Majestic View Community Park

CITY OF ARVADA

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Executive Summary

The Majestic View Community Park (Majestic View) is located on approximately 75 acres of land in Arvada, Colorado. The park is located south of 72nd Avenue, north of 68th Avenue, west of Carr Street and east of Kipling Street. Majestic View is a valuable resource to Arvada and other northwest metropolitan Denver communities with its broad ridges, panoramic views of the mountains and deep valleys lined with wetlands, lakes, ponds and heavily vegetated pockets of cover for wildlife.

Majestic View is envisioned as a passive community park where the focus is on interaction with nature and natural processes. Majestic View should be a part of a connected series of open spaces linked by canals. The open space and natural areas at Majestic View should complement the open spaces and regional recreation areas at Standley Lake Park, and should be physically and programmatically linked to the Two Ponds National Wildlife Refuge.

The master plan proposes to reuse three of four residential properties within the park: the Fox and Harder houses and the Kennedy farm. The City of Arvada (hereafter, City) owns each of those properties. The fourth house, and approximately 5 acres of land to the west, are currently privately owned; the City at some point in time will seek to incorporate the remaining house and land into the park.

The proposed use for the Fox residence is as a conference and meeting center, while the proposed use for the Harder residence is as an environmental education center. The proposed uses for the Kennedy farm encompass artists-in-residence, urban gardens, and possibly a facility for raptor education.

The master plan for Majestic View was developed through a cooperative process involving the citizens of Arvada, the Arvada Park Advisory Committee, City staff, interest groups, government agencies, City leaders and selected consultants.

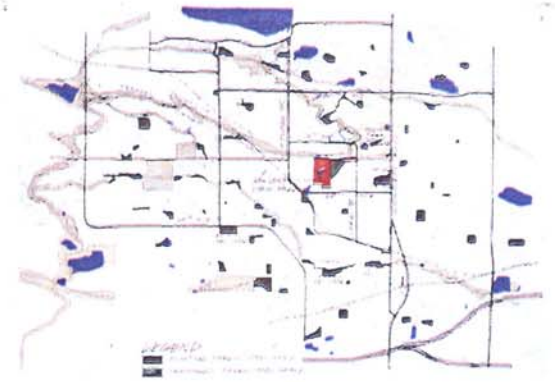


Figure 1 - The context map shows the regional connection opportunities for Majestic View Community Park.

Figure 2 - The park currently provides habitat for a variety of birds and mammals.

Extensive public involvement activities solicited and developed the following goals for the master planning process:

- **Preserve and enhance native vegetation and wildlife habitats.**
- **Establish a trail system to link the park to the neighborhood, community and region.**
- **Establish multiple access points into the park to provide clear access and to minimize local traffic impacts.**
- **Adapt the existing residences to new uses while maintaining their individual architectural styles.**
- **Preserve and enhance the cultural landscapes.**
- **Preserve spectacular views into and from the park.**
- **Establish a unified park identity.**
- **Establish a safe and easily maintained park.**
- **Develop Majestic View as a community park.**

Background

Broad ridges affording panoramic views of the mountains, and deep valleys lined with wetlands, lakes, ponds and pockets of vegetation sheltering wildlife, make Majestic View Community Park (hereafter, Majestic View) a valuable resource for Arvada and other northwest metropolitan communities.

The Majestic View site is rich with history. The Croke and Farmer's High Line Canals brought irrigated agriculture to the foot of the mountains. The area became an agricultural center characterized by small truck farms supplying fresh corn, tomatoes, pumpkins and other fresh vegetables to metropolitan markets. After World War II, the City of Arvada saw the same suburban explosion that affected the rest of the United States. Soon the Majestic View site was a remnant oasis in the middle of neighborhood development.

The park site has many informal connections to the surrounding communities along the Croke and Farmer's High Line Canals, and at its fringes. Those connections show that the site is already a regional, community and neighborhood resource. The irrigation canals, reservoirs and natural stream courses left by the canals have nurtured a diversity of plant and animal communities. Majestic View is an even more valuable resource considering the diminishing open space and rural qualities of the northwest metropolitan area. The park also has many intangible assets including rural and natural qualities and the fact that it is isolated from dense urban development.

Figure 3 - The existing neighborhood park of approximately 17 acres provides a variety of recreational opportunities.

Site Description

The Majestic View property is located on approximately 75 acres of land in Arvada. That land is located south of the 72nd Avenue corridor, north of 68th Avenue, west of Carr Street and east of Kipling Street. Of those 75 acres, 17 are dedicated to a park that is used by people from the nearby neighborhoods. Approximately five acres of this park are irrigated bluegrass and 12 acres remain as native, unirrigated grass. The irrigated area has a playground, tennis courts and a small baseball/softball field with a backstop. Access to the park lies at the end of 70th Way, which terminates at the east side of the park. Visitors who drive there must park their cars along one of the neighborhood streets and walk to the park.

New acquisitions have added approximately 58 acres to the 17-acre neighborhood park. Those acquisitions include three residences, which vary in size, condition and intended park use.

The first residence, built in 1925, is the Kennedy residence, which encompasses 3,898 square feet and is located at the south end of the park. The Harder residence, located in the center of the park, was built in 1946. This 2,000 square foot house is in good condition after a 1983 renovation. The Fox residence, a 5,300-square foot house, overlooks Oberon Lake from the north.

A fourth property is currently privately owned. It is just west of the Harder residence and includes a home on three acres and approximately five acres of land on the south side of the upper lake.

On the north border of the park are the Croke and Farmer's High Line Canals. The proposed 72nd Avenue right-of-way alignments run along the north edge of the park. There are two possible alternatives for the roadway, one on city owned land directly to the south of the Croke Canal on the north edge of the park. The second possible alignment for 72nd Avenue lies further north between the two canals.

There are two small lakes on the site. The lower lake, Hayes Lake, is very shallow with abundant cattails and other vegetative and aquatic life. The upper lake, Oberon Lake, is directly below the Fox residence. It is deeper and also has abundant aquatic flora and fauna.

Running generally north and south are drainage ways fed by springs and canal seepage from the Farmer's High Line Canal and water from Croke Canal. Those drainage ways then feed Oberon and Hayes Lakes. A small stream and wetland zone lies in the channel between the two lakes.

Figure 4 - Lake Oberon and the Fox residence. This residence has great potential to accommodate a variety of community programs.

The Planning Process

Site Inventory

Existing information about the site was collected, mapped, and analyzed to determine possible Majestic View uses. The existing site features were examined as to their potential for mixed-use recreation, special events or interpretive events and/or open space preservation.

Further information was collected from the City of Arvada (hereafter, City). This included, but was not limited to, site archeological reports; utilities; ownership maps; flood plain information; adjacent street traffic counts; existing and proposed land uses and zoning; information on adjacent City-owned parcels; and proposals for parks and trails.

Site base maps were prepared from City-provided information. Field assessments of wildlife habitat, jurisdictional wetlands and existing vegetation were conducted. Spatial qualities, visual buffers, land forms and related area-separating elements were identified. Historic elements were researched by contacting the local historical society and interviewing long-term residents.

Following a review of available information and interviews with residents and City staff, field assessments of the three residences were completed. Maps of floor plans were developed for each of the three residences. On site assessment of the physical condition, compliance with Americans with Disabilities Act (ADA) requirements and the structural, mechanical and electrical condition of the residences were also completed.

A workshop was conducted with City staff to produce a *vision* for the future of the park and to develop a program of uses. After the workshop an *Existing Conditions* diagram, summarizing site information, was created. Subsequent to the workshop the consultant team made a site walk with City staff to confirm the discoveries of the inventory and assessment process, to gather further information based on the collective knowledge of City staff and to discuss development possibilities.

Figure 5 - The existing conditions diagram describes the site's current condition.

Figure 6 - The spatial qualities diagram illustrates the variety of landforms and outdoor spaces within the park.

Interest groups and prospective users were incorporated into the process at this stage to assist in determining space needs and related programming requirements. Public perceptions were collected at open meetings, and were used in formulating park goals and objectives. Information specific to neighborhood and interest group perceptions was added to further refine program elements.

An initial workshop/open house for the public was organized and conducted on December 4, 1996. The inventory and existing conditions information was presented and comments were solicited on the accuracy and completeness of the work. The issues, goals and objectives of each neighborhood were identified.

Conceptual Alternatives

Conclusions from the site inventory phase served as the basis for the development of conceptual alternatives. Products included: 1) alternative uses for each residence, with program options; 2) three conceptual site plans; 3) recommendations for revisions to existing site access and egress; 4) recommendations for the enhancement of wildlife and vegetation habitat and the identification of site/ vegetation management strategies.

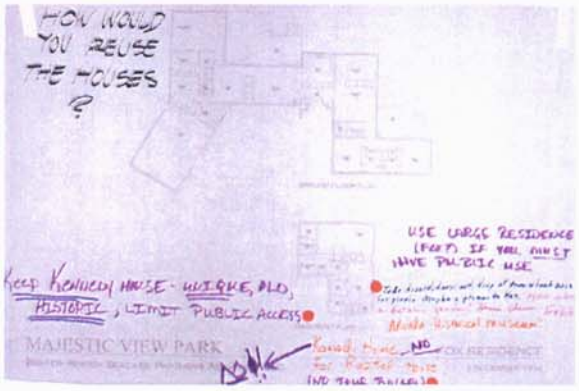
On January 30, 1997, a second public workshop/open house was organized and conducted. A refined site program, alternative concept plans and options for the on-site residences were presented. Comments were solicited and materials were prepared that would lead to the final step of selecting a preferred alternative or combination of alternatives.

Final Master Planning

The final elements of the public process focused on synthesizing work to date into a final alternative. On March 13, 1997 the third public open house/workshop was conducted. The final plan drawing and relevant illustrations were presented.

On April 22, 1997 a round table discussion was organized with interest groups. The intent of that meeting was to compare those uses proposed in the plan to the group's ideas of possible uses for the park. The plans were presented to the City Council in a meeting on March 24, 1997; to Arvada Parks Advisory Committee on December 10, 1997; and to the North Jeffco Recreation and Parks Board on May 8, 1997. The final plan, illustrated in Figure 8, was presented to the City Council on January 26, 1998.

Figure 7 - The first public workshop collected the perceptions of the area residents to help formulate goals for the park.



This master plan report describes the planning process and background data; the importance of natural/open space features; the value of the ecosystem; a site development program; potential phasing; and an estimate of probable construction costs. The report also describes the plan and program for the adaptive reuse of the existing residential structures; recommendations for preservation and enhancement of the vegetation and wildlife habitat; and a management strategy for the park.

Figure 8 - Final Master Plan

MAJESTIC VIEW PARK

CITY OF ARVADA
PLANNING DEPARTMENT

MASTER PLAN

The Majestic View Master Plan

The Vision for Majestic View

The vision for Majestic View is as a part of a connected series of open spaces linked by canals that enhance and make accessible the high plains agricultural and natural areas that have developed in the park since the turn of the century.

Majestic View will also complement the expansive open spaces and regional recreation areas at Standley Lake Park and will be physically and programmatically linked to the Two Ponds National Wildlife Refuge between Standley Lake and Majestic View Parks.

The vision for Majestic View was derived from an extensive public process. That vision was an expression of the collective desires and needs of the public and was further detailed in goals and objectives that guided the final development of the master plan.

Figure 9 - The proposed access and circulation patterns should respect the existing informal patterns and protect sensitive habitat and open space.

Figure 10 - The broad ridges provide a variety of panoramic views. The upper lakes, hills and valleys all have different recreation and habitat opportunities.

Goals and Objectives

Goal: Preserve and enhance native vegetation and wildlife habitats.

Objectives:

- *Restore and expand areas of native vegetation and create habitat to attract wildlife.*
- *Locate site features away from sensitive wildlife areas.*
- *Provide interpretive areas and exhibits to educate park users on the importance of wildlife.*
- *Limit access to sensitive wildlife habitat during critical rearing months.*
- *Remove noxious weeds and aggressive species.*

Goal: Establish a trail system to link the park to the neighborhood, community and region.

Objectives:

- *Provide a hierarchy of paved and unpaved trails.*
- *Create canal crossings to connect surrounding neighborhoods to the park.*
- *Create a system of trailheads.*
- *Provide connections to the regional trail system.*

Goal: Establish multiple access points into the park to provide clear access and to minimize local traffic impacts.

Objectives:

- *Provide access roads from the east.*
- *Use existing parking lots.*
- *Locate new parking lots in areas of least impact.*
- *Provide areas for overflow parking (gravel or native grass areas).*

Goal: Adapt the existing residences to new uses while maintaining their individual architectural styles.

Objectives:

- *Suggest new uses for the individual home sites, i.e. places for weddings, receptions, environmental education, conferences, lectures, seminars, exhibits and/or community activities.*
- *Maintain existing scale and building envelopes.*

Goal: Preserve and enhance the cultural landscapes.

Objectives:

- *Maintain site farming activities.*
- *Maintain the agricultural irrigation systems.*
- *Reestablish former orchards.*

Goal: Preserve spectacular views of and from the park.

Objectives:

- *Develop formal and informal gathering spaces at viewpoints.*
- *Frame and enhance views with vegetation and landforms.*

Goal: Establish a unified park identity.

Objectives:

- *Use a family of rustic materials.*
- *Provide a unified signage system:*
  - *Park identification,*
  - *Interpretive program.*

Goal: Establish a safe and maintenance friendly park.

Objectives:

- *Use durable construction materials.*
- *Locate a caretaker on-site.*
- *Use native plantings for water conservation.*
- *Locate trails and facilities to be seen from adjacent areas .*

Goal: Develop Majestic View as a community park.

Objectives:

- *Make available for community functions.*
- *Create regional trail connections.*

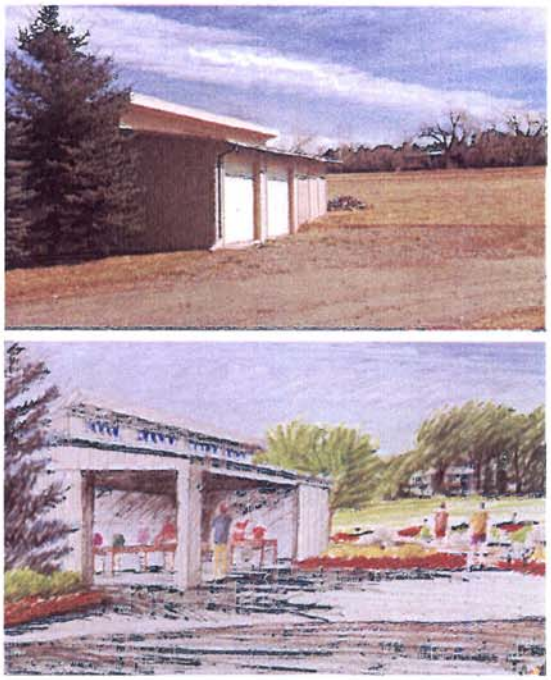


Figure 11 - Existing residences should be reused to support educational activities devoted to the site's natural qualities, such as this proposed "wet lab" within an existing garage structure.

Key Design Principles

The following key design principles evolved from the goals and objectives.

Majestic View should be a place of refuge.
Preservation and enhancement of existing wildlife habitat across significant portions of the site should be a priority. Institutions that promote the preservation and enhancement of the natural world should be encouraged to participate in, and support, that primary mission of the site. The site should also be one of refuge for the city's residents. It should be developed in a manner that allows residents to escape the noise and activity of the city, yet prevents undue impacts on natural resources.

Majestic View should be a place to learn about the area's cultural and natural features, history, and habitat.
A partnership should be forged with the US Fish and Wildlife Service and other local public entities with a mission to educate the public about the nat-

ural world. The need to preserve habitat should be balanced with the opportunity to educate about the incomparable qualities at Majestic View and the value of preserving that natural world within the city. The site also has a rich agricultural history that should be preserved and expressed.

Majestic View should accommodate community activities without causing significant impacts on the site's natural resources. Existing residences on the site should be used to accommodate community activities, especially educational activities that teach respect and appreciation for the site's natural qualities. Encroachment on natural areas should be discouraged and new development should be limited to the edges of the site.

Majestic View should be protected through ongoing management and stewardship. Growth and change at Majestic View should not be limited to the construction of park improvements. Rather, an ongoing program of management of the area's natural resources should be put into effect to improve what exists and to assure the continued viability and diversity of the site's plant and animal communities.

Majestic View should be a place to learn about the local prairie environment. Majestic View is an ideal location for a prairie arboretum. The mission of the arboretum should be to educate the public about the remnants of the original natural prairie landscape at the site and the effects of agriculture and urbanization over time on plant and animal communities. The arboretum should promote and educate the public about the use of drought-tolerant plants and plants suited to the Colorado climate that have been introduced to the site.

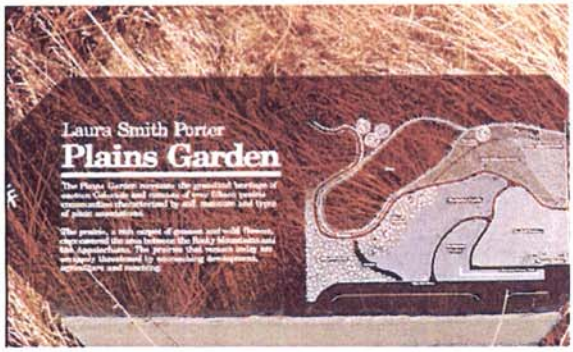


Figure 12 - The proposed arboretum should educate the public about the prairie environment through an interpretive program.

Figure 13 - Principal Management Zones

The Site

The park site is best thought of as comprising four principal *management zones*, shown in Figure 13, above. Qualities of these areas and implied management recommendations are discussed below.

Oberon Lake

Oberon Lake is in the center of the park just north of the Harder and Hansen residences and just south of the Fox residence. The lake is a focal point of Majestic View and attracts a variety of seasonal wildlife. The shoreline is dominated by mowed turf and scattered trees. It will be critical to protect the quality and quantity of existing water sources for Oberon Lake, for without a reliable source of water, that resource could be degraded.

The south shoreline currently consists primarily of a narrow band of shoreline vegetation and turf. Restoring and expanding the south shoreline vegetation would allow for a diversity of habitats to develop. Pedestrian access should be restricted along the south shoreline to maintain the area as wildlife habitat and nesting refuge. Wildlife observation should occur from the proposed nature center at the Harder residence.

Objectives, Management Recommendations and Priorities

- *Protect the quality and quantity of existing water sources for Oberon Lake.*

- *Limit visitor access to the south shore and adjacent habitats.*
- *Develop a diversity of habitats along the south shore.*
- *Manage the south shoreline and its adjacent habitats as natural areas.*

Core Wildlife Area

The Core Wildlife Area is located in the north central portion of the park. The feature of the area is the diverse wildlife habitats that include wetlands, woodlands, shrub lands and grasslands. The rolling topography of the area, and its diverse vegetation, should help to screen wildlife from the park activities. Enhancement of the wildlife habitat should occur by expanding the size and variety of vegetation types including adding small areas of open water. Seepage from the Croke Canal currently supports the wetland vegetation in this area. Limiting access in the Core Wildlife Area will be critical for maintaining it as a wildlife refuge.

Objectives, Management Recommendations and Priorities

- *Protect the water source that supports wetlands.*
- *Limit visitor access to the Core Wildlife Area.*
- *Enhance the existing wildlife habitat.*

Prairie Arboretum

The Prairie Arboretum should be a demonstration area of native prairie species and desirable naturalized species adaptable to the prairie environment. The high plains grass and prairie ecosystem should be restored on the uplands, and more diverse riparian and wetland plant communities developed in the valleys. Trails should connect the different plant communities and species should be identified. Information about the historic use of the plants by Native Americans, the role of the plants in wildlife habitat and the relationship of plants to other plants within each plant association should be communicated by interpretive signage.

Figure 14 - The south shoreline of Oberon Lake (background) should be developed as habitat and pedestrian access should be restricted.

Figure 15 - The canals to the north of the site are not within the park boundary, but are important to the park because they supply the park with water and are important links for wildlife and the community.

Figure 16 - The Core Wildlife Area is characterized by a variety of existing, diverse wildlife habitats that include wetlands, woodlands, shrub lands and grasslands.

Visitors should enter the arboretum through a xeriscape garden containing desirable, native and non-native plants that are water conserving and suitable to the climate in Colorado. The garden plantings, trees and shrubs should also be seen in mass plantings in the Prairie Arboretum.

The xeriscape garden should be adjacent to the nature center proposed for the Harder residence. Its forms should recall historic truck farm planting patterns that are found in the area and should entice visitors to stroll through it. Information about requirements for water and sun, value to wildlife, native habitat, flowering characteristics and timing, growth habits, and related information, should be conveyed in interpretive signage.

Objectives, Management Recommendations and Priorities

- *Develop a landscape that is attractive and informative with native prairie species and desirable naturalized species adaptable to the prairie environment.*
- *Develop an urban wildlife habitat landscape.*
- *Protect, enhance and develop areas of native grasslands mixed with plantings of woody vegetation.*

Restored Natural Areas

Areas designated *Restored Natural Areas* are primarily grasslands dominated by non-native grasses such as smooth brome and crested wheatgrass. Those areas should be restored to native grasslands. Areas currently supporting native grasses should be the nuclei for restoring these non-native grasslands in the future.

Objectives, Management Recommendations and Priorities

- *Identify and protect any portions of potential restoration areas that currently support a predominance of native grasses.*
- *Develop and implement a phased grassland restoration plan.*
- *Develop a means to irrigate grassland revegetation sites temporarily.*
- *Develop a maintenance program.*

Management Plan

A management plan has been developed to help implement and support the Majestic View master plan. It is intended to provide a framework for developing and managing portions of the park as natural areas. The plan identifies natural area management zones and specific objectives, recommendations and priorities for each. The plan does not discuss specific planting, irrigation or grading plans.

Integration with Master Plan

The management plan should be dynamic and responsive to changes in the master plan and future park development. The recommended priorities set forth in the management plan apply only to the proposed natural areas and do not consider other park components. Natural area components should

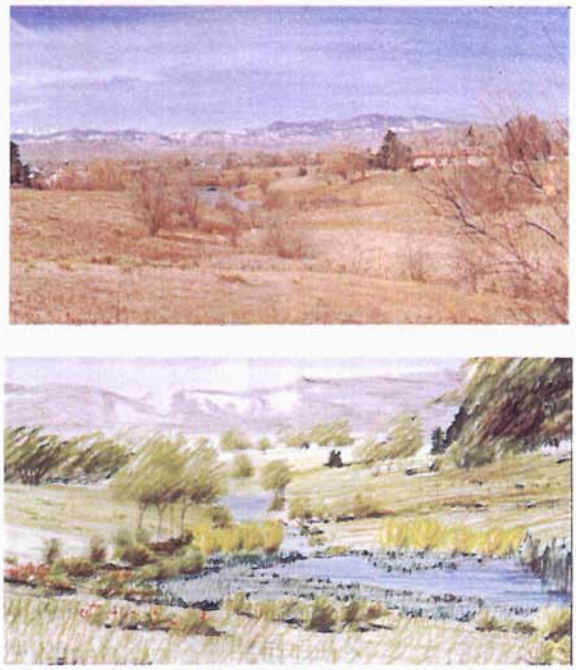


Figure 17 - The master plan proposes to enhance the existing wildlife habitats by creating more open water and shoreline, and expanding the area and variety of vegetation.

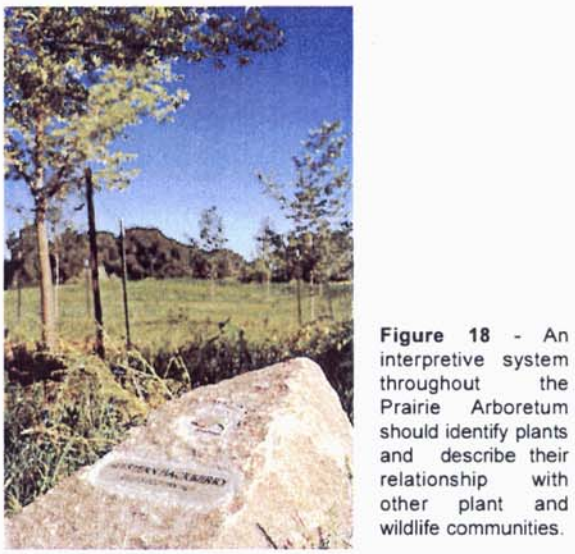


Figure 18 - An interpretive system throughout the Prairie Arboretum should identify plants and describe their relationship with other plant and wildlife communities.

be integrated with other park components to resolve multiple-use conflicts that may be inevitable.

Vehicular Access

Each of the roadways that provide access to the park was studied to determine how additional traffic generated by park improvements would affect them.

The only sanctioned access to the park should be from the 72nd Ave. R.O.W. and Garrison Streets. Although it is physically possible to access the park from the west off of 70th Place, there should be no sanctioned parking on the west side of the park. That decision was made based on the already high traffic counts on West 70th Place and a desire to avoid burdening the street further. It is essential that the roadways surrounding the park be signed effectively to indicate exactly where the appropriate access points are for each facility. People should be discouraged from driving through, and parking in, the adjacent neighborhoods with the use and enforcement of regulatory signage.

The main park access should be located off of the 72nd Ave. R.O.W., on the north end of the park. That access should consist of a new two-lane roadway running along the northern border of the park. The roadway should access a 50-space, general use parking lot, located near the existing tennis courts. The roadway should continue to a 100-space parking lot, drop-off and turnaround for the Fox residence. Signage and gating should limit access to the Fox residence to those visitors attending scheduled activities.

Access to the Harder residence should be from the southern park road connected to Garrison Street. Parking should be accommodated with a lot for approximately 20 cars with a drop-off / turnaround loop and bus parking.

Access to the Kennedy residence should be from the southern park road connected to Garrison Street. Parking should be accommodated with a lot for approximately 20 cars.

Figure 19 - Proposed overlook sites should provide areas for viewing the restored natural and wildlife areas, while not causing major impacts on those areas.

Figure 20 - The main access to the park should be from Carr Street and enter through an existing right-of-way at the northeast corner of the site.

Pedestrian Access

A variety of trail users should be accommodated on a multi-modal trail system. Connections to neigh-

borhoods and the regional trail system along the canals are planned as part of that system. Trail types should vary from 10-foot wide concrete for the regional trails; to eight foot wide concrete for primary park loop trails and six foot wide earthen secondary park trails; to two foot wide earthen social trails.

Some of the trails that are part of the existing network of social trails throughout the park should be removed or relocated to minimize impacts on sensitive habitat areas. Proposed trails should provide controlled access within habitat areas to allow interpretation, education and wildlife viewing. It is feasible that environmentally sensitive areas in the park will be closed to access or open only on a limited basis.

It is important to note that the pedestrian and bicycle access from the north crosses the 72nd Avenue right-of-way. Because that link is important to allow users from the north to visit the park without driving a vehicle, those paths should be maintained within the design of the future 72nd Avenue. There is also significant concern that the design and construction of 72nd Avenue not affect the water supply into the park.

Figure 21 - Existing informal trails should be limited to certain areas to minimize impacts on sensitive habitat.

The Residences

The master plan proposes to reuse three of the four residential properties within the park: the Fox and Harder residences and the Kennedy farm. The City owns each of them. The fourth, the Hansen residence, is owned by a private party. The City is seeking to acquire the Hansen residence and property.

Fox Residence

The proposed use for the Fox residence is as a conference and meeting center.

The building is a one-story brick *mission ranch* style house with a walk-out basement. The roof is tile and appears to be in good condition. The house has three working fireplaces that should be converted to gas to reduce pollution, while retaining the cozy ambiance in the conference center.

Reuse of the house and garage would provide approximately 7,800 square feet of usable space.The proposed floor plan includes a vestibule with glass walls, a lounge, a wet bar, one small meeting room (eight to 10 seats), one large meeting room (16 to 20 seats), and two banquet rooms (approximately 150 seats total).

The multiple-level layout of the existing building and its relationship to the surrounding topography allows for at-grade outdoor access to each level. That provides an opportunity to extend the interior spaces of the house out to the exterior landscape.

The immediate landscape of the Fox residence should be characterized by an open formal lawn and garden area to the south, wetland and riparian areas to the west and upland grassland to the north and east. Direct access from the Fox residence to the north shore of Oberon Lake should be by way of that open formal lawn and garden.

An existing poplar grove to the west of the Fox residence is proposed as a rustic garden area that could accommodate small weddings, receptions and informal gatherings. Because it is physically separate from the open formal lawn and garden, different events could take place simultaneously in each area.

Figure 22 - The multiple level layout of the Fox residence and the topography variations around the building provide *at grade* access from each level. Programs should be expanded to the outdoors.

Figure 23 -The existing poplar grove to the west of the Fox residence is ideal for outdoor activities.

Harder Residence

The proposed use for the Harder residence is as an environmental education center.

The building is a one-story, synthetic stucco, *Santa Fe* style house with no basement. The roof is flat and appears to be in good condition. The house has been modified and added to over time. The interior is well maintained and in good condition. The exterior is also in good condition except for woodpecker damage to the synthetic stucco.

Reuse of the house, garage and shed would provide approximately 2,900 square feet of usable space. The proposed floor plan for the house includes a vestibule, display area, two classrooms (15 and 20 seats, respectively), and a mini theater (up to 24 seats). Support facilities should include public restrooms, a kitchen and workroom, office and storage space. The shed building should provide a separate wetlab facility. This should accommodate a variety of programs that should operate independently of the main nature center.

The immediate landscape of the Harder residence should be primarily upland grassland. The natural uplands / riparian zones between the house and the lake should be restored.

A proposed xeriscape demonstration garden would be constructed to the east of the future environmental education center. That garden should expose park visitors to xeriscape plantings and lead them into the Prairie Arboretum where the plants could be viewed in a more natural arrangement.

Interpretive and environmental educational programs to be held at the center should continue along a trail network through the wildlife and natural areas. Selection of trail routes should be sensitive to habitat and nesting areas. Periodic closures of trails should occur to minimize impacts during nesting seasons.

There is significant neighborhood concern regarding potential traffic impacts arising from the nature center side access to the Harder house off of Garrison Street. Thus, the use of the Harder house must be carefully monitored with the idea that at some point in the future a new nature center could be built with access off of the 72nd Avenue corridor.

Figure 24 - The Harder residence, a *Santa Fe* style building, should be reused as an environmental education center.

Future Environmental Center

If over time the Harder residence can no longer accommodate increasing interest in environmental education programs, a new separate environmental center should be built. Three possible park locations for the center have been discussed. The first location is at the northwest corner of the park, the second is at the north central part of the park and the third location is near the existing softball field. Each location creates minimal disturbance to sensitive habitat, minimal automobile traffic within the park interior and can be accessed directly from the main entry of the park.

Further studies must be performed to understand the demand for any additional environmental education facilities. There is the possibility that a structure would significantly affect views from the ridge to the east and increased activities at the center could compromise the site's tranquility. Further studies, including a public forum, should be conducted to determine the appropriateness of a new facility at any location.

Kennedy Farm

The Kennedy Farm is proposed as a facility for artists-in-residence and urban gardeners, and possibly for raptor enthusiasts.

The existing Kennedy Farm is composed of four buildings in varying degrees of disrepair. The four buildings include the main house, the bunk house/garage, a shop/barn and a chicken coop. A tornado shelter is also on the site in back of the garage. All the buildings are wood frame and would need extensive renovation for adaptation to any public use.

Reuse of the main house, garage, caretaker's apartments and chicken coops will provide approximately 7,480 square feet of usable space. The proposed floor plan for the main house includes two apartments (550 and 600 sq. ft), a studio apartment (560 sq. ft.) and a shared dining room, kitchen and living room. Support facilities include storage in the basement. The proposed floor plan for the garage and caretaker's apartments includes office space, meeting and work rooms, vehicle storage and a covered potting area. The barn and chicken coop are proposed as raptor mews. The space between the existing lines of cottonwood trees should be connected to the main road and used as parking.

The immediate landscape of the Kennedy Farm should encompass flower and vegetable gardens, hay fields to the north and a small orchard / urban garden to the south.

The rear courtyard of the main house contains a historic rose garden that should be renovated and integrated into the urban garden program.

The agricultural fields to the north should be maintained for their historic and educational value.

The area to the south was historically an orchard, maintained with truck farming methods. Partial restoration of that orchard should be explored. The small orchard could share the space with the proposed urban gardens that should be organized to reflect the historic orchard / truck farming patterns.

Figure 25 - The rear courtyard of the main house at the Kennedy complex offers an opportunity to renovate a historic rose garden and incorporate it into the urban garden program.

Figure 26 - An extensive historic irrigation system should be rehabilitated to irrigate the landscape areas adjacent to the Kennedy complex.

Significant remnants of the historic irrigation system are intact and should be renovated where possible to provide irrigation to the adjacent landscapes. The historic orchard and irrigation should be restored as an extension of the urban garden activities. Further investigations should be conducted to better understand the historic significance of the Kennedy residence and landscape to assist in the evaluation of proposed adaptive reuse of the complex.

Preliminary Interpretive Prospectus

Majestic View has a variety of landscapes and a spectrum of natural and cultural resources. The possibilities for interpretation are numerous, so the development of an interpretive plan and phasing strategy requires focus and prioritization to convey relevant, connected and coherent messages across the site.

We propose to organize interpretive messages into two types: *informative* or *persuasive*. Informative messages are *educational* in intent, whereas persuasive messages should *promote stewardship* of the park property. Neighborhood groups should be solicited to monitor sensitive wildlife areas, or to adopt areas for litter control. Schools might perform water quality monitoring as part of long term environmental education projects.

Each type of message, in turn, encompasses both *natural* and *cultural* themes. Natural themes might include discussions of the park's various ecosystems and habitat zones; indigenous and introduced plant communities; and views. Cultural themes might include the park's prior use as a truck farm; the importance of irrigation; settlement of the site by Native Americans and subsequent immigrants; and the larger social and economic context.

Figure 27
Preliminary Interpretive Prospectus

Informative Messages

Natural:
- Wetlands/Riparian Ecosystem
    - Vegetation and wildlife
- The Prairie Ecosystem
    - Vegetation and wildlife
- The Upland Ecosystem
    - Vegetation and wildlife
- The Food Chain/Predators/Prey
    - Aquatic Life
    - Birds
    - Mammals
- Habitat Zones
- Reproductive Habits (e.g. nesting seasons)

Cultural:
- Agricultural History
    - Truck farming
    - Orchard
    - Irrigated agriculture
        - Farmer's High Line Canal
        - Croke Canal
    - Irrigation patterns
- Successive Occupation of the Site
    - Man's influence on nature
        - first settlement
        - Native Americans
        - archeological remnants
        - migration west
        - agriculture
        - neighborhood development

Persuasive Messages

Natural:
- Wetlands / Riparian Ecosystem
    - Stewardship
- The Prairie Ecosystem
    - Stewardship
- The Upland Ecosystem
    - Stewardship
- The Food Chain
    - Need for predation
    - Endangered habitat
- Reproductive Habits (e.g. nesting seasons)
- Native Vegetation vs. Introduced Vegetation
- Views and Saving Them

Cultural::
- Agricultural History
    - Truck farming
    - Irrigated agriculture
        - water law / water rights
        - water development
    - Successive Occupation of the Site
        - Man's impact on nature

Each area of the park should be evaluated for its potential to provide cultural and natural interpretive messages. The age relevance of the messages should also be evaluated. Wildlife corridors and the expansive viewing areas directed toward the mountains should be the inspiration for messages that are appropriate for the general public; while the Kennedy residence gardens complex should offer experiences suitable for school children in neighborhood or metropolitan schools.

Each of the areas should be prioritized for phased implementation. Some of the areas of the park will be more desirable in terms of numbers of message and/or potential for funding early in the construction.

Estimate of Probable Construction Costs

Majestic View Community Park

ITEM	QTY	UNIT	UNIT COST	TOTAL COST
Clearing and Grubbing	75	AC	3,200.00	240,000.00
Prairie Arboretum	885,700	SF	1.25	1,107,125.00
Restored Natural Area	1,428,200	SF	1.25	1,428,200.00
Wetlands	164,850	SF	1.00	123,637.50
Agricultural Fields	665,300	SF	0.25	166,325.00
Orchard	76,900	SF	1.75	115,350.00
Asphalt- Parking and Roadway	158,000	SF	1.75	237,000.00
Concrete Path	75,850	SF	3.75	227,550.00
Crusher Fines	53,790	SF	1.50	67,237.50
Earthen Earthen Trail	8,900	SF	1.00	6,675.00
Low Water Crossing (Wood Deck) 6'w	2	EA	7,500.00	15,000.00
Pedestrian Bridge (@ Dam)	1	EA	100,000.00	100,000.00
Fox Res. w/ utilities improvements	1	LS	621,726.00	621,726.00
Harder Res. w/ utilities improvements	1	LS	183,352.00	183,352.00
Kennedy Res. w/ utilities improvements	1	LS	345,057.00	345,057.00
Mobilization	1	LS	3%	149,527.05
Subtotal				5,133,762.05
Contingency			*20%*	*1,026,752.41*
Construction Estimate				**6,160,514.46**
Design, Engineering and Const. Admin. Fees			*10%*	*616,051.45*
TOTAL ESTIMATE				**6,776,565.91**

Phasing

To facilitate successful implementation of this master plan, a multiple year phasing strategy is recommended. It is probable that funding for each phase will be obtained from varying sources and/or interests. The master plan is flexible, however, and any element can be implemented as funds become available. The following pages describe a suggested four part phasing strategy.

Fox Residence-Conference Center

This phase would include all proposed remodeling of the building; development of the park entry road from Carr Street to the Fox Residence; development of the 100 car parking lot at the Fox residence for conference center visitors; development of the 50 car parking lot near the existing tennis courts, for park visitors; and partial development of the arboretum, natural areas and wetlands adjacent to this phase.

Majestic View Community Park-Fox Residence Phase

ITEM	QTY	UNIT	UNIT COST	TOTAL COST
Clearing and Grubbing	18	AC	3,200.00	57,600.00
Prairie Arboretum	322,200	SF	1.25	402,750.00
Restored Natural Area	455,310	SF	1.00	455,310.00
Wetlands	20,100	SF	0.75	15,075.00
Asphalt- Parking and Roadway	108,200	SF	1.50	162,300.00
Fox Residence	1	LS	561,226.00	561,226.00
Utilities improvements	1	LS	60,500.00	60,500.00
Mobilization	1	LS	3%	51,442.83
Subtotal				1,766,203.83
Contingency			20%	353,240.77
Construction Estimate				**2,119,444.60**
Design, Engineering and Construction Administration Fees			10%	211,944.46
TOTAL ESTIMATE				**2,331,389.06**

Prairie Arboretum and Trails

This phase would include the development of the arboretum, natural area and remaining wetlands; development of the trails system, including 8' wide concrete primary park trails, 6' wide crusher fines trails and 2' earthen social trails; development of two low water crossings, one at the wetland area east of the Fox residence and one at the wetlands near Hayes Lake; and development of a pedestrian bridge at the Oberon Lake dam.

Majestic View Community Park-Arboretum / Trails Phase

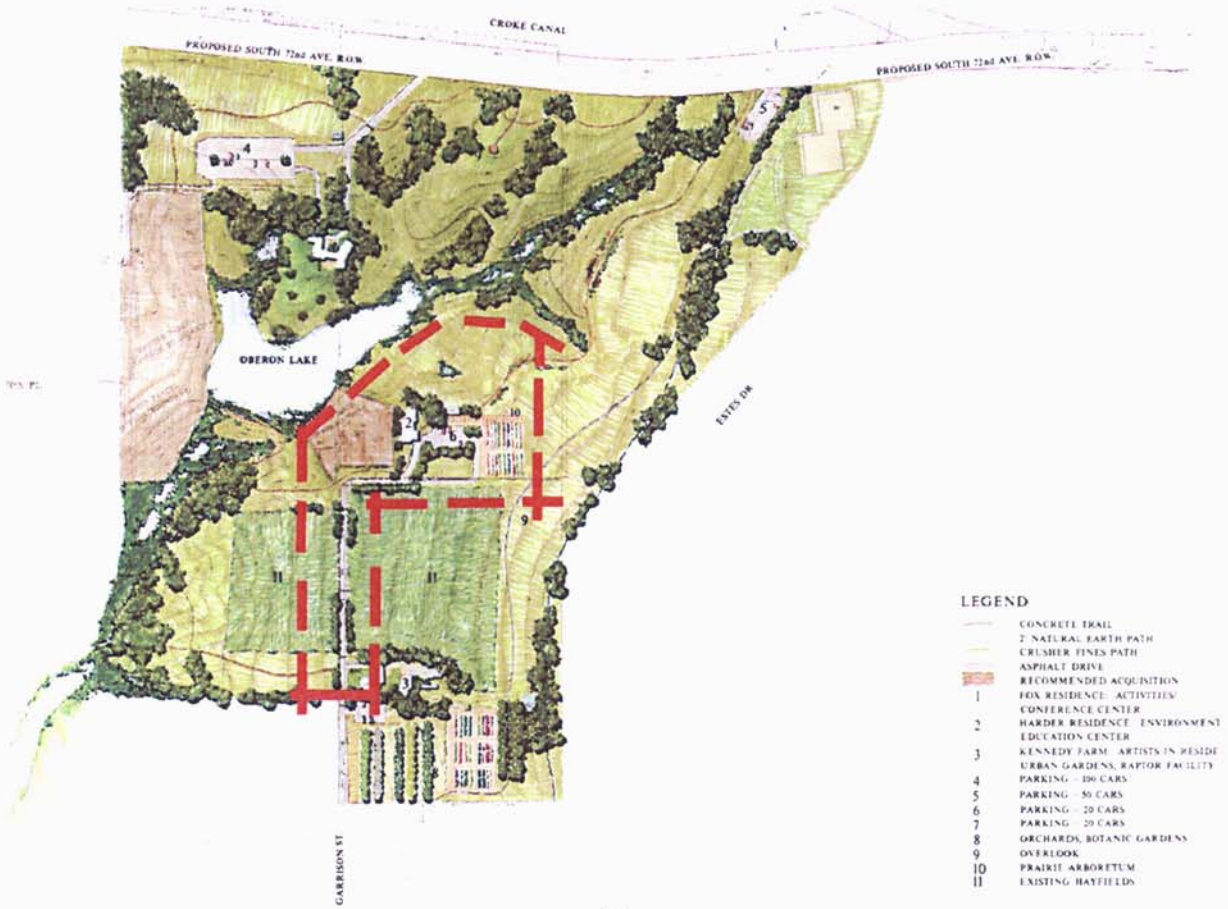
ITEM	QTY	UNIT	UNIT COST	TOTAL COST
Clearing and Grubbing	37	AC	3,200.00	118,400.00
Prairie Arboretum	563,500	SF	1.25	704,375.00
Restored Natural Area	936,230	SF	1.00	936,230.00
Wetlands	144,750	SF	0.75	108,562.50
Concrete Trail	75,850	SF	3.00	227,550.00
Crusher Fines Trail	53,790	SF	1.25	67,237.50
Earthen Trail	8,900	SF	0.75	6,675.00
Low Water Crossing	2	EA	7,500.00	15,000.00
Pedestrian Bridge (@ Dam)	1	EA	100,000.00	100,000.00
Mobilization	1	LS	3%	68,520.90
Subtotal				2,352,550.90
Contingency			20%	470,510.18
Construction Estimate				**2,823,061.08**
Design, Engineering and Construction Administration Fees			10%	282,306.11
TOTAL ESTIMATE				**3,105,367.19**

Harder Residence- Environmental Education Center

This phase would include all proposed remodeling of the building; development of the entry road from Garrison Street to the Harder residence; development of a turnaround and drop-off area near the Harder residence; development of a 20 car parking lot to accommodate environmental center visitors; and development of the natural area adjacent to this phase.

Majestic View Community Park-Harder Residence Phase

ITEM	QTY	UNIT	UNIT COST	TOTAL COST
Clearing and Grubbing	3	AC	3,200.00	9,600.00
Restored Natural Area	36,660	SF	1.00	36,660.00
Asphalt- Parking and Roadway	42,100	SF	1.50	63,150.00
Harder Residence	1	LS	143,352.00	143,352.00
Utilities improvements	1	LS	40,000.00	40,000.00
Mobilization	1	LS	3%	8,782.86
Subtotal				301,544.86
Contingency			20%	60,308.97
Construction Estimate				**361,853.83**
Design, Engineering and Construction Administration Fees			10%	36,185.38
TOTAL ESTIMATE				**398,039.22**



Kennedy Residence-Artists in Residence and Urban Gardens

This phase would include all proposed remodeling of the building; development of a 20 car parking lot off of Garrison Street; development of the historic orchard; development of an area to be used as an urban garden; and development of the agricultural fields.

Majestic View-Kennedy Residence Phase

ITEM	QTY	UNIT	UNIT COST	TOTAL COST
Clearing and Grubbing	17	AC	3,200.00	54,400.00
Agricultural Fields	665,300	SF	0.25	166,325.00
Orchard	76,900	SF	1.50	115,350.00
Asphalt- Parking and Roadway	7,700	SF	1.50	11,550.00
Kennedy Residence	1	LS	322,057.00	322,057.00
Utilities improvements	1	LS	23,000.00	23,000.00
Mobilization	1	LS	3%	20,780.46
Subtotal				713,462.46
Contingency			20%	142,692.49
Construction Estimate				**856,154.95**
Design, Engineering and Construction Administration Fees			10%	85,615.50
TOTAL ESTIMATE				**941,770.45**

Appendix A

Management Plan for Natural Areas

Prepared By ERO Resources Corporation
Authors: *Steve Dougherty*
Mark G. DeHaven
Denise E. Larson

Management Plan for Natural Areas
Majestic View Park

Background

This management plan has been developed to help implement and support the Majestic View Park Master Plan. It is intended to provide a framework for developing and managing portions of the Park as natural areas. This plan identifies natural area management zones and specific objectives, recommendations, and priorities for each. This plan does not discuss specific planting, irrigation, and grading plans.

General Objectives

The general objectives of this management plan are to:

1. Divide the Park into management zones that have similar resources and management requirements.
2. Develop and prioritize a set of recommended actions for each management zone.
3. Develop a range of plant communities and habitats for each management zone.
4. Develop a palette of suitable native and semi-native plant materials for each plant community.
5. Provide recommendations for plant establishment and maintenance.
6. Provide recommendations for weed control.

Recommended actions are prioritized both for the park as a whole and for each of the management zones. Priorities consider : 1) maintenance of the existing resource; 2) enhancement of the existing resource; and 3) creation of a new resource. Resource creation typically is a substantial undertaking compared with maintenance and enhancement of existing conditions. Implementation and management actions will be divided into a sequence of steps that promote adaptive management. This approach will allow Arvada's park staff to learn from successes and failures, and adapt long-term management accordingly.

Integration with Master Plan

This management plan should be dynamic and responsive to changes in the Master Plan and future Park development. It follows the current Master Plan's philosophy and design. The recommended priorities set forth in this management plan apply only to the proposed natural areas and do not consider other Park components. Natural area components will need to be integrated with other Park components to resolve multiple-use conflicts that may be inevitable.

Recommended Priorities For The Park As A Whole

The following top ten management priorities are based on: 1) protecting existing resources; 2) enhancing existing resources; and 3) focusing on resources likely to yield the greatest impacts for the least effort and cost.

1. Develop a weed control program that focuses on removing Russian olive and controlling Canada thistle in wetlands and remnant native grassland communities.
2. Replace removed Russian olives with mesic shrubs and trees.
3. Protect the quantity and quality of lake and wetland water sources.
4. Develop specific planting and habitat enhancement plans for the Core Wildlife Management Zone.

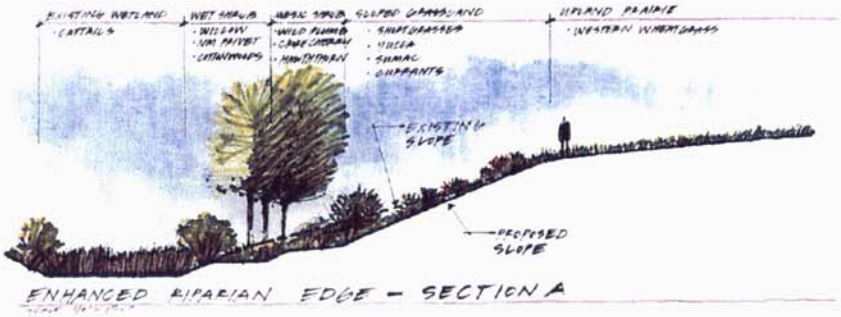
and scattered trees. Although the turf provides excellent grazing habitat for geese and is aesthetically pleasing, it limits the shoreline's habitat diversity.

Objectives, Management Recommendations, and Priorities

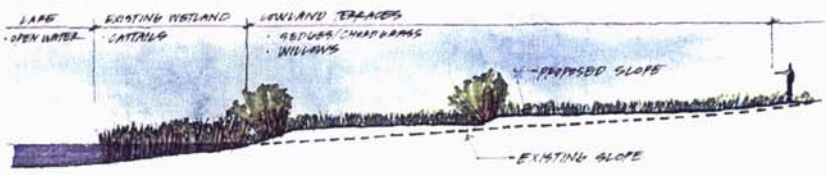
1. *Protect the quality and quantity of existing water sources for Oberon Lake.*
Secure the water that fills Oberon Lake. Make sure lake levels can be maintained over the long-term, in dry years, or if future demands are placed on the water. Without a reliable source of water, the resource will be lost or degraded.

2. *Limit visitor access to the south shore and adjacent habitats.*
Limit and control visitation to the south shore by:
· Locating trails outside (south) of the south shore natural area .
· Providing signage to explain access limitations and recommend viewing wildlife from the north shore.
· Using fencing or landscaping to limit access.

3. *Develop a diversity of habitats along the south shore.*
Expand south shore habitats. Habitats along the south shore would serve as a refuge for wildlife that may be behaviorally displaced by activities along the north shore. Currently, these habitats consist primarily of a narrow band of shoreline vegetation and turf. A series of benches or terraces could be created in the following order from lake landward to provide:
· Littoral zone - A shallow aquatic shelf that supports submerged and emergent aquatic vegetation for feeding habitat.
· Shoreline marsh - Bulrushes and cattails for nesting and refuge.
· Willow thickets - Coyote willow for nesting and cover.
· Mesic shrublands - Chokecherry, American plum, and hawthorn for nesting, cover, and a bar -rier to visitors.
· Woodlands - A gallery of cottonwoods for structure, nesting, cavities, and shade. These woodlands also would define a landscape "edge" for this natural area.
The graphic below illustrates this concept.



ENHANCED RIPARIAN EDGE – SECTION A



WET SEDGE MEADOWS – SECTION B

4. Manage the south shoreline and its adjacent habitats as natural areas .

Designate the south shoreline as a natural area.

Issues to Consider and Resolve

1. Can Arvada secure and control the water that fills Oberon Lake?
2. If needed for habitat creation or enhancement, can Arvada drain the lake or control (fluctuate) water levels?
3. Can irrigation be used temporarily to establish vegetation?
4. The key to creating new shoreline habitat will be slight changes in elevation as the habitat progresses landward. This would require detailed survey, hydrological studies, and a grading, planting, and irrigation plan.
5. Landscape reshaping and development of habitats along the shoreline will require authorization from the U.S. Army Corps of Engineers.

Core Wildlife Area

The Core Wildlife Area is located in the north central portion of the Park. The focus of this natural area is the diverse wildlife habitats that include wetlands, woodlands, shrublands, and grasslands. The rolling topography of this area, combined with its diverse vegetation, should help to screen and buffer wildlife from Park activities.

Objectives, Management Recommendations, and Priorities

1. Protect the water source that supports wetlands in this area.
   Make sure that seepage from the Croke Canal continues to support these wetlands. Without this seepage, the wetlands will be lost. Lining the canal would eliminate the wetlands. Water rights for seepage from the canal potentially could be obtained.
2. Exclude or limit visitor access to the Core Wildlife Area.
   Limit visitor use around the Core Wildlife Area by-
   - Locating trails outside the area.
   - Providing signage to explain access limitations.
   - Using fencing or landscaping to shape access.
   - Providing periodic, seasonal tours of the Core Wildlife Area.
3. Enhance the existing wildlife habitat in the area.
   Wildlife habitat enhancement should consider-
   - Expanding the size and variety of wetland habitats including adding small areas of open water
   - Taking advantage of the gradients created by the rolling topography and, from the bottom of the drainages to the hilltops, create:
     - Wetlands
     - Mesic shrublands/woodlands
     - Xeric shrublands
     - Grasslands
   - Controlling noxious weeds, which compete with desirable vegetation.
   - Limiting grassland mowing to intervals needed to control weeds.

Issues to Consider and Resolve

1. Can Arvada secure the Croke Canal seepage that supports the wetlands?
2. Will it be acceptable politically to exclude visitors from the Core Wildlife Area?
3. Can visitor and pet access to the Core Wildlife Area be controlled successfully?
4. Can irrigation (temporary and/or permanent) be established to support a diversity of vegetation types?
5. Expansion and alteration of existing wetlands will require authorization from the U.S. Army Corps of Engineers.

Prairie Arboretum

The Prairie Arboretum would be a demonstration area for viewing native and specimen trees and shrubs in a natural setting. Visitors could enter the Prairie Arboretum through a xeriscape garden. This garden would display individual plantings and specimens of trees and shrubs that can be viewed in mass plantings in the Prairie Arboretum.

Objectives, Management Recommendations, and Priorities

1. Develop a landscape that is attractive and informative with native prairie species and desirable naturalized species adaptable to the prairie environment.

Consider developing a landscape composed of large groupings of trees and shrubs with species information including water and sun requirements, native habitat, wildlife use, time of flowering, growth habit, and maximum height. Planting and developing the Arboretum could be phased.

2. *Use plants adapted to the prairie.*

Species selected for Arboretum plantings should be adapted to the prairie environment, have low water requirements, and be available commercially to the public.

3. *Develop an urban wildlife habitat landscape.*

Plant species that provide a diversity of cover and food for wildlife. Provide information on how each plant species can benefit wildlife in an urban/suburban environment.

4. *Protect, enhance, and develop areas of native grasslands mixed with plantings of woody vegetation.*

Existing native grassland areas should be protected. In addition, over the long term, areas of native turf should be established. Native turf should vary in species composition and management (for example, mowing height should be varied, turf should be mixed with wildflowers and shrubs).

Issues to Consider and Resolve

1. What existing vegetation near the Arboretum should be saved and incorporated into the Arboretum?
2. Will creation of the Arboretum require substantial grading?
3. What are the irrigation requirements for the Arboretum?
4. What will be the plant palette for the Arboretum?

Restored Natural Areas

Areas designated "Restored Natural Areas" currently are primarily grasslands dominated by non-native grasses such as smooth brome and crested wheatgrass. These areas potentially could be restored to native grasslands.

1. *Identify and protect any portions of potential restoration areas that currently support a predominance of native grasses.*

Areas currently supporting native grasses likely will be the nuclei for restoring these grasslands in the future. Protection should include infrequent fall mowing and routine weed control.

2. *Develop and implement a phased grassland restoration plan.*

Grassland restoration should be phased. Phasing will limit the amount of area disturbed at any one time, and will reduce the area that needs to be managed for weeds. Phasing also will allow Park staff to learn from revegetation successes and failures, and apply this experience to future phases.

3. *Develop a means to irrigate grassland revegetation sites temporarily.*

Grassland revegetation will require 1 to 3 seasons of irrigation; however, the long-term goal will be a grassland that, once established, does not require irrigation and is adapted to the plains environment.

4. *Develop a maintenance program.*

Establishing grasslands will require a 4- to 7-year program of weed management and possible remedial measures such as reseeding.

Plant Communities and Habitats for Each Management Zone

Plant communities and habitats are definable units that respond to and are supported by a common set of environmental conditions. Within the park there are nine identifiable such communities and habitats. Table 1 keys these nine communities to the four Management Zones. As indicated, some Management Zones may contain only a few communities while others may include all communities.

Below we discuss the attributes of each community; management and restoration recommendations; and opportunities and constraints. Table 2 lists suitable plant species for each community.

Lake Shore Management Community

The Lake Shore Management Community is limited to the south shore of Oberon Lake. Other communities such as wetlands, shrublands, and woodlands should be developed landward of the Lake Shore Management Community (Table 1).

Management and Restoration Recommendations

The south shore should provide food and cover for wildlife, primarily waterfowl. Shoreline development should consider including a littoral zone - a shallow aquatic shelf that supports submerged and emergent aquatic vegetation. A littoral zone would provide food for waterfowl, and substrate for aquatic invertebrates and small fish that serve as a food supply for waterfowl and shorebirds (Table 2, Littoral Zone). The shelf should vary in width (3 feet to 8 feet) and depth (0.5 feet to 2 feet). Construction of the shelf will require partial draining and grading of the lake.

Opportunities and Constraints

Developing a shallow littoral zone could greatly enhance the aquatic habitat of Oberon Lake. A littoral zone would create additional feeding habitat; however, the aquatic vegetation could provide excess organic matter that could accelerate lake filling and, possibly, eutrophication. Additionally, littoral vegetation is subject to decimation by large flocks of waterfowl.

Wetland Management Community

Three basic wetland communities are discussed:

· Open Water/Aquatic

Table 1. Management communities associated with Management Zones.

Management Communities	Oberon Lake Shoreline	Core Wildlife Area	Prairie Arboretum	Restored Natural Areas
Lake Shore	X			
Open Water/Aquatic	X	X		
Marshes	X	X		
Wetland Shrublands	X	X		
Sloped Grasslands		X		X
Upland Prairie		X	X	X
Mesic Shrublands	X	X	X	
Xeric Shrublands		X	X	X
Woodlands		X	X	X

Table 2. Recommended plant species for management communities.

Common Name	Scientific Name	Littoral Zone	Marsh	Wetland Shrubs	Mesic Shrubs Upland Grassland	Xeric Shrubs	Woodlands
Trees							
Box Elder	*Acer negundo*						X
Cottonwood, Lanceleaf	*Populus x acuminata* (hybrid)						X
Cottonwood, Plains	*Populus deltoides (sargentii)*						X
Hackberry, Netleaf	*Celtis reticulata*						X
Hawthorn	*Crataegus macarantha*				X		
Juniper, Rocky Mountain	*Juniperus scopulorum*						X
Pine, Ponderosa	*Pinus ponderosa*						X
Pine, Piñon	*Pinus edulis*						X
Shrubs							
Alder	*Alnus tenuifolia*			X			
Chokecherry, Western	*Prunus virginiana* ssp. *melanocarpa*				X		
Currant, Common or Whitestem	*Ribes inerme*				X		
Currant, Wax	*Ribes cereum*				X		
Dogwood, Redosier	*Cornus stolonifera*			X			
Leadplant, Indigobush	*Amorpha fruiticosa*			X			
Plum, American or Wild	*Prunus americana*				X		
Rabbitbrush, Rubber	*Chrysothamnus nauseosus*					X	
Rose Wood's	*Rosa woodsii*				X		
Sage, Fringed	*Artemesia frigida*					X	
Sagebrush, Big	*Artemisia tridentata*					X	
Sagebrush, Prairie	*Artemisia ludoviciana*					X	
Sagebrush, Silver	*Artemisia cana*				X		
Saltbush, Four-winged	*Atriplex canescens*					X	
Serviceberry, Saskatoon	*Amelanchier alnifolia*				X		

Common Name	Scientific Name	Littoral Zone	Marsh	Wetland Shrubs	Mesic Shrubs Upland Grassland	Xeric Shrubs	Woodlands
Skunkbush, Three-leaved sumac	*Rhus triolobata (aromatica* ssp. *trilobata)*					X	
Snakeweed	*Gutierrezia sarothrae*				X		
Snowberry, Western or Wolfberry	*Symphoricarpos occidentalis*				X		
Snowberry, White	*Symphoricarpos albus*				X		
Winterfat	*Ceratoides lanata*					X	
Yucca or Soapweed	*Yucca glauca*					X	
Vines							
Grape, River	*Vitis riparia*				X		
Virginsbower, Western	*Clematis ligusticifolia*				X		
Grass and Grass-Like							
Alkali Grass	*Puccinellia nuttalliana (airoides)*		X				
Alkali Sacaton	*Sporobolus airoides*		X				
Arrowweed	*Triglochin maritimum*		X				
Bluestem, Little	*Schizachyrium scoparium*					X	
Bottlebrush Squirreltail	*Sitanion hystrix*					X	
Buffalo Grass	*Buchloe dactyloides*					X	
Bulrush, 3-square or Olney Threesquare	*Scirpus americanus*		X				
Bulrush, Alkali	*Scirpus maritimus*		X				
Bulrush, Hard-stem	*Scirpus acutus*		X				
Bulrush, Small fruit	*Scirpus microcarpus*		X				
Bur-reed	*Sparganium eurycarpum*	X	X				
Cattail, Broadleaf	*Typha latifolia*		X				
Cordgrass, Prairie	*Spartina pectinata*		X				
Grama, Blue	*Bouteloua gracilis*					X	
Grama, Sideoats	*Bouteloua curtipendula*					X	

Common Name	Scientific Name	Littoral Zone	Marsh	Wetland Shrubs	Mesic Shrubs Upland Grassland	Xeric Shrubs	Woodlands
Mannagrass	*Glyceria striata*		X				
Needle and Thread	*Stipa comata*					X	
Needlegrass, Green	*Stipa viridula*					X	
Ricegrass, Indian	*Oryzopsis hymenoides*					X	
Rush, Baltic or Arctic	*Juncus balticus (arcticus)*		X				
Rush, Colorado	*Juncus confusus*		X				
Saltgrass, Inland	*Distichlis spicata (stricta)*		X				
Sand Dropseed	*Sporobolus cryptandrus*					X	
Sedge, Nebraska	*Carex nebrascensis*		X				
Sedge, Woolly	*Carex lanuginosa*		X				
Spikerush, Creeping	*Eleocharis palustris*		X				
Spikerush, Needle	*Eleocharis acicularis*		X				
Switchgrass	*Panicum virgatum*		X			X	
Three awn	*Aristida purpurea*					X	
Wheatgrass, Western	*Agropyron smithii*					X	
Wildrye, Canada or Nodding	*Elymus canadensis*		X			X	
		Forbs					
Arrowhead	*Sagittaria latifolia*	X					
Blanketflower, Native	*Gaillardia aristata*					X	
Coneflower, Prairie or Mexican Hat	*Ratibida columnifera*					X	
Coreopsis, Plains	*Coreposis tinctoria*					X	
Cowboy's Delight or Scarlet Globemallow	*Sphaeralcea coccinea*					X	
Daisy, Easter	*Townsendia exscapa*					X	
Evening Primrose, White Tufted	*Oenothera caespitosa*					X	
Flax, Wild blue	*Linum lewisii*					X	
Gayfeather, Dotted	*Liatris punctata*					X	

Common Name	Scientific Name	Littoral Zone	Marsh	Wetland Shrubs	Mesic Shrubs Upland Grassland	Xeric Shrubs	Woodlands
Iris, Wild or Western	*Iris missouriensis*		X				
Milkweed, Showy	*Asclepias speciosa*		X				
Milkweed, Swamp	*Asclepias incarnata*		X				
Penstemon, Narrow-leaf	*Penstemon angustifolia*					X	
Smartweed	*Polygonum pensylvanicum*		X				
Sunflower, Common	*Helianthus annuus*					X	
Vervain, Blue	*Verbena hastata*		X				
Water Plantain	*Alisma plantago aquatica*	X					
Yarrow	*Achillea lanulosa*					X	

- Marshes
- Wetland Shrublands

Variations of these wetland communities - such as cattail marsh, bulrush marsh, common threesquare marsh, and sedge meadow - can be developed. Small changes in the hydrologic regime (depth, duration, and frequency of inundation or depth to ground water) and water quality can determine the wetland community that will be established. Site-specific grading, hydrology, and planting plans will need to be developed for establishing each wetland community.

Open Water/Aquatic

Open water and shallow aquatic communities basically are shallow ponds designed to support aquatic vegetation and invertebrates, and provide habitat for waterfowl, shorebirds, and amphibians as well as a general water source for wildlife. These habitats most likely would be created in or adjacent to areas currently supporting wetlands, and would add diversity to the existing wetlands.

Management and Restoration Recommendations

Shallow open water and aquatic habitats, juxtaposed with other wetland habitats, can provide important wildlife habitat diversity and create a visually diverse landscape. These communities can be created by excavating shallow basins to expose ground water. The overall depth of the basin should not exceed 3 feet and the basin's side slopes should be shallow (5:1 to 6:1 or shallower). Suitable plant materials are similar to those listed for the Lake Shore Management Community littoral zone (Table 2).

Opportunities and Constraints

Opportunities to create open water/aquatic communities exist where there is a reliable surface and/or ground water supply to support the shallowly inundated habitats. The most suitable sites at the Park appear to be the wetland seeps from Croke Canal.

Constraints are similar to those discussed for the Lake Shore Management Community littoral zone. Additionally, the shallow aquatic community also will provide habitat for mosquitoes, which could be a nuisance to Park visitors and neighbors.

Marshes

Marsh communities can be created or enlarged adjacent to existing wetland communities supported by Croke Canal seepage. Marshes require shallow inundation or saturation to the surface for most of the growing season. Marsh communities are influenced by water depth, duration of inundation and saturation, and water quality. Common marsh types include cattail, bulrush, common threesquare, and sedge. The following is a brief description of these marsh types.

- Cattail - Common; grows in 0.5 feet to 2 feet of water; tolerates high nutrient loading and alkaline conditions; aggressive and difficult to control.
- Bulrush - Often intermixed with cattails; grows in 0.5 feet to 1.5 feet of water; less toler ant of nutrients than cattails; some species tolerant of alkaline conditions; less aggressive than cattails.
- Common threesquare - Grows in 0.5 feet of water to saturated conditions; tolerant of alka line conditions; relatively easy to establish.
- Sedge - Grows in 0.25 feet of water to saturated conditions; not tolerant of alkaline condi tions; difficult to establish.

Management and Restoration Recommendations

The diversity of the existing wetlands can be increased by creating a variety of wetland marshes. Establishing wetland marsh communities primarily will be determined by hydrology. Grading existing wetlands and areas adjacent to existing wetlands can develop the varied hydrology needed to support a diversity of marsh types. Existing seasonal ground water levels will need to be monitored to develop a grading plan that will provide a supportive hydrology for a diversity of wetland marshes. Marsh plants are best established by using transplanted plugs, rhizomes, and tubers or nursery stock (Table 2).

Opportunities and Constraints

Opportunities for creating marshes occur in the drainage valleys supported by Croke Canal seepage and by reshaping the south shore of Oberon Lake and adjacent lands. Marshes can create barriers and buffers that can shape visitor use.

Site hydrology and topography will be constraints to marsh creation and enlargement. Additionally, the margins of areas that are excavated for marshes are susceptible to invasion by weeds, particularly Canada thistle. Marshes can create habitat for mosquitoes that can be a nuisance to Park visitors and neighbors.

Wetland Shrublands

Wetland shrublands consist primarily of willows, but can include other shrubs such as alder, birch, swamp privet, and red osier dogwood. Wetland shrublands frequently border marsh communities. They typically occur in environments with saturation near the surface for much of the growing season, but are typically inundated for only brief periods. Wetland shrublands are suitable for expanding wetlands that currently occur in the valley bottoms or in areas that would be regraded along and adjacent to the south shore of Oberon Lake.

Management and Restoration Recommendations

Wetland shrublands need a hydrologic regime that consists of saturation to or less than 1 foot from the surface for much of the growing season. Dense planting of willows can provide excellent wildlife cover and a barrier or buffer that shapes visitor use. Once established, some species such as coyote willow can rapidly colonize an area. Consider establishing wetland shrublands at the edge of marshes and along the lake shoreline, which are natural settings for this community. Wetland shrublands are best established as live dormant stakes or container nursery stock.

Opportunities and Constraints

Opportunities for establishing shrublands are similar to those mentioned for marshes. Constraints for shrubland creation primarily are related to providing the needed supportive hydrology.

Upland Grasslands

The upland grasslands management community is divided into two communities based on topographic position and differences in species composition. Sloped grasslands occur on the hillsides of the rolling topography that forms the north central portion of the Park. The upland prairie community is on the deeper soils on the relatively flat tops of the hills. Many of the hills currently support remnants of the native shortgrass prairie that historically dominated the site.

Sloped Grasslands

Sloped grassland communities occur on relatively dry shallow soils of hillsides within the Park.

These hillsides cirrently support small scattered native grassland remnants that are some of the best examples of native plant communities in the Park. These remnants will serve as the nuclei for native grassland restoration. Common species that comprise sloped grasslands include blue grama *(Bouteloua gracilis)*, sideoats grama *(B. curtipendula)*, three awn *(aristida purpurea)*, yucca *(Yucca glauca)*, and prickly pear *(Opuntia sp.)*.

Management and Restoration Recommendations

Recommended grassland seeding mixes and seeding procedures are presented in Appendix A2. Recommended native shortgrass prairie species are presented in Table 1. As previously discussed for Restored Natural Areas, native grassland revegetation should be phased.

The following is a typical sequence for converting an area from non-native to native grasslands.

1. Eradicate all undesirable vegetation the year prior to seeding.
2. Till the area to be seeded. Contour plowing will be needed on any sloped areas to be planted.
3. Drill or broadcast seed mix (Appendix A2.)
4. Mulch the seeded area with clean, weed free mulch at a rate of about 1 ton per acre. Mulch should be crimped into the soil. Slopes may require a heavier application of mulch or erosion control fabrics.
5. Irrigate the newly seeded area. Irrigation should complement precipitation and equal about 1 inch per week during the growing season. Under-irrigation will retard seedling establishment, and over-irrigation will promote substantial weed growth. Irrigation will be needed for 1 to 3 growing seasons, depending on the success of seedling establishment. Newly established grasslands should be weaned from irrigation by gradually reducing the amount and frequency of irrigation.
6. Control weeds.
7. Reseed areas that have not become established.

This sequence can be altered in the beginning by using a nursery crop such as sorghum, or by irrigating the first season prior to seeding to "flush"the seedbank of weedy species. Seedbank flushing is the process of irrigating the site to promote germination, then tilling under the germinated version before it goes to seed. This process can be repeated several times during the season.

Opportunities and Constraints

There are opportunities to establish native grasslands at the Park on portions of the Core Wildlife Area, Prairie Arboretum, and Restored Natural Areas Management Zones. Native grassland establishment is not an easy process and establishment is not guaranteed. Although native grasslands are attracting ever increasing attention, the public that appreciates native landscape forms may not appreciate the subtleties of native grasslands. Sloped grasslands also have increased potential for erosion and can be difficult to irrigate.

Upland Prairie

The upland prairie community is similar to the previously discussed sloped grassland community except that it occurs on deeper soils, on more level topography, and has a greater component of western wheatgrass *(Agropyron smithii)*.

Management and Restoration Recommendations

The management and restoration recommendations discussed for sloped grasslands also apply to the upland prairie community.

Opportunities and Constraints

Opportunities and constraints for the upland prairie community are similar to those discussed for the sloped grassland community except there is a reduced risk of erosion for the upland prairie community.

Upland Shrublands

Upland shrubland communities on the plains typically are associated with moist environments such as drainages and gulches, or rocky areas with coarse soils where moisture is trapped and held deep in the soils where it can be accessed by shrubs. At Majestic View Park, the upland shrubland management community is divided into xeric shrubland community and mesic shrubland community. Mesic shrubland communities frequently border wetland shrubland communities in the valleys of rolling hills. Xeric shrublands may border mesic shrublands or occur as scattered islands within upland grassland communities. The Park currently supports few native upland shrublands except for the rabbitbrush in the northeastern corner of the Park.

Mesic Shrublands

Mesic shrublands are comprised of shrubs that need less moisture than wetland shrublands, but more moisture then xeric shrublands and grasslands (Table 1). Mesic shrublands can provide excellent songbird habitat, cover for other wildlife, visual diversity, and spring and fall color.

Management and Restoration Recommendations

Recommended native shrub species are presented in Table 1. Shrubs are best established from container stock and should be planted in groupings that simulate shrub thickets. Consideration should be given to species moisture requirements. Temporary irrigation will be needed to establish shrubs and, in some instances, permanent irrigation may be required.

Opportunities and Constraints

There are opportunities for mesic shrub communities in the valleys of the rolling hills and adjacent to the reshaped shoreline of Oberon Lake. When intermixed with trees, shrubs create a multiple-layered canopy that provides valuable wildlife habitat and visual diversity. Most shrubs will spread and may form dense thickets, which serve as buffers and living fences that shape visitor use. However, heavy shrub cover also may provide a screen for undesirable activities at the Park. Mesic shrubland establishment will require an evaluation of existing moisture conditions and irrigation.

Xeric Shrublands

Xeric shrublands occur on dry slopes and as scattered islands in grasslands. These shrubs can provide habitat and visual diversity within grassland communities.

Management and Restoration Opportunities

Recommended native shrubs species are presented in Table 1. Shrubs are best established from container stock and should be planted in groupings that simulate shrub thickets. Temporary irrigation for at least two growing seasons will be needed to establish xeric shrubs.

Opportunities and Constraints

Opportunities for creating xeric shrublands occur on dry hillsides and grasslands. Shrub establishment will require temporary irrigation.

Woodlands

Currently, there are woodlands at the Park along the valleys fed by seeps from Croke Canal, along lake margins, and as scattered ponderosa pines in upland locations. The woodland community can be a substantial addition toteh Park's wildlife habitat diversity and provide visual diversity and shade for Park visitors. Intermixed with shrublands and wetlands, the woodland community can greatly increase habitat complexity.

Management and Restoration Recommendations

Native and naturalized trees suitable for the park's natural araes are presented in Table 1. Trees are best established from container or ball and burlap stock. Tree species ahould be matched to their typical habitat:

Wetlands and shrublands: cottonwood, peachleaf willow, box elder;
Uplands: ponderosa pine, gambel's oak, burr oak, pinon pine, hackberry.

Tree establishment will require temporary, and in some cases permanent, irrigation. Tree planting should consider the ultimate height and spread of the tree. View corridors also should be considered so that important vistas are not eventually blocked.

Opportunities and Constraints

Woodlands and scattered trees can occur in all of the management Zones at the Park, and can be mixed with any of the management communities. Consideration should be given to how pines and deciduous trees are used. Mixing pines and conifers with deciduous trees is not common in native landscapes at low elevations except for ponderosa pine and gambel's oak. Trees will require irrigation and can block views as they mature.

Appendix A1

Weed Management

This appendix discusses general techniques for managing weeds, as well as specific instructions for managing the most common aggressive weeds at Majestic View Park. New techniques are continually being developed and tested, and may prove more effective in the future than the following methods.

Many attractive restoration projects have failed, turning into large weed fields due to lack of weed control. It is imperative to consider weed management prior to initiating a restoration project and before ground is disturbed. After all construction and planting are completed, disturbed and revegetated areas need to be monitored for weeds and appropriate management techniques implemented.

Management Strategies

Three general strategies for successfully managing weeds are 1) prevention, 2) control, and 3) eradication.

1. **Prevention.** Preventing weeds from invading a site is the most effective and least costly weed control method. Weed prevention requires constant vigilance from the very beginning of the project.

   A cover of native vegetation helps limit weed invasion. Never leave the ground bare. If necessary, plant a cover crop such as winter wheat if the land will not be revegetated immediately. Remove weeds from nearby areas to prevent seeds from invading a revegetation site.

   Use only weed-free hay for mulch, weed-free seeds in seed mixes, and weed-free compost. Weeds have invaded many well-planned projects because weed-free products were not used.

2. **Control.** Control reduces a weed population to a manageable level; but usually does not eliminate the problem. There are four main control methods; most successful management plans include a combination of two or more of these methods:
   - **Cultural Control** increases the growth of desirable, non-weedy plant species through proper planting, appropriate irrigation, and other techniques.
   - **Mechanical Control** disrupts weed growth by physical disturbance. Techniques include tilling, hoeing, hand-pulling, mowing, burning, and mulching.

- **Biological Control** uses predators of the particular weed, such as goats and beetles. Biological agents usually only partially control weed infestation and should be combined with other methods for increased efficiency.
- **Chemical Control** uses herbicides to disrupt weed growth. Herbicides must be used sparingly and with caution. Herbicides often are used to the exclusion of other management techniques. Many herbicides, especially if they are overused or their use is not targeted, will kill desirable plants, as well as weeds. Soil active chemicals, such as Tordon, Banvel, or Telar should not be used near woody vegetation. To decrease the destruction of desirable vegetation, use herbicides that are effective on a narrow range of plants. **Always read herbicide labels, follow directions, and use precautions.**

3. **Eradication.** Eradication is the complete removal of weeds from an area and is rarely achieved once weeds have become established.

   Most weeds are extremely hard to eradicate. For example, tilling will not eliminate Canada thistle or bindweed, both of which will grow from broken pieces of roots.

   Eradication is most effective on weed patches less than 100 square feet and areas where weeds are newly established.

   Always revegetate after eradication to prevent other weed problems.

Managing the Most Common and Aggressive Weeds at Majestic View Park

Trees

Russian Olive (*Eleagnus angustifolia)*

Description — This fast-growing tree has silvery green leaves and long thorns. The fruit is olive-shaped. A European native, Russian olive has been widely sold in Colorado as an ornamental shade tree. Along some streams, Russian olive has completely replaced native woody vegetation such as cottonwoods, thus decreasing wildlife habitat. Russian olives occur in moist soils along the draws in the Park.

Management Methods — Garlon 4 and the premixed product Pathfinder ™ can be used to control Russian olive (based on work by William Neil in California and The Nature Conservancy in Colorado and Arizona):

Cut the Russian olive trees within 4" of the ground. Within 5 minutes of cutting, treat the stumps with the herbicide. Monitor and implement follow-up treatment as needed. Follow-up treatments are best completed the following June before any possible resprouts have time to grow. Retreated areas should be monitored every

six months until complete mortality is ensured. Do not drag downed Russian olives laden with fruit; this will disseminate the Russian olive seeds throughout the Park.

Garlon decomposes rapidly after application, in a day or less in sunlit water and approximately 2 weeks to 2 months in soil. However, care should be taken not to introduce the herbicide into adjoining waters.

Grasses

Cheatgrass (Downy Brome) *(Bromus tectorum)*

Description — This winter annual grass grows from seed to a height of 4 to 30 inches. Growing in spring and early summer, this weed effectively competes with more desirable native grasses for moisture and nutrients. As the plant dries in summer, it can become a fire hazard.

Management Methods —

- **Cultural Control.** Irrigation can be used to manipulate the planting time of desirable species to control cheatgrass. In an area infested with this weed, till the site in early spring before seed has set. In May, irrigate the area and plant native grass seed. Continue to irrigate in the summer to encourage the growth of native plants. Several native grasses, including bottlebrush squirreltail and western wheatgrass, compete well with cheatgrass.
- **Mechanical Control.** Mowing, hoeing, and tilling before the seed has set is a good way to control cheatgrass. This grass also is very susceptible to fire. However, if the weed has been in the area for many years, the soil probably has a large seedbed and more plants will come up next year. Establishing vegetative cover as soon as possible will help reduce re-establishment. When tilling the soil, make sure the soil is tilled under at least 4 to 6 inches—deep enough to bury the plants and seeds. Till in early spring and plant native grasses in the fall.
- **Chemical Control.** Several different herbicides are effective in controlling cheatgrass. However, they also may kill desired native plants. Pronamide applied in late fall will control cheatgrass selectively in stands of slender wheatgrass, western wheatgrass, and other grasses. (This does not mean it is harmless to all grasses.) The label for Pronamide prohibits grazing of treated grass. Glyphosate is another herbicide that when applied in early spring or late winter (mid to late-February) does not reduce the cover of western wheatgrass, blue grama and needlegrasses. These herbicides are effective only on living plants and do not affect seeds that may be in the ground; although, Pronamide will control seedings shortly after germination. A new cheatgrass-specific herbicide is being developed.

Forbs

Knapweed, Diffuse (*Centaurea diffusa)*

Description — This usually biennial weed has finely divided leaves and numerous solitary flower heads. It is distinguished from other knapweeds by the comb-like bracts under the flower heads. This introduced weed invades disturbed ground with dry, light soils.

Management Methods — Controlling diffuse knapweed is required under the Colorado Weed Management Act. The key to controlling this weed is to prevent seed production.

- **Cultural Control.** The most effective way to prevent invasion of this noxious weed is to revegetate disturbed areas as soon as possible with fast growing grasses.
- **Chemical Control.** Transline (cloyralid) is an effective chemical control for diffuse knapweed when applied at the rosette to early-bolting growth stage. This herbicide is effective only on four plant families. After diffuse knapweed has been removed from an area, reseed the site quickly to prevent reinvasion.
- **Biological Control.** The root-boring beetle (*sphenoptera, ugoslavica*) has the best potential for success against diffuse knapweed, although further research is needed. Two seedhead flies (*urophora* ssp.) and the seedhead weevil have been released against diffuse knapweed with marginal success.

Knapweed, Russian (*Centaurea repens)*

Description — This perennial spreads by seeds and creeping roots. The taproots may grow to a depth of 23 feet within 2 years of establishment. Russian knapweed differs from other knapweeds by having broad, round bracts with papery margins under the flower head. In Colorado, this noxious weed has infested an estimated 50,000 acres.

Control Measures — The Colorado Weed Law mandates control of Russian knapweed. The most effective weed control plan combines cultural control methods with mechanical and/or chemical control methods. Mowing or applying herbicide alone usually is not sufficient.

- **Cultural Control.** Planting an area with fast growing grasses helps prevent the establishment and spread of Russian knapweed.

- **Mechanical Control.** Mowing the area two to three times per season helps prevent seed production and stresses the plant.
- **Chemical Control.** Herbicides alone usually will not manage this weed effectively. Curtail or Transline can be sprayed at bud to flower stage. Disk the area one month to six weeks before seeding, then plant cool season grasses.

Knapweed, Spotted (*Centaurea maculosa*

Description — Very similar to diffuse knapweed, this short-lived perennial reproduces from seed. Spotted knapweed's distinguishing physical characteristic is a small, dark spot at the end of the bracts underneath the flower head. This noxious weed invades disturbed ground with light, well-drained, often calcareous soils. It survives in soil that is slightly moister than what is preferred by diffuse knapweed.

Management Measures — Spotted knapweed should be managed in the same manner as diffuse knapweed.

Spurge, Leafy (*Euphorbia esula)*

Description — This European native forms dense patches in riparian corridors and other moist sites, as well as in drier areas. It is a tall plant with leafy stems supporting yellow flowers. This perennial grows from seeds and root stock. The extensive root system may grow to a depth of 15 feet or more. It is extremely difficult to control much less eradicate this weed once it has established. Leafy spurge grows rapidly early in the year taking moisture and nutrients from native plants before they have had a chance to grow. It also produces a white milky sap that is irritating to skin and detrimental to cattle.

Management Measures — Colorado Weed Law mandates control of leafy spurge.

- **Prevention.** The most effective management technique is to prevent this weed's establishment. All other methods are difficult and require great persistence.
- **Cultural Control.** Having a good cover of grasses, especially early in the growing season, helps prevent an infestation of leafy spurge from spreading.
- **Mechanical Control.** It is difficult to control leafy spurge with mowing alone. However, mowing at 14 to 21-day intervals throughout the summer can be combined with herbicide control to decrease the amount of herbicide needed. Caution: leafy spurge's milky sap may "gum up" the mower.

- **Herbicide Control.** Timing herbicide application is critical; all treatments may need to be repeated up to several times a year for several years. Roundup (Glyphosate) needs to be applied at 1-month intervals (1 quart per acre) beginning in June and works best when combined with fall grass seedings. Other herbicides such as Banvel (dicamba) and Tordon 22K (picloram) require fewer applications. However, both of these chemicals are active in the soil, will kill other herbaceous vegetation, may damage nearby woody vegetation, and should not be used in drainages.
- **Biological Control.** Sheep and goat grazing will help control (but not eradicate) the plant. Other livestock avoid leafy spurge. The Colorado Department of Agriculture has four varieties of flea beetle available to feed on and help control leafy spurge. The appropriate type of beetle depends on the soil type of the area.

Thistle, Canada (*Cirsium arvense*

Description — This aggressive weed forms large dense patches of spiney plants along the bottoms of intermittent drainages and other areas with moist soil. This thistle, however, does not do as well in constantly saturated soils. It is extremely difficult to eradicate because it has an extensive root system and new plants will grow from even a small piece of root. One plant is able to colonize an area up to 6 feet in diameter in 1 or 2 years. Canada thistle grows to 3 feet tall, has spine-tipped leaves, and small purple flowering heads.

Management Measures — In addition to avoidance, the key management measure is to stress the plant by forcing it to use stored root nutrients.

- **Avoidance.** The most effective way to control this species is to revegetate moist bare soil.
- **Cultural Control.** After establishment, competition with other plants is helpful, but not completely effective in controlling this weed. Reseeding is necessary after the thistle has been removed from an area.
- **Mechanical Control.** Mowing may be effective when combined with herbicide treatments, especially in areas with competition from established plants. Mow throughout the growing season and treat with herbicides in the fall. Mowing alone, without herbicides, may be effective if done at one-month intervals over several years. Another effective control method is to till the soil at 3-week intervals.

- **Chemical Control.** Herbicides can be effective, especially when combined with mowing, tilling, and competition from other plants. Mow two or three times in the summer at monthly intervals (beginning at bolt to early bud-growth stage) and follow with fall applications of Curtail.
- **Biological Control.** The larvae of the weevil *Ceutorhyncus litura* bores into Canada thistle weakening the plant. This weevil alone will not effectively control thistle, but it can be combined with other methods. *Urophora cardui* is another insect that helps to control this weed.

Musk thistle (*Carduus nutans)*

Description — This biennial weed is a prolific seed producer and reproduces rapidly. It establishes in moist, bare ground. Reaching up to 6 feet tall, musk thistle has spiney margined leaves and rose pink clusters of flowers growing at the top of the stem.

Management Measures — In addition to avoidance, the key to controlling this weed is to prevent seed production:

- **Cultural Control.** Because seeds need open moist ground to germinate, the most effective control method is to keep an area vegetated. Do not allow grassland to degrade resulting in open areas of bare soil. Do not fertilize when revegetating, as that encourages musk thistle. Always revegetate after removing the weed.
- **Mechanical Control.** Tilling will effectively remove musk thistle. Cut the weed below the soil line before the bud stage. Early mowing should help prevent the development of viable seed. Mowed debris should be gathered and burned to destroy any seeds.
- **Herbicide Control.** Several different herbicides (e.g., Banvel, Torclon, Curtail, Transline, 2,4-D) are effective when applied to the musk thistle rosettes in the spring or fall before the flowering stems are produced (bolting). Apply Escort in early spring when the thistle is in the rosette to early-flower growth stages.
- **Biological Control.** The musk thistle seed head weevil helps reduce seed production by an average 50 percent. Although this method alone is not effective in controlling musk thistle, it can be combined with other methods such as herbicides or mowing to control this weed.

Appendix A2

Recommended Grassland Seed Mix and Seeding Methods

Seeding Time

Seeding should occur generally before April 15 or after October 15 until frozen ground prevents seeding.

Seed Treatment

Seeds often need pretreatment, which includes scarifying, soaking, or cold treatment.

- Scarifying is a process that mimics the removal of the outer seed shell that may naturally occur in the digestive track of birds or animals. Some seeds must be scarified to germinate. Use a knife to chip at the hard coating, or soak the seeds in bleach.
- Soaking mimics natural spring rains that result in moist soils. Some species require this seasonal change for germination.
- Cold treatment initiates dormancy that naturally occurs with winter temperatures. When seeds are planted in warm moist soils (much like spring conditions), the dormancy is broken and germination can begin.

Always ask the seed retailer if pretreatment is necessary or if pretreated seeds are available to ensure maximum germination.

Seeding Methods

- Drilling — For large areas, the most practical method is drilling. This involves the use of a machine that inserts the seeds into holes placed at a controlled depth. This requires the least amount of seeds and ensures maximum germination due to the placement directly in the soil at the desired depth. Many native seeds are odd-shaped and require the use of a range-type driller. Drilling is best suited for large areas where the slope grade is 33 percent (3:1) or flatter. The general soil depth for native seeds is ¼ to ¾ inch, although some variation may occur.
- Broadcasting — This method often is used in areas that are either too small or steep or are inaccessible for a drilling machine. Broadcasting is completed by hand spreading or using a small hand-held spreader. After the seeds have been spread they must be covered with ¼ to ¾ inch of soil by using harrows, rakers, or drags. This method requires twice the amount of seed recommended for the drilling process and does not ensure maximum germination. However, it often is more successful than drill seeding because it buries seed at a variety of depths. Not all seeds work well with the drill depth setting.

Recommended Native Grass Seed Mix

Species	Variety	% Mix	# PLS/Ac
Western wheatgrass	Arriba	35	5.6
Green needlegrass	Lodorm	25	2.5
Sideoats grama	Vaughn	20	1.8
Blue grama	Pastura	15	0.5
Purple prairie clover		5	0.3

Appendix B

Adaptive Reuse of Existing Residences

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Joonho Yo

MAJESTIC VIEW PARK

City of Arvada

Adaptive Reuse of Existing Residences

Barker·Rinker·Seacat & Partners·Architects·P.C.
Wenk Associates

Through the public process described earlier the proposals for adaptive reuse of the various buildings at Majestic View Park evolved into the following recommendations. The narrative included here is supplemented by the following drawings and tables:

- **Annotated Existing Conditions Architectural Drawings**
  These drawings note the key systems, materials, finishes and features of the existing structures. Also noted are potential deficiencies or anticipated problems.

- **Annotated Existing Conditions Structural Drawings**
  These drawings are a general layout of existing structure based on readily visible observations. No testing was performed. If structure was hidden by existing finishes practical experience and best judgement was used to determine the condition.

- **Mechanical Systems Narrative**
  This narrative reviews the existing systems for each building and makes recommendations for the new proposed uses. Estimates are provided for the modifications.

- **Program and Conceptual Budget for Buildings**
  This spreadsheet is a description of the proposed uses, materials, and key program elements for each space within each building. Budgets are assigned with a per square foot cost for each space based on the degree of renovation involved.

- **Conference and Meeting Center Occupancy Calculations**
  This spreadsheet summarized the occupancy and restroom considerations for the Conference and Meeting Center based on the Assembly Occupancy for the building.

FOX RESIDENCE - CONFERENCE AND MEETING CENTER

The Fox Residence currently is a 6,577 gross square foot house at the center of the Park overlooking the pond to the south. The building is a one story brick mission ranch style house with a walk out basement. The roof is tile and appears in good condition. The house has 3 working fireplaces that are proposed to be converted to gas to retain the ambience of the fireplaces in the conference center.

This large rambling house has an unusual layout that makes renovation to a conference center a challenge. The largest rooms for the banquet uses are found by combining the existing 3 car garage with the bath and bedrooms of the east most wing into one large space. This space then has the potential to seat up to 146 in a banquet format and if divided can seat 50 in one room with 74 in the other. A chair and table storage room is proposed to be added on the east side.

The center part of the building provides break out space for the large banquet rooms and includes a small meeting room, a lounge and a wet bar. A large deck opens off the lounge and one of the banquet rooms for outdoor receptions. A trellis is proposed over the deck to provide shade.

A large entry porte cochere covers the drop off drive at the front of the center and connects to the front door. This is provided to accommodate parties arriving and leaving the center during inclement weather and to reduce ice problems at this north entry. A small plaza with a fountain is suggested within the "court yard" created by the center. (The plaza is not included in the attached budget)

The west most wing houses the support spaces and includes a warming kitchen, an office, secure storage (for expensive items and liquor) and accessible restrooms. The warming kitchen is intended to provide facilities to hold food prepared off-site and delivered by catering services. The kitchen provides warming ovens, and a serving area but is not intended to provide food preparation equipment.

The basement has an additional meeting room that can also be uses as a changing room during wedding reception. The meeting room has walk out patio wrapping the south and west sides. Restrooms, storage and the mechanical room are also located in the basement.

The renovation budget for the Conference Center is **$564,000.** See the Program and Conceptual Budget for Buildings for a description of the functions and spaces and break down of the associated costs.

HARDER RESIDENCE - ENVIRONMENTAL EDUCATION CENTER

The Harder Residence currently is a 2,898 gross square foot house at the center of the Park overlooking the pond to the north. The building is a one story synthetic stucco Santa Fe style house with no basement. The roof is flat and appears in good condition. The house has been modified and added on to over time. The interior is well maintained and in good condition. The exterior is also in good condition except for woodpecker damage to the synthetic stucco.

The house is proposed to be converted into an Environmental Education Center to interpret the natural characteristics of the park and to be a working classroom for visitors and for students on field trips.

A large part of the building is proposed as display and interpretation space for exhibits and educational areas. Two classrooms, a mini-theater, accessible toilets, an office and staff work

areas are proposed. The Dry Classroom overlooks the pond and has an outdoor deck adjacent. This classroom is intended for "dry" activities such as seminars, lectures, discussion groups, and meetings. The Wet Classroom is at the south side of the building converting the garage space. This classroom is intended for experiments, crafts, hands on activities and other "wet" functions. The Outdoor Lab to the south of the Wet Classroom is walled in and provides a place to spill over activities to the outside.

The existing kitchen and sun room remain essentially unchanged and are proposed as staff work rooms.

The renovation budget for the Environmental Education Center is **$144,000.** See the Program and Conceptual Budget for Buildings for a description of the functions and spaces and break down of the associated costs.

KENNEDY FARM - ARTIST RESIDENCE, URBAN FARM AND HAWK MEWS

The existing Kennedy Farm is composed of four buildings in varying degrees of disrepair and in need of much maintenance. The site areas around the buildings is a jumble of paved areas, patios, fences, planting areas and storage areas. The four buildings include the Main House, the Bunk House/Garage, a Shop/Barn, and a Chicken Coop. A tornado shelter is also on the site in back of the garage. All the buildings are wood frame and would need extensive renovation for adaptation to any public use.

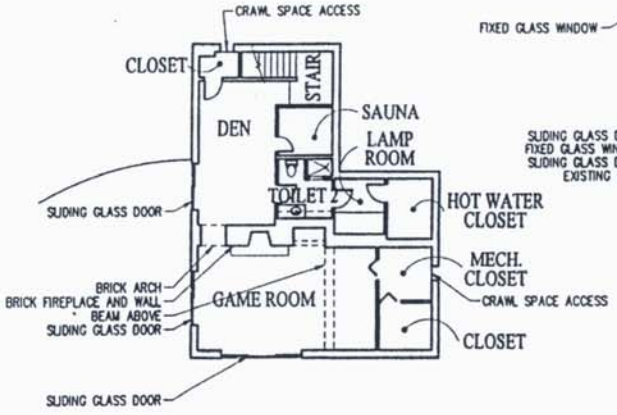
The proposed uses have been determined from public meetings to date and include artist residences at the Main House, urban garden offices and functions at the Bunk House, and hawk mews at the Barn and Coop buildings.

The conversion of the Main House to artist residences is intended to serve visiting artists on a short term basis for the City of Arvada and the Arvada Center for the Performing Arts. The building is shown to have three apartments, each with a private bath. A communal kitchen and living area is proposed. The basements has a low ceiling and would house mechanical and storage only.

The Bunk House is proposed to be converted into offices for the Arvada Urban Gardens and include spaces for their offices, staff work rooms, a public/gardener meeting room, and a potting shed. The site accommodates garden plots to the south of the building. Accessible public toilets are included for use by the gardeners.

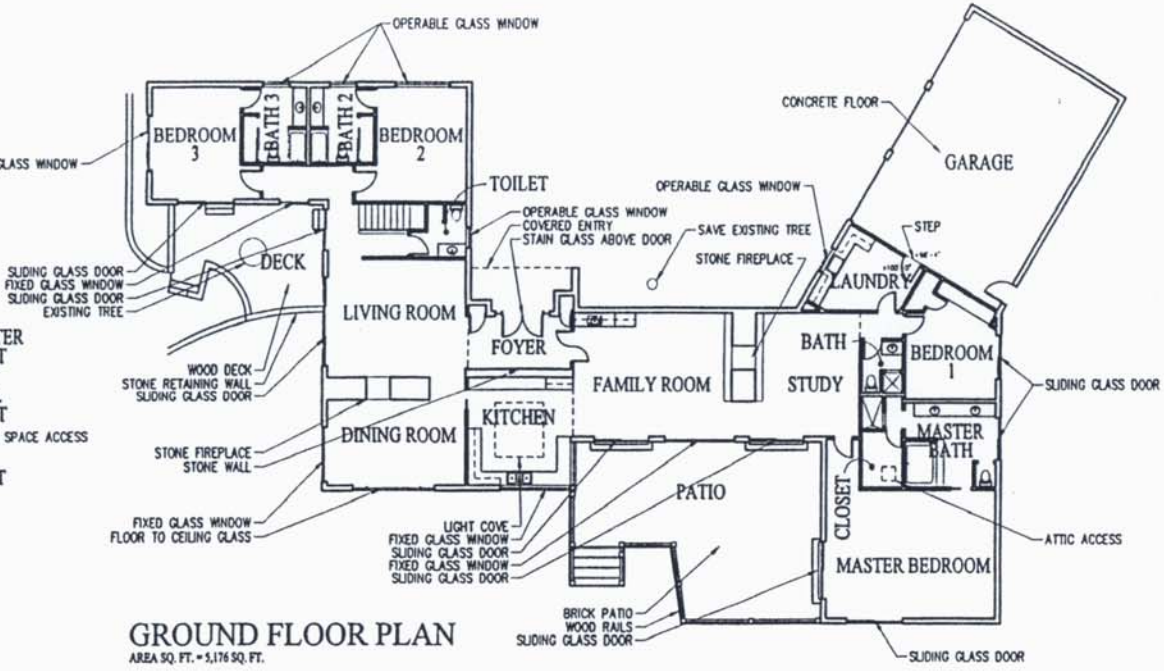
The Barn and Storage Building is proposed to be converted into offices and work areas for Hawk Quest. The Chicken Coop would be the Hawk Mews, a large fenced encloses and roofed area for hawks.

The renovation budget for all the renovations proposes at the Kennedy Farm is **$291,000.** See the Program and Conceptual Budget for Buildings for a description of the functions and spaces and break down of the associated costs.



BASEMENT PLAN

AREA SQ. FT. = 1,377 SQ. FT.



GROUND FLOOR PLAN

AREA SQ. FT. = 5,176 SQ. FT.

NOTES:

1. EXTERIOR – TAN BRICK WITH CONCRETE TILE ROOF
2. INTERIOR – PAINTED GYP. BD. OR WD PANELING ON MTL. FRAMING OR WD FRAMING
3. CEILING – PAINTED GYP. BD.
4. GENERAL LIGHTING – MOSTLY INCANDESCENT AND SOME FLUORESCENT LIGHT FIXTURES
5. WINDOWS – INSULATED DOUBLE PANE AND SLIDING GLASS DOORS
6. SLOPED ROOF
7. CARPETED FLOORS EXCEPT FOYER
8. WOOD PANEL DOORS

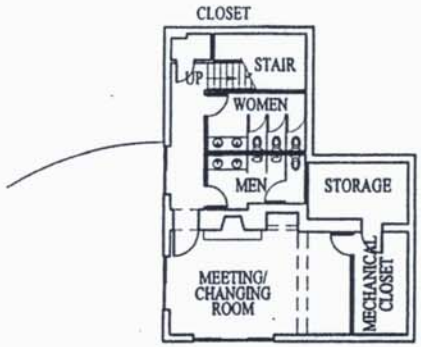
MAJESTIC VIEW PARK

FOX RESIDENCE

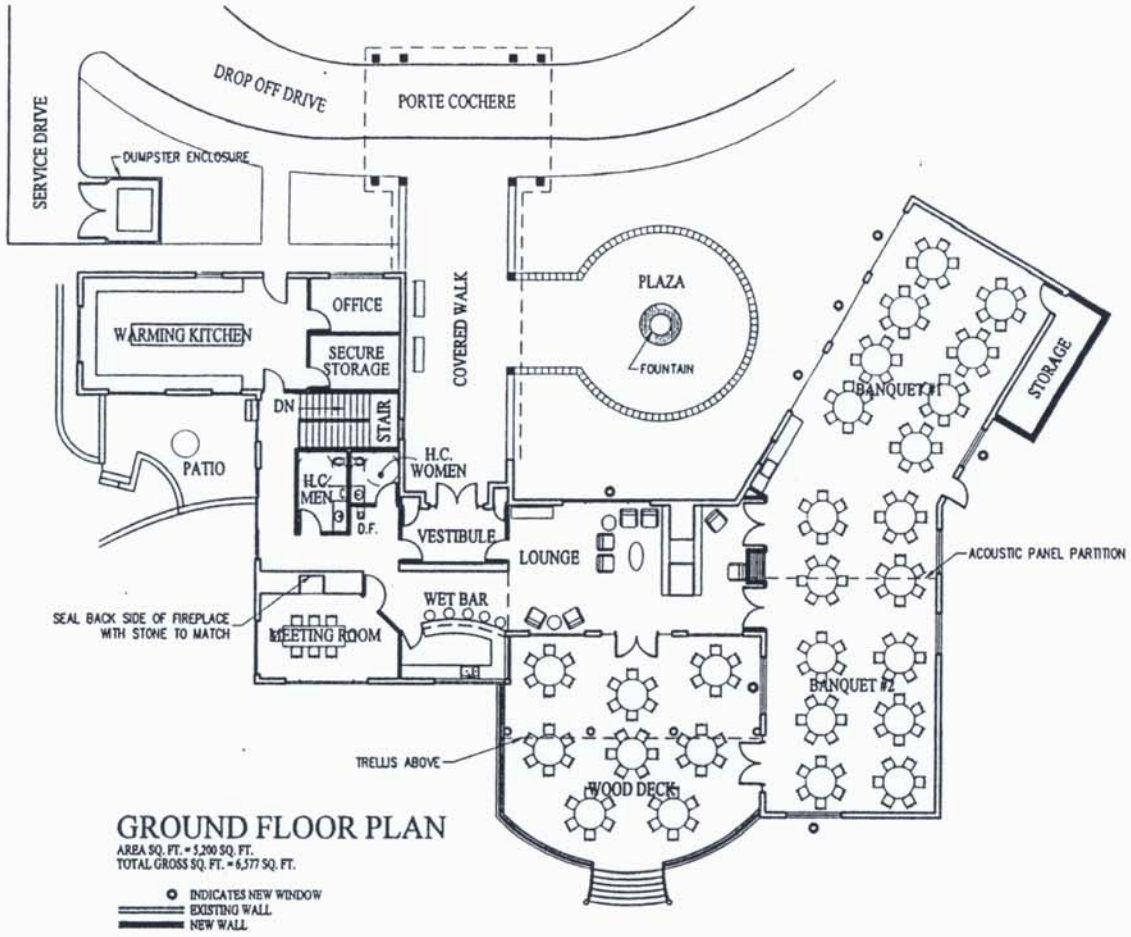
BARKER • RINKER • SEACAT & PARTNERS • ARCHITECTS, P.C.

0 4' 8' 16'

NOVEMBER 1997



BASEMENT PLAN
AREA SQ. FT. = 1,377 SQ. FT.



GROUND FLOOR PLAN
AREA SQ. FT. = 5,200 SQ. FT.
TOTAL GROSS SQ. FT. = 6,577 SQ. FT.

o INDICATES NEW WINDOW
EXISTING WALL
NEW WALL

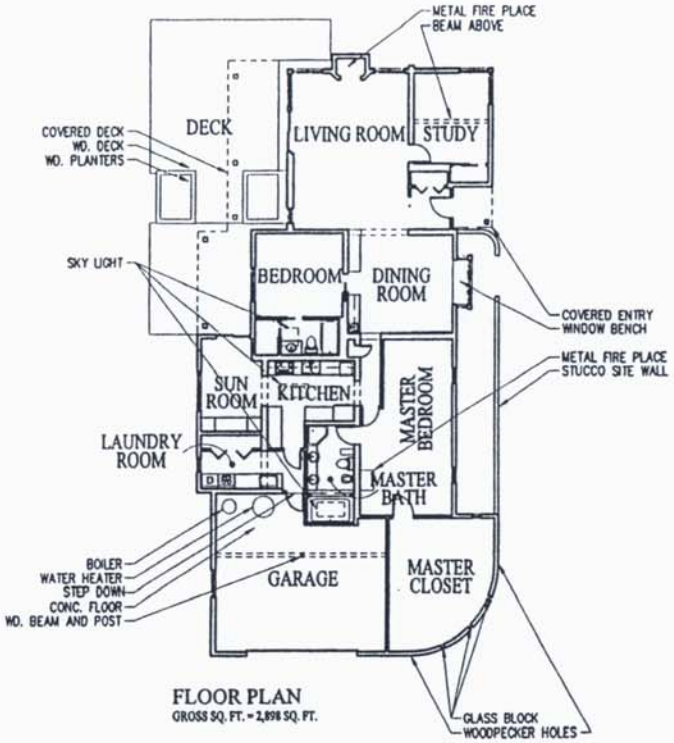
MAJESTIC VIEW PARK

CONFERENCE & MEETING CENTER

BARKER • RINKER • SEACAT & PARTNERS • ARCHITECTS, P.C.

0 4' 8' 16'

NOVEMBER 1997



FLOOR PLAN

GROSS SQ. FT. = 2,898 SQ. FT.

NOTES:

1. EXTERIOR – SYNTHETIC STUCCO ON WOOD FRAME AND CONCRETE BLOCK – ADOBE STYLE
2. INTERIOR – PAINTED GYP. BD. ON WOOD FRAMING
3. CEILING – TEXTURED FINISHED
4. GENERAL LIGHTING – BOTH INCANDESCENT AND FLUORESCENT LIGHT FIXTURES
5. WINDOWS ARE INSULATED DOUBLE PANE
6. FLAT ROOF
7. CARPETED FLOORS EXCEPT, KITCHEN, SUN ROOM, FOYER, LAUNDRY ROOM, AND BATHROOMS
8. WOOD PANEL DOORS

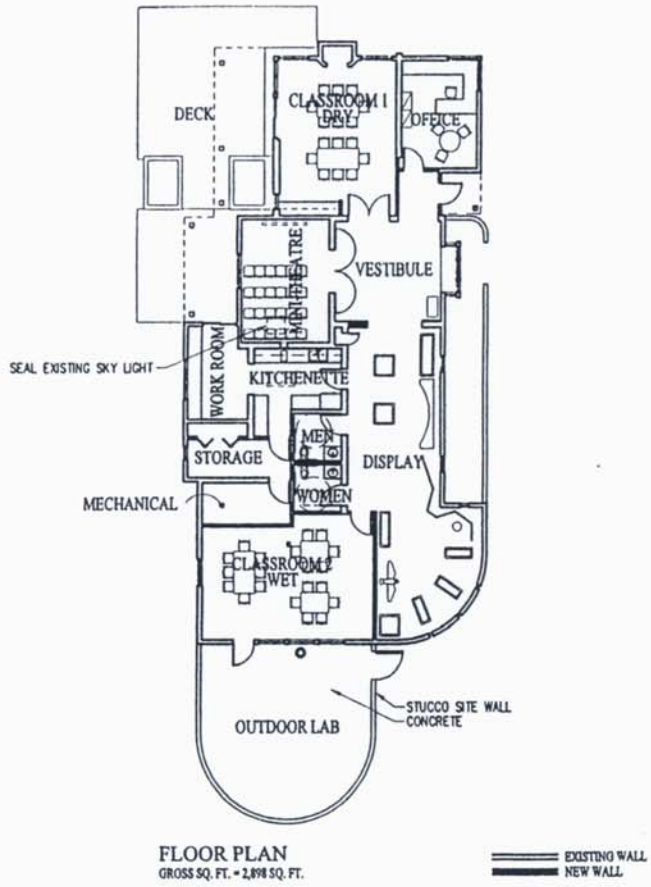
MAJESTIC VIEW PARK

HARDER RESIDENCE

BARKER • RINKER • SEACAT & PARTNERS • ARCHITECTS, P.C.

0 4' 8' 16'

NOVEMBER 1997



FLOOR PLAN
GROSS SQ. FT. = 2,898 SQ. FT.

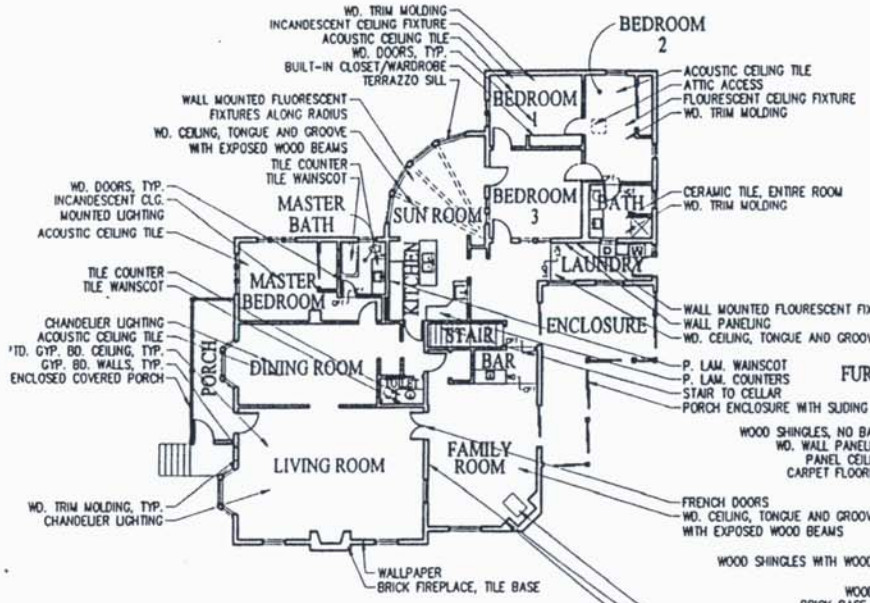
MAJESTIC VIEW PARK

ENVIRONMENTAL EDUCATION CENTER

BARKER • RINKER • SEACAT & PARTNERS • ARCHITECTS, P.C.

0 4' 8' 16'

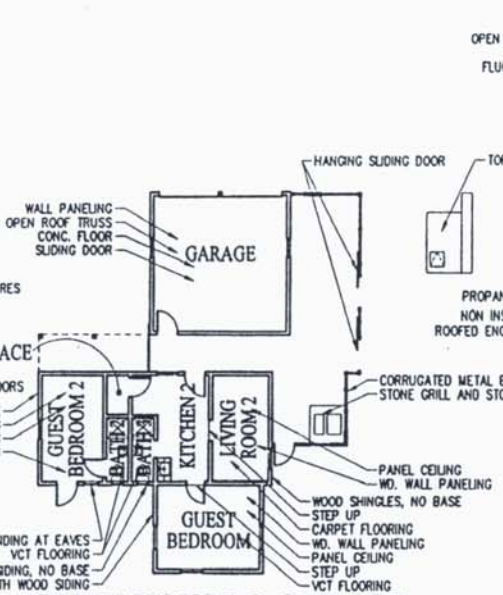
NOVEMBER 1997



MAIN HOUSE GROUND FLOOR PLAN

AREA SQ. FT. = 2,848 SQ. FT.

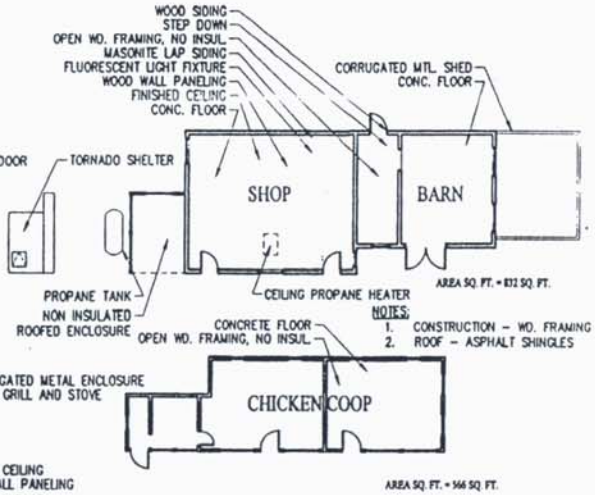
NOTES:
1. EXTERIOR – SANDSTONE BASE WITH WOOD SIDING OR SHINGLES
2. ROOF – ASPHALT SHINGLES
3. CONSTRUCTION – WOOD FRAMING
4. WINDOWS ARE SINGLE PANE WITH ALUM. STORM WINDOWS



BUNK HOUSE & GARAGE FLOOR PLAN

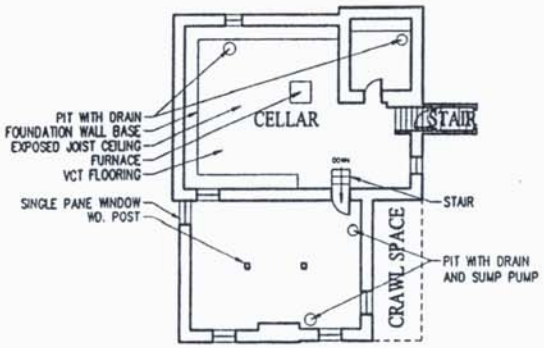
AREA SQ. FT. = 1,713 SQ. FT.

NOTES:
1. CONSTRUCTION – WOOD FRAMING
2. WINDOWS ARE SINGLE PANE
3. ROOF – ASPHALT SHINGLES



SHOP, BARN, & COOP FLOOR PLAN

TOTAL AREA SQ. FT. = 1,198 SQ. FT.



CELLAR FLOOR PLAN

AREA SQ. FT. = 1,537 SQ. FT.

TOTAL GROSS SQ. FT. = 6,939 SQ. FT.

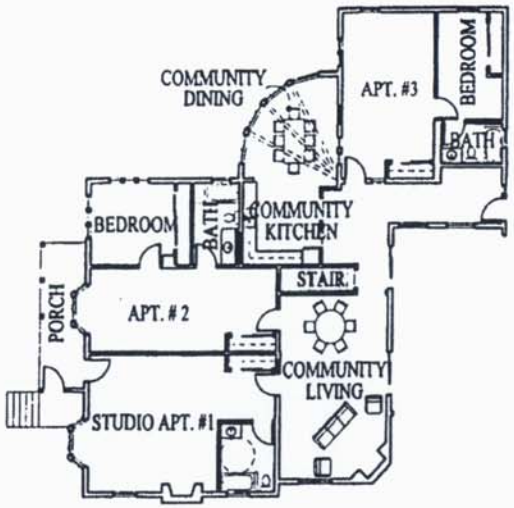
MAJESTIC VIEW PARK

KENNEDY FARM

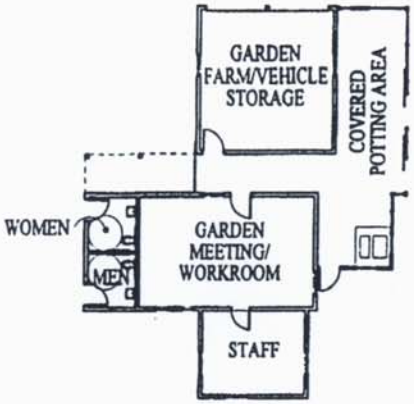
BARKER • RINKER • SEACAT & PARTNERS • ARCHITECTS, P.C.

0 4' 8' 16'

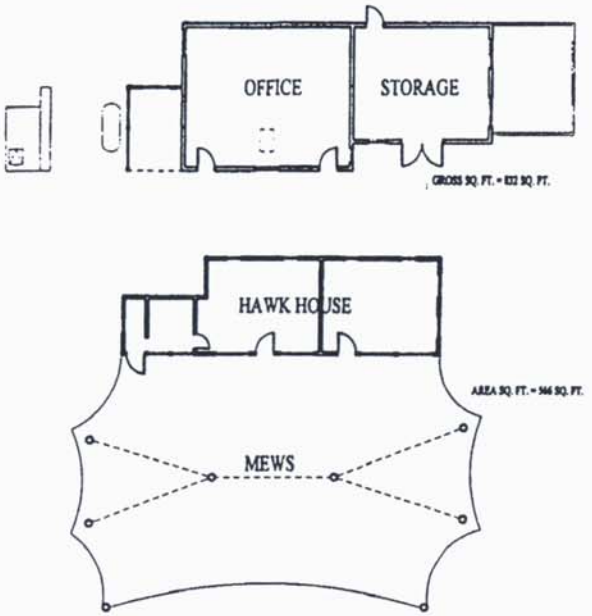
NOVEMBER 1997



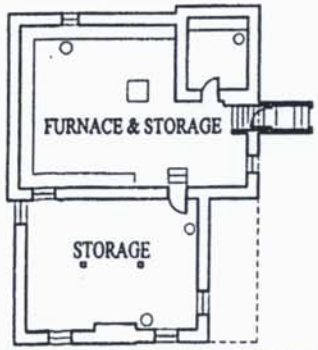
ARTIST RESIDENCE
GROUND FLOOR PLAN
AREA SQ. FT. = 2,848 SQ. FT.



URBAN GARDENS
FLOOR PLAN
AREA SQ. FT. = 1,713 SQ. FT.



RAPTOR FACILITY
FLOOR PLAN
TOTAL AREA SQ. FT. = 1,398 SQ. FT.



CELLAR FLOOR PLAN
AREA SQ. FT. = 1,537 SQ. FT.

EXISTING WALL
NEW WALL

TOTAL GROSS SQ. FT. = 6,939 SQ. FT.

MAJESTIC VIEW PARK

ARTIST RESIDENCE, GARDEN & RAPTOR FACILITY

BARKER • RINKER • SEACAT & PARTNERS • ARCHITECTS, P.C.

0 4' 8' 16'

NOVEMBER 1997

CONSULTANTS INC

MAJESTIC VIEW PARK

MECHANICAL AND ELECTRICAL SYSTEMS EVALUATION

I. FOX RESIDENCE

A. Heating, Ventilation and Air Conditioning Systems:

1. Heat is currently provided to the house via a hydronic baseboard system. All areas of the house are heated, with the exception of the garage. The system utilizes a gas-fired American Standard boiler with 396,000 BTU/H input for heat production. The heated water is circulated throughout the house via an uninsulated copper piping system consisting of six individual zones. Each zone has an individual thermostat for system control. Also included in the system, is a Grundfos circulating pump which is used for supply and return of the system water from the baseboards.

   Outside air is currently provided to the house through operable windows. Air is exhausted from each restroom in the house by ceiling mounted exhaust fans which are controlled through wall switches. There is no air conditioning system used to cool the house.

2. In order to use the house for a commercial use, such as a conference center, the following items should be considered. The following items do not consider the kitchen to be of a commercial type.

   - The existing boiler is old, inefficient and replacement parts are not readily available. The boiler should be replaced with a new energy efficient model. The new boiler would be sized with additional capacity to heat the garage area and would have an input of 400,000 BTU/H. An appropriately

1123 AURARIA PARKWAY, #400
DENVER, COLORADO 80204
303-623-6200 FAX 623-8435

sized expansion tank would be installed with the new boiler. Also, a backflow preventer would be added to the boiler water supply for code compliance.

Cost: $ 8,500

- Fiberglass, jacketed insulation could be added to accessible portions of the existing hydronic piping system for improved efficiency.

  Cost: $ 1,500

- At the time of boiler replacement, an additional zone should be added to the system for heating of the garage area. The new zone would consist of insulated copper piping, baseboard radiation and a new thermostat for zone control. A new circulating pump would replace the existing pump and be sized for the new system flow requirements.

  Cost: $ 3,500

- Combustion air for the boiler would need to be extended to the exterior of the building to meet current Mechanical Code sizing requirements.

  Cost: $ 750

- An exhaust system with an in-line, centrifugal exhaust fan would be needed for a new restroom group. This system would be ducted to the exterior of the facility and terminated with a roof or wall cap.

  Cost: $ 1,500

- Air conditioning could be added to the facility with the use of five split-systems. Each split-system would consist of a fan coil unit located in the attic space and a condensing unit mounted remotely. Air would be distributed to each area of the facility through sheetmetal ducts located in the attic areas. Banquet Room 1 would have a 7-1/2 ton system. Banquet Room 2 would have a 5 ton system. A 3 ton system would be provided for the ground floor Meeting Room. All remaining areas would be served by a single 5

ton system. Each system would be controlled by individual thermostats located in their respective spaces.

Cost:	Banquet Room 1	$ 12,500
	Banquet Room 2	$ 10,000
	Meeting Room 1	$ 10,000
	Remaining Areas System	$ 14,000

- In order to accommodate the new interior layout of the facility, several baseboards and their associated piping must be relocated.

Cost:	$ 3,500
Total Mechanical Construction Cost:	$ 65,750

B. Plumbing Systems:

1. Water service is provided to the house through a 3/4" tap with a 5/8" x 3/4" meter. Hot and cold water are distributed throughout the house via an uninsulated copper piping system.

   Sanitary sewer piping is extended to each restroom and kitchen area of the house and collected into a central 4" main. The sanitary sewer piping material is PVC. Information is not currently available to determine if the sewer is connected to the city sewer system or a septic system. Each group of fixtures is vented to atmosphere via PVC vent piping.

   Domestic hot water is produced with two glass lined, electric water heaters. Each water heater has an electrical rating of 4500 watts and together provide a total storage capacity of 132 gallons.

   The existing fixtures in the house are of a non-water conserving, residential type. The fixtures currently operate properly and are in fair condition. None of the fixtures meet current ADA accessibility requirements.

   The house has a 6" W.C. gas service. Threaded black steel piping is used to distribute the gas from the meter to the existing boiler.

2. In order to use the house for a commercial use, such as a

conference center, the following items should be considered. The following items do not consider the kitchen to be of a commercial type.

- The domestic water service will need to be upgraded to a 1" tap and meter at a cost of $20,400. This will be needed for the addition of a central restroom group. A credit for the existing water tap will be given at $8160.

  Cost: (not including utility extension on site) $ 12,240

- To meet current Uniform Plumbing Code and state code requirements, a backflow preventer would installed on the domestic water service entry.

  Cost: $ 2,000

- A sanitary sewer tap fee of $8275 will be imposed based on the new water tap. A credit of $2250 will be provided for the existing tap (if applicable).

  Cost: (not including utility extension on site) $ 6025

- New commercial type, water conserving plumbing fixtures will be required in the central restroom area to meet current code and ADA requirements. These fixtures will be connected to the existing utilities in the facility via new branch piping. Six water closets, three urinals, six lavatories, one drinking fountain, one sink and two floor drains are used for cost analysis.

  Cost: $ 19,500

- Demolition and relocation of existing fixtures and piping.

  Cost: $ 6,500

  Total Plumbing Construction Cost: $ 44,265

C. Electrical Systems:

1. The house was constructed in the 1980's and all of the electrical devices and equipment are in good condition. The incoming service

is overhead and fed from a pole mounted transformer near the roadway. Secondary voltage is 120/240V, 3 wire, 1 and the main breaker panel (located in the garage) is 150A, 40 pole with a 150A main circuit breaker.

The main panel sub feeds and an additional 42 pole load center in the basement. The residence is also equipped with a complete and functioning security and intercom system. There are; however, no GFI receptacles in the kitchen and baths and only 2 smoke detectors; one in the corridor leading to the west bedroom and one in the master bedroom.

2. The following is a breakdown of construction costs (labor and materials) for the proposed renovations of the Fox Residence. These include lighting, fire alarm, branch service receptacles and wiring.

Warming Kitchen	$7,000
Meeting Room	$3,000
Lounge	$6,000
Banquet # 1 & 2	$16,500
Meeting/Changing Room	$2,000
Basement Baths	$1,500
Remaining Areas	$10,000
Total Electrical Construction Costs	$46,000

II. HARDER RESIDENCE

A. Heating, Ventilation and Air Conditioning Systems:

1. Heat is currently provided to the house via a hydronic baseboard system. All areas of the house are heated except for the garage. The system utilizes a gas-fired Hydrotherm boiler with 100,000 BTU/H input for heat production. The heated water is circulated throughout the house via an uninsulated copper piping system consisting of three individual zones. Each zone has an individual thermostat for system control. Also included in the system, is a Grundfos circulating pump which is used for supply and return of the system water from the baseboards.

   Outside air is currently provided to the house through operable windows. Air is exhausted from each restroom in the house by

ceiling mounted exhaust fans which are controlled through wall switches.

An evaporative cooler is located on the roof above the living room. Air is distributed through a sheetmetal duct system located on the roof. The air is discharged into the kitchen and dining rooms for cooling of the space during the summer months.

2. In order to use the house for a commercial use, such as a educational center, the following items should be considered.

   - The existing boiler and expansion tank could remain where located and reused. Piping would need to be modified and connected to the existing distribution system. Also, a backflow preventer would be added to the boiler water supply for code compliance.

     Cost: $ 1,500

   - Fiberglass, jacketed insulation could be added to accessible portions of the existing hydronic piping system for improved efficiency and to meet code requirements.

     Cost: $ 800

   - Combustion air for the boiler would need to be extended from the exterior of the building to the new boiler location.

     Cost: $ 500

   - The existing ceiling mounted exhaust fans could be relocated and used for the new restrooms. The fans would be individually ducted to the exterior of the facility and terminated with a roof or wall cap.

     Cost: $ 600

   - Air conditioning could be added to the facility with the use of three additional evaporative cooling units. The existing

evaporative cooler and ductwork would remain and be reused. Each evaporative cooling unit would be located on the roof of the space being cooled. Air would be distributed to each area directly through the roof with ductwork. Classroom 1 would have a 5000 cfm unit. Classroom 2 would have a 6600 cfm unit. A 3500 cfm unit will be provided for the Mini-Theatre. All remaining areas would be served by the existing evaporative cooling unit. Each system would be controlled by individual thermostats located in their respective spaces.

Cost:	Classroom	1	$ 4,000
	Classroom	2	$ 4,500
	Mini-Theatre		$ 3,500

- In order to accommodate the new interior layout of the facility, several baseboards and their associated piping must be relocated.

Cost: $ 2,000

Total Mechanical Construction Cost: $ 17,400

B. Plumbing Systems:

1. Water service is provided to the house through a 3/4" tap with a 5/8" x 3/4" meter. Hot and cold water are distributed throughout the house via an uninsulated copper piping system.

Sanitary sewer piping is extended to each restroom, laundry and kitchen area of the house and collected into a central 4" main. The sanitary sewer piping material is PVC. Information is not currently available to determine if the sewer is connected to the city sewer system or a septic system. Each group of fixtures is vented to atmosphere via PVC vent piping.

Domestic hot water is supplied from a 200 gallon storage tank located in the garage. The hot water is produced from the hydronic heating system boiler.

The existing fixtures in the house are of a non-water conserving, residential type. The fixtures currently operate properly and are in

fair condition. None of the fixtures meet current ADA accessibility requirements.

The house has a 6" W.C. gas service. Threaded black steel piping is used to distribute the gas from the meter to the existing boiler.

2. In order to use the house for a commercial use, such as an education center, the following items should be considered.

- A sanitary sewer tap fee of $2250 will be imposed if the facility is currently on a septic system and is modified to connect the city sanitary sewer system.

  Cost: (not including utility extension on site) $ 2,250

- New commercial type, water conserving plumbing fixtures will be required in the restrooms to meet code and ADA requirements. Two water closets, two lavatories and two floor drains are used for cost analysis.

  Cost: $ 4,500

- Classroom Sink Addition

  Cost: $ 650

- Water supplies would be provided for the new evaporative coolers.

  Cost: $ 1200

- A glass lined, 40 gallon electric water heater would be required to eliminate the current cross connection between the hydronic heating system boiler and the domestic hot water system. The water heater would serve the lavatories in the restrooms and the kitchen fixtures. New, insulated copper piping would also be extended from the water heater to the fixtures.

  Cost: $ 1,800

  Total Plumbing Construction Cost: $ 10,400

C. Electrical Systems:

1. The house was remodeled in the early 1980's and all of the electrical devices and equipment are in good condition. The incoming service is overhead and fed from a pole mounted transformer near the roadway. Secondary voltage is 120/240V, 3 wire, and 1 and the main breaker panel (located in the garage) is 100A, 20P with a main (100A) circuit breaker. The main panel sub feeds an adjoining 100A, 24P breaker panel. The residence is also equipped with a complete and functional security system. There are; however, no smoke detectors or GFI receptacles in the kitchen. GFI receptacles are provided in the bathrooms.

2. The following is a breakdown of construction costs (labor and materials) for the proposed renovations of the Harder Residence. These include lighting, fire alarm, branch service receptacles and wiring.

Classroom #1	$2,000
Classroom #2	$2,000
Office	$1,000
Display	$4,000
Mini-Theatre	$2,500
Workroom/Kitchenette	$2,000
Remaining Areas	$2,000
Total Electrical Construction Costs	$15,500

III. KENNEDY RESIDENCE

A. Heating, Ventilation and Air Conditioning Systems

1. A gas-fired Whirlpool furnace with an input of 105,00 BTU/H provides heat for the house. Air is distributed throughout the house via sheetmetal ductwork. The ductwork is located in the basement and crawlspace of the house and discharges through floor diffusers in each room.

Outside air is currently provided to the house and guest residence through operable windows. Air is exhausted from two of the restrooms in the house and both restrooms to the guest residence via ceiling mounted exhaust fans which are controlled through wall switches. There is no air conditioning system used to cool the house or guest residence.

The guest residence is heated by an Armstrong gas-fired furnace with an input of 100,000 BTU/H. Additionally, a gas fired wall heater provides heat to the guest bedroom.

Gas-fired unit heaters are located in the garage and shop, each unit heater operates on L.P. gas and each is controlled from an integral thermostat to maintain the desired space temperature.

2. In order to use the residence as an Urban Farm and Artist Residence, the following items should be considered.

Main House - Artist Residence

- The existing furnace located in the basement of the house is inefficient and outdated. The furnace should be replaced with a new gas-fired, energy efficient model. The new furnace would have an input of 120,000 BTU/H and would connect to the existing ductwork distribution system.

  Cost: $ 1,700

- Relocation of some ductwork and registers would be required for the new space layout.

  Cost: $ 5,500

- New ceiling mounted exhaust fans would be required for individual apartment restrooms. Each fan would be ducted to the exterior of the facility and terminated.

  Cost: $ 1,500

  Artist Residence Mechanical Construction Cost: $ 8,700

Guest Residence - Urban Gardens

- All existing systems are in poor condition and shall be removed.

  Cost: $ 1,800

- An energy efficient, gas-fired furnace could be used to supply heat to the space. The furnace would be 80,000 BTU/H input and would be ducted directly to the space.

  Cost: $ 2,000

- A 2 ton thru-wall air conditioning unit could be used for the meeting room.

  Cost: $ 1,800

- New ceiling mounted exhaust fans would be required for the toilet rooms. Each fan would be ducted to the exterior of the facility terminated.

  Cost: $ 800

  Urban Gardens Mechanical Construction Cost: $ 6,400

Shop Building and Raptor Facility

- The unit heater would be removed along with associated piping and flue.

  Cost: $ 500

- An energy efficient, gas-fired furnace could be used to supply heat to the space. The furnace would be 50,000 BTU/H input and would be ducted directly to the space.

  Cost: $ 1,500

  Raptor Facility Mechanical Construction Cost: $ 2,000

  Total Facility Mechanical Construction Cost: $ 17,100

B. Plumbing Systems:

1. Two water meters currently supply the facility. One meter serves the main house and the second serves the guest residence. Meter and tap sizes are currently unavailable.

   The hot and cold water distribution system of the main house is

composed of copper and ductile iron. Some of the ductile iron is corroded. The guest residence hot and cold water piping is copper and appears to have been damaged from freezing.

The main house and guest house use a waste and vent system composed of copper and cast iron piping. Information is not currently available to determine if the sanitary sewer is connected to the city sewer system or a septic system.

Natural gas is provided to the main house through a 6" W.C. service provided by PSCo. The gas service is extended from the meter to the furnace with threaded, black steel pipe. The guest residence, shop and garage have gas supplied form an L.P. tank located adjacent to the garage. The L.P. system is not currently used.

These are four sumps with pumps in the basement to remove ground water. Each sump appears operational.

The fixtures in both the main house and guest residence are in very poor condition and serve no practical use if either facilities are to be renovated.

2. Use of the facility as an Urban Farm and Artist Residence would require the following:

Main House - Artist Residence

- Demolition of all fixtures and ductile iron water piping.

  Cost: $ 6,500

- New fixtures of water conserving type would be installed with new branch piping for new restrooms. Three water closets, three showers and there lavatories are used for cost analysis.

  Cost: $ 6,000

- An additional glass lined, electric water heater of 40 gallon capacity should be added to the main house.

  Cost: $ 1,000

Artist Residence Plumbing Construction Cost: $ 13,500

Guest Residence - Urban Gardens

- A backflow preventer would be required for the domestic water service. This would be required to meet state and Uniform Plumbing Code requirements.

  Cost: $ 500

- Extend natural gas service to facility for furnace.

  Cost: $ 2,500

- The existing fixtures would be removed along with associated piping.

  Cost: $ 1,500

- The existing water service would need all breaks repaired.

  Cost: $ 1,200

- Two waterclosets, two lavatories and one electric, 10 gallon water heater would be installed for the new restrooms.

  Cost: $ 4,000

  Urban Gardens Plumbing Construction Cost: $ 9,700

Shop Building and Raptor Facility

- Extend natural gas service to facility for furnace.

  Cost: $ 1,000

  Raptor Facility Plumbing Construction Cost: $ 1,000

- A sanitary sewer tap fee of $2,250 per building will be imposed if the facility is currently on a septic system and is modified to connect to the city sanitary sewer system.

  Cost: (not including utility extension on site) $ 6,750

- No plumbing work is considered for the garage, storage area or Hawk House. Additionally, a cost assessment can not be made regarding the existing water service until more information is available.

Total Facility Plumbing Construction Costs: $ 30,950

C. Electrical Systems:

1. The house was constructed in the 1920's. Most of the power equipment appears to be original and needs to be replaced if remodel work is done. The incoming service is overhead and fed from a pole mounted transformer near the roadway. Secondary voltage is 120/240V, 3 wire, 1 and the main breaker panel located on the north face of the main house is 125A, 20P, main lugs only. The main breaker panel sub feeds three load centers: 4-20A/1P in garage, (4-15A/1P, 2-20A/1P) in basement and (2-15A/1P, 2-20A/1P) in workshop. The workshop and basement load centers are in fair condition- garage needs to be replaced.

In addition to the service and panels, further concerns for renovations include:

Smoke detection and GFI receptacles. By the City of Arvada code, smoke detectors are required: (1) per every floor of the dwelling, (1) in every corridor leading to bedrooms, and (1) in each bedroom. GFI receptacles are required at all above counter locations in kitchens and in bathrooms by code. The Kennedy house has no smoke detection and GFI receptacles. Depending on the extent of the remodel, these conditions might need to be corrected.

2. The following is a breakdown of construction costs (labor and materials) for the proposed renovations of the Kennedy Residence. These include lighting, fire alarm, branch service receptacles and wiring.

Artist Residence:	
Apartment #1	$5,000
Apartment #2	$6,000
Apartment #3	$6,500
Remaining Areas	$2,000

Urban Gardens:	
Garden Meeting/Workroom	$ 2,000
Bathrooms	$ 1,000
Staffroom	$ 1,000
Raptor Facility	
Office	$ 500
Storage	$ 250
Remaining Areas	$ 250
Total Electrical:	$ 24,500

MAJESTIC VIEW PARK

City of Arvada

PROGRAM AND CONCEPTUAL BUDGET FOR BUILDINGS

Barker-Rinker-Seacat & Partners-Architects-P.C.
Wenk Associates

November 18, 1997

BUDGET SUMMARY

1.0	**CONFERENCE AND MEETING CENTER** FOX RESIDENCE	**6,577 SF**	**$564,482**
2.0	**ENVIRONMENTAL EDUCATION CENTER** HARDER RESIDENCE	**2,898 SF**	**$144,397**
3.0	**ARTIST RESIDENCES, URBAN GARDENS., RAPTOR MEWS** KENNEDY FARM	**7,496 SF**	**$290,738**
4.0	**ADMINISTRATION AND FEES** *20%*		**$199,923**
	SUBTOTAL		**$1,199,540**
	10% ESTIMATING CONTINGENCY		$119,954
TOTAL PROJECT BUDGET			**$1,319,494**

MAJESTIC VIEW PARK

City of Arvada

PROGRAM AND CONCEPTUAL BUDGET FOR BUILDINGS

Barker-Rinker-Seacat & Partners-Architects-P.C. **November 18, 1997**
Wenk Associates

Proposed Use: **CONFERENCE AND MEETING CENTER**
Currently: **FOX RESIDENCE**

Space No.	Space	Room Size	Budget /SF	Estimated Budget
1.0	**Public Spaces**			
1.1	Vestibule	112	$30	$3,360
	Glass side walls with new doors.			
	New ceramic tile floor.			
1.2	Lounge	648	$25	$16,200
	Gathering space and break out space for Meetings and Banquet Rooms.			
	Informal seating area			
	Fireplace to remain. Provide gas logs.			
	Carpet flooring.			
	Cut new window to front for view into entry plaza.			
	Replace sliding glass doors with widows and frech doors.			
1.3	Wet Bar	256	$55	$14,080
	For serving Lounge and Meeting Room.			
	Cabinets, sink, dishwasher, refrigerator, bar top.			
1.4	Meeting Room	240	$30	$7,200
	Seating for 8 to 10 in conference format.			
	Private dining and small parties.			
	Gas insert for fireplace			
	Carpet flooring.			
1.5	Banquet Room #1	1,299	$40	$51,960
	Seating for:			
	Banquet 74			
	Classroom 74			
	Theater 110			
	Reception 158			
	Raise floor in existing garage to accommodate.			
	Install windows at garage door openings and on east side.			
	Serving counter with sink.			
	Acoustic partition with high STC rating between Banquet Rooms.			

Space No.	Space	Room Size	Budget /SF	Estimated Budget
2.4	Office *Manager and Kitchen Coordination.* *Carpet flooring.*	104	$40	$4,160
2.5	Secure Storage *Liquor, food, special locked storage.* *Washable wall and ceiling surfaces, quarry tile floor.*	104	$40	$4,160
2.5	Storage at Banquet (Upper Level) *New Construction to accommodate chair and table storage.*	120	$65	$7,800
2.6	Storage (Lower Level) *General building maintenance and paper goods storage.* *Vinyl flooring.*	126	$25	$3,150
	TOTAL	**1,374**		**$69,870**

3.0	**Circulation and Mechanical Spaces***			
3.1	Hall (Upper Level) *Carpet flooring.*	200	$25	$5,000
3.2	Stair *Rebuild stair for improved head room access.* *Rubber treads.*	112	$40	$4,480
3.3	Mechanical Room (Lower Level) *Enlarge, fire rate if required, new doors.* *Sealed concrete flooring.*	120	$25	$3,000
3.4	Hall (Lower Level) *Carpet flooring.* *Replace sliding glass doors with windows and french doors.*	105	$30	$3,150
	*See Mechanical Narrative for HVAC Equipment and Costs			
	TOTAL	**537**		**$15,630**

Space No.	Space	Room Size	Budget /SF	Estimated Budget
	1.6 Banquet Room #2 *Seating for:* *Banquet 50* *Classroom 50* *Theater 75* *Reception 107* *Replace sliding glass doors with windows and french doors.* *Patch brick exterior walls.* *Acoustic partition with high STC rating between Banquet Rooms.* Combined Banquet Rooms *Seating for:* *Banquet 146* *Classroom 146* *Theater 218* *Reception 273*	884	$40	$35,360
	1.7 Meeting / Changing Room (Lower Level) *Seating for 16 to 20 in conference format.* *Private dining and small parties.* *Gas insert for fireplace.* *Carpet flooring.* *Use for changing room for Weddings.* *Use for other preparation activities.* *Walk out to private patio areas (see site budget).* *Sliding glass door to remain.*	364	$30	$10,920
	TOTAL	**3,803**		**$139,080**

2.0	**Support Space**			
	2.1 H. C. Restrooms (Upper Level) *Ceramic tile floor and walls.*	168	$55	$9,240
	2.2 Restrooms (Lower Level) *Ceramic tile floor and walls.*	224	$55	$12,320
	2.3 Warming Kitchen *Catering kitchen and is not intended for food preparation.* *Storage cabinets, refrigeration, counters, sink, dishwashing.* *No commercial equipment.* *Direct access to loading and dumpster with new door.* *Washable wall and ceiling surfaces, quarry tile floor.* *Replace sliding glass doors with windows and french doors.*	528	$55	$29,040

Space No.	Space	Room Size	Budget /SF	Estimated Budget
4.0	**Exterior Spaces***			
	4.1 Porte Cochere and Covered Walkway	Budget		$75,000
	4.2 Viewing Deck *Trellis above for shade.* *Wood deck over existing patio to be level with floor for accessibility.* *New handrails and steps to grade.* *Seating for 48*	Budget		$20,000
	4.3 Dumpster Enclosure	Budget		$2,000
	* See Site Estimate for Drives, Patios, Walks, and Landscaping.			
	TOTAL			**$97,000**

5.0	**Building Exterior Improvements**			
	4.1 Paint Trim Windows	Budget		$4,500
	4.2 Minor Roof Tile Repairs.	Budget		$1,500
	4.3 Minor Exterior and Brick Repairs and Patching.	Budget		$1,000
	TOTAL			**$7,000**

	SUMMARY OF SPACES			
1.0	**Public Spaces**	**3,803**		**$139,080**
2.0	**Support Space**	**1,374**		**$69,870**
3.0	**Circulation and Mechanical Spaces**	**537**		**$15,630**
4.0	**Exterior Spaces**			**$97,000**
5.0	**Building Exterior Improvements**			**$7,000**
	TOTAL ASSIGNABLE AREA AND BUDGET	**5,714**		**$328,580**
	Mechanical Improvements*			**$65,750**
	Plumbing Improvements*			**$44,265**
	Electrical Improvements*			**$46,000**
	Furniture, Fixtures, and Equipment	**$5 per Assign. SF**		**$28,570**
	Construction Contingency 10% * See attached Mechanical and Electrical Narrative			**$51,317**
	Assignable/Gross	87%		
	TOTAL GROSS AREA AND BUDGET	**6,577**	**$86 /SF**	**$564,482**

MAJESTIC VIEW PARK

City of Arvada

PROGRAM AND CONCEPTUAL BUDGET FOR BUILDINGS

Barker-Rinker-Seacat & Partners-Architects-P.C. **November 18, 1997**
Wenk Associates

Proposed Use: **ENVIRONMENTAL EDUCATION CENTER**
Currently: **HARDER RESIDENCE**

Space No.	Space	Room Size	Budget /SF	Estimated Budget
1.0	**Public Spaces**			
	1.1 Vestibule	264	$20	$5,280
	Remove closet, swing door to exterior for egress.			
	New ceramic tile floor at entry, carpet in remaining areas.			
	General queing area with some seating.			
	1.2 Display	652	$25	$16,300
	Changing exhibits.			
	Environmental dispay space.			
	Video displays.			
	Carpet flooring.			
	Special lighting (See electrical narrative).			
	Remove existing fireplace.			
	1.3 Classroom #1 (Dry)	391	$25	$9,775
	For classes and demonstrations not requiring sink.			
	Can seat 20 persons in class format.			
	Retain existing fireplace.			
	Carpet flooring			
	1.4 Classroom #2 (Wet)	450	$35	$15,750
	Renovation of garage.			
	Can seat 15 persons in lab format.			
	Sealed concrete floor			
	Counters with sink.			
	Infill garage door with door and window.			
	Access to Outdoor Laboratory Space.			

Space No.	Space	Room Size	Budget /SF	Estimated Budget
	1.5 Mini-Theater *Seating for 24* *Projection thoughKitchen wall.* *Larger door openning.* *Remove bathroom.* *Close skylight (or provide covering).*	234	$20	$4,680
	TOTAL	**1,991**		**$51,785**

2.0	**Support Space**			
	2.1 H. C. Restrooms *Ceramic tile floor and walls.* *Use existing plumbing connections.*	112	$55	$6,160
	2.2 Kitchen *Retain much of existing kitchen* *Add door.*	147	$10	$1,470
	2.3 Work Room *Retain much of existing room* *New counters*	117	$10	$1,170
	2.4 Office *Manager* *Carpet flooring.*	176	$20	$3,520
	2.5 Storage *Remove laundry equipment, use for storage.*	110	$10	$1,100
	2.6 Mechanical* *Provide walls and enclose.*	60	$20	$1,200
	*See Mechanical Narrative for HVAC Equipment and Costs			
	TOTAL	**722**		**$14,620**

Space No.	Space	Room Size	Budget /SF	Estimated Budget
3.0	**Exterior Spaces***			
	3.1 Outdoor Lab	Budget		$2,500
	Wood screen wall for security.			
	Uses existing conrete driveway for lab surface.			
	3.2 Existing Deck	Budget		$1,500
	Retain existing deck as is.			
	Will not be H.C. accessible.			
	New sealer, minor repairs if needed.			
	* See Site Estimate for Drives, Patios, Walks, and Landscaping.			
	TOTAL			**$4,000**

5.0	**Building Exterior Improvements**			
	4.1 Paint trim and general allowance for touch up	Budget		$2,500
	4.2 Patch and repair existing exterior stucco system	Budget		$1,500
	TOTAL			**$4,000**

	SUMMARY OF SPACES			
1.0	**Public Spaces**	**1,991**		**$51,785**
2.0	**Support Space**	**722**		**$14,620**
3.0	**Exterior Spaces**			**$4,000**
4.0	**Building Exterior Improvements**			**$4,000**
	TOTAL ASSIGNABLE AREA AND BUDGET	**2,713**		**$74,405**
	Mechanical Improvements*			**$17,400**
	Plumbing Improvements*			**$10,400**
	Electrical Improvements*			**$15,500**
	Furniture, Fixtures, and Equipment	**$5 per Assign. SF**		**$13,565**
	Construction Contingency 10%			**$13,127**
	* See attached Mechanical and Electrical Narrative			
	Assignable/Gross	94%		
	TOTAL GROSS AREA AND BUDGET	**2,898**	**$50 /SF**	**$144,397**

MAJESTIC VIEW PARK

City of Arvada

PROGRAM AND CONCEPTUAL BUDGET FOR BUILDINGS

Barker-Rinker-Seacat & Partners-Architects-P.C.
Wenk Associates

November 18, 1997

Proposed Use: **ARTIST RESIDENCES, URBAN GARDENS, RAPTOR MEWS**
Currently: **KENNEDY FARM**

Space No.	Space	Room Size	Budget /SF	Estimated Budget
1.0	**Artist Residences**			
	1.1 Studio Apartment #1	560	$35	$19,600
	Unit is handicapped accessible.			
	Carpet flooring.			
	Ceramic tile in bathroom.			
	Retain existing fireplace.			
	Refinish, patch and paint all walls and ceiling.			
	1.2 Apartment #2	600	$35	$21,000
	Unit has separate bedroom			
	Carpet flooring.			
	Ceramic tile in bathroom.			
	Retain existing fireplace.			
	Refinish, patch and paint all walls and ceiling.			
	1.3 Apartment #3	556	$35	$19,460
	Same as Apt. #2.			
	1.4 Community Dining and Kitchen	336	$55	$18,480
	Seating for 6 in dining area.			
	Community Kitchen to be shared by Artists.			
	Linoleum Flooring			
	Refinish, patch and paint all walls and ceiling.			
	New appliances and sink (dishwasher, stove, ref, disp.)			
	1.5 Community Living	416	$25	$10,400
	Shared communtiy room			
	Retain existing wood burning stove and fireplace.			
	Carpet Flooring			
	Refinish, patch and paint all walls and ceiling.			

Space No.	Space	Room Size	Budget /SF	Estimated Budget
	1.6 Basement - Furnace and Storage (Unfinished)	1,284	$5	$6,420
	Minor clean up and repair.			
	1.7 Exterior Improvements			
	Patch and paint exterior siding, windows and trim.	Budget		$6,500
	Repair roof as required.	Budget		$1,000
	Demo front porch enclosure, restore porch covering.	Budget		$1,000
	Demo back glass enclosure area.	Budget		$500
	Sub Total			**$104,360**
	Mechanical Improvements*			**$8,700**
	Plumbing Improvements*			**$13,500**
	Electrical Improvements*			**$19,500**
	Furniture, Fixtures, and Equipment			**$18,760**
	Construction Contingency 10%			**$16,482**
	* See attached Mechanical and Electrical Narrative			
	TOTAL ASSIGNABLE AREA	**3,752**		
	TOTAL GROSS AREA AND BUDGET	**4,385**	**$41 /SF**	**$181,302**
	Net/Gross	**86%**		

Space No.	Space	Room Size	Budget /SF	Estimated Budget
2.0	**Urban Gardens**			
	2.1 Public Restrooms	112	$55	$6,160
	Ceramic tile floor and walls.			
	2.2 Garden Meeting Workroom and Staff Offices	608	$35	$21,280
	Demo all interior partitions.			
	Level floor and carpet.			
	2.3 Garden Farm Vehicle Storage (Existing garage)	400	$10	$4,000
	Manager and Kitchen Coordination			
	Carpet flooring.			
	Add Electrical and Mechanical.*			
	Repair windows.			
	**See mechanical narrative.*			
	2.4 Covered Potting Area	432	$10	$4,320
	Repaint existing, no significant changes.			
	2.5 Exterior Improvements			
	Patch and paint exterior siding, windows and trim.	Budget		$6,000
	Repair roof as required.	Budget		$1,500
	Sub Total			**$43,260**
	Mechanical Improvements*			**$6,400**
	Plumbing Improvements*			**$9,700**
	Electrical Improvements*			**$4,000**
	Furniture, Fixtures, and Equipment	**By tenant**		
	Construction Contingency 10%			**$2,010**
	* See attached Mechanical and Electrical Narrative			
	TOTAL ASSIGNABLE AREA	**1,552**		
	TOTAL GROSS AREA AND BUDGET	**1,713**	**$38 /SF**	**$65,370**
	Net/Gross	**91%**		

Space No.	Space	Room Size	Budget /SF	Estimated Budget
3.0	**RAPTOR MEWS**			
	3.1 Office Work Area	500	$35	$17,500
	Finish interior suitable for office needs.			
	Level floor and carpet.			
	Add Electrical and Mechanical.*			
	Repair windows.			
	**See mechanical narrative.*			
	3.2 Storage	336	$10	$3,360
	No significant changes.			
	3.3 Hawk House (Existing chicken coop)	520	$10	$5,200
	Moderate changes to accommodate hawk needs.			
	Sealed concrete flooring.			
	3.4 Fenced in Mews Area. (20,000 SF)			$10,000
	Chain linked fenced and covered area.			
	Located in shadey area under trees.			
	Dirt Flooring.			
	Sub Total			**$36,060**
	Mechanical Improvements*			**$2,000**
	Plumbing Improvements*			**$1,000**
	Electrical Improvements*			**$1,000**
	Furniture, Fixtures, and Equipment	**By tenant**		
	Construction Contingency 10%			**$4,006**
	* See attached Mechanical and Electrical Narrative			
	TOTAL ASSIGNABLE AREA	**1,356**		
	TOTAL GROSS AREA AND BUDGET	**1,398**	**$32 /SF**	**$44,066**
	Net/Gross	**97%**		

	SUMMARY OF SPACES			
1.0	**Artist Residences**	**4,385**	**$41 /SF**	**$181,302**
2.0	**Urban Gardens**	**1,713**	**$38 /SF**	**$65,370**
3.0	**Raptor Mews**	**1,398**	**$32 /SF**	**$44,066**
	TOTAL GROSS AREA AND BUDGET	**7,496**	**$39 /SF**	**$290,738**

MAJESTIC VIEW PARK

City of Arvada

CONFERENCE AND MEETING CENTER OCCUPANCY CALCULATIONS

Barker-Rinker-Seacat & Partners-Architects-P.C. **November 18, 1997**

Wenk Associates

*From Drawings Dated Nov. 1997

Component of Facility / Space Use		Floor Areas	Floor Area	Occupant Load Factor (SF/Person)	Building Occcupants (Persons)
GROUND FLOOR					
1.0	**Conference/Banquet**				
	Banquet #1		1,299	15	86.6
	Banquet #2		884	15	58.9
	Lounge		648	15	43.2
	Wet Bar		256	15	17.1
	Meeting Room		240	15	16.0
	Sub-Total		3,327		222
2.0	**Entry Vestibule**		112	NA	
	Sub-Total		112		0
3.0	**Support Spaces**				
	Warming Kitchen		528	200	2.6
	Office		104	100	1.0
	Secure Storage		104	300	0.3
	H.C. Restrooms		168	NA	
	Hall and Stair		312	NA	
	Storage		120	300	0.4
	Sub-Total		1,336		4
	Sub-Total Net Ground Floor		**4,775**		**226**
	Actual Gross Square Feet	**5,200**			
BASEMENT					
4.0	**Closet**		21	300	0
5.0	**Storage**		105	300	0
6.0	**Restrooms**		224	NA	
7.0	**Hall**		105	NA	
8.0	**Mechanical**		120	300	0
9.0	**Meeting / Changing**		364	100	4
	Sub-Total Net Basement		**939**		**4**
	Actual Gross Square Feet	**1,377**			
NET TOTALS			**5,714**		**231**
ACTUAL GROSS SQUARE FEET		**6,577**			
CIRCULATION, STAIRS WALLS			**863**		
RATIO NET TO GROSS			**87%**		

Minimum Plumbing Fixture Calculations		
	Men	**Women**
Persons per Gender	**115**	**115**
Toilets	2.0	3.0
Urinals	2.0	0.0
Lavatories	3.0	3.0
Showers (not req.)		
Drinking Fountains	1	

Appendix C

Transportation Access and Circulation Study

Prepared By MK Centennial
Authors: Dennis J. Ohlrogge
Jennifer Linden

Transportation Access and Circulation Study
Majestic View Park

Majestic View Park - Existing Uses

Majestic View Park, located South of 72nd Avenue, West of Carr Street and East of Kipling Street currently functions as a neighborhood park. Although the park is approximately 80 acres. There is only a small improved area with tennis courts, a playground, and a ball field. There are no trails to access the park beyond the tennis court and playground area. The park is used primarily by people from the nearby surrounding neighborhoods who walk to and from the park. In addition, vehicle access to and from the park is limited and no sanctioned parking facilities exist. Anyone who drives to Majestic View Park must park their car along one of the neighborhood streets and walk to the park.

Majestic View Park - Proposed Uses

The City of Arvada has purchased the park and plans to improve it into a community park. This would include providing adequate parking and access for potential park users. To determine the type and level of access necessary, the amount of traffic generated by each of the proposed uses within the park must be considered. The plans for Majestic View Park indicate that the park will actually remain somewhat of a natural facility with no additional play fields or buildings. The park will, however, have improved access and be upgraded as previously mentioned in this report.

In addition to the general improvements for the park area, such as bicycle and pedestrian paths, there are several additional uses planned for within the park. These additional uses are planned for the existing structures already in the park (Fox house, Harder house, Kennedy house, and Hansen house. These additional uses are listed below:

- Fox house - Conference and Meeting Center
- Harder house - Environmental Education Center
- Kennedy house - Artist Residence, Urban Gardens, and raptor facility
- Hansen house - not owned by Arvada, if bought would be a low use facility

While no additional buildings are planned at the initial stages of development, it is possible that long range future plans for the park could include a new Nature Center.

Trip Generation

Each of these improvements will increase traffic entering and exiting the park. To determine how much traffic will be entering and exiting the park, traffic forecasts were completed utilizing the ITE Traffic Generation Manual 5th Edition. The following analysis details each of the improvements and the amount of traffic it will generate.

Majestic View Park

The park itself, when improved to include facilities such as picnicking areas, trails, and paths will generate additional traffic. The ITE Manual has a number of studies available on City Parks.

The following formulas are used to calculate the number of trips generated by an 80-acre park with areas for play and picnicking.

City Park	-80 Acres @ 2.23 trips/scale = 178 (Weekday) ADT
	-80 Acres @ 5.90 trips/scale = 472 (Weekend) ADT

A trip as referred to in the above equation is a single or one direction vehicle movement with either the origin or the destination being within the study area. This means that half of the ADT trips are vehicles destined for the park. These trip generation figures indicate that on a busy week-end day 236 vehicles might desire to park at Majestic View Park.

According to the ITE trip Generation Manual 5th Edition, park traffic generally peaks at times other than standard AM and PM peaks, (AM peak - 7 am- 9 am, PM peak 4 p.m. - 6 p.m.). Park traffic generally peaks from 12 p.m. to 5 p.m. This indicates that the additional traffic generated by the improvements at Majestic View Park will not be impacting the AM peak at all, and will impact the PM peak only slightly.

	Weekday	Weekend	Peak hour
Cars parking at facility	89	236	50
Cars on roadway to and from the facility (ADT)	178	472	100

Fox house - Conference and Meeting Center

The Fox house, located in the northwest corner of the park is planned to become a conference and meeting center. One of the primary functions of the facility would be as a site for weddings and receptions. The facility will be designed to accommodate around 200 people maximum. The parking lot for this facility will have 100 spaces. * This should be adequate given an average ratio of 2 people per car, which although higher than average for work trip traffic, is a conservative estimate for activity destination traffic.
*The parking lot for the conference center at the Fox house will also be used for general parking when no activities are scheduled at the center.

Traffic generation information for this type of facility is not listed in the ITE Traffic Generation Manual. Therefore, it is necessary to estimate the trips generated based on the facility's capacity and daily use patterns. The Fox house has a capacity of 200 people and is a facility that does not necessarily have daily use. Given an average of two people per car, a reasonable estimate is 100 trips per day to and from the facility, a total of 200 ADT both weekday and weekend.

	Weekday	Weekend	Peak hour
Cars parking at facility	100	100	100
Cars parking on roadway (ADT)	200	200	200

Harder house - Environmental Education Center

The Harder house, located in the southern center of the park is planned to become an

Environmental Education Center. The facility will be designed to accommodate around 40 to 50 people. The parking lot for this facility is designed with 20 spaces for cars and four spaces for buses.

Traffic generation for this type of facility is also not listed in the ITE Traffic Generation Manual. Trip generation was therefore based on the facility's capacity and daily use patterns. The Harder house has a capacity of 40-50 people, most of which would be children dependent on an adult for transportation. A reasonable estimate, given the facilities characteristics would be 20 trips a day to and from the facility, a total of 40 both weekday and weekend.

	Weekday	Weekend	Peak hour
Cars parking at facility	20	50	10
Cars on roadway to and from the facility	40	100	20

Kennedy House - Artist Residence, Urban Gardens, and Raptor Facility

The Kennedy house, located in the southeast corner of the park, is planned to become two facilities. The main house will be divided into three apartments type residences for visiting performing artists to Arvada, and the out buildings are planned to become part of the urban gardens facility. The parking lot for this facility is designed with spaces for 20 cars.

Artist Residence

He ITE Manual has a number of studies available on apartments, the studies used for this report are studies general apartments category 220 in the ITE Trip Generation Manual 5th Edition.

Apartment -3 dwelling units @ 6.47 trips/unit = 20 (Weekday) ADT
-3 dwelling units @ 6.20 trips/unit = 19 (Weekend) ADT

Urban Gardens Facility

Traffic generation information for this type of facility is not listed in the ITE Traffic Generation Manual. Trips generation was therefore based on the similar facilities run by operators of urban gardensprograms. Trip generation estimate for the facility, based on existing facilities is 40 trips a day, to and from the facility, a total of 80 ADT both weekday and weekend.

	Weekday	Weekend	Peak hour
Cars parking at facility	40	40	9
Cars on roadway to and from facility (ADT)	80	80	9

Hansen House

The Hansen house, located in the southern center of the park, is not currently owned by the City of Arvada. Should this house be bought, it would become a low use facility, estimated to generate only minimal traffic. A parking lot for this facility would have only 10 spaces.

	Weekday	Weekend	Peak hour
Cars parking at facility	20	20	5
Cars on roadway to and from facility (ADT)	40	40	8

The total traffic generated by all of the park facilities and the park itself would be:

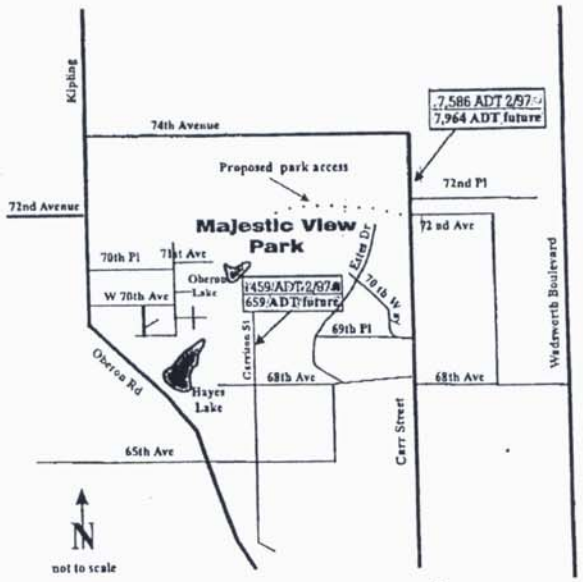
	Weekday	Weekend	Peak hour
Cars parking at facility	289	465	179
Cars on roadway to and from facility (ADT)	578	390	245

It is important to note that the pedestrian and bicycle access from the north does cross through the proposed 72nd Avenue corridor. Because this access is important to allow park users from the north the ability to access the park without driving a vehicle, these paths should be maintained within the design of the future 72nd Avenue.

Roadway Capacities

Each of the roadways that will have access to the park was studied to determine how the additional traffic generated by the improvements to the park would impact the roadways. The figure below illustrates the Majestic View Park area with both the current (February 1997) and future (Majestic View Park built out) traffic counts.

Access to the park would be off of West 72nd Avenue and Garrison Street. Although it is physically possible to access the park from the west off of 70th Place, there will be no parking permitted in the west side of the park. This decision was made based on the already high existing traffic count on west 70th Place. It is also essential that the roadways surrounding the park be signed to indicate exactly where the appropriate access points are for each facility. This will help limit the number of driving through and parking in the neighborhoods surrounding the park.



West 72nd Avenue

West 72nd Avenue will be the best place to obtain Park access. While not yet under construction, West 72nd Avenue is expected to be completed within the next 3-4 years. Until this new artery is completed, access to the park may be obtained from Carr Street. Carr Street is a north-south connector street located approximately ½ mile east of the park. Prior to the completion of West 72nd Avenue, the Carr Street intersection may have to be improved to provide left and right turn lanes at the temporary park access.

Garrison Street

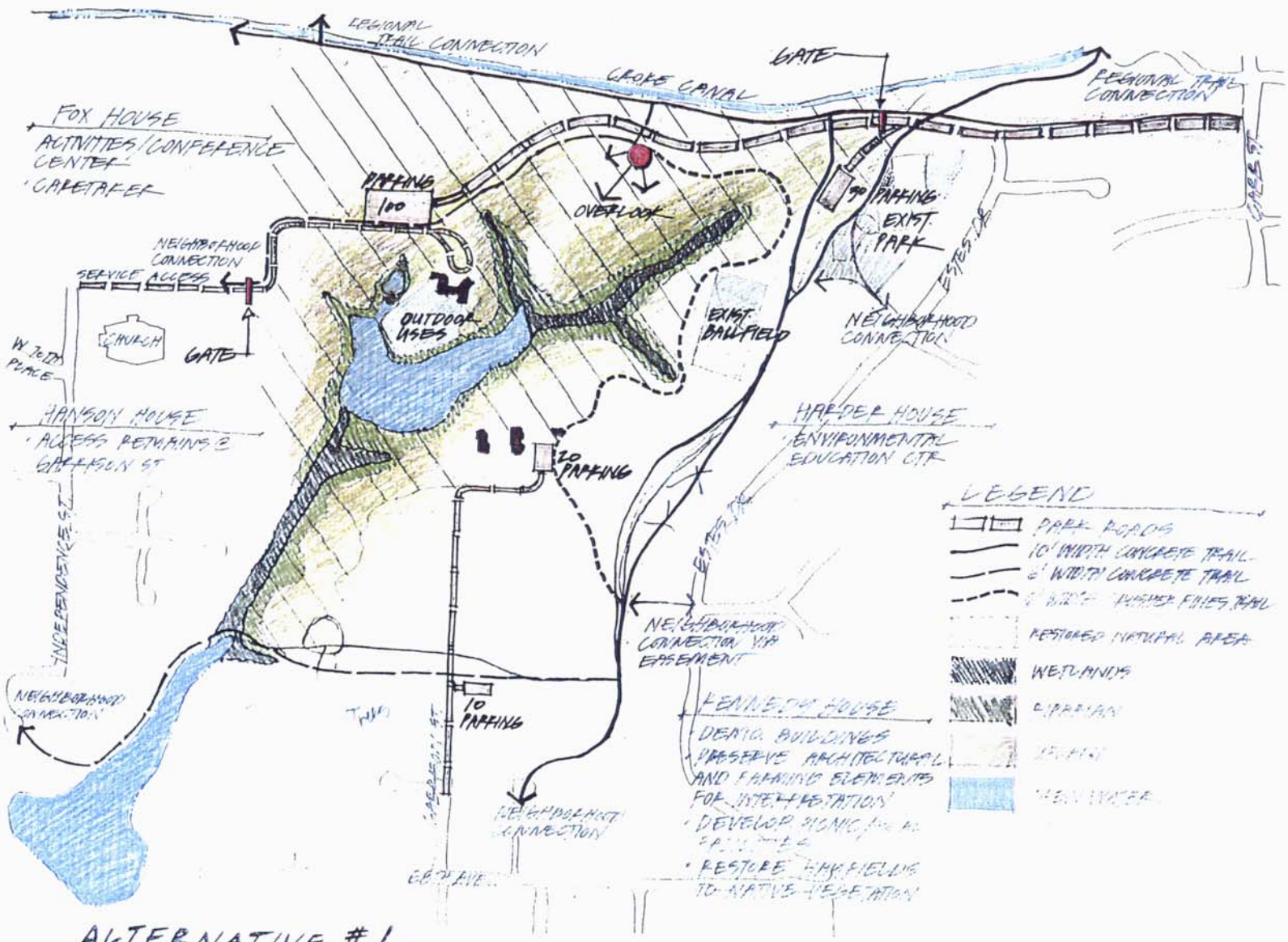
Garrison Street is also a two-lane roadway, but it is a residential street with parking and houses in both sides of the roadway. Traffic is currently low, 459 ADT, on Garrison Street, and an increase of 200 vehicles per day (Maximum) is not going to be beyond the capacity of the roadway. However the residences along Garrison may notice more traffic and congestion. It is also possible that if people are not aware of the larger parking lots located off of Carr Street they may park at the lots off Garrison intended for the specific facilities located off of Garrison.

Recommendations

In order to make sure that the official parking lots are indeed utilized and no additional traffic generated by the park users through the nearby neighborhoods, it will be essential to place roadway signs in these neighborhoods directing drivers to the appropriate and sanctioned parking lots for the park.

Appendix D

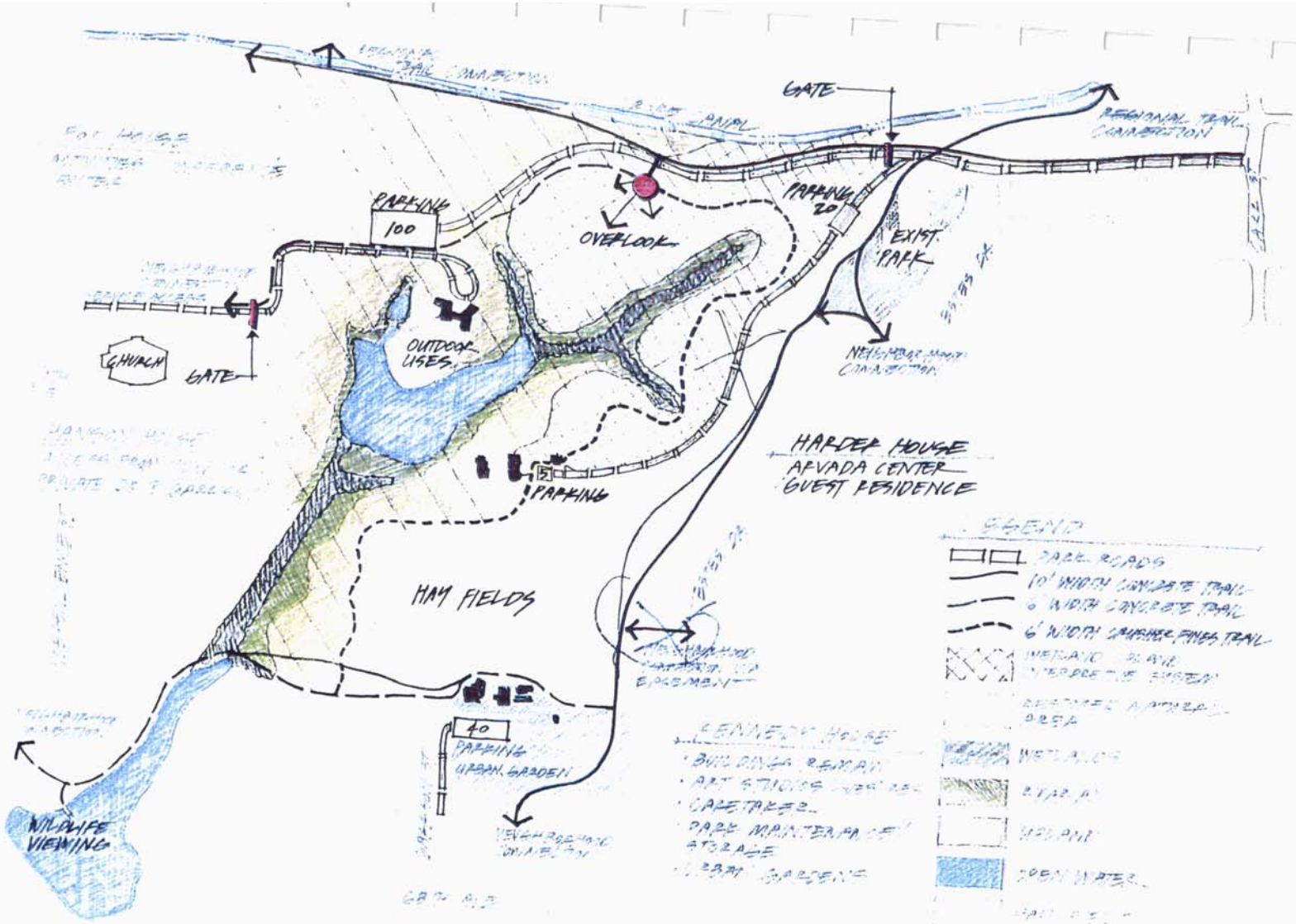
Conceptual Alternative Diagrams



ALTERNATIVE #1

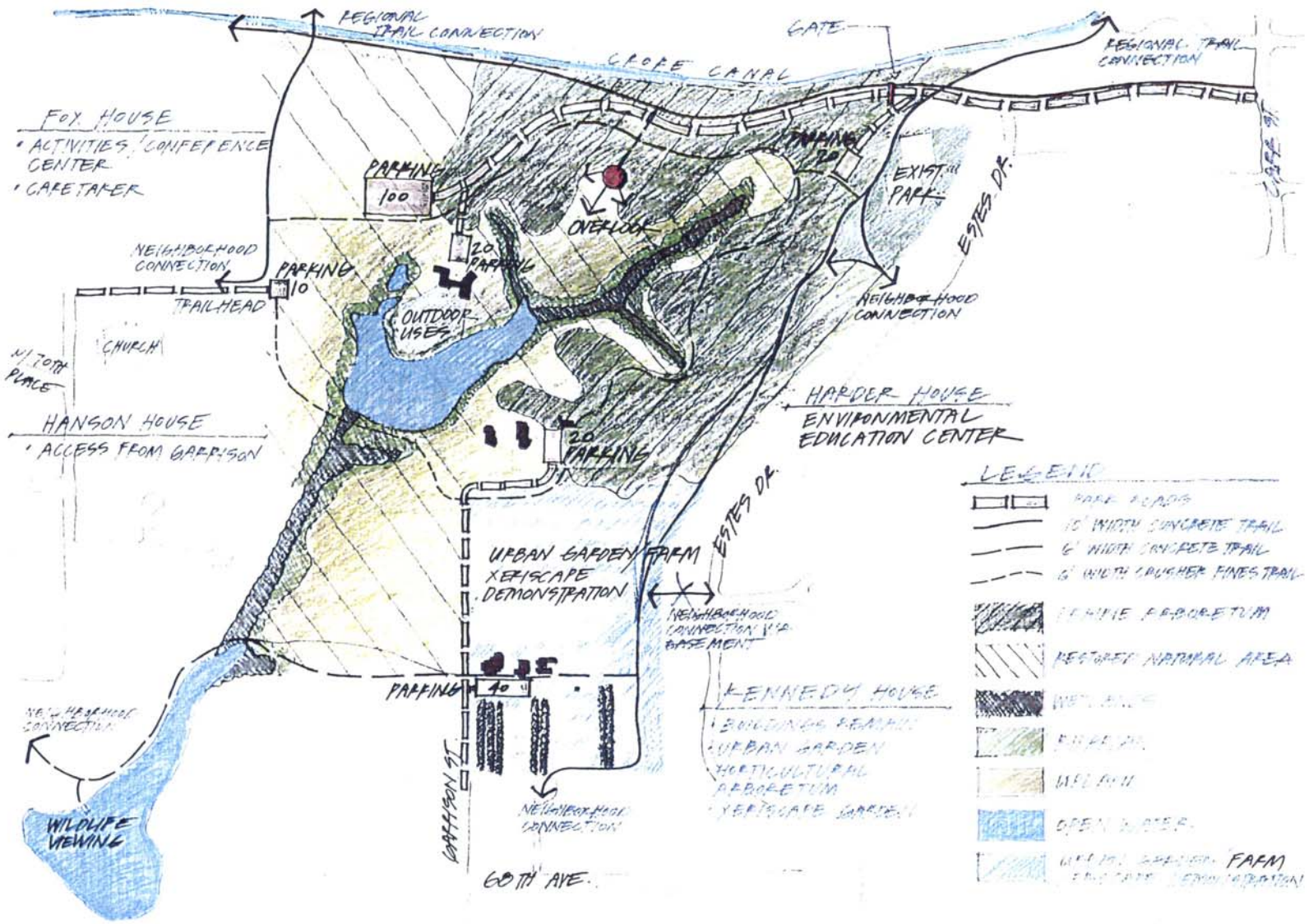
MAJESTIC VIEW PARK

CITY OF ARVADA
PLANNING DEPARTMENT



ALTERNATIVE #2

MAJESTIC VIEW PARK



ALTERNATIVE #3

MAJESTIC VIEW PARK

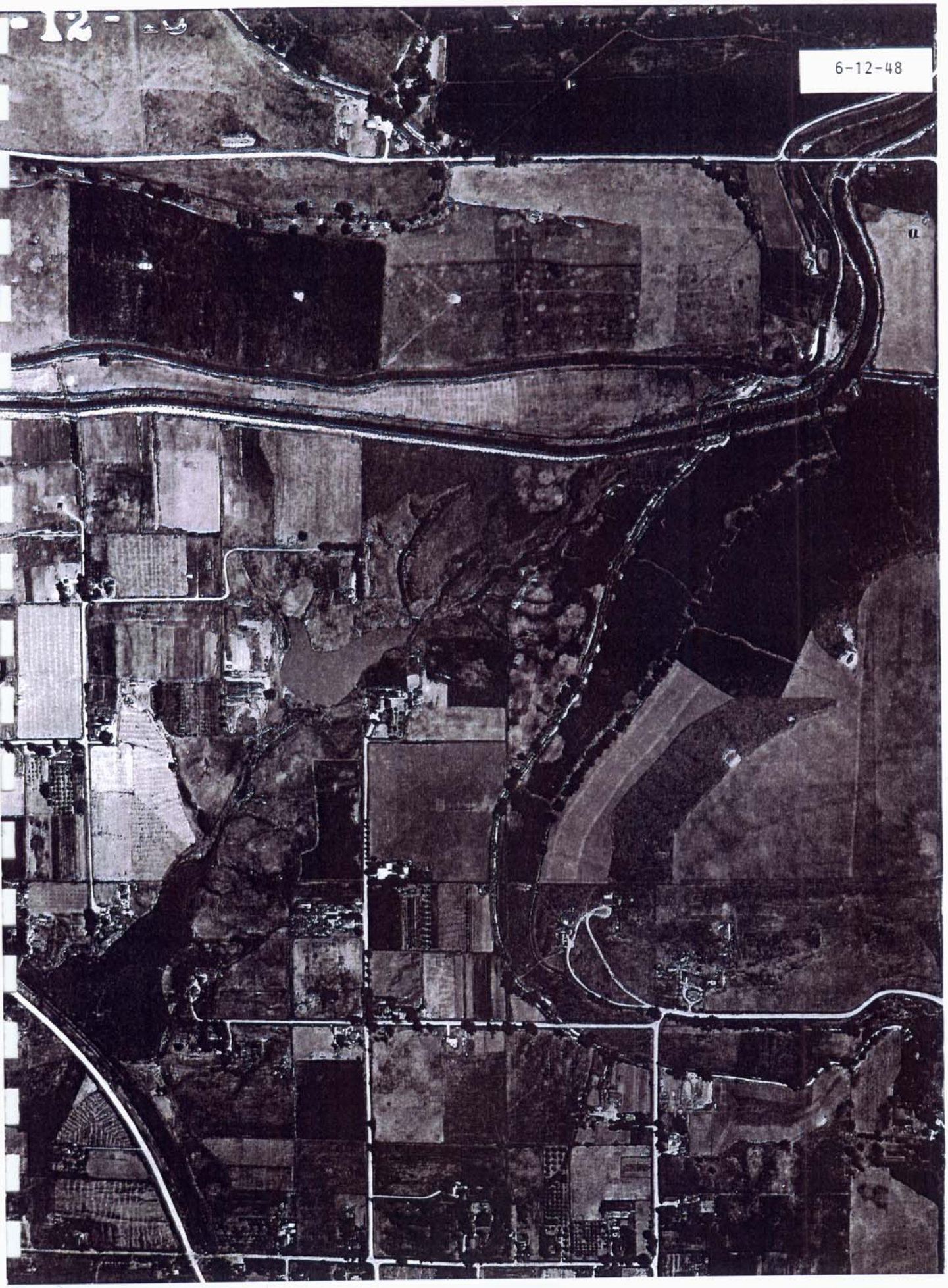
CITY OF ARVADA

PLANNING DEPARTMENT

Appendix E

Historic and Current Aerial Photographs

6-26-95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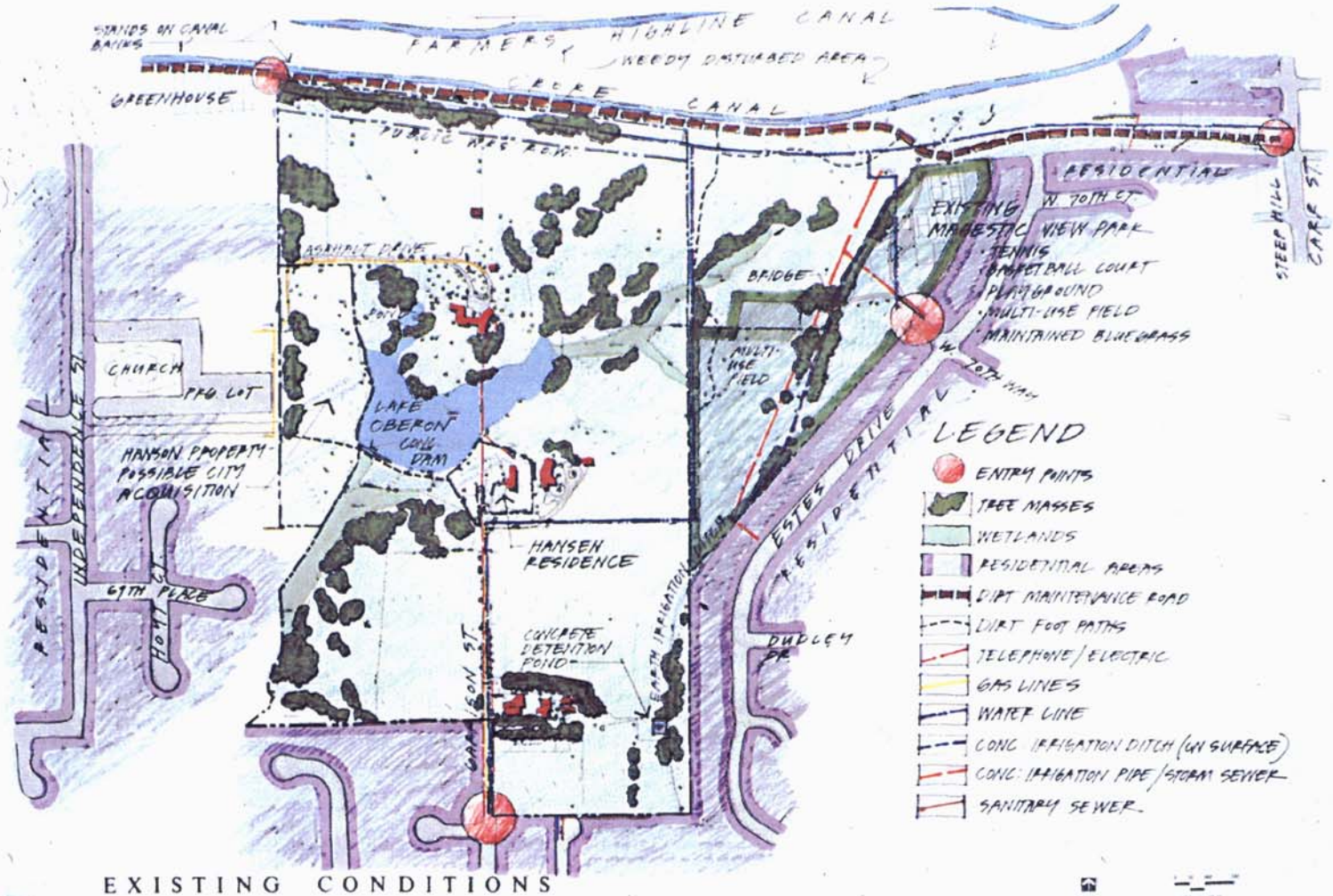
Appendix F

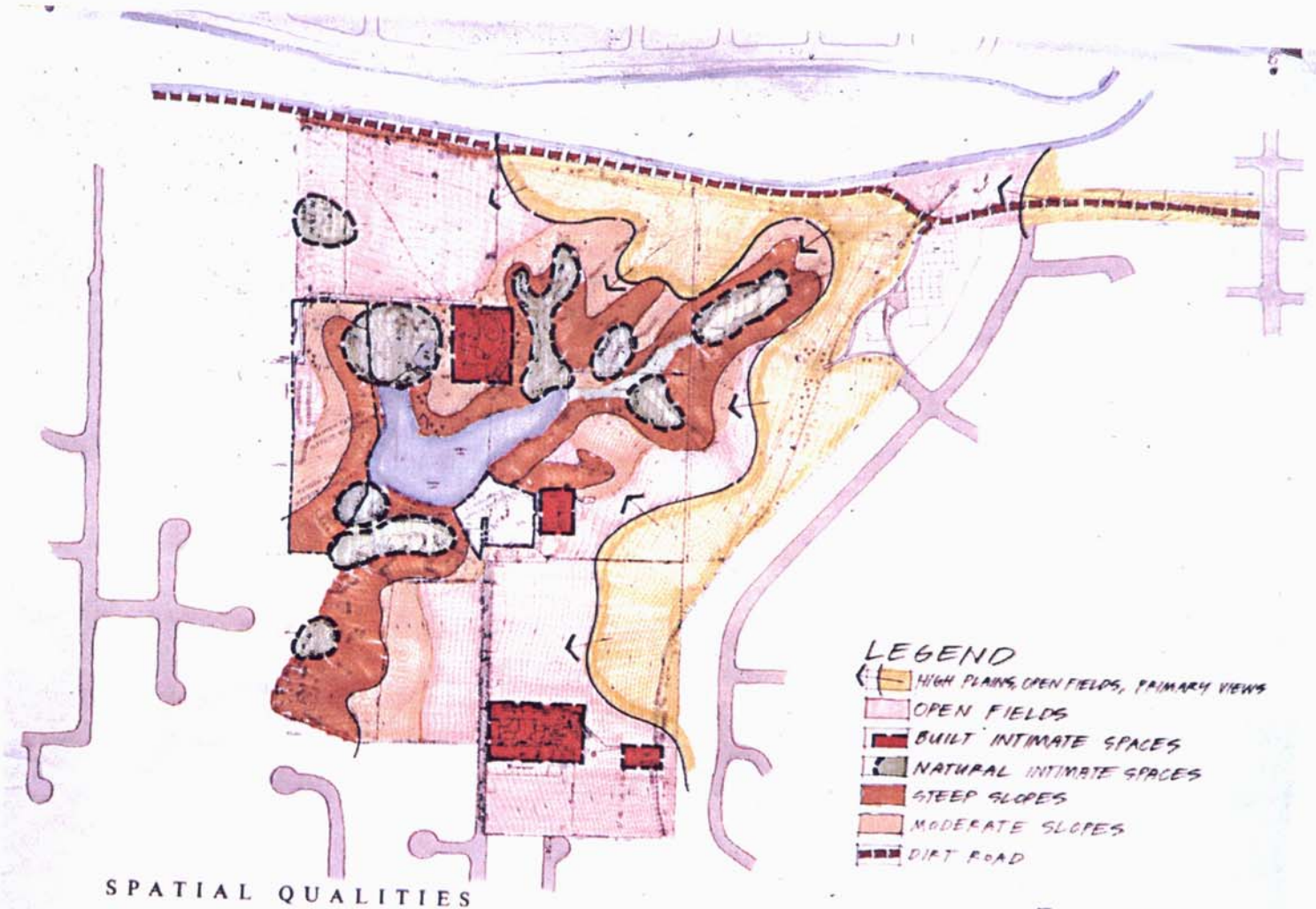
Site Analysis



EXISTING CONDITIONS

MAJESTIC VIEW PARK

CITY OF ARVADA
PLANNING DEPARTMENT



SPATIAL QUALITIES

MAJESTIC VIEW PARK

CITY OF ARVADA
PLANNING DEPARTMENT