadside Right Of Ways. One mower-deck width of three to five feet is the maximum clearance to mow to minimize impacts and encourage establishment of native grasses and resistance to weeds. .

Currently, noxious weeds are controlled by mechanical, biological, and chemical means. Methods described in the 1983 Master Plan have changed with the introduction of new chemicals and research on Colorado's weeds. The staff places highest management priority on List A state-classified weeds first, List B species next, List C species that create large monocultures or seem to be rapidly spreading, Watch List species, and finally any non-native species that are spreading in such density as to crowd out native plants. Weeds managed in the Park currently include A list species hairy willow herb, myrtle spurge, and purple loosestrife; B List species of various thistles, toadflax, teasel, Dame's rocket, knapweeds, hoary cress, hounds tongue, quack grass, leafy spurge, Russian-olive, tamarisk, and sulphur cinquefoil; List C species include common burdock, common mullein, St. John's wort, cheat grass, bindweed, perennial sow thistle, poison hemlock, puncture vine, and red stem filaree; Watch List species include common reed and pampas grass; non-listed species include common buckthorn, Tartarian honeysuckle, Japanese wayfaring tree, kochia, white-top, small-flowered alyssum, ornamental junipers, and some poison ivy near trails. The treatment methods, seasons, chemicals, and processes used are recorded in the operating manuals maintained by supervisors as these change regularly. Continued use of existing control methods, use of fire, and over-seeding or planting native competition for weeds are recommended parts of the integrated pest management plan.

Park staff are responsible for the grassland management between Mineral Avenue and the deer fencing, but the median grasses, trees, and irrigation system is managed by City of Littleton crews or contractors.

WATER RESOURCES MANAGEMENT

South Platte Park has a large amount of aquatic habitat including seven lakes (previously gravel mine pits), several small streams, and the South Platte River. Adjacent to these habitats are abundant wetlands and riparian habitat (Figure 10). The water quality of the river and lakes is generally good. The Park staff may, from time to time, work with other entities to monitor water quality. Major concerns include extremely low flows (with anticipated future reductions still possible), run-off from surrounding

Commented [SAL12]: Previously this was a 20-30 foot swath that has been deemed ineffective and counter productive in modern grassland management

Commented [SAL13]: This section now lists all the current species managed, and provides reference to operations manuals for the detail on how each is managed.

Commented [SAL14]: Greatly expands the water resources section to address water rights, channel improvement projects, and more.

roadways and existing and future developments, and river flow consisting of a high percentage (greater than 80% at times) of treated effluent many days of the. Increased urban run-off and effluent would likely have higher levels of nutrients and increased temperatures that could result in increased algae problems, which can result in offensive aesthetics, smells, or reduced fish survival.

The river though South Platte Park is designated by the Colorado Department of Public Health and Environment as Segment 14 of the Upper South Platte River from the outlet of Chatfield Reservoir to Burlington Ditch. Former references to Segment 6c from Chatfield to Bowles Ave are now out of date. This segment currently has the following water quality designations: Aquatic Life Warm 1 (capable of supporting warm-water and plains species; trout survival is possible, reproduction is unlikely); Recreation Class E, Primary (appropriate for recreation requiring full body contact such as kayaking and rafting, less than 126 fecal coliforms per 100 mL); Water Supply (suitable for domestic drinking water supply with treatment); and Agricultural (suitable for livestock drinking water). The temperature and chemical standards and associated species for these designations change periodically, and the State occasionally implements special exemptions for this reach of the river, so checking current standards is recommended for any associated management actions.

Commented [SAL15]: Adds the current designations in one location

Channel Management

The river must be able to deliver at least 5000 cubic feet per second (cfs) in a flood event, and it is the responsibility of the City of Littleton (thus Park staff), per the initial agreement with the USACE, to follow the Army Corps maintenance manual found in the Nature Center files. Daily inspections of the channel, removal of major debris, and elimination of obstructions is required. Urban Drainage partners on most of this work by sending crews through six times per year on 'debris cycles' and staff can usually contact them for downed trees or beaver structure removal. Trees and willows are not currently allowed to grow in the defined flood channel downstream from South Platte Park, however, opposition has never been voiced towards the status of natural riparian vegetation within the active river channel of South Platte Park during previous USACE inspections.

Commented [SAL16]: New section addresses channel maintenance

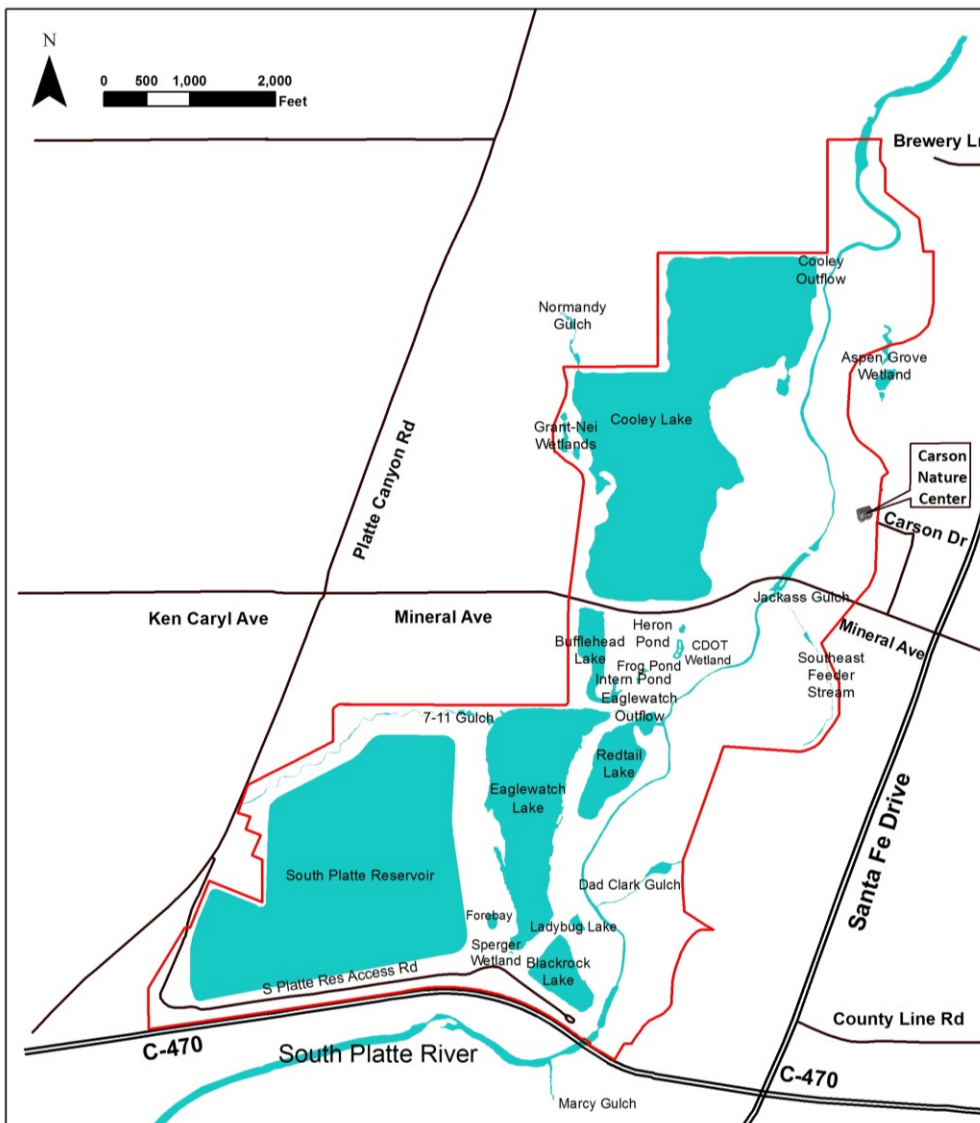
Cut bank Management

The cut banks along the river are an important ecosystem component, but can be difficult to manage in a bound urban river. These low erosion cliffs on the outside of river bends are used by northern rough-winged swallows, bank swallows, and kingfishers for nesting, and their nestlings are a seasonal component of the diet of bull snakes. The river enhancement project made some efforts to stabilize critical bank areas while maintaining some cut-banks for nesting. This effort should be monitored, and vegetation trimmed if it is restricting bird use. Artificial cliffs might be considered in some of the Park's remnant aggregate piles or in more stable river sections if nesting locations decrease. The stabilized

Commented [SAL17]: New section addresses cut bank value

cut banks will continue to migrate away from the river during high water events so long term management actions may be needed.

Figure 10: Waterways



Instream Flow Rights

The City of Littleton and SSPRD jointly hold instream flows rights in the South Platte River below Chatfield Dam to attempt to maintain minimum flow. The decree has been perfected, so rights are absolute and no longer conditional, with appropriation date of Aug 2, 1991 and an administration date of Dec 31, 1993. The decree stipulates Boat Chute 4 (Figure 11, near Mineral Ave.), and Boat Chute 9 (Brown Ditch, near Reynolds Landing), have rights for 100 cfs for boat chute operations from April 1 – Oct 31; and 70 cfs from April 1 – Oct 31 or 30 cfs from Nov 1 to March 31 for recreation in the form of fish habitat enhancement. These quantities are not cumulative, so the 100 cfs of boat chute operations incorporates the 70 cfs for fish habitat enhancement. Boat Chute 10 (C470) also has a designated right with the same date of appropriation for boat chute operation only, of 100 cfs from Apr 1 – Oct 31. These flow rates were based on *A Minimum Flow Study for the South Platte River Downstream from Chatfield Reservoir 1991* by Miller Ecological Consultants, that helped determine survival flows for aquatic life, and can be found the Nature Center files or in the Chatfield Reallocation Environmental Impact Statement. An additional study by Miller Ecological Consultants from 1998, *Habitat Control Structure Investigations, South Platte River in South Platte Park below C470* and hydrologic opinions by Fisher, Brown, Bartlett and Gunn might provide additional information on the fishery downstream from the dam.

A point of measurement was installed in 2003 at Boat Chute 10 to measure low flows of the river including releases from Chatfield, flow from Marcy Gulch, and any groundwater gains to that point.

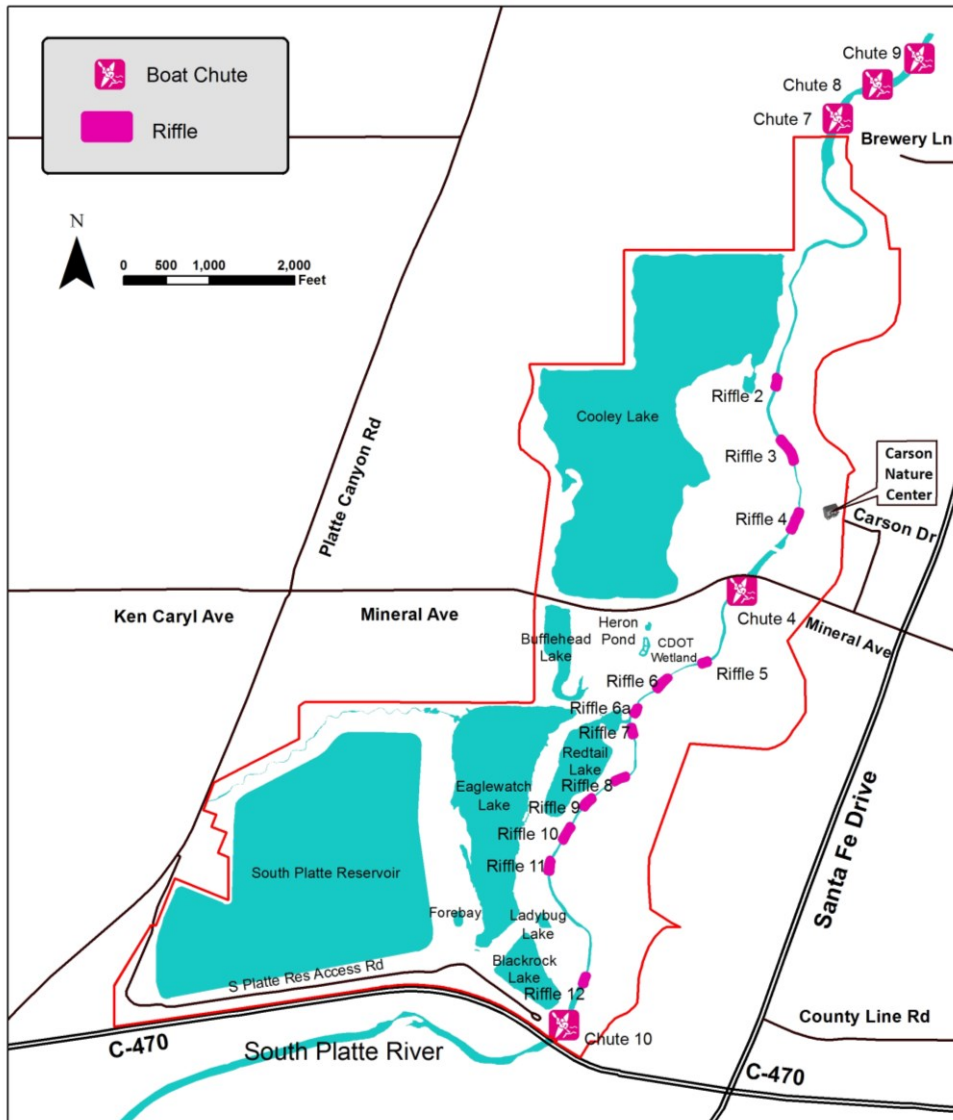
This gauge is maintained by Park Staff per the 2016 amendment to the management IGA between the City of Littleton and South Suburban. The gauge requires regular maintenance and periodic

calibration. The numbering of the boat chutes is relic convention. Chute 10 was designated after the downstream chutes were named, so they are not in a logical order and in 2015, five chutes were converted to riffle features. The date of appropriations are very junior, so calls from upstream users are rarely possible; however, these rights ensure that future appropriations or exchanges will not reduce the river flows further. Water commissioners have indicated they don't know how to implement the boat-chute operational rights due to the lack of constant boating use, and this concept could require further legal exploration. September 2016 is the first recorded exercise of the rights and calls should be placed at each turning of the dates above to active. The benefits of securing minimum flows include improved water quality, effluent dilution, better recreational opportunities, improved growth of trees, beautification of the river corridor, improved wildlife and fisheries habitat, and maintaining functional river processes. Periodic, moderate, in-bank flooding would be beneficial to the Park ecosystem.

Commented [SAL18]: Expanded section captures details of the rights.

Commented [SAL19]: This line will be changed if the IGA amendment is not adopted concurrently with this plan revision.

Figure 11: Boat Chutes and River Features



River Enhancements

The 1983 Master Plan makes reference to enhancement of the river fishery by creating fish habitat structures and adding boulders to the river bottom. The USACE, CPW, the Colorado Water Conservation Board, Urban Drainage & Flood Control District, and other authorities reviewed this plan and several versions of habitat improvements were created in 1990 – 91 with the USACE Feature Design Memorandum No. PC-45, *Fish and Wildlife Habitat Restoration Downstream Channel Improvements, South Platte River* (Federal document, copies stored in Nature Center Library and Park Manager's office).

In 2010, the Park initiated a study in river function that resulted in implementation of the River Enhancement Plan for a low-flow channel the length of the Park. The study found that the river has a fraction of its historic flow, while maintaining the historic geometry. The 120-foot-wide channel was formed by a river with an annual bankful depth of 4000 cfs and 40,000 cfs flood potential flows; but now it only has an annual bankful depth of 650 cfs due to water appropriations, and a maximum flow of 5000 cfs due to Chatfield Dam operations. The 3-phase river project constructed a narrower channel throughout the Park condensing flows under 650 cfs. This was accomplished by importing riprap, converting a number of existing drop structures to more natural riffle/pool features, and creating some bank stabilization structures. The 5000 cfs flood capacity of the channel was maintained, but in low flow conditions, water would be concentrated into a more-appropriate channel that is 25 to 40 feet wide. Willow plantings along with fish habitat and erosion control structures improve aesthetics, create wildlife habitat, and enhance fisheries. Historic high flows in 2015 damaged the restoration phase of this project, and in 2016 significant repairs were implemented to return the banks to the initially designed enhancements.

Ensor Wellfield

On the East Trail, the management parcels (Figure 2) show four square inholdings around well-heads owned and operated by Centennial Water and Sanitation. This Ensor Wellfield pumps groundwater and is tied to McClellan Reservoir. Operation of the wellfield began to negatively impact the surrounding forest, so an agreement was put into effect to create an irrigation system within the forest to keep the trees alive. The system was installed at Centennial's cost, and a \$250,000 endowment was given to the City of Littleton. Annually, South Suburban invoices against the interest in that account for maintenance and repairs of the system, currently around \$15,000 per year. The water for irrigation is provided directly from the wells by Centennial, up to 100 ac/ft. per year. Centennial has a permanent easement to access these wells for maintenance through Park property and the right to develop two additional wells.

Commented [SAL20]: New section addresses channel changes 2013 - 2016

Commented [SAL21]: New section records agreements surrounding these wellfields.

Evaporation Rights

The lakes south of Mineral Avenue were completed prior to 1983, so have no evaporation rights designated, nor required. Cooley Lake, completed in 1995, does have evaporation rights, with an absolute degree in the amount of 18.79 ac/ft. annually. This is to be provided, by agreement, from the City of Englewood using water held in McClellan Reservoir, up to a total of 35 ac/ft. per year. The agreement references a well-permit reduction of 280 gallons per minute that is included in the calculation. Since approximately 1991, Englewood has released approximately an additional 5 ac/ft to the river during the growing season for establishment of the 10,000 Trees via an irrigation system that pumps groundwater from Cooley Lake. Of this amount, around 1.25 ac/ft. annually is moved through the irrigation system, with another 0.2 ac/ft. pumped from Cooley to fill a water trailer used to establish restoration plantings. The 10,000 Trees irrigation system was envisioned to be a short-term aide to establish the trees, but many trees are still dependent on the system and begin to die if the zones are shut off. Some further legal investigation is necessary to clarify the duration and quantities related to these watering programs.

Commented [SAL22]: New section recording additional water rights

Cooley Outfall Agreement

The outfall of Cooley Lake to the river has a concrete pan, set at an elevation of 5340.8 ft. This is an adjudicated agreement with the Tuck family that owns The Wild Plum Farm in Columbine Valley, and is defined in paragraph 36 of the Cooley Lake Augmentation Plan, Case No. 93CW011 in District Water Court. A section of the Tuck property is identified as a floodplain flow easement and another as a ponding easement by the USACE. During high flow events, this pasture may be naturally inundated, however, staff must perform regular maintenance on the Cooley outfall to ensure no debris or beaver activity contribute to a further increase in lake elevation.

Commented [SAL23]: New section records the responsibility to maintain lake elevation

Training Dikes

At the north end of the Park, at the border with Reynolds Landing, are a set of training dikes that transition from Reach 1 of USACE flood project, which is the South Platte Park flood plain, into Reach 2 of the flood project which is a trapezoidal flood channel. The USACE maintenance agreement from the creation of the Park references a sediment trap in the river in this location requiring periodic dredging and the Master Plan recommends mineral rights be leased to an aggregate company. Further research with the USACE, Colorado Water Conservation Board, and Urban Drainage found no one familiar with this structure, no evidence of it being physically present, and doubt as to whether it was ever actually installed. In terms of modern river management, a mid-channel sediment trap is no longer a recommended practice, but until maintenance agreements are updated, further research may be required.

Commented [SAL24]: New section identifies an original design feature for the Park

Flood Plains

The 1983 Master Plan Appendix IV lists the Flood Plain Agreement with the Colorado Water Conservation Board and the City of Littleton. The staff generally inspects the river daily in order to assure compliance under Section 88 of the Water Resource Development Act of 1974, Public Law 93-251, which requires park management prevent encroachments in flood plain detention areas which would reduce their capability for flood transmission. A map of the floods plains within South Platte Park is shown in Figure 12. As part of the anticipated Santa Fe Park development zoned for what is currently the turf farm, the developer will likely be required by the City of Littleton to create a channel capable of delivering 1800 cfs through the Dad Clark gulch area, which would impact the existing Dad Clark wetland, trails, and river enhancement design low-flow channel in the river. Proper design is critical at the transition through South Platte Park to minimize these impacts.

Reservoir Releases

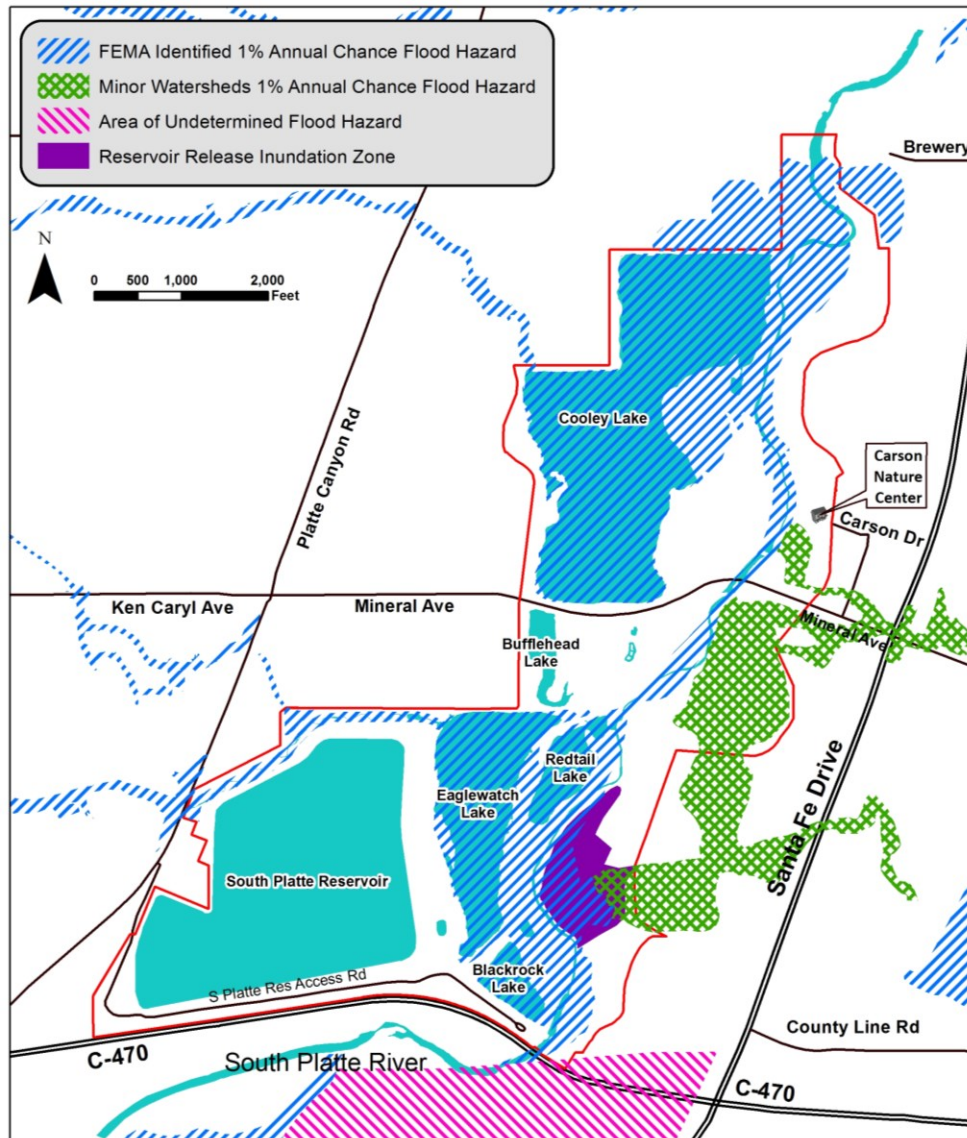
On the eastern border of the Park, near the Ensor Conservation Easement, Englewood maintains a pump station connected to McClellan reservoir. If McClellan needs to release water, an outlet near their pump station can discharge up to 75 cfs. When this happens, the Dad Clark wetland will overflow, a number of drainage swales fill, and over 100 yards of the East Trail go under water (Inundation Zone on Figure 12). At least three culverts run under the trail in this area but do not accommodate the full flow.. If the McClellan spillway is operating, additional flow will come down Dad Clark gulch from Santa Fe Drive, and flooding could be significant.

Connected on the north side of the McClellan outlet is another outlet structure from South Platte Reservoir. Again, in the situation that they must release water from their pumpworks, this 48" pipe can deliver over 110 cfs onto the East Trail area. These outlets are tested annually, which temporarily closes trails, but recreates beneficial flood conditions that maintain the health of the cottonwood forest in that area.

South Platte Park is on the emergency call list for South Platte and Chatfield Reservoirs. Should either begin emergency releases or begin to experience failure, the Park must be immediately evacuated and all entry points closed as inundation could exceed 15 feet deep.

Commented [SAL25]: New section explains possible trail flooding sources

Figure 12: Flood Zones



Sinkholes

Several times in the Park's history, sinkholes have appeared in several riparian areas. Some are attributed to collapsed animal burrows like beaver dens, some to cottonwood stumps that were buried and have decomposed, but some appear to be related to soil movement. These have typically occurred in cut bank areas, and are hypothesized to be pockets of very fine silt material from historic river meanders that get washed out by groundwater movement. In the Northern Wildlife Area, these holes were opening in the tread of the trail, trees were dying and falling over, and some holes were a hazardous five to six feet deep with collapsing edges. As part of the river enhancement project in 2015, hollow areas were compacted and filled by excavators, and a geotextile fabric was installed to filter the groundwater and minimize soil movement. This buried fabric follows approximately the eastern edge of the trail north of the middle entrance. The area must be inspected annually and if the fabric is visible, it must be buried or cut out to prevent damage to still-buried sections. Other areas to inspect for sinkholes include through the City of Littleton Open Space near Reynolds Landing, and on the East Trail near the Dad Clark wetland.

Commented [SAL26]: New section documents a reoccurring safety issue

Storm Response

Operating manuals for staff include a list of locations to be inspected during storms for blocked culverts and flooding, and following storms for damage and repair. This includes various overflow channels, culverts, and tributary streams.

Commented [SAL27]: New section records an important safety duty

Chatfield Reallocation

Since approximately the year 2000, water providers have been investigating a plan to 'reallocate' some of the flood storage capacity of Chatfield Reservoir to water supply storage. The process would potentially raise the pool depth by 12 feet, which would cause a significant shift in riparian zone locations, tree age classes, upland habitats, and the locations of recreation facilities. A complete Environmental Impact Statement (EIS) and Mitigation Plan has been approved by the federal government. South Suburban was an initial proponent of the plan, anticipating the concept would store water in surplus times, and release it to downstream agricultural users during times of drought, which would be of benefit to the Park. The EIS process, however, showed the plan to be assembled with junior rights or for from primarily upstream users. The anticipated impact is a likelihood to store water during free river days in fall and winter, and consume the water upstream of South Platte Park to a significant degree. Careful attention to the call for the Park's existing instream flow rights is necessary to ensure management of the reservoir does not harm those rights. The Chatfield plan creates a process for adaptive management and commits to making attempts to provide water to the river downstream in beneficial ways, but makes no guarantee nor authority for SSPRD to influence the process beyond making our needs known. Some possibility still exists for beneficial projects in South

Commented [SAL28]: New section adds a synopsis on the current and expected state of the Chatfield Reallocation Plan

Platte Park as a part of the downstream mitigation efforts and a mitigation plan for lost cottonwood forests required by the Chatfield Plan, so it is worth staying involved in this project. These decisions may not be made until after storage of the additional capacity begins after 2020. As of the writing of this revision, the State had announced an 'environmental pool' to be part of the Chatfield Reallocation that would specifically be dedicated to maintaining instream flows, however the administration of this pool is not yet clear.

Retention/Detention Systems

South Platte Park contains a number of artificially created wetlands that retain or detain storm flows from nearby developments and put that water to work providing habitat within the Park. Arrangements vary by wetland for construction and maintenance. The Grant-Nei Wetland was built by the developer and falls within South Platte Park proper thus maintenance falls to Park staff. The Aspen Grove Wetlands are on an easement on a city-owned buffer, so while the Park manages the wetland, repairs have fallen to the City or Aspen Grove in the past. Dad Clark gulch and the Southeast Feeder Stream areas offer opportunities for more retention wetlands from the anticipated Santa Fe Park development, and these could serve to benefit the Park and improve trails and habitat. In addition, potential developments on the Tuck Wild Plum Farm could incorporate wetland systems to handle storm water flowing into Cooley Lake through border agreements.

Commented [SAL29]: New section addresses policies for future developments

Sperger Wetlands

At the south end of Eaglewatch Lake, a small constructed wetland is known as Sperger wetland, with an agreement in place with Centennial Water to release surplus water from the Reservoir Pump Station into the wetland then into Eaglewatch. This flow varies on the time of year, and helps maintain wetland plant diversity.

Commented [SAL30]: New section records a water agreement

Wetland Maintenance

The wetlands east of the river are important natural areas. In a report prepared for the City of Littleton in October 1986, David J. Cooper, PhD, describes, "Wetlands along the proposed Mineral Avenue extension between South Santa Fe Drive and Platte Canyon Road." A total of 56 wetland species were found. According to Dr. Cooper, "Some of this habitat surely represents the last vestiges of the types of communities and the wetland diversity and complexity that occurred throughout the South Platte River system of the Colorado Piedmont in pre-settlement condition." Other wetlands of significant value include: the Cooley Delta; the Bufflehead Lake Wetland; the wetlands between the Nevada Ditch and Eaglewatch Lake; CDOT and Heron Ponds; the Grant-Nei Wetland, Aspen Grove drainage pond, and the Sperger Wetlands (Figure 10). All efforts must be taken to protect and maintain these areas. The water level and cattail over-abundance are managed to keep open water and plant diversity.

Management may include raising or lowering the water level, occasional dredging, and mechanical or chemical treatment of cattails and woody vegetation.

Efforts are needed to protect existing and create additional vernal ponds, which are temporary pools of water created by snow melt and spring rains that dry up in the summer. Several dozen low areas with clay bottoms currently serve this role, and are important habitat for amphibians like frogs and salamanders. Vernal ponds do not support fish or non-native bullfrogs that feed on native amphibians. However, they hold water long enough for native amphibians to mature into adults. Opportunities to create vernal ponds occasional arise during construction and utility easement access work and should be sought out as appropriate.

Aquatic Nuisances

South Platte Park is currently relatively free of aquatic nuisance species. Educational materials are available to alert visitors to the risk of introducing New Zealand mud snails, zebra mussels, and aquatic plants such as Eurasian watermilfoil. The snails, watermilfoil, and other aquatic specimens that do live in the park must be periodically identified with a biological key to ensure they are of the native varieties. Some non-native species that are not defined as noxious have been found in the Park including carp, Asian clams, bullfrogs, and others. If an infestation or significant change in the desired baseline ecology should be discovered, staff will work with CPW specialists to determine the best options to stop the spread while protecting native species.

Commented [SAL31]: New section sets the concept to watch for nuisances and to balance the response to them.

FISHERIES MANAGEMENT

South Platte Park is part of the metro fisheries program managed under Colorado Parks and Wildlife (CPW, referenced in some documentation by its old name Colorado Division of Wildlife). The lakes are a significant attraction to anglers in the region and are not native ecosystems. CPW continues to manage these lakes as game fisheries with occasional supplemental stocking and habitat improvements for optimal fishing. The fishery quality has improved greatly since the initial Master Plan and is considered primarily self-sustaining with occasional stocking necessary every year or two. Cooley Lake is managed for the natural habitat for fish that already exist without any supplemental stocking of game species, as fishing is not allowed. If carp, bass, and sucker populations were to be controlled in the river and ponds, then stocking of small native minnows in support of the original native ecosystems, might be possible.

The South Platte River is managed as a trout fishery as long as the water conditions remain conducive and CPW provides the fish. Species selected for stocking must have minimal negative impacts on native populations, and include rainbow trout and cutbows (cutthroat and rainbow trout hybrids). Brown

trout in particular, and even Brook trout are not recommended for stocking in South Platte Park because of their aggressive behavior and higher rates of predation of native fish. Habitat improvements, such as riffles and weirs help oxygenate water, and pools have been constructed to create low-water retreats for the fish, given the highly variable nature of the river flows.

Occasionally, CPW and Park staff conduct fish sampling studies in the lakes and river to record species stability. Appendix 9, Fish Checklist, lists fish species found in the lakes and river of South Platte Park. Periodic surveys and improvements of fish habitat are conducted. The State currently has in place a special regulation that is different from standard State Regulations permitting only bass greater than 16" to be kept in the areas south of Mineral. This was recommended by CPW and is posted at the Park. The only other current variation from state regulations is that while bow-fishing is a legal form of take in Colorado, it is not permitted in South Platte Park based on City Code and Park Rules regarding the limits placed on projectile weapons and hunting.

As fishing pressure continues to impact the Park, staff will monitor impacts in terms of levels of fishing-related litter, catch success, shoreline impacts, and visitor experience to determine if intervention is needed. The operation manuals regarding the Limits of Acceptable Change will help track tools and conditions to manage fishing impacts.

Habitat Structures

To improve fishing quality in these low-habitat gravel pits, a variety of structures have been added to the lakes. Maps to some of these can be found in the fishing guide brochure and Park files. Current structures include log cribs, concrete debris, towers of tires, and Russian-olive or waste Christmas trees sunk in concrete. These will decompose over time, so projects to add habitat diversity may be needed in the future, though waste tires or visible concrete debris will no longer be added to the South Platte Park environment.

Commented [SAL32]: New section records the types of work done.

WILDLIFE MANAGEMENT

Inventories and Monitoring

South Platte Park staff in cooperation with CPW completed inventories of: breeding birds and wintering waterfowl 1990 – present; fish in 1990, 1991, 1995, 2005, and 2007; 2011, and 2015; and benthic (aquatic) macroinvertebrates of the river in 1993. Additional collections of fish and benthic macroinvertebrates also occurred as a supplement to these inventories. Small mammals were systematically trapped on multiple occasions in the Park in 1992, 1995, 1996, 2004, and 2005.

However, no thorough Park-wide trapping inventory was conducted. The 1995 and 1996 surveys were conducted for the federally-listed, threatened Preble's jumping mouse. Past Resource Specialist, R. Sperger, anecdotally captured, identified, and recorded a Preble's meadow jumping mouse along the wetlands of the East Trail Wildlife Area in the early 1990's. While Sperger's report is highly credible, it was not fully documented with dated photos and anatomical measurements sufficient for federally-listed species documentation. The occurrence of large and medium-sized mammals is fairly well-known through casual observations, the use of infrared camera traps, visitor sightings and photographs, and the evidence of tracks, scats, and other signs. Casual observations of reptiles, amphibians, insects, and lake invertebrates are documented, and several student surveys have created additional anecdotal evidence, and infrared camera traps are used occasionally. Inventories as part of the metro-wide All Species Count Bioblitz were conducted in Sept 2004, Oct 2005, and June 2006.

Ongoing systematic monitoring programs include participation in the Colorado Breeding Bird Atlas, Spring and Fall Migratory Bird Counts, Winter Waterfowl Census, participation in the CPW Annual Waterfowl Count, and Nest Box Monitoring. Survey priorities include the distribution and abundance of rare and uncommon breeding, wintering, and migratory species, as well as, the utilization of adjacent lands by wildlife. These surveys are summarized and assessed for management implications. Species lists were compiled using the data from these surveys (Appendix 10, Wildlife Species in the South Platte Park Area). Currently, 324 species of vertebrates have been documented in South Platte Park, of which 253 species are birds.

Sick or Injured Wildlife

In general, wildlife populations will be allowed to live naturally and unmolested within South Platte Park. If particular species become overabundant, this might change the management prescription for them, or if species are missing or severely impacted, staff may consider projects to improve habitat or introduce species under careful planning with CPW. Natural diseases may move through wild populations, such as mange, distemper, rabies, and plague. When visitor safety may be at risk, areas might be closed, animals might be treated or euthanized to limit disease spread. If animals are found to be suffering or injured, staff may intervene by calling for animal control, police, or CPW to assist. In general, however, the policy is to let nature take its course as the Park does not have sufficient facilities, resources, permits, or training to perform wildlife rehabilitation.

Commented [SAL33]: New section, recommends we not intervene typically

Feral or Non-Native Species

In the interest of the Park's goal to promote native species, feral and non-native wildlife must be evaluated for control. In the past feral cats and small packs of feral dogs were known in the Park, and

Commented [SAL34]: New section recommends eliminate these animals when possible and cost effective

required management with the assistance of Littleton's Animal Control officer, but these have not been seen in recent years. Naturalized species like starlings, Eurasian collared-doves, and house sparrows may not be controllable. Staff will monitor and make reasonable low-cost and humane efforts to remove released domestic species (ducks, geese, and swans have been found historically) and to prevent non-native species from reproducing. Educational and management actions may be considered to prevent the introduction or spread of invasive species.

Wildlife Releases

Wildlife will typically not be released into South Platte Park as a 'disposal' option from private property, commercial animal control operations, or other SSPRD properties. Most wildlife relocations are subject to State regulations and often include the potential for introducing disease, developing unsustainable populations or over-competition, or makes released animals more vulnerable to predation. Exceptions may be granted when working with licensed wildlife rehabilitators or based upon recommendations by the District Wildlife Manager for CPW.

Commented [SAL35]: New section gives guidance on accepting animal releases.

Species Reintroductions

The 1983 Master Plan references species for possible reintroduction. Any proposals must be carefully weighed with input from the District Wildlife Manager for CPW. There may be implications on Park use areas, Park neighbors, and management activities that are not immediately obvious. Some discussions have included re-introducing ground birds such as turkey or grouse, reintroducing amphibians such as leopard frogs, or reintroducing native fish. All would have an impact on current species populations and may not be sustainable without long-term management programs, and no reintroductions are recommended at this time.

Commented [SAL36]: New section, suggests consideration before undertaking any wildlife reintroductions

Native Pollinator Management

Strong efforts are needed to support populations of native pollinator insects and the native wildflowers they depend on. Restoration plantings will incorporate a mix of native wildflowers, or after establishing grasses for stability, wildflowers will be introduced to return the diversity to the upland grasslands of the Park.

Commented [SAL37]: New section recommends promoting native wildflowers and pollinator habitat, addresses former beekeeping policies

Selection of pesticides and their use in the Park is carefully considered to minimize the impact on pollinators. Staff are also working on installation of nesting posts designed for native cavity-nesting bees.

The Park has allowed a volunteer beekeeping program previously, and should be evaluated with incoming research on the interaction of native pollinators and non-native honey bees. If beekeeping is

to be re-initiated, staff will set limits on the quantity of hives and hive placement. Volunteers, under the guidance of a beekeeping expert, would provide all the materials and maintenance of the hives. The hives and related materials can be removed from the Park at the discretion of Park staff or when the beekeeping expert and volunteers are unable to properly care for the hives.

Mosquito Management

The wetlands and river channels provide breeding areas for mosquitoes that can be quite voracious at times. Mosquitoes, while an important part of the Park ecosystem, are also vectors for human diseases including encephalitis and West Nile Virus. To protect visitor and staff health and comfort, and to protect native bird species threatened by West Nile Virus, staff will take measures to control mosquito populations through the use of bacterial larvicide added into breeding waters. Aerial spraying to control biting insects is not recommended due to the indiscriminate impact on native pollinators and other beneficial species. This process was formerly managed by the counties, but fell back into South Suburban's management responsibilities in 2013.

Commented [SAL38]: New section, explains our processes

Beaver Management

In the 1983 Master Plan for South Platte Park, CPW recommended a site-specific carrying capacity for wildlife, and for populations exceeding two active lodges, animals would be removed.

Commented [SAL39]: Clarifies and updates

The concept of carrying capacity has changed as natural resource management advances, and it does not incorporate numerous variables that could alter a carrying capacity. The 2016 update of this management plan reflects a move towards using Limits of Acceptable Change (LAC). The variables that would determine when the beaver population is getting too large would include if there is damage to older/mature forests, damage to recreational facilities, loss of significant amounts of vegetation, disease spreading through the beaver population, flooding of unacceptable areas, or blockage of storm drainage systems. This is discussed in more detail in the LAC operational documents.

Beavers are constantly on the move in South Platte Park and there may be numerous lodges at any given time. With help and training from CPW and the Colorado Department of Agriculture, Park staff is trained to remove problem beavers through the use of live traps. Relocation is only allowed with a permit from CPW, and then would be into carefully considered areas, otherwise removed beavers are euthanized. All methods of management by staff are completed with the knowledge and approval of CPW.

In order to mitigate habitat degradation and minimize removal of animals, the majority of beaver control efforts are to wrap trees with welded wire and rebar to deter beavers from cutting trees. The Park also

uses 'beaver paint' (a mix of latex paint and sand, color-matched to cottonwood bark and painted on the trees to discourage chewing). These methods of reducing damage are very useful. Thousands of trees have been protected to date, and this project is a good option for volunteer groups. Cages need to be readjusted regularly to prevent girdling trees, and must be removed if trees become stressed or damaged by them.

Prairie Dog Management

Prairie dogs are a keystone prairie species in large-scale grassland ecosystems where colonies migrate over time. Small, constrained urban colonies however can have significant negative impacts on the landscape and the health of the animals themselves. South Platte Park does not have sufficient space to maintain a migrating colony that would give vegetation communities a chance to recover from grazing. For this reason, prairie dogs are closely managed in a few key locations. Currently two colonies are active – one west of Bufflehead Lake, and one southwest of South Platte Reservoir. If prairie dogs appear in additional locations, they must be carefully monitored and managed to ensure high-quality grasslands are not degraded by overgrazing.

When populations expand onto service roads, into neighbors' properties, where animals become frequent roadkill, or spread beyond the accepted boundaries for the colonies, management action must be taken. The preferred method is to strengthen boundaries to the colonies through installation of visual barriers which are effective at stopping the spread of colonies. These consist of living fence (visual plant barriers) or prairie-dog fencing (a thick, plastic visual barrier). The Plastic fencing can be expensive, unsightly, and difficult to maintain, and is appropriate in some of the outer boundary areas in the Park, and living fence usual requires a consistent irrigation source.

Occasional reduction of population is necessary in some areas of the Park. Dam safety requirements of the State and Federal government impose a zero tolerance for burrowing species within the dam boundaries where they could compromise dam integrity. All prairie dogs and harvester ants must be eliminated from within the dam boundaries and a defined buffer zone. All population reductions must be undertaken by licensed technicians approved by SSPRD to trap and remove when possible or to apply chemical control methods. In areas outside dam safety zones, populations may be thinned to reduce issues of overgrazing, starvation, and disease spread.

Control of Other Mammals

On occasion, management of other mammal species may be required. Rabbit, squirrel and vole populations show regular shifts that have been self-correcting historically. Rabbits have been known to chew on wiring and vehicle hydraulic lines, mice can cause damage throughout the buildings and

Commented [SAL40]: New section explains our processes

Commented [SAL41]: New section addresses managing other mammal species

stored materials at the Nature Center, and pack rats can sometimes create issues with their middens. Efforts to exclude these animals are preferred, but the use of snap-traps or poisoned baits may be necessary when legal and appropriate. Large animals such as bear, elk, or mountain lion have been known on rare occasions to travel through South Platte Park. These species should be monitored, and if any safety concerns arise, CPW should be consulted for solutions. Otherwise, visitor education and awareness efforts will be undertaken as the animals are left to their wild habits.

Artificial Nests

The flood of 1965 removed a large number of mature cottonwoods. This led to a decrease in the number of snags and holes available to cavity-nesting species such as chickadees, tree swallows, wrens, kestrels, and others. In the 1990's, more than forty wooden nest boxes were installed in a variety of sizes, and later wood-duck boxes, cylindrical waterfowl hen-houses, and bat boxes were added, most of which get regular use. An osprey nesting tower was added in 2013, and osprey have been successfully using it. These items all require maintenance and monitoring. This is a popular activity for volunteers, but does take time and oversight. Nest boxes may remain important for cavity-nesting species, particularly as cottonwood forests decline due to lack of flood cycles. However, if this project is discontinued, boxes and their support structures will be immediately removed.

Commented [SAL42]: New section addresses nest boxes.

VISITOR MANAGEMENT

Uncontrolled use or unchecked growth of visitation could cause shifts in the natural character of South Platte Park including a loss of vegetation cover and diversity, a loss of wildlife diversity, an increase in injuries and visitor conflicts, or a degradation in user experience. Visitation dramatically increased with the opening of the Arapahoe Greenway Trail (now called the Mary Carter Greenway Trail (MCGT) in 1989, then later with the opening of the RTD Mineral Light Rail station in 2000, the Aspen Grove Lifestyle Center in 2000; the Berkshire Apartments in 2010, Breckenridge Brewery in 2015 and other residential and commercial developments in the area. The 1994 visitor estimate was 219,168 and in 2015 was estimated at 580,000 for trail use alone, not including fishing, river use, or program participation. Impacts for this tremendous growth have occurred, and have been minimized through the management practices and use-zone concept.

LIMITS OF ACCEPTABLE CHANGE

The establishment of Limits of Acceptable Change are introduced in the 2016 management plan revision, and are managed through an operational document that establishes measurable indicators for intervention, and a description of tools to be implemented if changes are necessary. This allows for adaptive management decisions by setting targets for the visitor experience, with opportunities for rapid response to changing conditions. An example could be that an established density of 20 trampled fishing shore areas seems acceptable, and if more trampled areas begin to appear, the LAC document might recommend additional signage, fencing, shoreline closures, parking limitations, or restoration plantings to return to the acceptable number of fishing sites.

Commented [SAL43]: Recommends changing from a carrying capacity-based management system to a flexible adaptive management system based on defining acceptable changes with increased used and recommendations for when and how to curb those impacts.

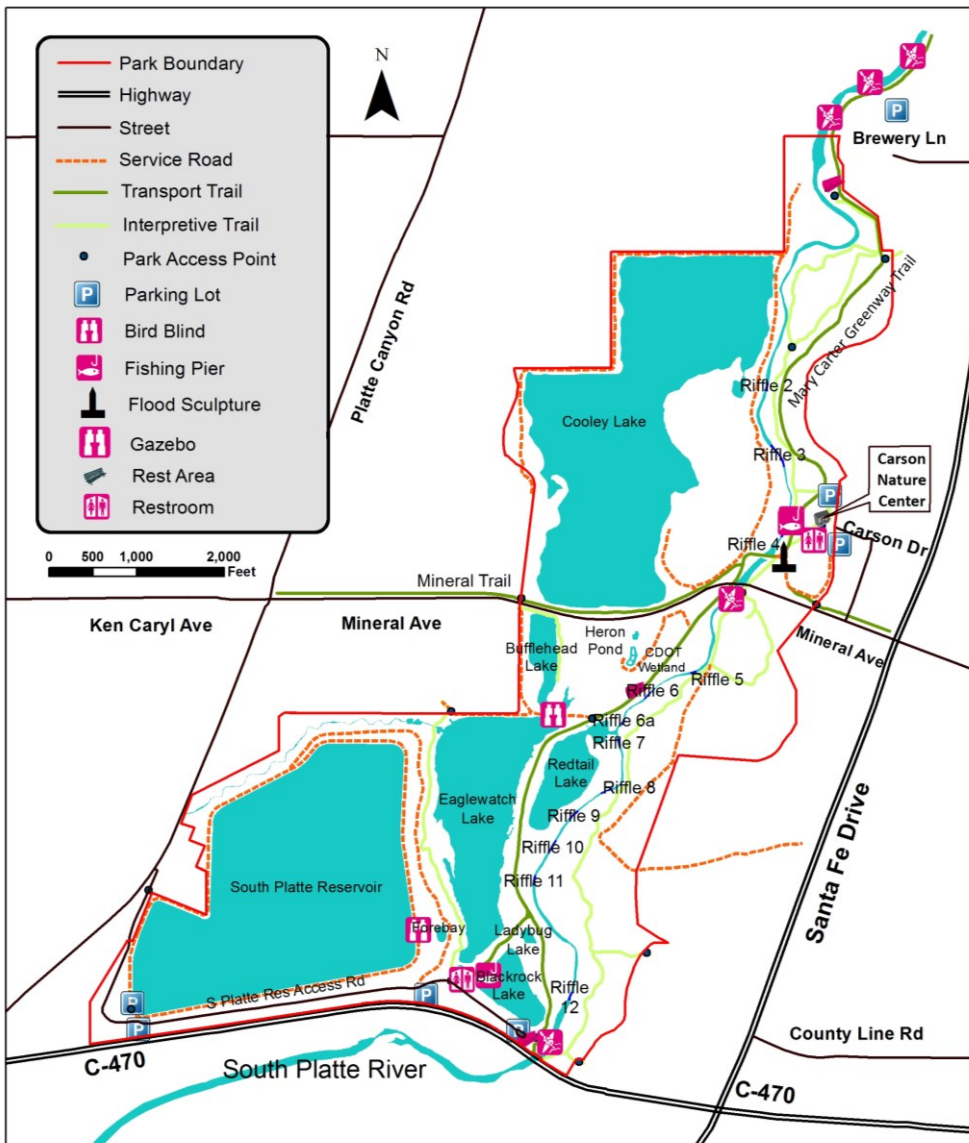
VEHICULAR ACCESS

One of the primary methods of regulating visitor use is to regulate vehicular access. This is done by not creating unlimited parking opportunities. Currently, Park staff manage four parking lots for visitors (Figure 13, Recreation Features) and a parking lot for staff, volunteers, and paying program participants that can accommodate around 25 vehicles.

The 1983 Master Plan calls for a parking area next to the CNC (3000 South Carson Drive), where a current lot sits to the northeast of the buildings. The gate to this lot is opened consistent with the Park hours, which are currently sunrise or by 6:30 am, until sunset. A formal agreement in the annexation of the RTD lot into Littleton (copy available in Park Manager and City files) allows MCGT users to utilize the Mineral Station for overflow parking on weekends when space is available as a condition of

annexation of the RTD lot into Littleton. No further expansions of parking opportunities will be created to meet the goal of controlling user numbers, and minimize the sensation of crowding in the Park.

Figure 13: Recreational Features



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The south entrance to South Platte Park is located off Platte Canyon road with a Jefferson County address of 8100 South Platte Reservoir Access Road. Via this entrance, two accessible parking spaces are provided near the Reservoir trail, plus a 10-car lot; 2 accessible parking spaces near the restroom facility plus a 50 car lot, and a 15-car lot and loading area near the river, also with an accessible space. This gate is also opened at sunrise or by 6:30 am, and closes at sunset. For facilities further in this gate, Littleton and Arapahoe County use 5198 S Platte Reservoir Access Road as the address.

Staff maintain six service roads within the Park boundaries, totaling 5.9 miles. The first is a non-paved, unimproved, surface road around Cooley Lake; the western and northern sections of the road also serve as the sewer line access for both Southwest Metro and Roxborough Water and Sanitation Districts. A service road lies to the north of Eaglewatch Lake with a spur along the west side of Bufflehead Lake. To access the southeastern section of the Park, the Centennial Wellfields, and the power line easement, a service road is maintained adjacent to Ensor's western-most fence line. The fifth service road allows quick and easy access from the maintenance shop to the Mineral Avenue Trail and MCGT. A service road provides access around the CWSD's South Platte Reservoir and 7-11 Gulch. The roads around Cooley, South Platte Reservoir, and the Maintenance shop are signed or gated for staff use only, while the others are incorporated into the public trail system. Staff, contractors, and easement holders also use the MCGT for maintenance purposes and emergency access within the Park. Due to high volumes of trail traffic, pedestrians get the right of way, maximum speed is 15 mph, travel off the sides of the trail are discouraged to protect irrigation systems and native vegetation, and at times flaggers are required to help with traffic safety.

To help with staff training and for emergency access, maps were created showing emergency access routes, as well as agency jurisdictions for emergency response, which get particularly complex at the south entrance. Emergency responses in that gate could involve Littleton Police, Jefferson County Sheriff, or Arapahoe County Sheriff depending on the emergency location (Figures 4 and 14).

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Figure 14: Emergency Access Map
(available in and best viewed in large format print, 11x17 or greater)



TRAILS

The trails in South Platte Park have been characterized in the 1983 Master Plan as transport trails, interpretive trails, and access trails. No paved or concrete trails (Transport Trails) will be located within the Park, except the MCGT and Mineral Avenue Trail. The trail characteristics are as follows:

Transport Trails

1. Transport trails are for multiple use including biking, hiking, horseback riding, roller skating, strollers, and rollerblading.
2. Trails are constructed of concrete or crusher-fine to accommodate wheelchairs and wheeled recreation devices.
3. Overhead space of ten feet minimum will be maintained.
4. Trails have a minimum width of five feet and a maximum width of twelve feet.
5. Dual trails have paved trails of no more than twelve-foot width with a parallel crusher-fines trail of eight feet width.
6. Maintenance of the transport trails within the Park will be handled jointly with SSPRD Trails crews working with SPP staff for functions of surface repairs, snow removal, and sweeping. Clearance mowing may be conducted in house or shared jointly.

The MCGT is a 10-foot wide concrete trail that enters the Park on the east side of the river at the north boundary of South Platte Park and crosses the river just north of the Mineral Avenue bridge. South of the bridge, it follows the west side of the river towards C-470. Wildlife Areas adjacent to the MCGT will be designated with a barbless-wire fence and signage.

In 2004, a dual trail system was added to improve safety and provide an optional separation of user types. The trail starts at Blackrock Lake and continues through the Park and follows the MCGT to the north. Currently, there are no specifications for types of use on each trail – bikes may travel on the gravel path, and pedestrians may use the paved surface. This decision generates some complaints, but accommodates a wide variety of accessibility, connection between mixed-use groups, and options during inclement weather when soft-surface trails are unusable. After the dual trail was installed, the District decided for safety concerns to stripe the MCGT with a broken yellow line along the entire length and a solid yellow line 100 feet before the approach of an underpass or bridge to separate the directional of traffic flow.

Certain rules and regulations on the MCGT, which is a regional trail, are different from those in the rest of South Platte Park. Regional trail hours (6 a.m. – 11 p.m.) go beyond sunset, whereas South Platte Park closes at sunset. Use of the MCGT through South Platte Park is permitted during these hours for

regional commuter traffic, which is generally considered to be single-direction travel, not returning to the same point of origin, and typically would not involve exercising pets. Users may be contacted by Park Rangers or police if they are found in the Park after hours if they are off of the transport trails, using the lakes or river, using access points beyond the regional trail entries, or if loitering near the buildings. In the interest of accommodating neighbors, residents of Wolhurst Landing may use their access point to reach the MCGT to recreate north of South Platte Park or for commuting. It is documented that most vandalism in parks within the District occurs between 10:00 p.m. and 2:00 a.m. Limited staff is on duty during these hours. SSPRD has no control measures to prevent after hours use in much of the Park so it is recommended to maintain a periodic night presence from Park Rangers or police for inspections and contacts. Due to seasonal day-length changes and ranger scheduling, the park signage indicates that gates will be open by 6:30 am. This means users may enter through non-controlled regional access points between sunrise and when the gates are unlocked to use the park resources, but prior to sunrise must remain on the paved Transport Trails.

Commented [SAL44]: This section adds clarification on the visitor hours and trail use dilemma with a regional commuter trail.

The Mineral Avenue Trail enters the Park at the west boundary along Mineral Avenue and connects with the MCGT on the west side of the river. This trail is on the north side of Mineral Avenue connecting the Columbine Trail, west of South Platte Canyon Road, to Santa Fe Drive. The Mineral Trail also extends east from the river to the RTD lot. As pedestrian access is not permitted on the Mineral Avenue Bridge, this transport trail is also open to pedestrian traffic outside of the Park Hours. The parking lot at the Nature Center has a 3-hour parking limit, requiring regional commuters use the RTD lots and leave parking near the CNC for day-use visitors.

Roundabouts were installed on the Greenway Trail at major intersections to slow bike traffic and provide for safer interflow. It is recommended to have pedestrian routes through or around these structures to minimize the time pedestrians are on or crossing the paved trail.

Commercial transport or vending operations on the trails are not currently permitted nor recommended. Any changes or improvements to the trails within South Platte Park must be approved by Park staff or the SSPRD planning department.

Interpretive Trails

1. Interpretive Trails are for pedestrian use only. Trailheads are gated and signed as such.
2. The trail surfaces are well-compacted, natural soils, with occasional enhancements of wood chips added in mud-prone areas to reduce resource damage.
3. Trails are designed to provide a specific experience rather than to provide a route from point A to point B.

4. Water bars and fill help stabilize the trail and provide for visitor safety, and new or refurbished trails will be rebuilt with a crowned or out-sloped design to shed water.
5. Trails are maintained to a 40-inch maximum width with a 6.5 foot minimum overhead-clearance height.
6. Trails are subject to closure at any time for as long as deemed necessary to provide for public safety and/or protect the natural resources and wildlife in the area.
7. Minimal bike locking/horse tie posts are available at some trailheads to allow riders an opportunity to walk the trail, but no more than two shall be provided at each interpretive trail.
8. Park Rangers may use bikes to patrol these areas on occasion.

Two interpretive trails wind along the east side of the river. The first is the Northern Wildlife Area Trail, located north of the CNC off the MCGT. The main trailhead is west of the MCGT nearest the Aspen Grove drainage pond in the Newton Trust area. The trail is open to the public with three designated entry points that also limit bike and horse traffic.

The second trail, East Trail, follows the east bank of the river after it passes the wetland area south of Mineral Avenue. This trail has two spurs. One leads to the Wolhurst Mobile Home Community, the other leads to the Beaver Pond in the northeast portion of the East Trail Wildlife Area. Visitors return along the same trail. The trailhead is located at the east end of the Mineral Avenue pedestrian bridge.

Two interpretive trails are located on the west side of river. One is south of Mineral Avenue along the west shore of Eaglewatch Lake. This trail is situated between the west bank of Eaglewatch Lake and the Nevada Ditch. Trailheads are located at the southwest and northwest corners of Eaglewatch Lake.

Another interpretive trail is located in the South Platte Reservoir area on the south rim of the Reservoir. The trail has two public access points. One trailhead is at the parking lot along the southwest corner of the lake off Platte Canyon Road. The second trailhead is by the Reservoir pump house on the southeast corner of the Reservoir.

Access Trails

The 1983 Master Plan recommends a maximum of one access trail from each bordering subdivision, and no more than four total on either side of the river. Currently SSPRD maintains two access trails at Wolhurst Mobile Home Community, and one access trail each at Wolhurst Landing, the Overlook, and the Preserve. Aspen Grove/Berkshire Apartment residents have no direct entrance to the Park and use the main entry point at the Nature Center.

1. Access trails into the Park may be limited to pedestrian use only if they lead to interpretive trails or Wildlife Areas. However, the Wolhurst Landing Access and The Overlook Access are accessible to horses and bikes because of their close proximity to the MCGT.
2. All access trails remain unpaved. These trails will contain no artificial barriers that would limit access to users with mobility aids, but due to trail surface and grade may have a greater degree of difficulty than the fully-accessible transport trails.
3. The Park will have no less than two and no more than eight access trails leading into the Park. The last access trails into the Park are presently reserved for future pedestrian-only access from the Santa Fe Park development.
4. In the interest of pedestrian safety, a paved access to the Mineral underpass may be permitted along the south side of Mineral Avenue, within the right-of-way, to connect to the MCGT from future Santa Fe Park developments, provided the East Trail heading south from the right-of-way continues to meet the interpretive trail standards.

River Access Points

In addition to Park access trails, a number of designated river access points offer stable routes to the river's edge. River access points are needed for the safety and convenience of Park visitors, as well as the protection of riparian habitat. Prior to their installation, as many as 50 social trails to the river developed north of Mineral Avenue and as many or more formed to the south. River access points are designed to the specifications of access trails and are for pedestrian use only. Where the riverbank is steep, river access points may provide steps for the safety of the user and mitigation of erosion. River access points are signed and where appropriate, designated with a simple split rail fence entrance and shrubs to prevent short-cutting. Access points are limited in number, installed in places with stable, sustainable slopes, and direct users to points of interest near the river. They are generally no closer than 75 yards apart.

Commented [SAL45]: Redefined section for formalized river access.

Accessibility and Other Power-Driven Mobility Devices

The Park trails provide varying degrees of accessibility throughout the Park. Many of the routes formed along well-established social trails, have had no formal construction, and do not fully meet accessibility standards. As new trails or facilities are developed, they should strive to meet ADA standards or provide equivalent experiences where slope or floodplain regulations make this impossible. Visitors of all levels of mobility are welcome to travel all public routes in the Park, while some routes provide greater natural challenge than others due to grade, cross-slope, surface compaction, or natural features. New bridges and water crossings will strive to meet accessibility standards when trails approaching them are accessible. Gates must provide a minimum access width of 40" and may be signed for no bikes, but will not contain artificial barriers to access.

Commented [SAL46]: New section to describe accessibility standards

South Suburban's Other Power-Driven Mobility Devices Policy is in effect, which defines the types of mobility devices appropriate for the Park. Refer to the current policy for specifics, however, in general this policy allows wheelchairs on all routes open to pedestrians, and allows electric wheelchairs and electric-assist bikes on trails closed to other 'motorized' use. It prevents adding barriers at trailheads that restrict allowed devices, and disallows gas-powered devices, Segway-style vehicles, and golf-carts.

Table 2. Trail Classifications

Class of Trail	TRANSPORT	INTERPRETIVE	ACCESS
Approximate Length	¼- 3 Miles	¼- 2½ miles	0-¼ miles
Width of Trail	8-12 feet	40 inches	40 inches
Slope of Trail	1:50-1:12	1:50-1:4	1:50-1:3
Surface of Trail	Concrete; crusher-fines	Unpaved; compacted soil or wood chips	Unpaved; compacted soil or wood chips
Trails in South Platte Park	<ul style="list-style-type: none"> • MCGT (Carson Nature Center to: C-470 1.5 miles, north boundary 0.8 mile); • Mineral Avenue Trail (0.5 mile) 	<ul style="list-style-type: none"> • Riparian trails on east side of river south of Mineral (1.15 miles); • Loop Trail through Beaver Pond south of Mineral (0.3 mile); • Trail on west side of Eaglewatch Lake (0.65 mile); • Northern Wildlife Area Trail (0.72 mile loop); • South Platte Reservoir Trail (0.7 mile from western parking lot to gazebo) 	<ul style="list-style-type: none"> • From the south and north areas of Wolhurst Mobile Home Park to riparian trail; • From Wolhurst Landing to Greenway Trail; • From The Overlook northwest of Eaglewatch Lake; • From Polo Reserve Sanctuary to Bufflehead Lake

SIGNS

The 1983 Master Plan set standards for signage in the Park. The basic principles of that system continue to guide signage decisions, however, modern signage materials and studies in communications have led to sign systems with different materials, colors, and content than specified in the Master Plan. SSPRD maintains the most current specifications for design as an operational document.

Commented [SAL47]: Removes most previous signage standards and creates room for the new signage plan while maintaining the initial concept from the Master Plan of signage to fit the environment, and minimal signage over all.

The primary guidelines for signage remain unchanged:

- South Platte Park will use a unified system of text, font, color, and layout for signs, consistent with SSPRD Standards for the Park and Greenway Trail,
- Visitor behavior will be managed by the fewest effective number of signs to reduce a sense of crowding and urbanization from too many signs,
- Placement will be carefully considered to ensure signs fit legal boundaries and most effective locations,
- Messaging will be clear, simple, and positive in nature wherever possible and may use universal icons where appropriate,
- Sign materials and colors will be generally complimentary to the open space to reduce the visual pollution of signs in the natural area, while maintaining effective, readable signs,
- Outdated or damaged signs will be refurbished or removed regularly,
- Basic park identification and rules signage is provided at park entry points.

Interpretive signage will be of a consistent color and design to existing signage, follows the principles of interpretation (Appendix 11, Summary of Interpretation Plan), be minimal in number, and located in the most strategic and impactful locations possible. The preference is for location-specific maps to orient to the landscape rather than having north to the top where appropriate, while larger system maps will be oriented with north up. Additionally, South Platte Park may allow other government agencies, e.g. CPW or the City of Littleton to add signs where it is mandated and appropriate, with an effort made to meet existing standards.

FACILITIES

Buildings

Buildings in the Park include the Theo L. Carson Nature Center (CNC), the classroom also referred to as “Kingfisher Studio”, and a maintenance facility (the shop). The CNC and classroom buildings were donated to the Park in 1986. The CNC building was constructed by the Carson family and served as their home from 1949 to 1986, and was moved from its original location on Jackass Hill in 1986. All buildings are located within Park boundaries and all public areas attempt to meet accessibility standards within their historic construction when possible. A detached solar shed building was reconstructed in 2005 to serve as a classroom to accommodate larger groups. Structures within the Park have an architectural theme that is consistent with the existing buildings and Littleton building

code to complement the natural, rural, and agricultural themes of the area. Similar architectural themes are encouraged in adjacent developments to achieve neighboring design compatibility.

Carson Nature Center

The CNC functions as an orientation point for Park visitors and a place where an individual becomes acquainted with the Park (Figures 15 and 16). The name Carson Nature Center refers to the building, but is not promoted as the programming entity, which is publicly marketed as South Platte Park. At the Center, a visitor can ask the staff and volunteers questions about the Park, recreational opportunities in the area, general information, directions, or seek help in emergency situations, as well as collect brochures or interact with exhibits supporting the interpretive theme for the Park.

Maps, displays, and the River Table exhibits are available in the Center to enhance the visitor's experience or aid the individual who likes to discover on their own. After the visitor is acclimated to the Park through the use of the Center, he/she can further enhance the experience through the use of the Park's trail system. The CNC and the classroom serve as an orientation point for interpretive programs conducted by staff, interns, and volunteers. The educational program is discussed in more detail in the Interpretation and Education section.

The CNC also serves as the general office for Park staff. The offices are located on the second floor, which is generally not open to the public. The resource library is open to staff, interns, and volunteers daily and to the public by appointment only. The CNC also provides restrooms and a drinking fountain for the public during all hours the Park is open.

Classroom

The classroom is utilized for programs, groups, meetings, and environmental education (Figure 17). It accommodates up to 55 people in a stand-up meet-and-greet format, though generally is most comfortable for up to 40 adults if a seated event. The building is heated with a propane furnace, and is designed for passive solar heating to minimize fuel use. It is rented to the public per a set of pricing and policies approved by the South Suburban Board of Directors.

Maintenance Facility

A maintenance facility constructed just south of the CNC serves as the maintenance and construction shop for the Park. Most tools, materials, and equipment to maintain the Park are housed in this facility or in the adjacent storage bins.

Commented [SAL48]: Update and corrects use and capacity of Nature Center and classroom buildings.

Figure 15: Nature Center Facilities Map

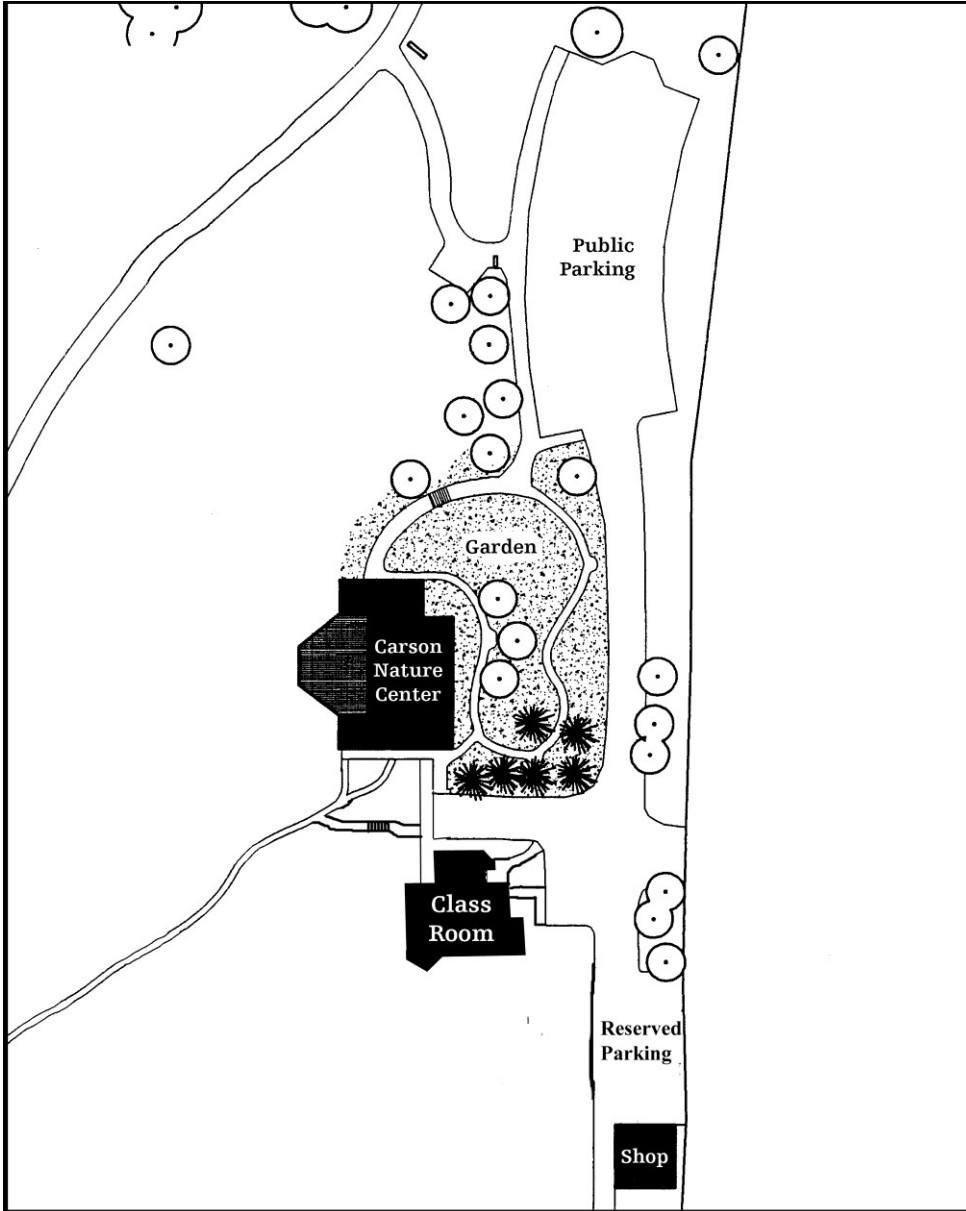
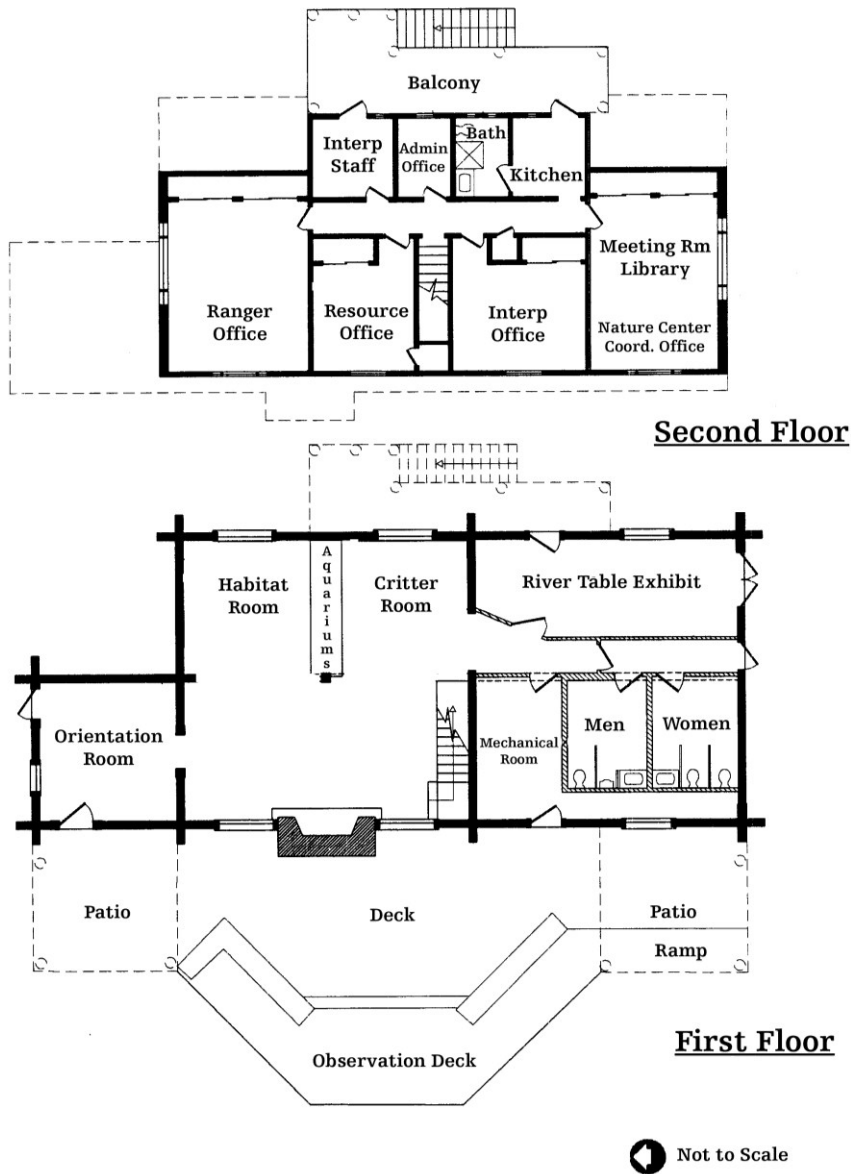
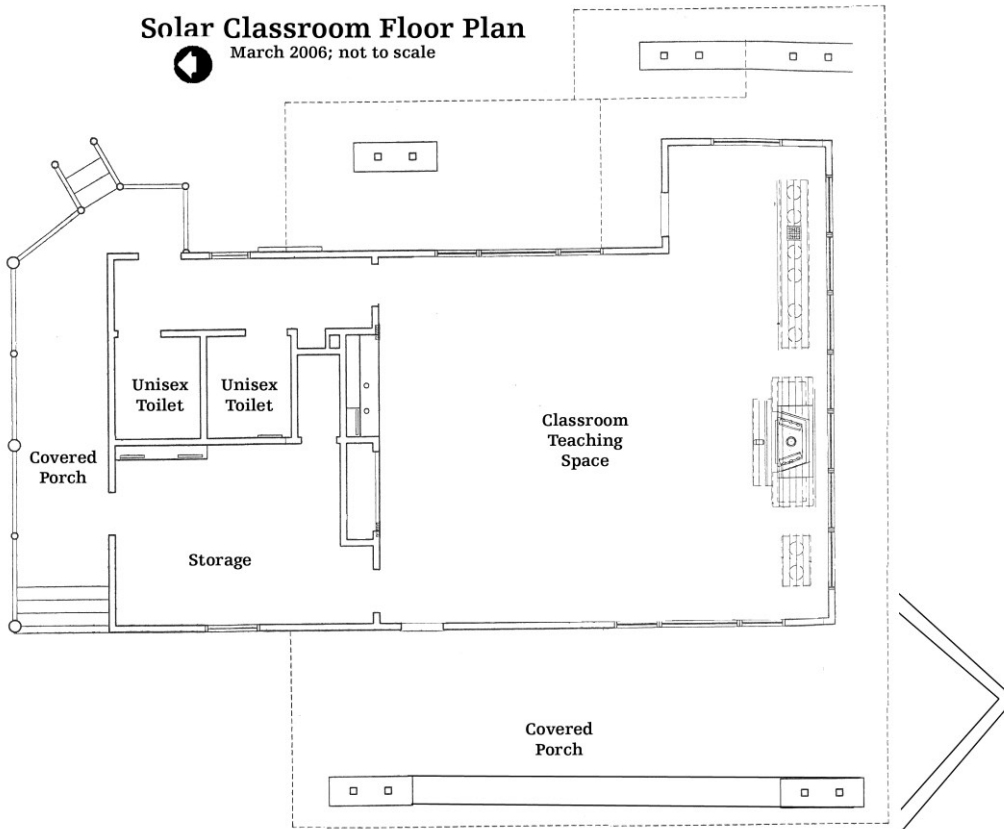


Figure 16: Carson Nature Center Floor Plan



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Figure 17: Classroom Floor Plan



Benches and Rest Areas

The Park currently has three rest areas along the MCGT, shown on Figure 13. One is the Weber Rest Area, located along the trail north of Redtail Lake. Another is the Cooley Rest Area, located on the west side of the river southeast of Blackrock Lake. The last is the Ulche Creamer Rest Area, on the east side of the river near the northern Park boundary. All rest areas provide scenic vistas of the Park as well as opportunities to view wildlife. Five other rest areas are located just north of the Park within two miles. No other formal rest areas are permitted along the MCGT within the Park. Wooden benches were refurbished in 2015, and periodic maintenance is required.

To maintain the natural character of the Park, no additional benches will be added along the trails or beyond the extent of the building envelope of the Nature Center or wildlife viewing facilities. Large cottonwood logs and rocks provide stopping points for users with limited endurance in strategic locations along the trails. These should be maintained and more added to provide an appropriate place to rest approximately every one-quarter to one-half mile in lieu of additional benches.

Commented [SAL49]: Introduces concept for accommodating users without compromising the Park's character.

Bridges and Boardwalks

Two bridges cross the South Platte River within the Park: the Mineral Avenue Bridge and the MCGT Bridge. The C470 overpass is not within Park boundaries and it is anticipated this will be reconstructed in 2017, with safety improvements for the MCGT and an improved wildlife corridor. Additionally, the MCGT has a small bridge over a drainage channel near the Wolhurst Landing access point.

Commented [SAL50]: Adds new detail to the existing bridges and boardwalks, while encouraging moving towards accessible structures when possible.

Bridges and boardwalks within the Park may be added when needed in areas identified by the South Platte Park staff and appropriate administrative staff. These structures are subject to closure at any time as deemed necessary for public safety and/or to protect natural resources. Some structures may be submerged by high water. Current locations include: two near the Wolhurst north entrance, on over Dad Clark, two over Jackass Gulch, one near the classroom, two in the Northern Wildlife Area, and on the west side of Eaglewatch Lake. Near this bridge, a rock crossing allows the 7-11 Gulch to inflow into Eaglewatch Lake, while a route of large boulders allows pedestrians to step across through the large spillway.

Cooley Canoe Launch

To prevent injury and shoreline erosion when used for occasional canoe programs, a small launching deck was constructed in 2005 along the eastern bank of Cooley Lake. It consists of a few hardened stairs and a gravel pad. No further improvements are recommended as it is used no more than twice per month during summer for programs. Minor maintenance and occasional fill may be required due to impacts of lake ice.

Accessible Fishing Piers

Accessible piers have been constructed in Blackrock Lake, with access from the C-470 parking lot; and overlooking a pool of the river due west of the Nature Center. Both structures are submerged when river flows exceed 2000 cfs. Following inundation, an inspection of footings will be conducted, and maintenance of the steel railings may be required. No other fishing docks or platforms are anticipated or recommended at this time.

Commented [SAL51]: Adds new fishing piers and flood exhibit to the facilities inventory.

Wildlife Viewing Blinds and Observation Decks

Photo blinds and observation decks provide unique access to wetlands and other appropriate wildlife viewing locations. Designs blend into the surrounding landscape and facility theme for the Park.

Commented [SAL52]: New section documents additional facilities and the South Platte Reservoir gazebo

The William Peacock Memorial viewing blind was constructed between Eaglewatch and Bufflehead Lakes (See Figure 13) in 1996. This three-sided structure provides a shaded rest area and wildlife viewing opportunities for Bufflehead Lake and its associated wetlands. In the blind are six interpretive panels about the habitats and wildlife in the area. The unenclosed entry of the structure is open to minimize vandalism and criminal activity. Shrubs were established along the road to minimize disturbance of waterfowl on the lake as people approach and enter the blind.

Another viewing station is the gazebo on the southeastern corner of South Platte Reservoir along the east rim. This gazebo provides a shaded rest area and wildlife viewing opportunities for the South Platte Reservoir, Nevada Ditch, and a 360-degree view of the Front Range and plains. An interpretive sign in the gazebo discusses the unique history, vegetation, and birds of the Nevada Ditch. Proposed future additions adjacent to the gazebo include an additional interpretative sign and accessible viewing binoculars.

One additional structure is on the East Trail, near the Beaver Pond Wetland and is a pond overlook that now straddles a small stream, but was once an observation platform in a large pond.

Any further structures of this kind require the approval of the South Platte Park staff and the SSPRD Design Review Committee. Structures are subject to closure at any time as deemed necessary by appropriate administrative staff to provide public safety and/or protect the natural resources and wildlife in the area.

Interpretive Waysides and Artworks

South of the CNC is an interpretive wayside. The wayside, designed by the private firm ECOS Communications, consists of CorTen steel sculpture that illustrates the depth of the 1965 flood, recreating a historic marker visitors remember from a tree or pole in the early years of the Park. It includes a small gravel pad and three interpretive signs. These structures may require occasional maintenance and weed control. Near the CNC is a decorative entrance gate by Joshua Weiner that supports the river theme of the Park. The Cooley Rest Area near Blackrock Lake has an interpretive sign about the mining history of the Park. No further artwork is recommended for the interior of the Park, but may be considered in the development envelopes of the existing structures.

Commented [SAL53]: Section added

Picnic Areas

Two picnic areas were installed in 2010 within the development envelopes of the existing buildings. One with three tables is north of the CNC parking area, the other is near the main parking off the Platte Canyon entrance with two tables. No further picnic facilities will be constructed.

Commented [SAL54]: New section document but limit further tables and toilets in keeping with the Master Plan

Trash Stations

Several trash stations are available throughout the Park to minimize litter. These consist of a trash barrel and a recycling barrel, and some contain a fishing line recycling bin.

Commented [SAL55]: Resource added

Restrooms

Restrooms are available in the Carson Nature Center and in the classroom. A composting toilet facility with a storm shelter porch is provided near the middle parking area of the Platte Canyon entrance, and in 2016 a flush restroom was installed at Reynolds Landing.

Commented [SAL56]: Section added

Lighting and Security

The Park and its facilities will be managed with the minimum amount of lighting possible to balance night sky preservation and wildlife impacts while maintaining public safety. Building exterior lights are directed towards the ground and have short-duration, motion-detector lights for staff and visitor safety approaching the building, stairs, and parking lots. They also help to ward off potential vandals. Brighter and timed exterior lighting is used during public programs to allow visitors to travel to and from their vehicles safely. However, no additional parking or street lights or more permanent lighting will be installed. This policy may be re-visited if adjacent development brings increased vandalism or safety concerns.

Memorials

SSPRD offers several memorial options for honoring a special person or occasion. Specific locations have been identified throughout the District where a memorial serves to enhance the beauty or use of

Commented [SAL57]: Clarifies the role of the South Platte Park Fund as well as the Park memorials policy

parks and trails. Specifically within South Platte Park, recommendations for memorials include: the enhancement of the South Platte Reservoir entrance, interpretive trails, art adjacent to the Carson Nature Center, and benches within the development envelopes of the buildings. Memorial trees and groves may be considered, but are discouraged unless there are provisions for watering and replacement. The roundabout near the Nature Center contains boulders dedicated to members of the South Metro Land Conservancy. Additional plaques or memorials will be limited to being incorporated within the development envelope or structure of each facility, and not posted on separate signage. A memorial policy for SSPRD is updated periodically. The South Platte Park Fund holds dedicated contributions from developers, memorials, or towards specified projects. Funds will only be carried over if they are designated towards a specific purpose. All other donations currently go into a scholarship fund used to bring students to programs.

RECREATION ACTIVITIES

The 1983 Master Plan recommends that South Platte Park offer limited leisure opportunities for Park visitors. Activities consistent with the intent of the Park include: hiking; fishing (both cold and warm water); non-motorized boating, canoeing, kayaking, rafting, paddle-boarding and tubing on the river; horseback riding; bicycle riding; wildlife viewing; and photography. Ice fishing is allowed at Eaglewatch Lake if the ice reaches a minimum thickness of six inches. Cross-country skiing and snowshoeing are enjoyed in the winter. No formal ice-preparation or skating rinks may be maintained, though ice-skating itself is allowed. Geocaches and letter boxes, which are outdoor treasure-hunting games, are allowed according to the SSPRD Geocache policy which may be updated on occasion. In general, users must contact the Park for approval first, stations may not be located on facilities, in sensitive or closed areas, and if they begin to create trails off of the formal system, the installer will be contacted and the cache removed if they do not respond. Land uses and recreational activity zones are diagrammed in Figures 7 and 8. Some of the activities not consistent with the intent of the Park include athletic programs enjoyed at many parks throughout SSPRD such as softball, soccer, archery, golf, races and marathons, fitness camps, and other organized sports and activities.

Horseback Riding

Horseback riding is allowed within 30 feet on either side of the MCGT and on service roads within the Park unless they enter designated wildlife areas or are marked for vehicles only. Horse use is greatly diminished from the past due to increased trail use, loss of nearby horse properties, and limited trailer parking. Speed is limited to a trot or lope. Horses are not permitted in the river.

Swimming and Boating

Littleton City Code prohibits swimming, wading, boating, rafting, or tubing unless specifically permitted in a park. The intent for South Platte Park is to allow the river to be used for recreational boating, tubing, and fishing, to allow shore-use only of the lakes, and to eliminate a higher-impact swim-beach environment. State regulations set testing, water quality, and safety standards for designated swimming areas, none of which are implemented in the Park. Conflicts in definitions between city code and state law make this a complex issue. Signage will indicate boating is permitted on the river only, and swimming and bathing are not permitted. Implementation of this rule will follow these guidelines:

- Boating is allowed in the river only, and this includes all state-defined non-motorized vessels such as kayaks, rafts and stand-up paddle-boards. All boating must comply with Colorado State regulations, which require an approved Personal Floatation Device (PFD, like a life vest) onboard for each adult user, and children 12 and under must be wearing such devices. Boating on lakes may be possible under a Park Use permit for management activities and interpreter-guided programs. Cooley canoe programs are currently offered monthly to provide unique opportunities for wildlife viewing, solitude and silence. Boating is prohibited on South Platte Reservoir due to a management agreement regarding drinking water standards with CWSD. All commercial and organized group use of the put-ins and take-outs of the South Platte River is by permit only.
- Swimming is prohibited in the lakes and the river, generally defined as travel through water waist deep or greater, with or without the use of floatation aids, except as described below.
- Tubing is managed by the state as a form of swimming. Tubing is allowed in the river only. Tubing generally include single-chamber rafts, pool toys, and the like. Downriver travel without a floatation aid capable of keeping the majority of the body out of the water is considered a prohibited form of swimming. Fishing float tubes on the lakes are not permitted. While not strictly enforced under state law, PFD's are encouraged for all tubers and especially children 12 and under. Tubing at flows below 50 cfs are discouraged through signage and visitor education as it tends to cause more significant damage to the benthic (river-bottom) environment and an increase in litter like damaged tubes and items people tire of carrying.
- Wading is allowed as a part of fishing or nature exploration in the river and along the lake edges.
- Bathing, such as sitting or lounging in water waist deep or less, or washing of the body, is not permitted.
- SCUBA and related forms of underwater diving are not permitted in the Park.

Partial or complete closure of the River may be declared by the State or by the Littleton City Manager upon the advice of Park staff or emergency officials for the protection of public safety in times of high

Commented [SAL58]: Clarify policies about wading and swimming.

water flows or obstructions in the River. This could include closure to all use, or closure for tubing but not to designated river vessels. In the past, officials have leaned towards stronger advisement of the public rather than restricting activities. Short-term closures have been implemented when the channel was impassable due to obstructions. Park staff should not attempt debris removal in high water conditions and in the past have been able to coordinate with Littleton Fire, Urban Drainage, or the USACE to coordinate reduction in flows, work by swift-water-trained teams, or removal from the river banks using cranes.

Drones and Remote Control Devices

Remote-controlled motorized devices such as airplanes, helicopters, boats, cars, trucks and drones are not allowed. This is to preserve the natural character of the Park from noise issues, and to protect nesting songbirds and raptors from harassment. Use of these devices may be allowed under a permit by staff for management and educational purposes.

Commented [SAL59]: This was recommended in the Master Plan but was not specified in previous versions.

Races and Special Events

The Park receives frequent requests to be a route or start for races and special events. In general, these are not consistent with the management goals of the Park and will not be permitted. The SSPRD special event and special use permits system addresses this in more detail.

Commented [SAL60]: Specifies no races or large special events

Tree Climbing

South Platte Park has had a relationship with recreational tree climbing since around 2006, and it has been a staple of birthday parties and public programming in low annual numbers. Tree-climbers leading programs must follow contract requirements for insurance and qualifications. Independent climbers may climb freely, provided they are certified and use proper equipment (no spikes, and use cambium-savers for ropes) to leave no lasting impacts on the trees. Contractors may, with permission from management, conduct occasional mulching or pruning to create safer climbing conditions. Very few mature cottonwood trees in the park remain safe for climbing due to the declines in forest health.

Commented [SAL61]: New section for an activity that has developed in recent years.

PARK RULES AND REGULATIONS

Rules and regulations specific to South Platte Park are covered under Littleton City Code, Chapter 9 of Title 6, Conduct on Public Property, Section 6-9-3 (Appendix 3). These are summarized on Park literature and signs. City Code regulations do not need to be posted on the property to be enforceable, however, any additional regulations specific to South Platte Park may need to be. Regardless it is recommended to post signage reinforcing the most common rule violations at trailheads and entrances. SSPRD's rules and the CPW regulations are also enforced within the Park's boundary.

Ranger staff make public-relation contacts to educate the public about the rules, regulations, and the reasons for them, with law-enforcement contacts as the next approach.

With increased used, the need for law enforcement at South Platte Park may increase dramatically. Potential problems - such as accidents, user conflict, violations of rules and regulation, vandalism, or homeless individuals camping or living in the Park - may increase the demand for police action on a year-round basis. This might require an increase in staffing or further coordination with Littleton Police to actively patrol the Park. Park Rangers are granted authority through the City of Littleton to issue summons for violations of Park rules, regulations, and parking codes, as well as codes covering wildlife and fishing violations as stated under Colorado Title 33. CPW requests Park Rangers complete field contact cards when it is felt that citation is needed. The Division will then contact the offender at a later time and issue a citation. With certain safety-related offenses (e.g., juveniles with alcohol, hunting, any weapons violations, and/or vehicles off-road, individuals appearing to be in a mental health crisis) or when situations escalate beyond their training and empowerment, Rangers will request backup from the appropriate agency (Jurisdiction Map, Figure 4). The Park has adequate signage to warn the public of the offenses. Public safety and legal liability demand that proper authorities be called.

The use of the Park by homeless individuals has been on the rise due to the proximity of light rail and changes in rules enforcement in surrounding cities. Refer to the current SSPRD policy and federal law regarding the methods for addressing camping and afterhours violations.

EXEMPTIONS

Park staff may grant exceptions to the posted Park Rules and Regulations, as listed on Park signs and in Appendix 3, by written permit for resource management and educational purposes. This is not limited to, but may include activities such as: allowing falconers to hunt during public program display; allowing the planting boxelders; allowing staff-led bonfires for public programs; allowing consumption of alcohol in accordance with City of Littleton permitting processes for classroom rentals; allowing overnight camping as part of specific guided programs; allowing swimming or boating on any of the lakes as part of guided-public programs or towards specific management goals; allowing aquatic diving for management purposes, allowing gold panning for public programs, etc.

SECURITY AND EMERGENCIES

With increased development and use come some new risks to staff and visitors. In the past five years, minor crimes and police activity have increased in surrounding areas. A full emergency plan is available in the office of the administrative assistant and is kept up-to-date with Lockdown/Lockout protocols, evacuation processes, guidelines for working with youth in the field during emergencies, and

Commented [SAL62]: Adds a section to reference new emergency protocols

access maps. 911 is the primary contact for all emergencies, with a very short response time, and Park Rangers should be contacted immediately after calling 911. Staff are encouraged to respond to their degree of comfort and training for the situation while waiting for emergency professionals to arrive as jurisdictional questions or travel to remote emergency scenes have taken extra time in the past.

INTERPRETATION PROGRAM

In accordance with the 1983 Master Plan goals, South Platte Park offers educational programs in natural and cultural history to persons of all ages and abilities in a variety of locations. The field of outdoor education has developed significantly since the Master Plan was released, and in 2006 staff developed an overall Interpretation Plan (Appendix 11) that aligns with the 1983 Master Plan goals, to address changes in the field and in the curriculum demands of the local school districts.

The term interpretation is used to describe activities that forge emotional and intellectual connections between the interests of the audience and the meanings inherent in the resource. Meanings and relationships are revealed, creating an understanding, appreciation, and respect for natural open space, and specifically South Platte Park through storytelling, hands-on experiences, and personal discoveries. The educational vision defined in the Interpretation Plan is to make South Platte Park a regional example of excellence that helps the community find meaning and value in natural open space through direct positive experiences, with the ultimate goal to create future stewards of the resource. To accomplish this vision, each program and product supports the over-arching theme “The South Platte River shapes life in our community.”

Interpretive programs are offered at South Platte Park in the form of interpretive walks, campfire programs, night hikes, workshops, demonstrations, training classes, continuing education opportunities, live animal programs, volunteer service, illustrated lectures, youth camps, and seminars. The Park also provides an EcoTour travel program throughout the western United States, as well as to international destinations. These trips cover all direct and indirect expenses, as well as contribute a portion to the Park Scholarship fund.

South Platte Park has a history of collaboration with surrounding environmental education groups such as Colorado Parks and Wildlife, Denver Water, The Audubon Society of Greater Denver, Thorne Ecological Institute, the SOLE program, and several Great Outdoors Colorado Inspire Initiative coalitions. These groups and coalitions change over time, but there is significant value in remaining part of the metro network, the Colorado Open Space Alliance, the National Association for Interpretation, and the Colorado Alliance for Environmental Education.

Commented [SAL63]: Updates education section with language from the 2006 interpretation plan and adds reference to the 2015 Business Plan.

The current Outdoor Recreation Coordinator is part of the South Platte Park staff. Outdoor recreation programs that are appropriate and consistent with South Platte Park as a natural area are also offered. Programs, such as hiking outings, canoeing, water safety classes, hunter's safety classes, and fishing classes are offered, and many are contracted to occur off-site.

The number of people attending programs at South Platte Park is limited to maximize the user experience and protect the Park's natural resources. Field trips for schools and special interest youth groups are limited to a maximum of 60 children per program, with no more than 15 children per one interpreter plus one or two adult chaperones (provided by the group), with a 1:10 ratio the preferred target. When possible, these programs are limited to 30 students on trails at any one time and 30 in self-guided activities at the Carson Nature Center as recommended in the Master Plan. Private and special interest groups visiting on their own are limited to a maximum of 60 participants.

The general public is welcomed and encouraged to participate in the natural and cultural history programs and volunteering, which are publicized in the SSPRD brochure, the South Platte Park Newsletter, social media channels, various schools, club publications, and newspapers, radio, and television coverage through press releases.

Staff shall, from time to time, review and revise fee structures associated with all environmental education programming and facility use. Fees are approved by SSPRD Board of Directors during the annual budget cycle. In 2015, a Business Plan was implemented along with an annual One Year Marketing Plan. This plan includes recommendations on the pricing and logistics for programs based on customer analyses.

The CNC and Classroom are integral parts of the educational and volunteer programs. They serve as a meeting point for program participants and volunteers, an area to conduct indoor programs and training, and an opportunity to combine indoor and outdoor programming.

In 2013, a scholarship fund was created. Educational donations and any non-designated funds donated to South Platte Park are placed into this fund, which can then be used to offset program or transportation costs for qualifying schools. Teachers and families are more engaged if they must pay at least a small portion of required fees, scholarships will generally not cover 100% of costs and at least \$1 per student is the recommended minimum unsubsidized share. Groups must be qualifying schools or non-profits, ideally with greater than 60% lunch subsidies or serving a known community in need. Funds are held as revenue and transferred as such when utilized. For public programs, SSPRD

offers RecMoney that is distributed through community non-profit groups, and scholarships that can be applied to direct costs of programs for qualifying individuals. This policy is managed by SSPRD and changes from time-to-time.

Since 1989, the Park has received a grant from the Scientific and Cultural Facilities District (SCFD) to support programming by keeping fees for school programs and family events affordable. This process is constantly evolving, but has typically provided around 15-20% of the costs of programs.

Interns and Academic Studies

Interns are accepted at the Park for specific studies or projects in Resource Management or Interpretation. These may include but are not restricted to: inventorying and monitoring the flora and fauna of the Park, creating photo documentation and collection of specimens; behavioral studies and trends of resident wildlife populations; bird migration patterns and studies in relation to habitats within the Park; visitor behavior patterns and visitor impacts; restoration ecology techniques; and interpretive program development or impact studies. Compensation and procedures will comply with SSPRD Human Resource policy regarding educational internships as well requirements from the school. The Park also welcomes low-impact scientific research by students and classrooms. Such work must be covered by an approved Temporary Access Permit and a copy or summary of the results is requested.

Volunteers

The Volunteer program recommended by the Master Plan has grown significantly and is designed for most ages. Families are invited to participate in activities together through the Parent/Child naturalist team program, VolunTeen, and similar opportunities. These programs give young adults experience for future career choices and provide community outreach for senior citizens. Volunteering can instill a strong sense of pride, community, and accomplishment as well as a lasting connection for stewardship of the Park.

Most training for volunteers is an “on-the-job” experience and involves shadowing experienced staff or volunteers in activities. At intervals, as time and demand allow, a more intensive natural history course or interpretive skills course may be offered. Periodic training sessions are offered to volunteers and may include but are not limited to: orientation, birds, mammals, reptiles and amphibians, cultural history of the Platte River valley, interpretive skills, first aid and CPR certification, and other natural and cultural history topics as they relate to the Park and its operations. Volunteers may also receive a discounted rate of up to 20% for public programs if the material is appropriate to further their effectiveness as a volunteer.

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Volunteers include individuals, Girl and Boy Scouts, school programs, corporate employee project days, special interest groups, Transition Programs, and court-ordered community service workers. Volunteers are encouraged to participate in projects or studies conducted by interns or Park staff. If interested, volunteers are encouraged, supported, and trained to lead projects, programs, or studies in the Park.

Benefits to the volunteer may include: limited insurance coverage for duty-related injuries (not currently provided); a general training session and manual; the opportunity to build job experience and references for his or her résumé; experience implementing land care techniques; chance to expand skills; task-specific training; social opportunities, and recognition. Job descriptions are available for most volunteer positions. They provide a clear purpose, job responsibilities, qualifications, training, time commitment, and potentially contracts for service.

CONCLUSION

The South Platte Park Management Plan is an operational guide covering land use policies, resource management, visitor management, and interpretation/education. To reach the goals and objectives of the 1983 Master Plan, this Management Plan must be closely followed.

This Plan defines the Park's natural communities, identifies important Wildlife Areas, addresses management of wildlife, vegetation, aquatic and wetland resources, and recommends appropriate land management policies. Vehicular access, trails, signage, and structural development are discussed with appropriate visitor management guidelines and minimal impact to natural areas. Interpretation and education are important aspects to the management and overall goals of the Park.

In addition to maintaining the Park per this management plan, the Park Manager is responsible for identifying and initiating Park improvement projects. A section on Future Improvement Projects was moved from the Management Plan into an operational document and is maintained by staff for needed improvements and wishlist ideas.

In conclusion, the South Platte Park Management Plan addresses the overall management needs of the Park. It allows visitors a variety of opportunities while providing undisturbed areas of wildlife habitat. It creates a balance between preservation of natural resources and visitor use in an urban setting.

SOUTH PLATTE PARK AGREEMENT

This agreement, made and entered into this 19th day of April, 1983, by and between THE CITY OF LITTLETON, a municipal corporation, hereinafter called the "City", first party, and SOUTH SUBURBAN METROPOLITAN RECREATION AND PARK DISTRICT, a quasi-municipal corporation, hereinafter called the "District", second party.

W I T N E S S E T H :

WHEREAS, the City owns the real property known as South Platte Park, which property is located generally on both sides of the South Platte River between Bowles Avenue and Interstate 470 in Arapahoe County, Colorado, hereinafter called the "Park", which property is devoted exclusively to flood control, park, recreation and open space purposes, and

WHEREAS, both parties desire that the District manage the subject property for the City,

NOW, THEREFORE, IT IS AGREED by and between the parties hereto as follows:

1. The City does hereby appoint the District as the managing authority of the Park for the purpose of providing maintenance and operations, including the construction of buildings and other improvements thereon as may from time to time be agreed upon between the parties. The District shall further have the responsibility and the right to maintain said property on a regular basis.

2. The following procedure for park and recreational planning, design, and development of the Park shall be adhered to:

(a) The District staff shall design the preliminary plan.

(b) The District shall submit preliminary plans to the City for critique and input.

(c) The preliminary plan shall then be redesigned by the District for mutual acceptance by the District and the City. Should there be elements in the plan that are not acceptable to either or both parties, then a joint meeting of the Board and Council shall be held to determine the content of the preliminary park plan.

(d) Either separately or in joint session, the District Board and the City Council shall mutually accept and approve the final, preliminary park plan; and

(e) Conduct a joint public hearing at which time citizens shall be given the opportunity to review the plan and provide input.

(f) The District shall then design the final plan and it shall be formally adopted by the District Board and the City Council.

(g) The District shall develop the proposed park and/or its facilities in concert with the adopted final park plan.

(h) In the event either party desires to substantially amend the final park plan, the full procedure of this section (§2) shall be followed.

3. The funding of the development and maintenance of the Park shall be as follows:

(a) There will be joint funding of the Park between the District and the City.

(b) Such joint funding will be agreed upon between the District and the City prior to each party's adoption of its respective annual budget. The District will submit to the City an itemized statement of all elements of its proposed Park budget.

(c) The minimum annual contribution of each party for maintenance of the Park shall be \$25,000.

4. The interests of the City and of the District in the real property and in the personal property of the Park shall be as follows:

(a) The title to real property of the Park will be held and owned by the City. The District will be the sole manager of the Park for the purposes so stated herein.

(b) The City has previously purchased equipment to be used solely on the Park. Such equipment is and shall remain the property of the City and is to be used in the Park.

(c) All equipment, supplies, provisions, and furnishings purchased for the Park from the joint budget shall be the joint property of the City and the District.

(d) Equipment purchased out of the Littleton South Platte Park Improvement Fund will be owned solely by the City. Such equipment purchased from Littleton South Platte Park Improvement Fund shall be used only for the Park. The District shall have the responsibility of maintaining and insuring such equipment.

5. This agreement shall continue and remain in force and effect for an indefinite and perpetual period of time. This agreement may, however, be terminated by either party, by giving written notice thereof to the other party at least one (1) year prior to the effective date of such termination. In the event of a termination of this agreement by either party or by order of Court, the disposition of the personal property relating to the Park shall be as follows:

(a) The personal property purchased solely by the District for use on the Park shall be returned in whole to the District. Such personal property shall be removed by the District within three months of the termination of this agreement. All such personal property remaining thereafter shall belong to the City.

(b) The personal property purchased solely by the City for use on the Park shall be retained in whole by the City.

(c) The market value of the personal property purchased from the joint budgets of the City and the District shall be determined by appraisal, based upon such value existing at the effective date of termination. Each party shall select an independent, qualified, and licensed appraiser, and if the two appraisers cannot agree between themselves, they shall select a third appraiser. Each party hereby agrees to be bound by the majority decision of said appraisers, and the cost of such appraisal shall be borne by both parties equally. If a majority decision cannot be reached, then and only then shall the parties have the right to apply to an appropriate court of law for the purpose of obtaining a hearing and ruling on the question of valuation. In the event of court proceedings, each party shall be responsible for its own costs incurred.

The City and the District shall, by joint agreement, determine which party, if either, will purchase, at the termination of this agreement, the personal property of the joint budget. If one party

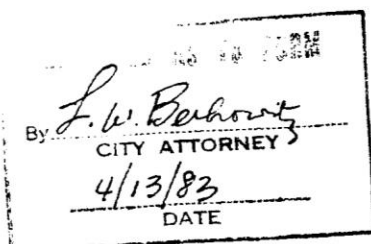
agrees to purchase the property the market value shall be the purchase price. If both parties or neither party desire the purchase of the said personal property, the said personal property shall be sold on the market to the highest bidder with the proceeds being divided equally between the City and the District.

6. District personnel whose employment is used in relation to the Park shall remain employees of the District. City personnel whose employment is used in relation to the Park shall remain employees of the City.

7. The City and the District each shall carry insurance to protect against liability for injury resulting from the operation and maintenance of the Park. The City and the District hereby each agree to provide insurance in the amount of \$150,000 per person and \$400,000 per occurrence for personal injury, and \$100,000 for injury to property.

8. This agreement shall be fully binding upon and shall inure to the benefit of the parties hereto, their successors and assigns.

IN WITNESS WHEREOF, the parties have set their hands and seals the day and year first above written.



THE CITY OF LITTLETON,
a municipal corporation,
First Party

By [Signature]
President of City Council

ATTEST:

[Signature]
City Clerk

SOUTH SUBURBAN METROPOLITAN
RECREATION AND PARK DISTRICT,
a quasi-municipal corporation,
Second Party

ATTEST:

[Signature] By [Signature]
Secretary President

Appendix 2

From the South Platte Park Master Plan

South Platte Park Goals

The Goals set forth by the Master Plan were updated in 2009 and established to be listed in priority order. Should a proposed rule or project create conflict between goals, earlier goals take precedence.

GOAL 1: Preserve and maintain the defined floodplain according to the Federal guidelines outlined in the agreement between the *City of Littleton* and the State of Colorado (October 13, 1977) which safeguards the community from the potential flooding danger of the South Platte River.

- Implement the most practical management methods while maintaining compliance with the U.S.A.C.E. standards as defined in Design Memorandum Volume I and II and as stated in the floodplain regulations prescribed by the Secretary of the Army, *Code of Federal Regulations, Title 33. Navigation and Navigable Waters, Chapter II. Corps of Engineers, Department of the Army, Department of Defense, Part 208. Flood Control Regulations, Section 208.10, Local Flood Protection Works; maintenance and operation of structures and facilities.*
- Monitor the resource and report any events or changes in the resource, which would require additional U.S.A.C.E. management recommendations.
- Actively seek the recommendations and approval of the U.S.A.C.E for all construction projects undertaken in the park.
- Promote public support of management towards this goal.

GOAL 2: Manage the resource as a natural ecosystem while maximizing the restoration of natural habitat areas for indigenous species.

- Implement the most practical resource management methods to minimize the impact of all park improvement or construction projects.
- Design and implement an adequate reclamation/revegetation program to provide native vegetation communities representative of the area's ecosystems, wildlife habitat, visual enhancement, soil stabilization and definition of visitor travel routes.
- Manage the park to provide maintenance and regeneration of the riparian and upland ecosystem.
- Implement the most appropriate enhancement programs, management techniques and regulations, and visitor management techniques to ensure wildlife propagation, population stabilization and protection.
- Implement the most appropriate enhancement programs, stocking programs and regulations to develop a "quality" fisheries resource.
- Actively seek the recommendations of County or State specialists prior to the implementation of herbicide control programs – for noxious or undesirable plant species.
- Monitor, document and evaluate wildlife residents, migrations and behavior to determine population needs and to provide management and background information for interpretive programs.

- Develop and maintain a cooperative working relationship with Colorado Parks and Wildlife.
- Promote public support of management towards this goal.

GOAL 3: Provide environmental education opportunities on a regional level.

- Provide in-service training and/or orientation for teachers wishing to use the park resource for group education experiences.
- Develop and/or help to coordinate the development of standardized and customized curriculum materials for environmental education programs.
- Implement a permitted scheduling system to limit group size, number of groups and the level of use of the Park resource.
- Monitor and evaluate the level of impact caused by group educational use and take appropriate management steps to minimize that impact.
- Create a schedule of non-formal environmental interpretation programs that helps the community find meaning and value in the resource through hands-on experiences and volunteer involvement.
- Implement volunteer programs for stewardship and interpretation that will increase public outreach regarding conservation and the environment.

GOAL 4: Provide limited leisure opportunities on a regional level.

- Encourage discovery of opportunities for passive recreation within the limitations of the resource.
- Establish adequate regulations to provide for visitor safety and minimal impact on the resource.
- Design an adequate trail system to minimize off-trail impacts and to protect fragile resource areas.
- Provide adequate information through signage and brochures on regulations and passive opportunities within the Park.
- Provide an information/education center to serve as an information dissemination location.
- Provide self-guided and naturalist-guided interpretive activities as needed.
- Monitor and evaluate the level of impact caused by visitor use and take appropriate management steps to minimize that impact.
- Provide a public fishing program in the lakes and river while maintaining healthy fish populations, and the aquatic, wetland, and riparian system.)

Appendix 3: LITTLETON COLORADO, CITY CODE

As obtained from: http://www.sterlingcodifiers.com/codebook/index.php?book_id=504 on Sept 29, 2016

6-9-3: UNLAWFUL CONDUCT IN PUBLIC PARKS AND OPEN SPACE:

In addition to the provisions contained in section 6-9-2 of this chapter, the following regulations are hereby established regarding the prohibitions of or limitations on certain activities in public parks and open spaces within the city or owned or leased by the city outside of the corporate limits of the city. (Ord. 30, Series of 2004)

- (A) The city manager or his designee or agent may require permits or licenses for certain uses or activities including, but not limited to: guaranteed reservations; consumption of alcoholic beverages; fishing, boating or special events. Such permits or licenses may be subject to a fee established by the city manager or his designee and may be subject to a monetary damage/cleanup deposit sufficient to defray unusual and/or extraordinary expenses to the city or its designee. At termination of use, the area used shall be restored to a litter free condition. Costs of repair and/or cleanup beyond normal use will be billed to the user based on the cost of such repair and/or cleanup less any monetary deposit.
- (B) All motorized vehicles, except electrically powered wheelchairs, are prohibited, including vehicles for purposes of unloading or loading picnic supplies or sports equipment, and all catering or concession vehicles. This restriction shall not be deemed to prohibit motorized vehicles from designated public streets or parking lots located within parks and open space areas.
- (C) No commercial concessions shall be operated, nor charge or donation of any kind be solicited of the general public on the premises.
- (D) No advertisement, programs, circulars, pamphlets or handbills shall be sold or distributed without express written permission of the city manager or his designee, and no such advertisement, program, circular, pamphlet or handbill shall be affixed to any public building, fence, power or light pole, telephone pole or other public structure. Banners, flags, placards or other similar devices, limited to organizational identification may be temporarily installed subject to approval of the form and method of installation by the city manager or his designee.
- (E) Installation of any structure including, but not limited to, tents, booths, stands, awnings and canopies is prohibited without express written permission of the city manager or his designee. Installation of unauthorized items including, but not limited to, tree houses and rope swings, is prohibited.
- (F) Destruction, damage or removal of any vegetation and damage or defacement of any public property is prohibited.
- (G) Swimming, wading, boating, rafting or tubing is prohibited except where specifically permitted by signage on the premises.
- (H) Any machine or device which amplifies the human voice, music or other sound is prohibited without express written permission of the city manager or his designee. No amplification of the human voice, music or other sound shall be permitted which violates title 7, chapter 3 of this code, including, but not limited to, the operation of radios, musical instruments, television sets and phonographs.

- (I) It shall be unlawful for any person to enter into any public park or open space except during hours of normal operation. Unless otherwise specifically stated by signage on the premises, hours of normal operation shall be from six o'clock (6:00) A.M. to ten o'clock (10:00) P.M., daily. (Ord. 26, Series of 1981)
- (J) Pets shall be on a leash not to exceed six feet (6') in length. No pet shall be permitted to run at large under any circumstances in any public park or open space. (Ord. 26, Series of 1981; amd. Ord. 30, Series of 2004)
- (K) Consumption of alcoholic beverages shall be permitted only upon express written consent of the city manager or his designee, and permitted alcoholic beverages shall be limited to malt and vinous liquors (beer and wine). (Ord. 26, Series of 1981)
- (L) Possession of any weapon or the discharge of any weapon including, but not limited to, rifles, shotguns, airguns, archery equipment and slingshots is prohibited in any public park or open space. Discharging any weapon in such a manner so that the discharged projectile lands within or passes through any public park or open space shall be deemed to violate this provision.
- (M) It shall be unlawful for any person to possess, or to place or set, any trap, snare, net or other device for the purpose of entrapping, snaring, netting or otherwise capturing any animal, fowl or fish in any public park or open space. It shall be unlawful for any person to use, train or possess in any public park or open space, any bird of prey or any other animal or fowl for the purpose of hunting any animal, fowl or fish. These provisions shall not be deemed to prohibit fishing in authorized locations, using accepted methods of sport fishing, including, for example, rod and reel. (Ord. 30, Series of 2004)
- (N) Any form of cooking and picnicking may be prohibited in certain public parks and open spaces if specifically prohibited by signage on the premises. (Ord. 26, Series of 1981)
- (O) Overnight camping and open fires are prohibited in any public park or open space.
- (P) Glass bottles and littering prohibited:
1. It shall be unlawful for any person to bring or possess any glass bottle in any public park or open space; provided, however, it shall not be unlawful for a person to have glass bottles in a vehicle located in a park as long as the contents are not consumed in the vehicle.
 2. It shall be unlawful for any person to bring in and dump, deposit or leave any bottles or other containers made of glass, any broken glass, ashes, papers, boxes, cans, dirt, rubbish, waste, garbage, refuse or other trash in or upon any public park or open space, or other recreational area or facility.
 3. It shall be unlawful for any person utilizing any public park or open space, or other recreational area or facility, to leave such area or facility before placing in disposal receptacles, where provided, all trash in the nature of boxes, papers, cans or other containers, garbage and other refuse in the possession of such person. If no disposal receptacle is available, then such person shall remove said refuse or trash in his or her possession from the premises. Said refuse or trash shall be disposed of in a proper and legal manner elsewhere.
- (Q) It shall be unlawful for any person to operate any vessel in violation of any Colorado statute, rule or regulation for the use, operation and equipment of such vessel.
- (R) It shall be unlawful for any person to violate the rules and regulations promulgated by the state of Colorado pursuant to section 33-1-106 Colorado Revised Statutes regulating the taking, possession and use of wildlife and fish. (Ord. 30, Series of 2004)

Appendix 4: List of Agreements for South Platte Park 2016

Quick reference only, refer to full documentation on shared drive or in Park Manager's files for current dates and legal details.

Agreement with	Regarding	Start date	End date	Agreement between	Summary
Agreements					
Alta Apartments	Property line and border agreements	11-Apr-07		SSPR and Quadrant	Fence-line is NOT property line, but set out of drainage swale, setback is from property line - discusses landscape design, signage, wildlife fence, \$25,000 for brochure, programs, pet impacts, wildflowers; Stays with property, \$25,000 one time, carried over until expended
Army Corps of Engineers	Lease of C470 management site	7/1/2013, renews annually	7/1/2023 contract ends, needs renegotiated	Littleton and Army Corps	Continues lease above, renewing annually until 2023.
Army Corps of Engineers	Recreation development of Platte Channel	(draft only found)	indefinite	SSPR and USA	SSPR will acquire lands, both prepare mgmt plan, requires insurance from concessionairs
Bobbi Superchi	Lease of home on Reynold's Landing park	1-Jun-13	6-2023 or death	Littleton and Superchi	Barbara Superchi can remain in the house for her natural life or 2023 June, 10 yr term expires.
Centennial Water and Sanitation	IGA regarding management of S Platte Reservoir	Jun 6 2006	Indefinite	Centennial, SSPR, Littleton	Centennial owns 212 acre S Platte Reservoir, SSPR manages, Littleton contributes funds - Exhibit B spells out duties of each
Centennial Water and Sanitation	IGA for Surplus water to Eaglewatch Lake	Nov 29 2001	Indefinite	SSPR, Littleton, Centennial	Centennial will release excess groundwater into SPP lake, contribute funds, Littleton will build and maintain wetland, If SSPR/Littleton agreement ends, Annexation in littleton ends, or 90 days notice by any party
Centennial Water and Sanitation	Ensor Wellfield Agreement	May 5 1992	not in effect	SSPR, Littleton, Centennial	Centennial wants to run wells that will affect aesthetics in the Park - created a one-time \$50,000 payment for management expenses of the Park. Ended when fund dropped below \$5000 (2005)
City of Littleton	IGA for management of S Platte Park	April 19th, 1983	Indefinite and perpetual	SSPR and Littleton	South Suburban will plan and manage the Park, budget will be split, division of property and equipment should agreement end
Colorado Water Conservation Board	Cooperation to buy/develop Flood channel	13-Oct-77	Indefinite and perpetual	Littleton and CWCB	Littleton acquiring land for floodplain park, hold state free from damages; gives state and corps permission to enter to inspect and repair, maintenance requirements
Nevada Ditch Company	Maintenance of Nevada Ditch	4-May-00	Indefinite	Denver Water Commissioners, Littleton, SSPR, Centennial	Nevada ditch company maintains high water line, Park manages beaver and top/outer banks, work together if overgrown, access to siphon areas kept open.

Appendix 4: List of Agreements for South Platte Park 2016

Quick reference only, refer to full documentation on shared drive or in Park Manager's files for current dates and legal details.

Agreement with	Regarding	Start date	End date	Agreement between	Summary
Polo Reserve Homeowners Association	Lease of practice polo fields	27-Sep-94	27-Sept-14 (20 yrs)	Littleton and FTSC	Littleton will lease approx 3 acres of land to polo for practice field, supposed to be not altered, deforested, fertilized, etc, no construction, etc. 2012 found series of violations. Lease is in exchange for Grant bench easement
Regional Transportation District	Unrestricted weekend parking, drainage through SPP	19-Nov-92	Applies to future development plans	Littleton and RTD	RTD cannot discharge untreated stormwater into SPP - must retain/treat on their property; discusses annexation, landscaping, and permits unrestricted parking access on weekends for access to the South Platte River
Urban Drainage and Flood Control District	IGA for spending for River Enhancement Plan	3-Jul-05	Completion of project	Urban Drainage, Littleton, SSPR	Urban Drainage will hold funds, all agencies will contribute for conceptual river ehancement plan
Urban Drainage and Flood Control District	IGA for maintenance of the River channel	TBD			
Easements held by other entities					
Centennial Water and Sanitation	Water line from S P Reservoir to McClellan				
City of Denver, Water Commissioners	Easement for water line along Mineral	14-Mar-79		Littleton and Denver	20' easement, 12 acres
City of Englewood	Wastewater Easement in SPP	23-Apr-64	perpetual	Englewood and Ensors	Agreement between Ensors and Englewood, 20 ft right of way on 2 parcels, legal description only
City of Littleton	"North Sewer Easement"				
Colorado Open Lands	Newton Trust Conservation Easement	4-Dec-97			
Ken Caryl Water and Sanitation	Interceptor along C470				
Polo Ridge Farms/Sanctuary Homeowners	View easement, Living fence maintenance				Lots 10 - 16 in Sanctuary hold view easement? Not allowed to add or remove vegetation along fenceline; living fence is 10 ft wide, nothing added without Pk Supervisor permission
Roxborough Sewer	Sewer easement in SPP				30' permanent easement, 15' from sewer center, 30 days notices to access; no planting woody plants on easement

Appendix 4: List of Agreements for South Platte Park 2016

Quick reference only, refer to full documentation on shared drive or in Park Manager's files for current dates and legal details.

Agreement with	Regarding	Start date	End date	Agreement between	Summary
South Metro Land Conservancy	Conservation easement - Ensor property	1-Jul-05		Littleton and SMLC	restricts use and development of 7.8 acres
Southwest Metro Sanitation	Sewer easements through SPP	15-Jun-05		City of Littleton and Southwest Metro	30' permanent easement for sanitary sewer west of the river
Xcel Energy	Powerline easements				125' wide (45' from either pole), no construction in/on easement
Ensor Family	Waterline and well easement at Ensor buffer	1-Jul-05			
Centennial Water and Sanitation	Well access easement Ensor buffer				
TBD	Permanent Utility easement on Superchi	16-Jun-78			
TBD	C470 road easement on Corp property	9-Sep-86		Corps of engineers and State of CO	unclear if SPP has any of easement on our properties
TBD	Mineral ROW				
Easements held by SPP					
Colorado Water Conservation Board	Easement for rec access, permission to issue permits	11-Sep-02	11-Sep-27	SSPR and CWCB	300 ft wide easement including river for recreation use
Polo Sanctuary Homeowners	Easement on 6 lots of private property	28-Sep-94	20 years, or if Lease agreement for practice field is terminated	Littleton and FTSC	2.026 acres south of mineral, east of Nevada ditch
Polo Reserve (homeowners or metro?)	Grant Bench Conservation Easement	27-Sep-94	20 years, or if Lease agreement for practice field is terminated	Littleton and FTSC	6.08 acres (west bank of Nevada ditch to east bank of Meadowwood drainage ditch), Only SPP can disturb vegetation; takes responsibility for land management.
Nevada Ditch Conservation Easement	Easement on west side of ditch, owned by Littleton				

Appendix 4: List of Agreements for South Platte Park 2016

Quick reference only, refer to full documentation on shared drive or in Park Manager's files for current dates and legal details.

Agreement with	Regarding	Start date	End date	Agreement between	Summary
Water Rights					
Chute 10 (c470)					100cfs conditional for boat chute operation
Chute 4 (mineral ave)		2-Aug-91			100 cfs absolute for boat chute operation, 70 cfs absolute for habitat Apr 1 - oct 31; 30 cfs absolute nov 1 - Mar 31 for development/enhancement of fishery
Chute 9 (brown ditch)		2-Aug-91			100 cfs absolute for boat chute operation, 70 cfs absolute for habitat Apr 1 - oct 31; 30 cfs absolute nov 1 - Mar 31 for development/enhancement of fishery
Cooley Lake Evaporative Loss	35 ac ft in McClellan Reservoir, court approved	11-Jun-05	annual		District Court case 89CW062 requires Englewood release 18.79 acre-ft for evaporation and 5 acre-ft for irrigation (use averageing 1.25 acre ft)
10,000 Trees Irrigation operation	Part of 35 ac ft, no formal ongoing agreement				
Permits we hold					
Chatfield State Park	Fees for ongoing program use	annual			
Denver Water	Permit to use hydrant water with meter	annual			
US Fish and Wildlife Service	Migratory Bird Possession Permit	annual			
City of Littleton	Recreational Burn Permit	annual			
City of Littleton	Tree Removal Permit				
Division of Parks and Wildlife	Scientific Collection License - wildlife salvage permit	annual			
US Forest Service	Recreational Outfitter Permit	annual			
Permits we Allow					
Centennial Water and Sanitation	Staff access river for periodic water testing				
City of Thornton	Staff access river for periodic water testing				
Urban Drainage and Flood Control District	Access for river maintenance projects				

Appendix 4: List of Agreements for South Platte Park 2016

Quick reference only, refer to full documentation on shared drive or in Park Manager's files for current dates and legal details.

Agreement with	Regarding	Start date	End date	Agreement between	Summary
Dale Carter (Wolhurst Resident)	Motorized Wheelchair on Mary Carter/East trail				
Wolhurst Retirement Village	Encroachment of homes on park property				
Designations					
National Audubon Important Bird Area					
National Wildlife Federation backyard habitat					
Sales contracts in files					
Carson Family	Sale of nature center	Sept 8 1986	final	Littleton and Carsons	\$10 sale to Littleton
City of Denver	Cooley Wells sold to Dity of Denver	18-Feb-72		Littleton and Denver	Selling 3 parcels called Cooley Wells to Denver? \$10
City of Denver	Cooley Wells sold back to Littleton	Dec 10 1980		Littleton and Denver	Selling 3 parcels called Cooley Wells back to Littleton, \$26,300
Cooley Gravel	Transfer of rights for Cooley Mine	11-Mar-82			Selling 5.655 acres
Ensor Trust	Sale of buffer	18-May-09			7.8 acres for \$3 mill.
Arapahoe County Open Space	IGA for conservation easement in exchange for funding to purchase Ensor	4-Nov-03			
SMLC	IGA for conservation easement in exchange for funding to purchase Ensor	1-Jan-10			
Annexation Orders in files					
City of Littleton	Annex South Platte Park Annexatin no 1	16-Jan-79		Littleton	
City of Littleton	Annex South Platte Park Annexatin no2	16-Jan-79			
City of Littleton	Annex South Platte Park Annexation no 4	16-Jan-79			

Appendix 4: List of Agreements for South Platte Park 2016

Quick reference only, refer to full documentation on shared drive or in Park Manager's files for current dates and legal details.

Agreement with	Regarding	Start date	End date	Agreement between	Summary
City of Littleton	Cooley Parcel	16-Dec-80			
City of Littleton	Annexation Cenco/Grant Bench property	18-May-82			
City of Littleton	Annexation of Denver Water Board Parcel, Hobby Horse parcel, Monen/Reiner Parcel, Newton B Parcel, Olsen Parcel,	21-May-85			
City of Littleton	Annexation of Newton Trust South Platte Park 1, 2, 3	6-Jul-93			7.8266 acres
Nye Family	access to SPP across property	19-Jun-84	?	Littleton and Nyes	conditions for accessing SPP properties, if Nye property is annexed into Littleton
Polo Reserve (homeowners or metro?)	Grant Easement #2	28-Sep-94		Littleton and FTSC	5.447 acres annexed into, included in S Platte Park
Public Law that affects SPP management					
1974 Water Resources Development Act	Establishes right to implement S Platte Park	27-May-05			Establishes right to purchase floodplain, states management regulations
1970 Flood Control Act	Lease with Corps certifies City remains in compliance with section 221				
Code of Federal Regulations, Title 33, Ch II	Flood Control Regulations				Section 208 regs
Littleton City Code, 6-9-3	Conduct on Public Property				
Grants that affect management					
Land and Water Conservation Fund	Platte River Park Wolhurst	30-Sep-74	25-Jan-06		Requires 5-year project inspection; acquisition of 25.29 acres

Appendix 5

Cooley Lake Policy

History

The Cooley Lake Area was previously a privately-owned aggregate mine. In 1989, it was incorporated into South Platte Park but it remained closed for a mandatory five-year reclamation period. After the reclamation process was completed, public meetings were held to decide the use of the area which is 236 acres and 26% of the Park. The goals for South Platte Park include (1) maintaining a naturally functioning native floodplain ecosystem, (2) managing the resources as a natural ecosystem, as well as (3) providing regional educational opportunities and (4) providing limited leisure opportunities. These goals are not always compatible with each other. In order to achieve balance between them, the low use of the Cooley Area offsets significant recreation impacts near the Nature Center, on the regional Greenway Trail, and along the southern lakes.

Additionally, the original Master Plan specifically called for “the provision of a wildlife retreat with low visitor use” that was described to be an area accessible by permit only, initially intended to be the southwest lakes area, which is now a high-use zone. As there was not a history of use of the Cooley area like there was in the lakes area, nor facilities to close and relocate, an intentional swap was made to designate Cooley as the limited use area. The Town of Columbine Valley also supported the Cooley Lake Concept based on wanting to limit trespass onto their Country Club golf-course and still opposes any inquiries for trail connection on the west side of the river along their border. On November 1, 1994, Littleton City Council voted to maintain restrictions around Cooley Lake, with the exception of naturalist-guided walks and programs, and specific approved studies. The SSPRD Board of Directors followed with their vote on January 25, 1995. The Cooley Lake area management has been challenged at least three additional times since then, and both Board and Council have voted to maintain the wildlife reserve concept to offset the heavy impacts in other parts of the Park.

Resource Management

The Cooley Area shows greater wildlife diversity than other regions of the Park. This cohesive and undisturbed area is important wildlife habitat which provides food, water, shelter, and space where animals can raise their young and live without continuous stress from humans. The Cooley Lake Area attracts and maintains species not found in more frequently visited areas of the Park. By preserving a portion of the park as a natural wildlife area and an area of undisturbed refuge, it increases viewing opportunities for wildlife on the rest of the Park.

The addition of South Platte Reservoir to the Park does not replicate the unique variety of wildlife habitats found in the Cooley Lake Area. The Reservoir is a water storage facility that could sit empty for years during a drought. It is managed to maximize drinking water quality. Therefore, no fish or plants have been introduced to it. The non-vegetated shoreline doesn't have hidden bays, islands, beaver structures, or shallow marsh edges that create variety and habitat on the shore of Cooley. The Reservoir shorelines are nearly sterile riprap, while Cooley has developed a variety of wetland soils. The reservoir may serve to attract occasional waterbirds on migration, but is of a substantially different quality. In periods of extended drought, South Platte Reservoir could be drained almost completely and remain empty for years, whereas Cooley is fed by groundwater and levels are unlikely to drop substantially.

Public Impacts and Access

Natural areas heavily frequented by human visitation have lower wildlife habitat qualities. Various scientific studies (Boyle and Samson 1985, Erwin 1989, Cassierer et al. 1992, Holmes

et al. 1993, Miller 1994, Miller et al. 1998, Reed and Merenlender 2008) have found that wildlife (mammals and birds) species, sensitive to disturbance, decrease in population and nesting along recreational trails. Miller et al. (1998) found that nest predation was greater along recreational trails. A literature review by Miller et al. (1998) lists flight distance, which is the distance from disturbance/disturber to animal when the animal physically flees to a safer location, to range from 15 meters to 400 meters. Taylor and Knight (2003) utilized calculations of the area around existing trails in a state park that may be impacted by recreationists on trails to demonstrate the area that could be rendered unsuitable for wildlife. Disturbance to wildlife affects their ability to forage, rest, and reproduce; increases energy expenditure; and impacts their survival. Animals on the move burn critical energy needed for migration or breeding activities.

Social trails that form for fishing along the shoreline results in trampling and loss of uncommon to rare wetland vegetation, an increase in weeds from trail sources or favoring disturbed areas, and changes in soil structure, erosion, and soil compaction. Ground nesting ducks and willow- and cattail-nesting songbirds often have their nests disturbed or damaged by anglers, shoreline species may be separated from their feeding or shelter areas, and young have been separated from their parents. Lakes open to fishing require additional patrol, license checks, and boundary enforcement. South Platte Park currently has 5 other lakes and 2.5 miles of river (or 11.8 miles of river banks and lakeshores) available for fishing with regular gamefish stocking to enhance the fishing experience. Animals in these areas escaping from human disturbance are distracted, thus more susceptible to predation. Animals may also be pushed off prime feeding and breeding territories by human disturbance.

Anglers leave significant amounts of litter debris and are the primary source of trash and litter complaints in South Platte Park. Lakes currently open to regular public use require cleanup at least once per month, with multiple bags collected each time. Litter has entangled and killed wildlife at these lakes.

Cooley Lake is a limited access zone where the public may visit the area on staff-guided activities, free monthly public hikes, rare fee-based programs, or volunteer projects. This provides control on the amount, type of use, and timing around the lake to help the area function as a refuge for wildlife, while still providing an opportunity for the public to explore the area.

The City Council, SSPR Board, and managers' decision to provide limited access to the Cooley Lake Area maintains a balance between the Park's goal of preserving a natural ecosystem and the goal of providing education and leisure opportunities in a heavily use natural area.

Cooley Lake Diversity Data

A monthly Winter Waterfowl Census has been conducted in the Park November through March annually since 1991. Over the 25 years that this study has been conducted, Cooley Lake has recorded 25% more species than Eaglewatch, the most comparable lake in the Park (55 species, compared to 44 species). Of those species, 14 have never been reported during the census from Eaglewatch, while only 3 species from Eaglewatch were not found at Cooley. Cooley also had very high numbers of herons, mergansers, and coots compared to Eaglewatch (ie 800 common mergansers vs 20). The data is taken from sunrise until approximately 9:30 am, before most human activity increases in the Park.

Annual spring and fall bird migration counts are conducted in South Platte Park. Based on migratory count data collected since 2000, Cooley Lake Area has on average 9.6% more species of birds (44-71 species) than did all of the five lakes south of Mineral combined (37-54 species) with the exception of one count where the number of species observed was identical.

The number of individual birds seen at Cooley (514-3185 individuals) was on average 23% more than that observed at all five Lakes south of Mineral (301-854 individuals).

In the last 10 years, the following birds have been reported ONLY from the Cooley Lake area of the Park:

Least Tern	Yellow-bellied Sapsucker	Canada Warbler
Black Tern	Pacific Loon	Sage Sparrow
Black-legged Kittiwake	Semi-palmated Sandpiper	Blackpoll Warbler
Great-crested Flycatcher	Great-tailed Grackle	Red-breasted Merganser
Tundra Swan	Chimney Swift	

Additionally, many birds are seen more regularly in the Cooley area, and only rarely in other parts of the park:

Bald Eagle	Common Loon	Clark's Grebe
Osprey	American Avocet	Horned Grebe
Snow Goose	Black-necked Stilt	Eared Grebe
Ross's Goose	Long-billed Dowitcher	White-faced Ibis
Ruddy Duck	Marsh Wren	Franklin's Gull
Canvasback	Green Heron	Bonaparte's Gull
White Pelican	Western Grebe (breeding)	Rose-Breasted Grosbeak
Greater White-fronted Goose	Pied-billed Grebe (breeding)	Common Nighthawk

Raptors, such as osprey and bald eagles, currently use Cooley for roosting activities more frequently than other lakes, and since 2014, Osprey have been nesting on a nesting platform provided on the east shore of Cooley Lake.

Cooley is home to an active coyote den, and at least one and up to three beaver families. The area has hosted black bears on several occasions in the past, and is the only place where "unusually large cat-like tracks" were found just days before a young mountain lion was killed by the light-rail train near Mineral in 2006. These species typically require more space and better quality habitat than many urban wildlife species.

The broad expanse of cattails on the delta region along the east shore shelters swallows by the hundreds in autumn, before and during migration when overnight temperatures and during inclement weather can threaten survival. This was a discovery unique to that area of the Park, and the birds are easily disturbed by human presence.

**City of Littleton Open Space Task Force
Final Report**

March 15, 1996

Introduction

The Littleton City Council created an Open Space Task Force in February, 1996. The task force completed its work on March 12, 1996. The task force met five times beginning February 26. The meetings included a site tour of the properties under consideration.

The city council appointed the task force in response to concerns over potential development of private land adjacent to South Platte Park. Zoning and land use guidelines for most of these parcels are addressed in the city's Santa Fe Corridor Plan, adopted in 1984. It was the city council's desire that the task force work include recommendations that could mitigate the effects of this development on the park, which the city values as unique in the Denver metropolitan area.

Task Force Goals

The task force members were presented with five goals to achieve:

- 1). Assemble an inventory of properties that abut the 630-acre South Platte Park using existing buffer studies and other resources.
- 2). Determine the potential impact that development of each parcel might have on the park, giving consideration for existing conditions, potential development, likelihood of each parcel being developed and when development might occur.
- 3). Determine how impacts might best be mitigated. If that involves land acquisition, how much land is required to reduce the impact to an acceptable level?
- 4). Determine the value of the parcels proposed to be acquired.
- 5). Establish a priority ranking for the parcels.

The goals of the task force have been achieved.

Task Force Recommendations Regarding Five Properties Studied

The task force ranked the five properties in this order of importance.

- 1). Newton
- 2). Central Construction
- 3). Ensor
- 4). Tuck
- 5). Kiewit

The task force members believe that the following three parcels should be acquired:

- 1). The 25-acre Newton Parcel, located north and east of the park boundary near the

intersection of Santa Fe and Mineral Avenue. The task force supports and urges the South Metro Land Conservancy to continue its work to acquire this parcel and exercise its option with the property owner. This parcel generally conforms with the large buffer parcel identified by the South Platte Park staff.

2). Up to 21 acres of the Central Construction property, located at the northeast corner of the park. The task force believes this parcel is significant because it is immediately adjacent to the river and important access to the river could be controlled through this property in the future. Finally, the property currently has a negative visual impact on the park. This parcel was not included in the original buffer study conducted by the South Platte Park staff.

3). The 19-acre small buffer Ensor parcel identified by the South Platte Park staff, located at the southwest corner of Mineral Avenue and Santa Fe. In addition, the task force urges the city to work with the developer in the future to mitigate the impact of development and perhaps acquire additional land if opportunity is afforded.

Regarding the final two properties, the task force recommends the following:

4). The Tuck property, located north of Cooley Lake in Columbine Valley. The task force believes that the existing easements (9.9 acre flow easement; 10.2 acre ponding easement; and .65 acre wing dyke easement) to a great extent accomplish the goals of the small buffer as delineated by the South Platte Park staff. Therefore, no acquisition is recommended at this time.

5). The final piece of land the task force considered was the 200+ acre Kiewit property at the southwest corner of the park, located in Arapahoe County. The task force recognizes that City of Littleton staff has had numerous discussions with Centennial Water and Sanitation District regarding the possible future development of this parcel as a reservoir. These discussions have included the parcel's potential for inclusion in the city limits and park boundary. The task force believes that a positive outcome to these discussions would be beneficial to the park. It recommends that these discussions continue. This parcel was not included in the original buffer study conducted by the South Platte Park staff.

Funding Sources

The task force examined a variety of funding options which included the proposed bond election by the South Suburban Park and Recreation District; Great Outdoor Colorado (Colorado Lottery) funds; and funds from the City of Littleton such as the \$100,000 tentatively pledged to open space acquisition.

Conclusion

The task force recommends acquisition of the Newton, Central Construction and Ensor properties as delineated above (priorities 1-3). The task force further advocates immediate action with application for the Great Outdoor Colorado grant by South Metro Land Conservancy for acquisition of the Newton property. Regardless, however, of whether Great Outdoor Colorado grant money is ever obtained, the task force recommends outright acquisition of these properties with South Suburban bond monies if the issue is approved by voters on May 7, 1996 along with city funds dedicated for this purpose, and any other funds which would be available.

City of Littleton Open Space Task Force Members

Pat Cronenberger, Chairwoman
Littleton City Council Member

Bobbie Sheffield
South Metro Land Conservancy

Bill Woodcock
Manager of Planning and Construction
South Suburban Park and Recreation District

Jim Ryan, Board of Directors
South Suburban Park and Recreation District

Andy McMinimee
City Manager
City of Littleton

Vaughn Gardinier
Former Littleton City Council Member
Trustee, Hudson Gardens Foundation

Clint Blum
Realtor, Polo Reserve Development

Property	Land Buffer	Est. Cost	Funding
<i>Newton</i>	25 acres	\$1.8 mil. (negotiated option)	SSPRD bonds; GoCo; match from SSPRD, match from City.
<i>Central Construction</i>	Up to 21 acres	?	"
<i>Ensor</i>	19 acre buffer	?	"
<i>Tuck</i>	20 acres of various easements which generally satisfy small buffer requirements	NA	NA
<i>Kiewit</i>	200+ acres-continue discussing with Centennial Water & Sanitation	NA	NA

Appendix 7

Recommended Re-vegetation Plant List

The following plants are suggested for seeding or planting in natural open spaces within South Platte Park. These plants survive well in the plains zone and the lowland riparian communities of South Platte Park. Plant species were selected that provide food and cover for a variety of wildlife. Plants that are especially drought tolerant are listed with “DT”. Most plants listed will typically require 2-5 years to establish depending on the site characteristics, and then should be self-sustaining and require less care and maintenance than typical ornamental plantings. Plants ordered from local nurseries should be done using the scientific name *italicized* in the text. Scientific plant names follow Kartesz (1994) and those in parentheses follow Weber (1996). Plants not on this list may be considered if they are native to the Colorado Front Range prairie or foothill community within approximately 60 miles of Littleton.

N plants native to South Platte Park
 DT very drought tolerant

Trees:

- | | | | |
|---|--------------------------------|----------|-----------|
| <i>Celtis reticulata</i> | Netleaf Hackberry | N | DT |
| Small tree, often stunted and shrubby. Bark is gray and corky. Found on dry rocky slopes of foothills and plains. Leaves usually covered with nipple galls. | | | |
| <i>Juniperus scopulorum</i> (<i>Sabina scopulorum</i>) | Colorado Juniper | | DT |
| Small symmetrical evergreen tree. Leaves gray-green or silvery, fruit light blue. Found in dry soil. | | | |
| <i>Pinus ponderosa</i> (subspecies <i>scopulorum</i>) | Ponderosa Pine | | DT |
| Tall evergreen with orange-brown bark. Yellow-green needles 5-7” long in bunches of 2 or 3. Found widely spaced on dry slopes in beautiful open parklands. | | | |
| <i>Pinus edulis</i> | Piñon Pine | | DT |
| Small bushy evergreen with short needles in bundles of 2. Source of the piñon nut. Found in dry woodlands. | | | |
| <i>Populus acuminata</i> (<i>Populus x acuminata</i>) | Lance-leafed Cottonwood | N | |
| A hybrid species of cottonwood with leaves intermediate between Narrow-leaf and Plains Cottonwood. Found in poor soil along streams and in valleys. | | | |
| <i>Populus angustifolia</i> | Narrow-leaf Cottonwood | N | DT |
| Medium sized shade tree with smooth creamy bark. Leaves narrow. Found along streams in poor soil. | | | |
| <i>Populus deltoides</i> (subspecies <i>monilifera</i>) | Plains Cottonwood | N | |
| Tall shade tree with a broad crown. Gray furrowed bark with thick ridges. Glossy triangular leaves. Found along streams and in flood plains. | | | |
| <i>Salix amygdaloides</i> | Peachleaf Willow | N | |
| The only native willow that becomes a 15-30’ many stemmed tree. Leaves are slender and long, twigs yellowish. Found along streams. | | | |

Shrubs:

Amelanchier alnifolia

Serviceberry

Low to medium sized shrub with oval leaves and fragrant white five-petal flowers in early spring. Bears edible juicy, berry-like fruits eaten by birds in late summer.

Amorpha fruticosa var. *augustifolia*

Lead Plant

N

DT

Medium shrub with 9-25 small oval leaflets per leaf. Dark blue or purple flowers and long flattened seed pods with two seeds.

Atriplex canescens

Four-winged Saltbush

N

DT

Medium sized shrub with narrow gray-green leaves. Four papery margins on fruit give the plant its name.

Chrysothamnus nauseosus

Rabbitbrush

N

DT

Spreading shrub with narrow light green leaves on gray woody stems. Small yellow flowers occur in clusters mid to late summer.

Cornus sericea (*Swida sericea*)

Redtwig Dogwood

N

Medium to tall leafy shrub with flat-topped clusters of white flowers. Beautiful red twigs and white berries. Occurs in moist areas along drainage ways mostly in the foothills, and rarely in protected locations in the plains along drainage ways.

Crataegus erythropoda

Shiny-leaved Hawthorn

N

Thorny shrub or small tree with smooth, shiny leaves and branches. Flowers white/pink five-petals and fruits brown-black "haws".

Holodiscus dumosus

Ocean Spray

DT

Medium sized shrub with small toothed leaves. Flowers in large plumes of creamy-white turning to rust.

Jamesia americana

Waxflower

Stiffly branched shrub with opposite leaves and branches. Waxy, creamy-white flowers in clusters, seed heads persist through winter.

Prunus americana

Wild Plum

N

Small-medium shrub with rigid, spiny branches, grayish bark. White flowers in clusters in May, orange to purple plums. Good for birds. Found in thickets along streams in foothills and plains.

Padus virginiana subspecies *melanocarpa*

Chokecherry

N

Medium-large shrub with reddish-brown bark. Creamy-white flowers in cylindrical clusters in May. Dark red-black fruits excellent for jelly. Good for birds. Forms thickets in valleys and hills.

Quercus gambelii

Scrub Oak

Many branched small tree or scrub with leathery, lobed leaves and acorns. Thicket forming in foothills.

Rhus glabra

Smooth Sumac

N

Tall shrub with stout stems, pinnately compound leaves, which turn bright red in fall. Small greenish flowers in clusters, fruits red, velvety and berry-like. Found in masses along roads.

<i>Rhus trilobata</i> (<i>Rhus aromatica</i> subspecies <i>trilobata</i>)	Three-leaf Sumac	N	DT
Many branched, rounded shrub with compound leaves. Tiny yellow-green flowers in clusters in May, red-orange sticky fruit. Found on dry, sunny slopes in foothills and riparian areas in plains.			
<i>Ribes aureum</i>	Golden Currant	N	
Medium height shrub with spicy yellow tubular flowers and small edible round black berries. Three lobed leaves. Common in foothills and plains.			
<i>Ribes cereum</i>	Wax Currant		
Low hairy shrub with small lobed leaves. Pinkish tubular flowers in clusters and orange-red edible fruit. Abundant on dry sunny slopes and in Ponderosa pine forests.			
<i>Rubus deliciosus</i>	Boulder Raspberry		
Medium shrubs with light brown shedding bark. Very showy single white rose-like flowers and flattened salmon colored fruits. Found on dry rocky ground in foothill canyons.			
<i>Rubus parviflorus</i>	Thimbleberry		
Medium shrubs with shedding older bark. White cupped flowers in clusters, edible pink fruits, and a favorite of birds.			
<i>Salix exigua</i>	Sandbar Willow: Coyote Willow	N	
Medium shrub 6-15 feet tall with many stems. Spreads rapidly once established. Found adjacent to water or in moist to wet areas. Good plant for erosion control.			
<i>Salix lutea</i>	Yellow Willow	N	
Medium shrub 6-15 feet tall growing in ball shape. Grows along streams or in wet areas of foothills and plains. Good plant for erosion control.			
<i>Sambucus racemosa</i> (<i>Sambucus microbotrys</i> var. <i>melanocarpa</i>)	Red-berried Elder		
Coarse tall shrub with compound leaves. Rounded white flowers in clusters, bright red to orange-red berries. Found in ravines, along roadsides, and on slopes.			
<i>Symphoricarpos alba</i>	White Snowberry		
Low growing shrub with round gray-green leaves. Pairs of pinkish-white flowers develop into white berries. Occurs on dry rocky soils and gravelly banks.			
<i>Symphoricarpos occidentalis</i>	Western Snowberry	N	DT
Low shrub with gray-green round leaves. Small pink tubular flowers in leaf axis, spongy green-white berries. Dense spreading colonies foothills and plains.			
<i>Yucca glauca</i>	Soapweed	N	DT
Low evergreen shrub formed of a cluster of long narrow leaves. Tall stout flower stalk rises from center of cluster with large creamy-white flowers and dry green pods. Abundant on plains and in foothills.			

Grasses:

<i>Agropyron smithii</i> (<i>Pascopyrum smithii</i>)	Western Wheatgrass	N	
Cool season, medium height sod forming grass. Moist to dry bottomlands.			
<i>Andropogon hallii</i>	Sand Bluestem		
Warm season sod forming grass. Sandy soils.			
<i>Bouteloua curtipendula</i>	Side Oats Grama	N	DT
Warm season, medium height, bunch grass. Prairies and rock hills.			
<i>Bouteloua gracilis</i> (<i>Chondrosum gracile</i>)	Blue Grama	N	DT
Warm season, short height, bunch grass. Sandy to heavy soils on plains and hills.			
<i>Buchloe dactyloides</i>	Buffalo Grass	N	DT
Warm season, short sod-forming grass. Dominant grass of Colorado's short grass prairie.			
<i>Nassella viridula</i>	Green Needlegrass	N	
Cool season, medium bunch grass. Dry slopes and plains.			
<i>Oryzopsis hymenoides</i> (<i>Achnatherum hymenoides</i>)	Indian Ricegrass	N	DT
Cool season, medium height, bunch grass. Dry, sandy soils.			
<i>Panicum virgatum</i>	Switchgrass	N	
Warm season, tall bunch grass. Medium to sandy soil in prairie bottomlands.			
<i>Schizachyrium scoparium</i>	Little Bluestem	N	DT
Warm season, medium height, bunch grass. Medium sandy soils in prairies and open woods.			
<i>Sorghastrum nutans</i> (<i>Sorghastrum avenaceum</i>)	Indian Grass	N	
Warm season, tall sod forming grass. Sandy to medium soils on dry slopes.			
<i>Sporobolus cryptandrus</i>	Sand Dropseed	N	DT
Cool season, medium height bunch grass. Sandy, open ground.			

Appendix 8

Recommended Grass Seeding Mixes and Rates

Subirrigated Mixes for Stream Channels

(in areas that get inundated in 1.5 to 5 year return intervals)

Clay/Clay Loam Soil				
<u>Common Name</u>	<u>Scientific Name</u>	<u>Variety</u>	<u>Grass type</u>	<u>PLS % of mix by weight</u>
Swithgrass	<i>Panicum virgatum</i>	Blackwell, Nebraska 28	W,T,B	5
Yellow Indiangrass	<i>Sorghastum nutans</i>	Native, Cheyenne	W,T,S	10
Big Bluestem	<i>Adropogon geradii</i>	Native, Kaw, Pawnee	W,T,S	20
Alkali Sacaton	<i>Sporobolus airoides</i>	Native	W,M,B	2
Western Wheatgrass	<i>Agropyron smithii</i>	Native, Arriba	C,M,S	15
Green Needlegrass	<i>Nasella viridula</i>	Native, Lodorm	C,M,B	10
Canada Wildrye	<i>Elymus canadensis</i>	Native	C,T,B	20
Sideoats Grama	<i>Bouteloua curtipendula</i>	Native, El Reno, Vaughn	W,M,B	10
American Mannagrass	<i>Glyceria grandis</i>	Native	C,S,T	8
				100

Loam/Sandy Loam Soil				
<u>Common Name</u>	<u>Scientific Name</u>	<u>Variety</u>	<u>Grass type</u>	<u>PLS % of mix by weight</u>
Swithgrass	<i>Panicum virgatum</i>	Blackwell, Nebraska 28	W,T,B	5
Yellow Indiangrass	<i>Sorghastum nutans</i>	Native, Cheyenne	W,T,S	10
Big Bluestem	<i>Adropogon geradii</i>	Native, Kaw, Pawnee	W,T,S	20
Alkali Sacaton	<i>Sporobolus airoides</i>	Native	W,M,B	2
Prairie Cordgrass	<i>Spartina pectinata</i>	Native	W,T,S	5
Green Needlegrass	<i>Nasella viridula</i>	Native, Lodorm	C,M,B	10
Canada Wildrye	<i>Elymus canadensis</i>	Native	C,T,B	20
Sideoats Grama	<i>Bouteloua curtipendula</i>	Native, El Reno, Vaughn	W,M,B	10
Little Bluestem	<i>Schizacarium scoparius</i>	Native, Pastura	W,M,B	10
American Mannagrass	<i>Glyceria grandis</i>	Native	C,S,T	8
				100

Sandy Soil				
<u>Common Name</u>	<u>Scientific Name</u>	<u>Variety</u>	<u>Grass type</u>	<u>PLS % of mix by weight</u>
Swithgrass	<i>Panicum virgatum</i>	Blackwell, Nebraska 28	W,T,B	10
Yellow Indiangrass	<i>Sorghastum nutans</i>	Native, Cheyenne	W,T,S	20
Sand Bluestem	<i>Andropogon gerardii</i>	Native, Woodward	W,T,S	30
Alkali Sacaton	<i>Sporobolus airoides</i>	Native	W,M,B	5
Sideoats Grama	<i>Bouteloua curtipendula</i>	Native, El Reno, Vaughn	W,M,B	15
Thickspike Wheatgrass	<i>Elymus macrourous</i>	Critana	C,M,S	10
Sand Dropseed	<i>Sporobolus cryptandrus</i>	Native		10
				100

Appendix 8

Upland Mixes for areas above Stream Channels

(in areas that do not get inundated until storms greater than a 5 year return interval)

Clay/Clay Loam Soil				
<u>Common Name</u>	<u>Scientific Name</u>	<u>Variety</u>	<u>Grass type</u>	<u>PLS % of mix by weight</u>
Buffalograss	<i>Buchloe dactyloides</i>	Native, Sharp's	W,S,S	40
Blue Gramma	<i>Bouteloua curtipendula</i>	Native, Lovington, Alma	W,S,B	15
Sideoats Grama	<i>Bouteloua curtipendula</i>	Native, El Reno, Vaughn	W,M,B	15
Western Wheatgrass	<i>Agropyron smithii</i>	Native, Arriba	C,M,S	20
Green Needlegrass	<i>Nasella viridula</i>	Native, Lodorm	C,M,B	<u>10</u>
				100
Loam/Sandy Loam				
<u>Common Name</u>	<u>Scientific Name</u>	<u>Variety</u>	<u>Grass type</u>	<u>PLS % of mix by weight</u>
Buffalograss	<i>Buchloe dactyloides</i>	Native, Sharp's	W,S,S	20
Blue Gramma	<i>Bouteloua gracilis</i>	Native, Lovington, Alma	W,S,B	10
Western Wheatgrass	<i>Pascopyrum smithii</i>	Native, Arriba	C,M,S	7
Thickspike Wheatgrass	<i>Elymus macrourus</i>	Native, Critana	C,M,S	7
Slender Wheatgrass	<i>Elymus trachycaulus</i>	Native, San Luis	C,M,B	6
Needle-and-thread	<i>Stipa comata</i>	Native	C,M,B	10
Green Needlegrass	<i>Nasella viridula</i>	Native, Lodorm	C,M,B	10
Prairie Junegrass	<i>Koeleria macrantha</i>	Native	C,M,B	5
Sideoats Grama	<i>Bouteloua curtipendula</i>	Native, El Reno, Vaughn	W,M,B	10
Little Bluestem	<i>Schizacarium scoparius</i>	Native, Pastura	W,M,B	10
Indian Ricegrass	<i>Oryzopsis hymenoides</i>	Native	C,M,B	<u>5</u>
				100
Sandy				
<u>Common Name</u>	<u>Scientific Name</u>	<u>Variety</u>	<u>Grass type</u>	<u>PLS % of mix by weight</u>
Blue Gramma	<i>Bouteloua curtipendula</i>	Native, Lovington, Alma	W,S,B	15
Prairie Sandreed	<i>Calamovilfa longifolia</i>	Native, Goshen	W,M,S	15
Sideoats Grama	<i>Bouteloua curtipendula</i>	Native, El Reno, Vaughn	W,M,B	15
Little Bluestem	<i>Schizacarium scoparius</i>	Native, Pastura	W,M,B	15
Indian Ricegrass	<i>Oryzopsis hymenoides</i>	Native	C,M,B	20
Prairie Junegrass	<i>Koeleria macrantha</i>	Native	C,M,B	10
Sand Dropseed	<i>Sporobolus cryptandrus</i>	Native		<u>10</u>
				100

* A diverse native wetland mix should be seeded along the edge of the stream channel in the saturated or seasonally inundated area, or these areas should be restored with wetland plants or plugs.

*Mixes should be drill seeded at 8-12 lbs. per acre to achieve the best results and maximum species diversity. Use 16 to 24 lbs per acre maximum if broadcast seeding.

* Hydromulch or crimp 3000 -4000 lbs/acre of certified weed free native grass hay after seeding.

Appendix 9

South Platte Park - Fish Checklist

Scientific Name	Common Name	Status	Blackrock	Eaglewatc h	Redtail	Ladybu g	Bufflehead	Cooley Lake	Grant Nei	South Platte River	Historical Note
Ameiurus melas	Black Bullhead	Native	X	X	X	X		X			
Pomoxis nigromaculatus	Black Crappie	Introduce	X	X	X	X		X			
Lepomis macrochirus	Bluegill	Introduce	X	X		X	X	X	X		
Culaea inconstans	Brook Stickleback	Native								X	
Salmo trutta	Brown Trout	Introduced								X	
Cyprinus carpio carpio	Common Carp	Introduced			X			X		X	
Luxilus cornutus	Common Shiner	Native	X								
Ictalurus punctatus	Channel Catfish	Native	X					X			
Semotilus atromaculatus	Creek Chub	Native								X	
Pimephales promelas	Fathead Minnow	Native		X				X		X	
Lepomis cyanellus	Green Sunfish	Native	X	X	X	X		X	X	X	
Ctenopharyngodon idella spp.	Hybrid Grass Carp	Introduced					X				
Etheostoma exile	Iowa Darter	Native		X						X	
Etheostoma nigrum	Johnny Darter	Native							X	X	
Micropterus salmoides	Largemouth Bass	Introduce	X	X	X	X	X	X		X	
Rhinichthys cataractae	Longnose Dace	Native							X	X	
Catostomus catostomus	Longnose Sucker	Native		X	X					X	
Fundulus sciadicus	Plains Topminnow	Native								X	
Lepomis gibbosus	Pumpkinseed	Introduced									X
Oncorhynchus mykiss	Rainbow Trout	Introduced		X	X	X				X	
Notropis stramineus	Sand Shiner	Native		X							
Micropterus dolomieu	Smallmouth Bass	Introduce	X							X	
Sander vitreus	Walleye	Introduced		X	X			X		X	
Gambusia affinis	Western Mosquito Fish	Introduced								X	
Catostomus commersonii	White Sucker	Native		X	X			X	X	X	
Perca flavescens	Yellow Perch	Introduce	X	X	X	X		X			

	s	S	F	W	Habitat
Wrens					
★ Rock Wren	R	R	R		LGS
★ House Wren	C	C	U		FS
Winter Wren	r			r	SF
○ Marsh Wren	O	R	O	R	MS
Gnatcatchers & Dippers					
★ Blue-gray Gnatcatcher	U	C	O		FS
American Dipper			r	R	R
Kinglets					
Golden-crowned Kinglet	R		R		FS
Ruby-crowned Kinglet	R		R		FS
Solitaires & Thrushes					
Western Bluebird	R		R		G
Mountain Bluebird	U		R		GR
Townsend's Solitaire	R		R		FS
Swainson's Thrush	R				FS
Hermit Thrush	O		R		FS
★ American Robin	C	C	C	O	GFSM
Mockingbirds & Thrashers					
★ Gray Catbird	O	U			SF
Northern Mockingbird	R				SF
Sage Thrasher	R	R	R		G
Brown Thrasher	*			*	SF
Waxwings, Pipits & Longspurs					
Bohemian Waxwing				r	SF
★ Cedar Waxwing	O	U	O	R	FS
American Pipit	O		R	r	RL
Lapland Longspur				*	G
Wood Warblers					
Northern Waterthrush	R				MFS
Black-and-White Warbler	R				F
Tennessee Warbler	*				FS
Orange-crowned Warbler	O		O		FS
Nashville Warbler	r		r		FS
Virginia's Warbler	O		R		FS
MacGillivray's Warbler	R				FS
★ Common Yellowthroat	U	C	U		MS
○ American Redstart	R				FS
Northern Parula		r			FS
Blackburnian Warbler			*		F
★ Yellow Warbler	C	C	U		FSM
Blackpoll Warbler	r				SF
Palm Warbler	r				S
Yellow-Rumped Warbler	C		C	R	FS
Townsend's Warbler			R		SF
Canada Warbler	*				SF
Wilson's Warbler	O		U		SFM
★ Yellow-breasted Chat	U	U	O		SF
Towhees & Sparrows					
Green-tailed Towhee	R		R	r	SF
★ Spotted Towhee	O	O	O	R	SF
Cassin's Sparrow			r		GS
American Tree Sparrow	U		U	C	SGFM
○ Chipping Sparrow	U	O	C		GSF
Clay-colored Sparrow	R		O		GS
Brewer's Sparrow	O		O		GS
Vesper Sparrow	U	U	U		GS
Lark Sparrow	R	O	U		GS

	s	S	F	W	Habitat
Sage Sparrow					
			R		GS
Lark Bunting	R	O	O		G
Savannah Sparrow	O		O		GM
Grasshopper Sparrow	r		r		G
LeConte's Sparrow			*		G
Fox Sparrow	*				S
★ Song Sparrow	C	C	C	C	SME
Lincoln's Sparrow	R		R		SM
Swamp Sparrow			r	R	MS
○ White-throated Sparrow	r		R	r	FS
Harris's Sparrow	R		R	R	GS
White-crowned Sparrow	C		U	C	FS
Golden-crowned Sparrow			*		S
Dark-eyed Junco	C		C	C	FSG
Tanagers					
Summer Tanager	*				F
Western Tanager	O		R		FS
Grosbeaks & Buntings					
Rose-breasted Grosbeak	r				FS
★ Black-headed Grosbeak	R	R	R		FS
Blue Grosbeak			*		FS
★ Lazuli Bunting	O	R	R		FS
Indigo Bunting	*				FS
Blackbirds & Orioles					
★ Red-winged Blackbird	C	C	C	U	MSGF
★ Western Meadowlark	C	C	C	R	GSE
★ Yellow-headed Blackbird	O	R	R		MGSE
Rusty Blackbird				*	GM
★ Brewer's Blackbird	R	R	R	R	GS
★ Common Grackle	C	C	C		MFGSL
Great-tailed Grackle	R				M
★ Brown-headed Cowbird	C	C	U		FSMG
Orchard Oriole	r				FS
★ Bullock's Oriole	C	C	O		FS
Finches					
Cassin's Finch				*	FS
★ House Finch	C	C	C	C	FSG
Common Redpoll				*	GS
Pine Siskin	r		r	r	SFG
★ Lesser Goldfinch	R	O	r		SG
★ American Goldfinch	U	C	U	R	SGF
Evening Grosbeak	r		r	r	FS
Introduced Species					
Ring-necked Pheasant	r	r	r	r	GSM
★ Rock Pigeon	U	U	U	U	G
Eurasian Collared-Dove	O	O			G
★ European Starling	C	C	C	C	FGS
★ House Sparrow	C	C	C	C	GFS

Date _____ Time in Field _____

Weather _____

Area of Park _____

Total Species _____ Individuals _____

Distance Traveled: by Car _____ by Foot _____

Observers _____

South Platte Park

3000 W. Carson Dr.
(north of Mineral, west of Santa Fe)
Littleton, CO 80120

A Natural Area

- Open daily sunrise to sunset
(Gates open by 6:30 am)
- 878 acres along South Platte River
 - 5 lakes open to fishing
 - Local and regional trails

Carson Nature Center

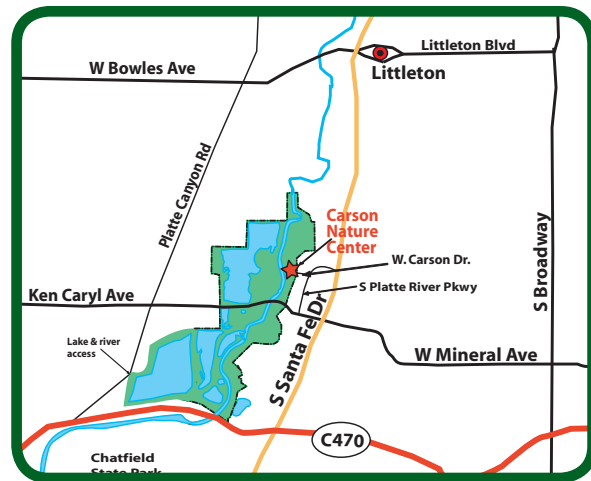
- Open Tu-F from 12-4:30 pm
Weekends 9:30 am-4:30 pm
- Interactive displays
 - Year-round public programs
 - Volunteer naturalist program

Guided Programs

Request programs for schools,
scouts and other organizations.

303-730-1022

www.sspr.org/nature



City of Littleton

Updated 2012

Bird Checklist



South Platte
Park
A Natural Area

South Platte Park protects over 2 miles of the beautifully forested and unchannelized South Platte River offering a quiet retreat for birds and birdwatchers. A natural area, owned by the **City of Littleton** and managed by **South Suburban Parks and Recreation**, it is a haven for more than 253 species of birds, 66 of which have been confirmed nesting.

Over 35% of South Platte Park is covered by water, creating an unusual mix of habitats in an otherwise semiarid environment. Lakes, ponds, wetlands, and the South Platte River provide open water all year, offering many opportunities to view a wide variety of water birds, shorebirds and waders.

Seasonal changes provide birding excitement year-round. On a single day in May you could see 50-75 species of migrating songbirds and shorebirds. Summers are filled with the delights of nesting birds. An average winter day of birding will yield 40 or more species including numerous diving and dabbling ducks. Often Bald Eagles are roosting in large cottonwoods or fishing over open water. This checklist includes species that have been observed in South Platte Park since 1982. Be an alert observer and you may be able to add new species to the list.

Legend

SEASONS

- s Spring (March-May)
- S Summer (June-August)
- F Fall (September-November)
- W Winter (December-February)

SPECIES ABUNDANCE CODES

- C Common -- likely to be seen in suitable habitat
- U Uncommon -- might be seen in suitable habitat
- O Occasional -- seen a few times each season
- R Rare -- not seen every year
- r Very Rare -- seen once or twice a decade
- * Accidental -- an isolated sighting

HABITAT – Shown in order of relative abundance

- F Forest
- G Grassland/Field
- L Lake or Pond
- M Marsh
- R River
- S Shrub Thicket

NESTING STATUS: ★= Confirmed ○ = Possible



	s	S	F	W	Habitat
Geese, Swans & Ducks					
Greater White-fronted Goose			R	R	LG
Snow Goose			O	R	LG
Ross's Goose			r		LG
Cackling Goose				O	LRGM
★Canada Goose	C	C	C	C	LRGM
Tundra Swan			R		L
★Wood Duck	U	U	U	O	RLMF
○Gadwall	C	U	C	C	LRM
○American Wigeon	U	U	C	U	RLM
★Mallard	C	C	C	C	LRMG
★Blue-winged Teal	C	R	R		LRM
★Cinnamon Teal	U	R	R		LRM
Northern Shoveler	U	R	U	U	LRM
Northern Pintail	U		U	U	RL
★Green-winged Teal	C	R	C	C	RLM
Canvasback	R		R		L
Redhead	U		U	U	LR
Ring-necked Duck	U		U	C	LR
Greater Scaup	R		R	R	LR
Lesser Scaup	O		O	O	LR
Surf Scoter			r	r	LR
White-winged Scoter			r	r	LR
Long-tailed Duck				R	LR
Bufflehead	U		U	C	LR
Common Goldeneye	U		U	C	LR
Barrow's Goldeneye			r	R	LR
Hooded Merganser	R		O	O	LR
★Common Merganser	C	O	C	C	LR
Red-breasted Merganser	R		R	R	LR
Ruddy Duck	R		R		L
Grouse, Turkeys & Quail					
Wild Turkey			*		F
Loons & Grebes					
Pacific Loon			r		L
Common Loon	O	R	O	R	L
★Pied-billed Grebe	U	U	U	O	LRM
Horned Grebe	O		O	r	L
Red-necked Grebe			*		L
Eared Grebe	O		O	r	LR
★Western Grebe	U	O	U	r	L
Clark's Grebe	R		R		L
Pelicans & Cormorants					
Double-crested Cormorant	C	C	C	r	LR
American White Pelican	O	O	O	R	LR
Bitterns, Herons & Ibises					
American Bittern	O	R	O		M
Great Blue Heron	C	C	C	U	RLMF
Great Egret	R				L
Snowy Egret	O		R		RL
Little Blue Heron		*			L
Cattle Egret			r		G
Green Heron	O	R	r		LM
Black-crowned Night-Heron	C	C	C	O	RFLM
Yellow-crowned Night-Heron		*			RLM
White-faced Ibis	O				MLRG
American Vultures					
Turkey Vulture	U	O	U		G
Eagles & Hawks					
Osprey	O	R	O		LR
Bald Eagle	R		O	U	RLF
Northern Harrier	O		O	O	GM
★Sharp-Shinned Hawk	O		O	R	FS
★Cooper's Hawk	O	O	O		FS
Northern Goshawk			r	r	F
Broad-winged Hawk	r				FG

	s	S	F	W	Habitat
★Swainson's Hawk	U	U	U		GF
★Red-tailed Hawk	C	C	C	C	GF
Ferruginous Hawk	R		R	R	G
Rough-legged Hawk	R		R	R	G
Golden Eagle	R	R	R	R	GF
Falcons					
★American Kestrel	U	U	U	U	GF
Merlin	R		R		G
Peregrine Falcon	R		R		GLR
Prairie Falcon	R		R	O	GRL
Rails & Coots					
★Virginia Rail	O	O	O	R	MR
★Sora	O	O	O		M
★American Coot	U	R	U	C	LRM
Cranes					
Sandhill Crane	R		R		GL
Plovers, Avocets, Sandpipers & Phalaropes					
Semipalmated Plover	R		R		L
★Killdeer	C	C	C	U	RLG
Black-necked Stilt	*				LRM
○American Avocet	U	O	O		LRM
★Spotted Sandpiper	C	U	U		LR
Solitary Sandpiper	O		O		LR
Greater Yellowlegs	U		O		RL
Willet	R		R		RL
Lesser Yellowlegs	U		O		RL
Long-billed Curlew	r				G
Marbled Godwit	R				RL
Semipalmated Sandpiper	r		R		LR
Western Sandpiper	R		R		LR
Least Sandpiper	R		R		LR
Baird's Sandpiper	R				LR
Pectoral Sandpiper			R		LR
Dunlin				r	RL
Stilt Sandpiper	r		R		RL
Long-billed Dowitcher	O		O		LR
Wilson's Snipe	U	R	O	O	MLR
Wilson's Phalarope	r		r		LR
Gulls & Terns					
Black-legged Kittiwake			*		L
Bonaparte's Gull	R		R		LG
Franklin's Gull	O		O		LG
Mew Gull				r	L
Ring-billed Gull	C	U	C	C	LRG
California Gull	O	O	O		LR
Herring Gull	O		O	O	LR
Thayer's Gull				r	LR
Least Tern		r			LR
Caspian Tern		*			LR
Black Tern	R		r		LR
Common Tern			r		LR
Forster's Tern	O		R		LR
Doves					
★Mourning Dove	C	C	C	R	GFS
Cuckoos					
Yellow-billed Cuckoo	r		r		FS
Owls					
Eastern Screech-Owl	r	r	r	r	FS
★Great Horned Owl	C	U	U	U	F
Burrowing Owl	r	r	r	r	G
Long-eared Owl	r	r	r	r	F
Short-eared Owl	r		r	r	GM
Goatsuckers					
Common Nighthawk	O	U	U		G
Common Poorwill		*			F

	s	S	F	W	Habitat
Swifts & Hummingbirds					
Chimney Swift		*			L
★Black-chinned Hummingbird	U	U			FS
★Broad-tailed Hummingbird	U	U	O		FSG
Rufous Hummingbird		r			FSG
Calliope Hummingbird	r	r			FSG
Kingfisher					
★Belted Kingfisher	C	C	C	U	RL
Woodpeckers					
Lewis's Woodpecker	r				FG
Red-headed Woodpecker	r				F
Yellow-bellied Sapsucker			r		FS
★Downy Woodpecker	C	C	U	U	FS
Hairy Woodpecker	R		r	r	FS
★Northern Flicker	C	C	C	C	FSG
Flycatchers					
Olive-sided Flycatcher	r		r		F
★Western Wood-Pewee	O	C	O		F
○Willow Flycatcher	R	r			SFM
○Least Flycatcher	R	r			FS
Hammond's Flycatcher	R		R		FS
Dusky Flycatcher	R		R		FS
Cordilleran Flycatcher	R		R		FS
Eastern Phoebe	r		r		FS
★Say's Phoebe	O	U	O		G
Great Crested Flycatcher	*				FS
Cassin's Kingbird	r				G
★Western Kingbird	U	O	U		GF
★Eastern Kingbird	O	O	O		GF
Shrikes					
Loggerhead Shrike	R	R			G
Northern Shrike			O	O	G
Vireos					
Yellow-throated Vireo	*				FS
Plumbeous Vireo	O	R	O		FS
★Warbling Vireo	O	O	O		FS
○Red-eyed Vireo	R	r			FS
Jays, Magpies & Crows					
★Blue Jay	U	O	U		FS
Western Scrub-Jay			r		FS
★Black-billed Magpie	C	C	C	C	GFSM
American Crow	C	U	C	C	GF
Common Raven	U	O	U	U	GF
Larks					
Horned Lark	O		O		GL
Swallows					
★Tree Swallow	C	C	O		RLGM
Violet-green Swallow	C	O	O		RLGM
★No Rough-winged Swallow	U	U	O		RLGM
○Bank Swallow	U	R	R		RLGM
★Cliff Swallow	C	C	O		RLGM
★Barn Swallow	C	U	O		RLGM
Chickadees & Bushtit					
★Black-capped Chickadee	C	C	C	C	FS
Mountain Chickadee				r	FS
★Bushtit	R			r	FS
Nuthatches & Creepers					
★Red-breasted Nuthatch	R		R	R	F
★White-breasted Nuthatch	U	U	O	O	F
Pygmy Nuthatch		r		r	F
Brown Creeper	R		R	R	F

CHECKLIST for SOUTH PLATTE PARK
Littleton, Colorado
(Birds are not included)

Date _____ Weather _____

Locality _____

Time in field _____ Total Species _____

Observers _____

Over 35% of the Park is covered by water, creating an unusual mix of habitats in an otherwise semiarid environment. Lakes, ponds, wetlands, and the South Platte River provide open water offering many opportunities to view wildlife in a beautiful setting. Natural surface trails meander through forested woodlands, scattered shrub thickets and open grasslands. This provides the casual or experienced wildlife watcher a chance to see a variety of common and unusual Colorado animals.

A wide variety of aquatic and water-dependant species can be found in South Platte Park. Twenty-three of the 38 species of fish found along the South Platte River have been observed. Fishermen commonly catch Largemouth Bass, Green Sunfish, Bluegill, Channel Catfish, Perch, and Rainbow Trout; all except the catfish are non-native. Unusual native fishes include the Brook Stickleback (dependant on unchannelized reaches of streams) and the Plains Topminnow.

Herptile lovers will enjoy the spring chorus of Woodhouse’s Toads and the “peeps” of Striped Chorus Frogs. Basking Bull Snakes, Garter Snakes, and Racerunner Lizards are also enjoyed by many of the Park users. Our only poisonous snake, the Prairie Rattler, has been confirmed only twice in the Park since the mid-1980’s.

Dawn and dusk viewing by mammal lovers will yield surprisingly great viewing and photographic opportunities of beaver and muskrat. Many bats flit along the river on summer evenings, which is also a great time to glimpse a White-tailed Deer and its spotted fawn. Coyotes are most easily seen in winter and early spring. Cottontail rabbits and fox squirrels abound wherever there are woodlands and thickets.

Species Abundance Codes used in this checklist reflect the likelihood of seeing a particular species, or its sign, in suitable habitat during the appropriate season of the year and time of day. Although many small mammals are quite common, you are unlikely to see them. Thus, small mammal abundance codes reflect the number of individuals *live trapped* during biological surveys.

Be an alert observer and you may be able to add a new species to this list. Enjoy your adventures observing all the wonderful wildlife in South Platte Park.

Amphibians and Reptiles

Legend

Species Abundance Codes

(information for small mammals only is derived from live trapping surveys)

A Abundant – seen frequently (live trapped in large numbers)

C Common – likely to be seen (live trapped in moderate numbers)

U Uncommon – might be seen (live trapped in small numbers)

R Rare – not seen every year (live trapped in very small numbers)

K Unknown

Habitat Codes

R River

C Cool Water Lake

S Secondary Channel, River

P Pond

B Backwater, River

M Marsh

E Stream

T Thicket, Shrub

L Lake

G Grassland/Field

W Warm Water Lake

F Forest

Species

Abundance

Habitat

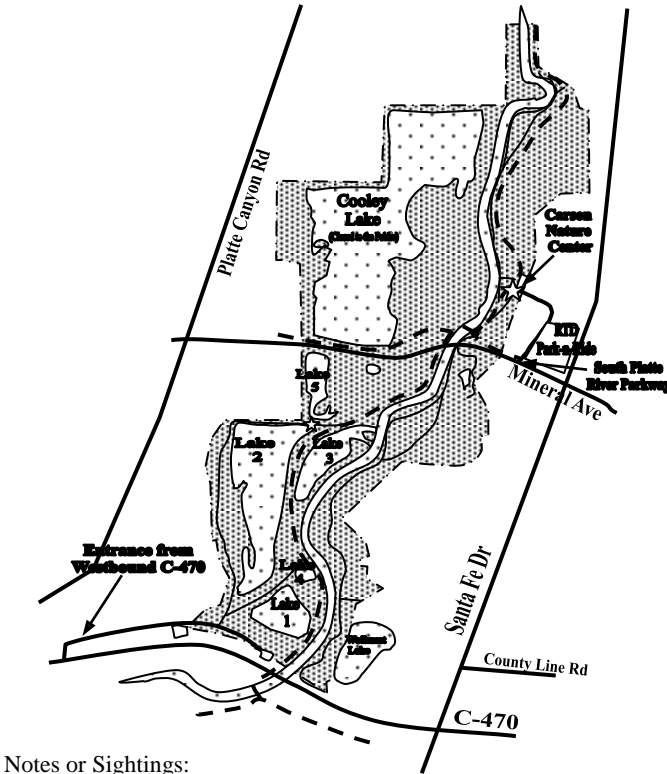
Amphibians		
Mole Salamanders		
_____ Tiger Salamander	R	MPR
True Toads		
_____ Woodhouse’s Toad	C	MPLRGT
Tree Frogs		
_____ Striped Chorus Frog.....	C	MPR
True Frogs		
_____ Bull Frog.....	C	MPLR
Reptiles		
Turtles		
Snapping Turtles		
_____ Snapping Turtle.....	U	LPMRTG
Pond and Box Turtles		
_____ Painted Turtle.....	R	LPM
_____ Western Box Turtle	R	FGT
_____ Red Eared Slider	R	LPM
Lizards		
Whiptails		
_____ Prairie Six-lined Racerunner	C	GTF
Snakes		
Colubrids		
_____ Yellow-bellied Racer	U	GFTM
_____ Milk Snake	R	FTG
_____ Northern Water Snake	U	RLPMT
_____ Bull Snake.....	C	GTFM
_____ W. Terrestrial Garter Snake	A	TFMGRP

_____ Plains Garter Snake	U to R	TFMGRP
_____ Common Garter Snake	R	MTFPR
Vipers		
_____ Prairie Rattlesnake	R	TG

Fish		
Species	Abundance	Habitat
Trout		
_____ Brown Trout.....	R	RC
_____ Rainbow Trout	C	RCW
Minnow		
_____ Carp.....	C	RSBWCM
_____ Hybrid Grass Carp.....		
_____ Long-nosed Dace	C	R
_____ Creek Chub	A	RBSEWCPM
_____ Common Shiner	R	R
_____ Sand Shiner.....	C	RB
_____ Fathead Minnow.....	A to C	SWC
Sucker		
_____ White Sucker.....	A	RSBEWCPM
_____ Long-nosed Sucker	R	RB
Catfish		
_____ Channel Catfish.....	U	RWC
_____ Black Bullhead.....	C	W
Killifish		
_____ Plains Topminnow	R	B
_____ Western Mosquito Fish.....	U	RSBM
Sunfish		
_____ Black Crappie	R	WS
_____ Largemouth Bass	C	WS
_____ Smallmouth Bass	R	SW
_____ Green Sunfish	C	WSB
_____ Bluegill.....	U to R	W
_____ Pumpkin Seed	R to U	W
Perch		
_____ Walleye	R	R
_____ Yellow Perch.....	U	W
_____ Johnny Darter.....	R	B
_____ Iowa Darter.....	R	
Stickleback		
_____ Brook Stickleback.....	C	SBPM

Mammals		
Species	Abundance	Habitat
Bats		
_____ Little Brown Bat	A	R L M G

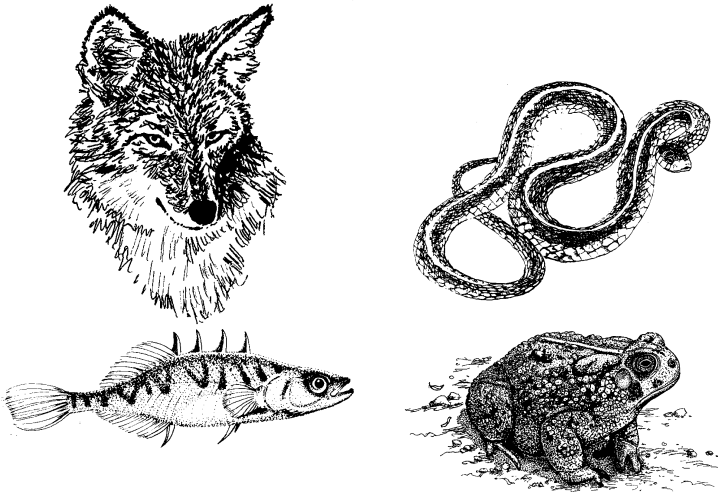
_____ Silver-haired Bat	K	_____ R L M G
_____ Big Brown Bat.....	C	_____ R L M G
Carnivores		
_____ Black Bear.....	R	_____ T F
_____ Raccoon.....	C	_____ M F T G
_____ Long-tailed Weasel	U to R	_____ T F
_____ Mink.....	R	_____ R T L
_____ Striped Skunk.....	U to C	_____ T F M G
_____ Coyote.....	C	_____ G T F M
_____ Red Fox.....	U	_____ F T M
_____ Mountain Lion	R	_____ T
Rabbits and Allies		
_____ Eastern Cottontail.....	A	_____ T F M G
_____ Desert Cottontail	K	_____ T F M G
Rodents		
_____ Black-tailed Prairie Dog.....	U	_____ G
_____ Rock Squirrel	U	_____ T G F
_____ Fox Squirrel	A	_____ F T
_____ Beaver	C to A	_____ L R M
_____ Western Harvest Mouse	U	_____ F T
_____ Deer Mouse	A	_____ F T G M
_____ Mexican Woodrat.....	R	_____ T
_____ Meadow Vole.....	C to U	_____ G M T
_____ Prairie Vole	C to U	_____ G M T
_____ Muskrat	C to A	_____ M R L
_____ Norway Rat	R	_____ T M
_____ House Mouse.....	R to U	_____ T M F G
_____ Preble's Meadow Jumping Mouse	R	_____ M T F
Even-toed Hoofed Mammals		
_____ Elk.....	R	_____ G F T
_____ Mule Deer	R	_____ G F T M
_____ White-tailed Deer	U	_____ F G T M



Notes or Sightings:

Vertebrates of South Platte Park

Littleton, Colorado



South Platte Park stretches for two and one half miles along a beautifully forested and unchannelized reach of the scenic and historic South Platte River. Situated one mile downstream from Chatfield Dam and surrounded by an urban environment, the Park offers a quiet and peaceful retreat for wildlife and wildlife watchers alike. Owned by the City of Littleton and managed by South Suburban Park and Recreation District as a natural area, the Park is refuge for over 25 species of mammals, 17 species of reptiles and amphibians, and 23 species of fish. South Platte Park is known for its large snapping turtles and bull snakes, its chorusing frogs and gigantic channel catfish. The Park's abundant and easily seen cottontails, beaver, muskrats, raccoon, and coyotes make a great destination for wildlife viewing close to the city.



To report any additional or infrequently seen species, please notify the staff at:
South Platte Park
3000 W Carson Dr
Littleton, Colorado 80120-2968
303.730.1022
www.sspd.org/nature

Appendix 11

INTERPRETIVE MANAGEMENT PLAN SUMMARY South Platte Park and Carson Nature Center

PURPOSE

Every activity and product created should help support the goals of South Platte Park, approved by South Suburban's Board of Directors and the Littleton City Council. Each product proposed should be measured against those goals. In addition to defining existing products and ensuring they support these goals, this plan suggests opportunities, sets a series of measurable objectives, and provides guidelines for evaluating future ideas and products to ensure they support a common purpose. This document should remain dynamic, and should be updated as products, markets and needs change.

INTERPRETATION DEFINED

The purpose of the interpretive program, in accordance with the definition of interpretation, is to forge emotional and intellectual connections between the interests of the audience and the meanings inherent in the resource. As a management tool, this connection is intended to reduce negative impacts and improve understanding and appreciation of the resources to ensure their continued existence and improvement. Interpretation should also aim to alter visitor behavior to protect the resources. One aspect for evaluating the products is to determine if they utilize appropriate and accepted interpretive techniques currently supported by social research. For interpretation to be successful, it must also be:

- **Thematic:** the audience should be able to discern a message—a complete thought—regarding the resource. This message MAY be perceived differently by individual participants, however the lack of a specific message in planning has been shown to create products that are significantly less effective.
- **Organized:** People need to know where different bits of information fit, and to be able to put them into context with other bits of information and with their own experience.
- **Pleasurable:** Since most interpretive audiences are voluntary, with internal motivation for participating, they must receive personal value from interpretation or they will tune it out.
- **Meaningful:** If interpretation can tie into universal concepts that govern the lives of participants and the things they care about, it is more likely to be adopted and remain something of value in the future—and increase their commitment to the resource.

Interpretation should strive to utilize the following principles:

- Interpretation must relate to something within the experience of the visitor.
- Interpretation is not simply information, but revelation based upon information.
- Interpretation should seek to provoke the visitors to learn more for themselves.
- Interpretation itself is an art—a synergy of various sciences and talents (which are all teachable); and communicates an impression that may differ for those viewing it.
- Interpretation should present a complete concept, rather than portion of the story; it should speak to the whole person, not just one aspect of their self-perception.
- Interpretation should be adapted to the learning and interest needs of the audience.
- Interpretation must be capable of attracting financial, volunteer, political, and administrative support.

Appendix 11

SOUTH SUBURBAN'S MISSION

To foster healthy living through stewardship of the environment, parks, trails, and open space and by providing recreational services and programs.

SOUTH PLATTE PARK GOALS

The specific, board-approved goals for South Platte Park are listed in the full interpretation plan and in the South Platte Park Management Plan. The interpretation plan also lists a summary reference for each subgoal that the interpretation program can address. These are listed below to help focus in on the purposes of the various interpretive products:

- 1d Promote Support for Floodplain Mgmt
- 2d Protect Wildlife and Habitat
- 2g Document Wildlife Populations
- 2i Promote Support for Native Ecosystem Mgmt
- 3a Provide Teacher Training
- 3b Develop Environmental Education Curricula
- 3c Limit Educational Group Sizes
- 3d Monitor and Minimize Educational Impacts
- 3e Provide Field Trips
- 3f Provide Public Programming
- 4a Encourage Discovery of Passive Recreation
- 4d Provide Information on Regulations/Opportunities
- 4e Provide an Information Center
- 4g Monitor and Minimize Recreation Impacts

INTERPRETIVE VISION

The vision of the Interpretive program at South Platte Park is to become a regional example of excellence that helps our community find meaning and value in natural open space through direct positive experiences, and gives them the motivation and knowledge to be good stewards of it.

PRIMARY INTERPRETIVE THEME

All products and programs will strive to support an over-arching theme. Without a theme, the communication of a message can be garbled and confusing. The theme decided upon by interpretive staff, for which all products should be able to support is: ***The South Platte River shapes life in our community.*** This can be interpreted with multiple meanings including such things as how the river and its flood history shaped the layout of Littleton, how it attracts wildlife and native communities, and how it impacts the human community and the individual lives of residents.

DESIGN GUIDELINES

To ensure the messages all appear to come from the same source, all exhibit labels, brochures, and interpretive signs are to be designed within the existing “family” of products. A complete design guideline is included as an appendix for the complete version of this plan. These guidelines and ‘families’ evolve with the overall South Suburban branding guidelines.

Appendix 11

Brochures should follow current branding in terms of coloration, cover and back-panel design, and standard information to include. Internal fonts and layouts may vary for creativity provided it fits with existing products and looks professional. Nature Center exhibit labels and interpretive signage should use the design elements also detailed in the plans, and should strive to compliment existing signage.

INTERPRETIVE STAFF EXPECTATIONS

Interpretive staff collaboratively developed a series of Values for what we wanted our work experience to be at South Platte Park. As part of the process, we developed very specific examples of what those values look like in our day-to-day business as a way to ensure the values are clear to everyone (detailed in interpretation plan appendices). These values are reviewed and updated on an annual basis.

Value 1: “One Team!” We commit to working hard as “one team,” collaborating to EXCEED the expectations of every customer, internal and external. Individually and collectively, we are accountable for making South Platte Park and South Suburban a source of pride for everyone.

Value 2: Harmony. We trust, respect, encourage, and support each other. We communicate constructively and realize it is the harmony of our efforts that gets things done and makes our work fun and fulfilling.

Value 3: Excellence. The public sees the center as a regional example of excellence, professionalism, attention, and care.

PRODUCT DEVELOPMENT

As new products are introduced, a product description should be created, including

- purpose
- intended audience
- how it fits the theme
- how it supports goals for the Park

Measurable objectives for each product and a description of how to improve products to meet those objectives should be developed over time. Without this type of documentation, it may be difficult to defend products should their need come into question at a future time.

Appendix 11

CURRENT PRODUCTS

A complete listing of current products with their purpose, audience, and goals is included in the complete interpretive plan. Descriptions and goals for products are detailed in the complete interpretation plan.

Programming

Requested programs for groups

Onsite adult programs

Onsite youth programs

Onsite family programs

Summer camps

Free Cooley Walks

Offsite Programs

Ecotravel Tours

Rent-A-Naturalist custom presentations

Volunteer Program

Parent/Child Volunteering

VolunTeen

Roving Interpreters

River Table Demonstrations

Bioblitz

Stampede

Publications

Newsletter

Electronic News

Park Brochure

Timeline Brochure

Species Checklists

Recreation Catalog

Web site

Volunteer recruitment brochure

Public Programs marketing

Quick Guides

Staff Challenge Sheets

Trailside Guides

Volunteer Update

Volunteer Manual

Exhibits

Park Orientation Room

Critical Habitats

Regional History Timeline

Live Animals

River Model

Seasonal Displays

Traveling Booth Exhibits

Natives Plant Garden

Interpretive Signage

Offsite exhibits (libraries, etc)