City of Grand Island

Tuesday, December 11, 2007
Study Session/Special Mtg

Item -1

Presentation of Proposed Arboretum for Stolley Park

Staff Contact: Steve Paustian

Council Agenda Memo

From: Steve Paustian, Park and Recreation Director

Meeting: December 11, 2007

Subject: Stolley Park Arboretum

Item #'s: 1

Presenter(s): Steve Paustian, Park and Recreation Director

Background

In 1981, Bob Kriz, former Grand Island Mayor led an effort to develop a Zoo in Stolley Park. The Zoo was constructed and continued to operate for approximately 20 years. Originally the Zoo operated under the guidance of a Zoological Society and eventually under the City until its closure in 2001.

At that time, then Mayor, Ken Gnadt appointed a Zoo Re-Use committee to assist staff in the development of a plan to utilize the area that was formally the Heritage Zoo. The committee consisted of Tom Gdowski, Gloria Wolbach, Jim Hruskoci, former Councilman Gale Larson, Mackenzie Cochran and Luke McMahan and two high school students. The committee formulated a re-use plan which was adopted by City Council in late 2001. One process the committee undertook was to poll the community regarding what features they might desire in the redevelopment of the site. (Survey and Survey results are attached). The end result of the committees work included the following recommendations: construction of a themed playground, refurbish the train and train tracks, erecting a community picnic shelter, development of an arboretum and construction of an outdoor refrigerated ice rink.

To date, the themed playground has been constructed, the train and train tracks refurbished and a community picnic shelter has been erected. The next phase of the re-use plan is to develop an arboretum. Over the past three years, funding for the arboretum has been requested through the budget process, to date funding has not been approved or allocated.

Discussion

The committee, in collaboration with the Parks & Recreation Department is providing the following proposal to make the arboretum a reality.

It is proposed that a community based fund drive be initiated to assist in providing the capital necessary to construct the arboretum. The original Architects estimate to provide a finished arboretum was approximately $870,000. Utilizing a fund drive and volunteer assistance, similar to the effort made to build Kids Kingdom, the committee believes the Arboretum can become a reality for approximately $400,000.00.

Staff feels an ongoing maintenance commitment by the City will be necessary. To properly maintain the arboretum one additional full-time person and two seasonal staff will be required at a labor cost of approximately $55,000 annually including benefits. Volunteer labor will be critical to the upkeep of the beds, but ongoing construction, maintenance and repairs would be handled by staff.

The committee is willing to undertake the challenge of raising capital funds if Council is willing to support the arboretum by funding maintenance and long term care.

Conclusion

This item is presented to the City Council in a Study Session to allow for any questions to be answered and to create a greater understanding of the issue at hand.

It is the intent of City Administration to bring this issue to a future council meeting for the formal adoption of the Arboretum Development Plan.

Gathering Public Input

UTILIZATION OF EXISTING HERITAGE ZOO PROPERTY

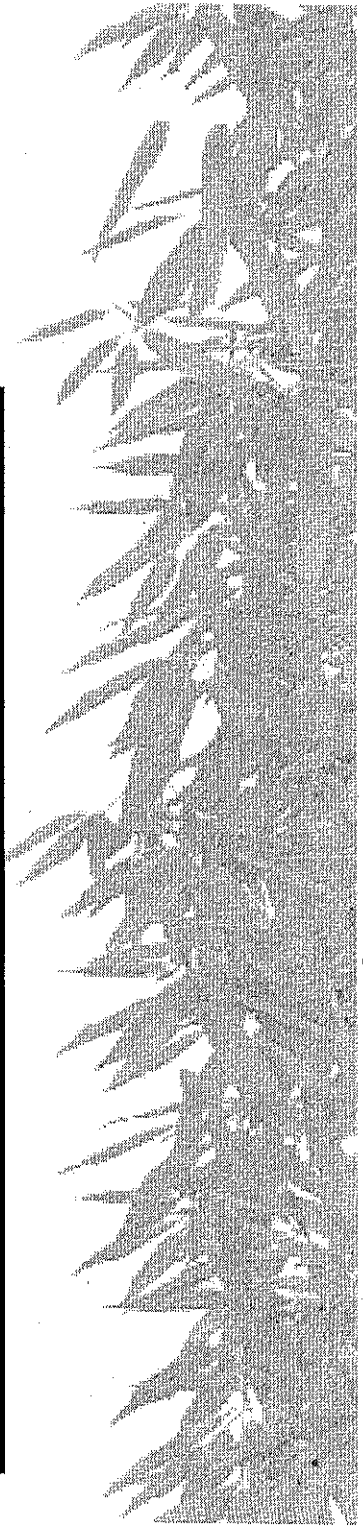
Public input is vital in shaping the future use of the Grand island Heritage Zoo property (encompassing approximately 6+ acres). Here is your opportunity to provide YOUR input. The following survey is designed to allow YOUR input as to how the City of Grand Island can best utilize the existing Zoo property. Some initial suggestions are listed here.

Please check all that you feel are important considerations as to the use of the grounds, but MORE IMPORTANTLY, please feel free to list ADDITIONAL IDEAS that you feel need consideration. Please fill out this form prior to October 22, 2001.
Check all those that you feel are important:

- ☐ Train rides around the park
- ☐ Historical Site
- ☐ Outdoor / Indoor Pavilion
- ☐ Children's Museum
- ☐ Horseback / pony rides
- ☐ Botanical Garden / Arboretum
- ☐ Theme (Non-conventional) Playground*
- ☐ Basketball court / Refrigerated Ice Skating Rink

Your additional ideas/comments welcome:

* 2+ acre, child-designed, family friendly playground



CITY OF GRAND ISLAND

INTEROFFICE MEMORANDUM

DATE: November 19, 2001

TO: Zoo Site Reuse Committee

FROM: Steve Paustian, Parks & Recreation Director

RE: Citizen Inputs for Committee Consideration

The following is a statistical breakdown of the input received to date. The numbers were derived from both the newspaper survey and utility survey inserts.

BOTANCIAL GARDEN----------518

TRAIN RIDE----------423

*BASKETBALL/ICE SKATING RINK----------393

THEMED PLAYGROUND----------386

CHILDRENS MUSEUM----------311

OUTDOOR/INDOOR PAVILION----------264

HORSE/PONY RIDES----------216

HISTORICAL SITE----------180

PETTING ZOO----------22
CAMPGROUND----------8
DOG PARK----------9
SKATEBOARD PARK----------4
AUCTION OFF PROPERTY----------6
HUMANE SOCIETY----------3
RESTORE TO TREES AND GRASS----------8
FRISBEE GOLF----------6

*BASKETBALLCOURT/ICE RINK----------318
ICE RINK ONLY----------69
BASKETBALL COURT ONLY----------6

December 5, 2007

Grand Island City Council
100 E 1st St.
Grand Island, NE 68801

To Whom It May Concern:

This letter is to ask you for your support in regards to the Stolley Park Arboretum project. I served as a member of the Stolley Park Re-Use Committee that was formed at the time of the Zoo closing and as a Co-Chair for the Kids Kingdom project along with my wife Becky and Kirk and Katie Ramsey. When the Stolley Park Re-use plan was adopted by the Council in 2001 we were hopeful the completion would take approximately three years. Although we are somewhat behind schedule, many wonderful pieces of the plan have been completed!

The Kids Kingdom playground, train and covered pavilion have all been well received and the arboretum project will fulfill the majority of the initial plans goals. The completion of this project will take a commitment of both public and private efforts to build and maintain on a long term basis. Please take into consideration the considerable support the initial Reuse plan received, the overwhelming success of the Kids Kingdom project and the current use of all the facilities within the park. All were developed with significant input and support from the citizens of Grand Island!

Thank you for the consideration you give this project as well as all your efforts in providing leadership to the community of Grand Island.

Sincerely,

Tom Gdowski

Tom Gdowski

Cc: Steve Paustian

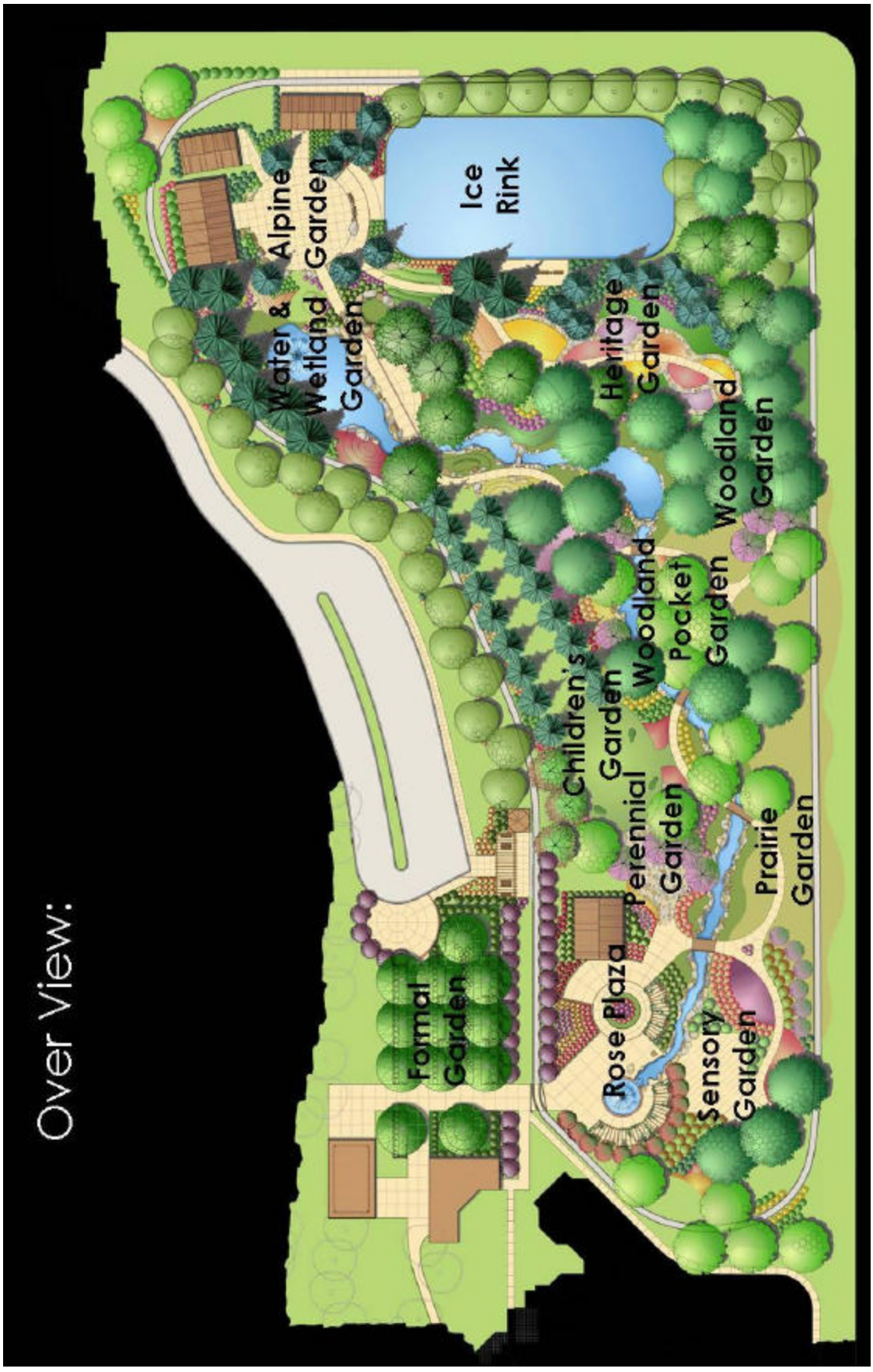
LANDSCAPE MASTER PLAN

STOLLEY PARK ARBORETUM

GRAND ISLAND, NEBRASKA

January, 2004

The Clark Enersen Partners
Architecture
Landscape Architecture
Engineering
Interiors



Landscape Master Plan

Stolley Park Arboretum

OVERVIEW

This master plan was developed to assist the City of Grand Island establish an arboretum at the former Heritage Zoo site in Stolley Park. This plan is intended to provide general structure to the planning process for the City of Grand Island's future landscape goals at this site. Its main purpose is to focus upon the "big picture" landscape issues at Stolley Park and should be used to give direction in the planning of the general intent of future landscape at this site. The plan has intentionally been kept flexible so that it might adapt to future changes in program, site conditions, and funding opportunities.

MISSION

The mission of the development of the Stolley Park Arboretum landscape is six-fold:

- Display plant material in a beautiful setting. Develop the site in such a manner that the landscape enhances the activity that occurs there.
- Display plant material in such a way so that it becomes an educational resource for the public.
- Utilize a mix of diverse landscape plants that are well-adapted to the area.
- Utilize a mix of diverse new and underutilized landscape plant species that might be adaptable to the area.
- Develop the site so that it might achieve local and regional recognition as an outstanding arboretum site.
- Develop the site so that it is organized into individual themed areas that can be phased or funded separate from one another, if desired.

SITE CONDITIONS

Location: The Stolley Park Arboretum site is located on a contiguous property that totals approximately 7 acres in south central Grand Island, Nebraska south of West Stolley Park Road between South Blaine Street and Park Drive. It is located in Stolley Park.

Context: The Stolley Park Arboretum site is situated in the south central part of Grand Island, Nebraska, a growing community of approximately 44,000 persons located in east-central Nebraska. The arboretum site, situated at the former Heritage Zoo property is located in Stolley Park. Existing parking lots that will serve the arboretum are situated to the north and west of the arboretum entrance. A large new children's playground is located to the west of the arboretum. Large open park areas surround the arboretum to the north and west. No significant changes in elevation occurs within this site, but an existing water feature that includes a small pond and stream bisects the site. A miniature railroad track that served the Zoo has been rebuilt, and will now enhance the arboretum activity. All of the former Zoo exhibit areas have been removed, but a few existing buildings remain, as well as many trees and shrubs.

Access: Access to the site is straightforward, and uncomplicated via the City of Grand Island street system. Once at the site, parking is available in the existing Stolley Park parking areas, mentioned above. Stolley Park is open throughout the year.

Climate: The climate of east-central Nebraska is variable. Wide temperature fluctuations are common from season to season, and even within a specific season. Temperatures range from over 100 degrees Fahrenheit during the summer (June through September) to under –20 degrees Fahrenheit during the winter (December through March). Daily fluctuation in temperature can sometimes approach 50 or 60 degrees. Precipitation can also vary. The region receives an average of 25 inches of precipitation per

year. However, only approximately 18 inches of that amount falls as rain during the growing season (an average of 160 days between late April and early October). Periods of drought are common even during years that total annual precipitation is average. More severe droughts occur on average every seven years.

Plant Hardiness: The USDA Plant Hardiness Zone for this site is 5b. The average annual minimum temperature for this zone is –20 degrees Fahrenheit.

Soils: The soils on the site are urban, mixed soils. After decades of building and site improvements at the site, the top three or so feet of soil has been modified to the point of being undefined per typical USDA classifications.

Existing Collections and other Vegetation: No evidence exists of pre-settlement native mixed-grass prairie on this site. Existing trees do subsist throughout the site. This planting mainly consists of a number of species of deciduous trees. Landscape has also been installed and maintained throughout Stolley Park. Most of the landscape in and around Stolley Park is mature, and provides a pleasant overstory canopy.

Educational Activities: No formal educational activity currently occurs at this site.

GOALS AND OBJECTIVES

Site Development Goal: The Stolley Park Arboretum site will be a visually attractive area. Users will be able to learn about plants and enjoy the benefits of a well-planned landscape.

- Emphasis will be placed on quality landscape design that provides a sense of beauty for the site
- Declining trees will be pruned or removed as necessary to improve the appearance of the site
- Additional plantings will be installed to augment existing specimens
- Additional plantings will be installed in order to provide pedestrian comfort including wind protection, shade, and visual screening on the site
- Native and naturalized plantings will be utilized whenever appropriate
- Landscape plants will be utilized to enhance specific themed areas including a formal garden, rose garden, sensory garden, children's garden, prairie garden, woodland pocket garden, woodland garden, water/wetland garden, heritage garden, and alpine garden.
- The primary arboretum entrances to the site will be enhanced through the use of landscape
- The arboretum development will integrate and enhance adjacent park uses, including the new children's playground and proposed community picnic pavilion
- The arboretum development will enhance the existing adjacent residential neighborhoods
- The arboretum should be developed to provide all-season activity and interest

Collections Goal: The Stolley Park Arboretum site will offer a diverse collection of plants that are appropriate for the area.

- A collections policy should be developed
- A list of desired species, appropriate to the site, will be developed (see Exhibit A)
- Emphasis should be placed on expanding the variety of trees, shrubs, perennials and groundcover plants displayed at the site

Education Goal: Stolley Park Arboretum site will serve as an educational resource center for Grand Island Public Schools, and for the Grand Island community.

- Emphasis should be placed on educational activities appropriate for Grand Island school youth

- Plants should be properly labeled for easy identification
- Consideration should be given to the development of interpretive information regarding site characteristics and planting
- A site brochure that indicates plant location and layout should be developed
- Efforts should be made to schedule outdoor public events that emphasize landscape development on the site

Maintenance Goal: The Stolley Park Arboretum site will serve as a model for proper landscape maintenance.

- High quality maintenance of the existing plant material on site as well as other site features, including the proper interface between landscape and pavements, buildings, and other site features will be advocated
- The arboretum will demonstrate desirable landscape cultural practices including planting, mulching, irrigation, pruning, weed control and pest control
- Emphasis will be placed on low-input maintenance techniques including reduced chemical use and increased biological control
- The design of the landscape will be completed to allow plantings to be maintained in their natural form
- The design of the landscape will be completed to allow for reduction in mowing and trimming
- Plants will be mulched on a regular basis
- The design of the landscape will be completed to allow for the grouping of plants in planting beds so as to promote the mulching of large, contiguous areas, rather than individual plant locations

Management, Funding and Volunteer Support Goal: Management, funding and volunteer support for the site will be initiated.

- Efforts to attract additional physical and financial support will continue
- Donations will be encouraged for the development of the master plan
- Local recognition of physical and financial support will continue

DEVELOPMENT CONCEPTS

The following concepts describe the significant design ideas for the development of the Stolley Park Arboretum site for the duration of the master plan. They are part of a phased approach to the implementation of the plan, as time and resources allow.

- The site should be organized into thematic areas. Each subarea should be designed to focus on a particular type of landscape. The subareas could include the following:

    - Formal Garden
    - Rose Plaza
    - Sensory Garden
    - Prairie Garden
    - Perennial Garden
    - Children's Garden
    - Woodland Pocket Garden
    - Woodland Garden
    - Water/Wetland Garden
    - Heritage Garden
    - Alpine Garden Plaza

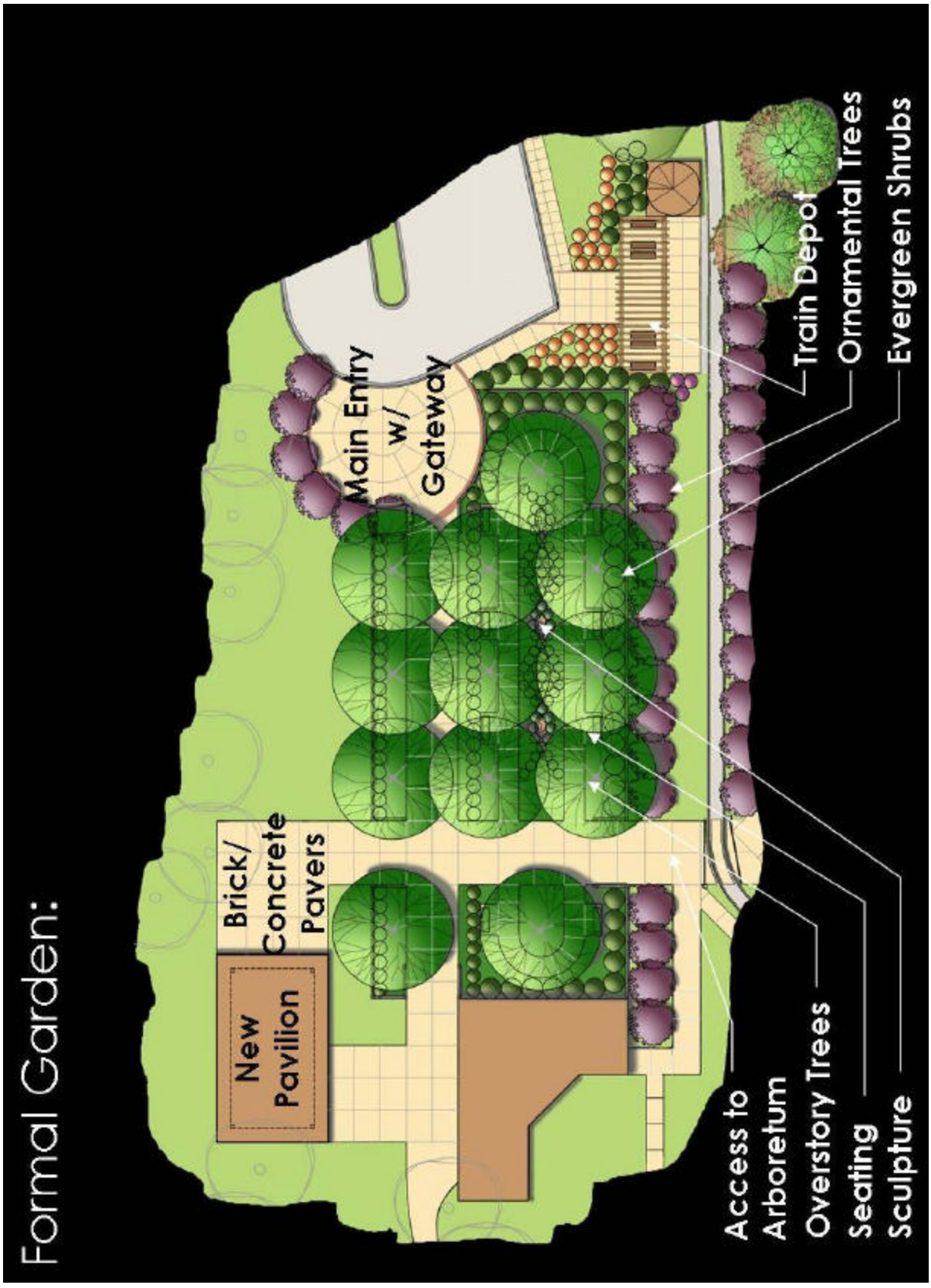
- The **Formal Garden** is located at the north side of the arboretum to the east of the former Zoo entrance building. The Formal Garden is designed to serve as the entrance to the arboretum. This area should be pleasant, shady and inviting. The entrance to the Formal Garden should be located so that it is on axis with the existing ornamental fountain basin that exists inside the arboretum (former Zoo).

  The Formal Garden would be designed to include a perimeter fence or wall. If the perimeter is contained with a fence, it should be constructed to a height of 6 feet with high quality materials such as wrought iron or powder coated steel. If the perimeter is defined by a wall, it should be constructed to a height of 6 feet with masonry or stone. A shrub hedge should be planted at the base of the perimeter fence/wall (interior and exterior). Vines should also be planted at the base of the fence or wall.

  Overstory deciduous trees would be planted in planting areas to provide shade in the interior of the Formal Garden. A variety of shade tolerant perennials and ground covers would be planted at the base of the overstory trees. The planting areas that are created in the Formal Garden should be constructed to accommodate sculpture placements. Steel benches that reflect the character of the perimeter wall/fence should be located in the formal garden to accommodate visitors who are arriving or leaving the arboretum.

  The ground pavement in the Formal Garden should be unit pavers (brick or concrete). The pavers should be selected to provide color (brown, tan, charcoal, red or other earth tones). They should be installed to create borders or other typical patterns observed in pedestrian plazas. Low level pedestrian lighting should also be installed in the Formal Garden.

  The Formal Garden is connected to other park facilities that are related to the arboretum, but not directly integrated with it. A new drop off point at the west end of the existing parking lot that is located to the east of the former Zoo entrance building would be constructed to connect the parking


Formal Garden:
Brick/ Concrete Pavers
New Pavilion
Main Entry w/ Gateway
Train Depot
Ornamental Trees
Evergreen Shrubs
Access to Arboretum
Overstory Trees
Seating
Sculpture

area to the arboretum Formal Garden and entrance. This drop off point would also connect to a new train depot that would be constructed directly to the west of the Formal Garden (outside of the perimeter wall), and a new community picnic pavilion that would be constructed to the north of the former Zoo entrance building. The existing park road that is currently routed through this area would be removed, and relocated to the north. The new train depot and picnic pavilion could be utilized during times that the arboretum was not open.

- Located directly to the south of the Formal Garden, across the railroad tracks is the **Rose Plaza**. This area would be mostly sunny with no overstory shade trees so that a variety of low-maintenance shrub roses and climbing roses could be displayed. This construction of this plaza would also include the renovation of the existing ornamental water fountain and stream.

  The plaza pavement should be constructed of unit pavers (concrete or brick). Pergolas should be constructed at the south perimeter of the plaza to provide support for climbing roses. These pergolas would also provide filtered shade for the comfort of visitors. Benches should be located under the pergolas. Ornamental flowering trees and shrubs should be planted behind the pergolas to provide a colorful and fragrant backdrop to the Rose Plaza.

  A central, circular shrub rose planting area should be constructed to the east of the ornamental water fountain. This planting area would direct pedestrian traffic to the remainder of the arboretum, or to the entrance of the renovated arboretum support building (the former Zoo herpetarium). The perimeter of the Rose Plaza would be planted with varieties of hardy shrub roses.

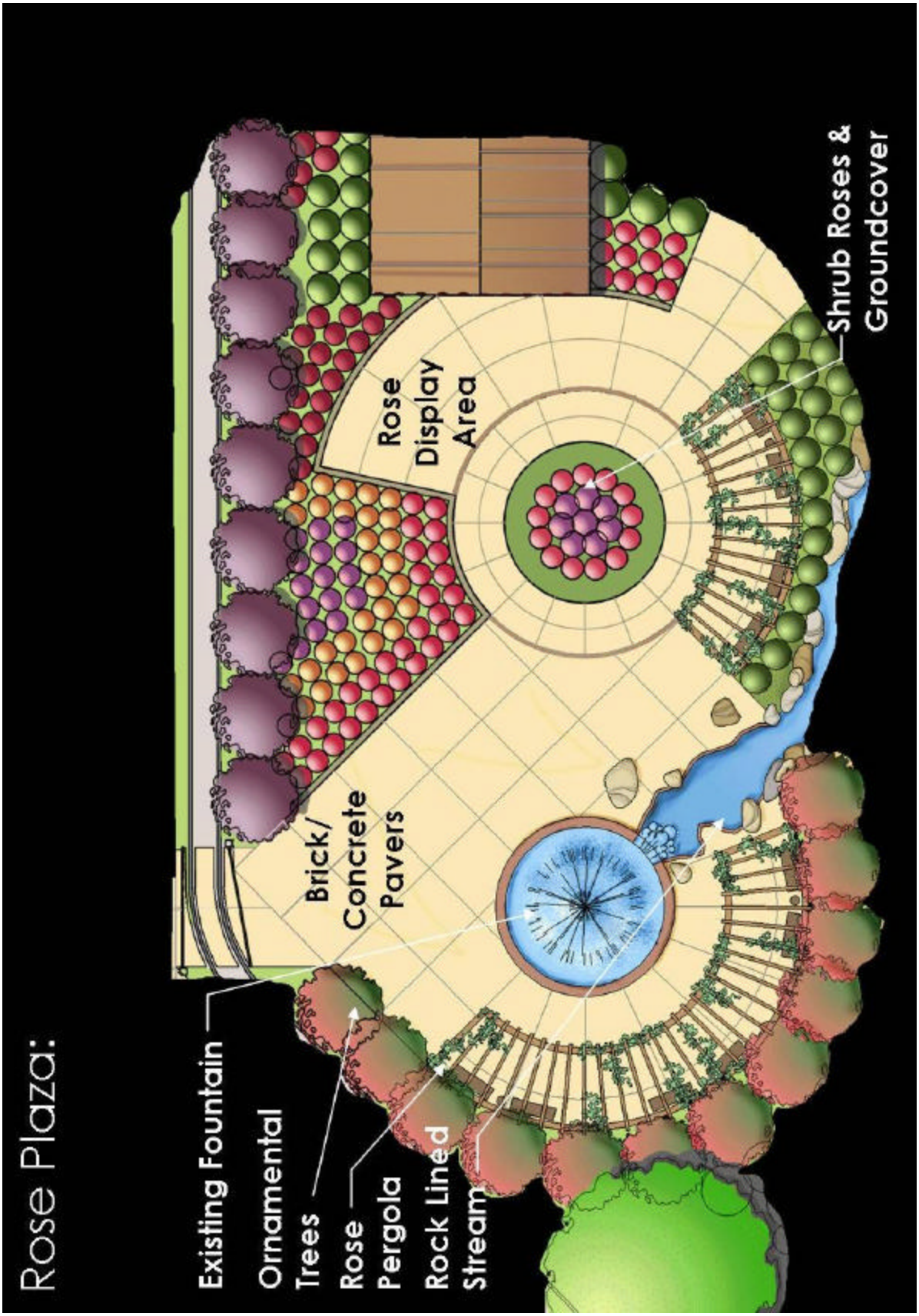
  The former Zoo herpetarium should be renovated to provide space for arboretum maintenance, demonstrations, winter indoor storage for non-hardy plant species and the like. The interior of the building should be refinished to provide an environment similar to a nursery holding area or greenhouse. Skylights should be installed in the roof of the existing metal building to provide sunlight into the interior of the building.

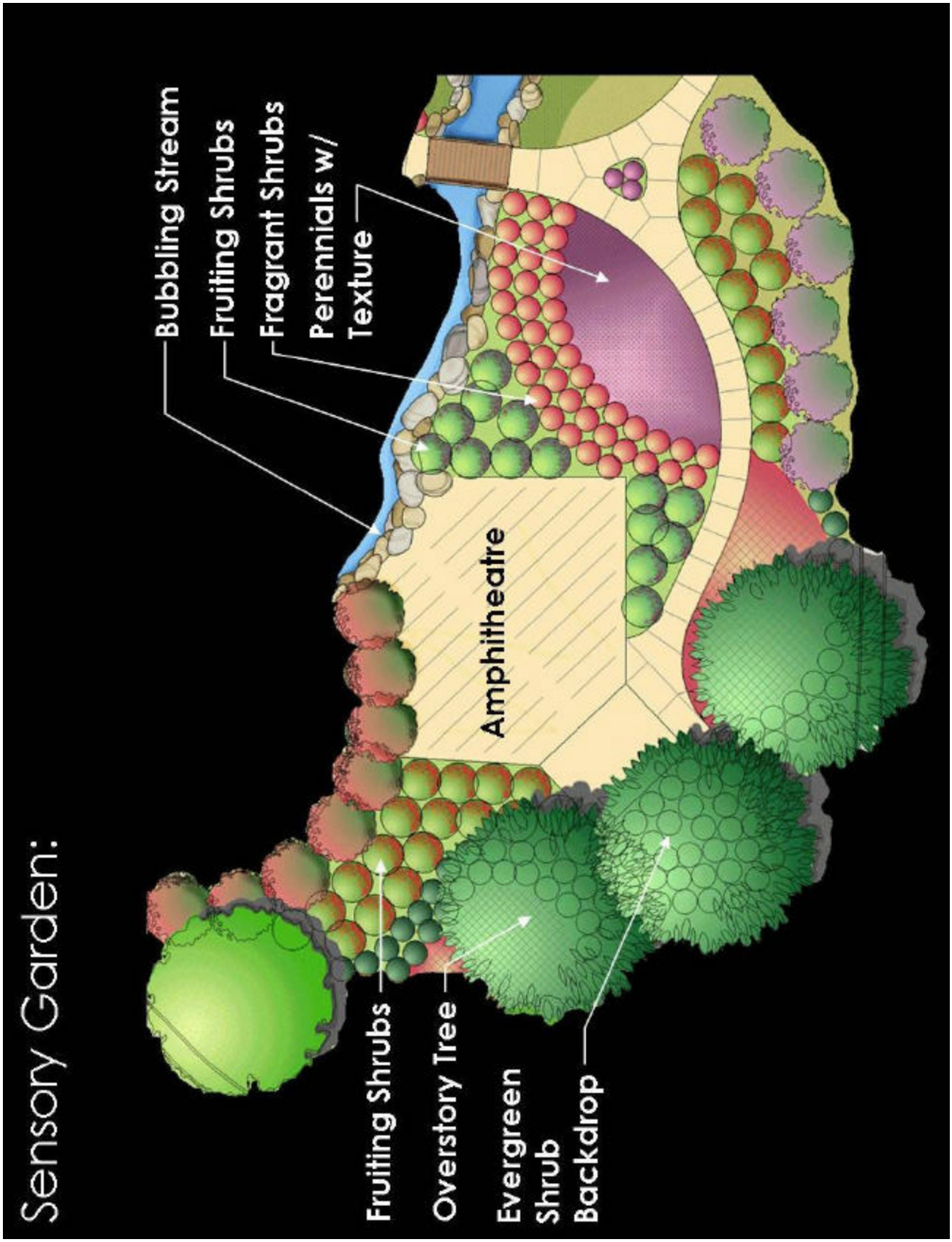
- A path that would cross the arboretum stream to the south of the Rose Plaza would connect to the **Sensory Garden**. The Sensory Garden would be located to the south and east of the Rose Plaza at the current location of the amphitheatre. The recently completed community playground is located beyond the arboretum perimeter, to the east of the Sensory Garden. This setting is ideal for the development of the Sensory Garden, since this area will be able support numerous children's activities at the arboretum.

  The existing amphitheatre will be the primary focus of the Sensory Garden. This facility could serve as the primary outdoor educational setting at the arboretum. It could be accommodate demonstrations, classes, lectures and entertainment. The landscape surrounding the amphitheatre would be developed to include plants that provide fragrance, color, fruit, texture and sound. Large evergreen trees should be planted at the back of the amphitheatre stage to provide a natural visual and sound buffer between the adjacent playground and railroad track.

  Pedestrian lighting should be provided in this area for dusk or evening events. Electrical capacity for stage and event lighting should also be installed. Conduit and wiring for sound reinforcement systems should also be considered.

  Due to the likelihood that numerous young children, strollers, elderly and physically challenged persons may attend events at the amphitheatre, all pavements in the Sensory Garden should be paved. It is recommended that all main path surfaces in the arboretum with the exception of plaza or entrance areas should be paved with concrete for ease of maintenance, and cost considerations.


Rose Plaza:
Existing Fountain
Ornamental Trees
Rose Pergola
Rock Lined Stream
Brick/ Concrete Pavers
Rose Display Area
Shrub Roses & Groundcover


Sensory Garden:
Bubbling Stream
Fruiting Shrubs
Fragrant Shrubs
Perennials w/ Texture
Amphitheatre
Fruiting Shrubs
Overstory Tree
Evergreen Shrub Backdrop

Located directly to the east of the Sensory Garden entrance at the south perimeter of the arboretum is the recommended site of the **Prairie Garden**. The Prairie Garden is a small area that borders the arboretum stream. A concrete path would be routed through the center of the Prairie Garden. Native grasses and wildflowers would be planted on either side of the path so that visitors to the arboretum could experience a short simulated walk through one of Nebraska's predominant historical landscapes. No trees would be planted in this area.

- The **Perennial Garden** is located to the north of the Prairie Garden, across the arboretum stream. It is connected to the Rose Plaza, which is located to the west. The Perennial Garden is a small area that would be devoted to the display of low-maintenance perennial plants. Access through this area would be provided by a large, curvaceous paved area. The surface would be constructed of flagstone.

  The perennial display area to the south of the flagstone pavement would be planted with perennials that prefer lowland or wetland environments since this planting area is located adjacent to the arboretum stream. A few multi-stemmed ornamental trees and shrubs would be planted in this bed as well in order to provide some filtered shade for the perennials. The display area to the north of the pavement would be planted with perennials that prefer dryland environments.

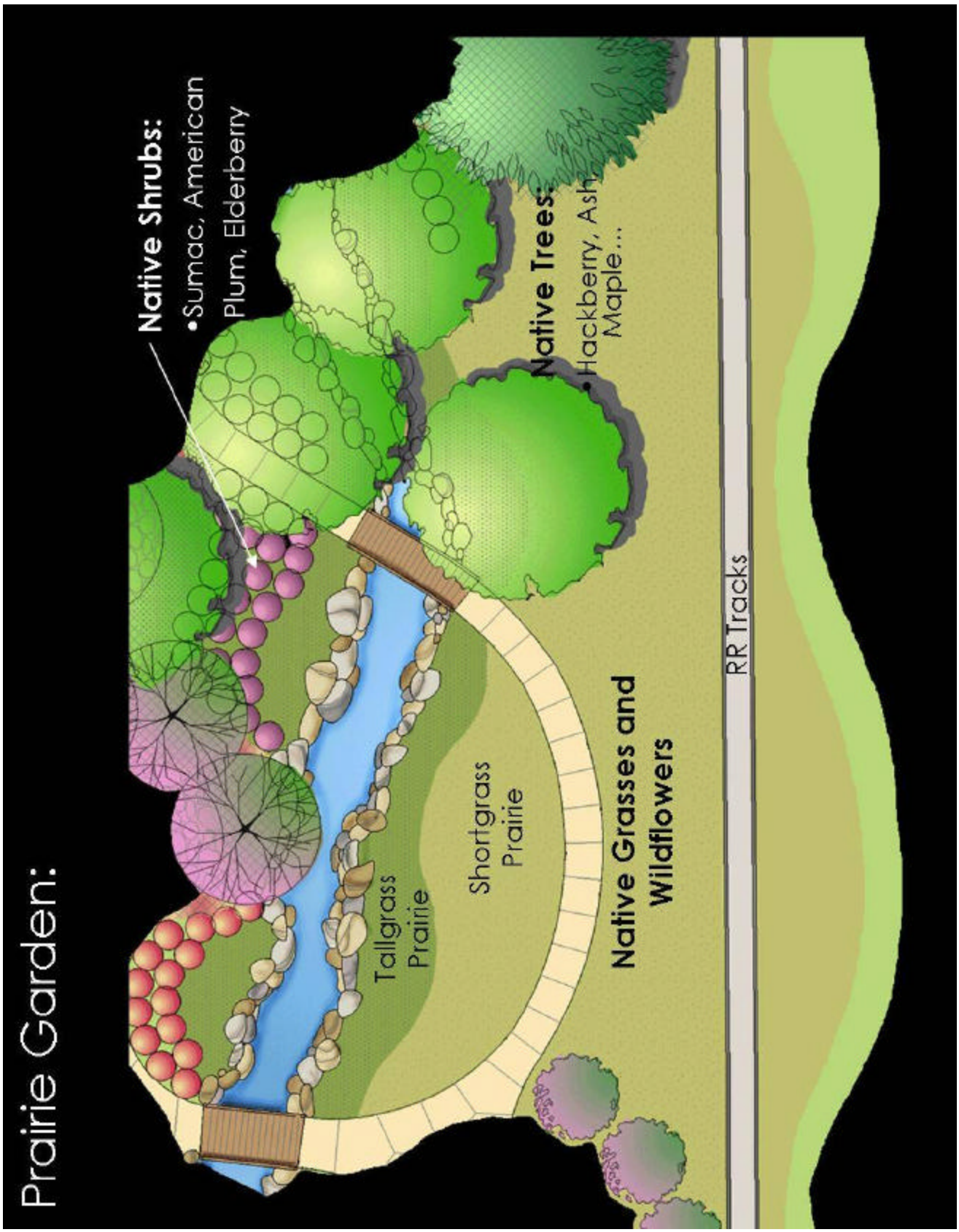
  The Perennial Garden is designed to provide an interactive, colorful and educational display area at the arboretum. However, it has also been designed to act as the western terminus to the main view corridor at the arboretum. The eastern terminus of this view corridor is the Alpine Garden Plaza. Between the areas lie the Wetland Garden, and the Children's Garden. A person standing at the Perennial Garden would be able to look through the Children's Garden and Wetland Garden to the Alpine Garden. This feature connects four of the arboretum's most important spaces and provides a sense of orientation for visitors.

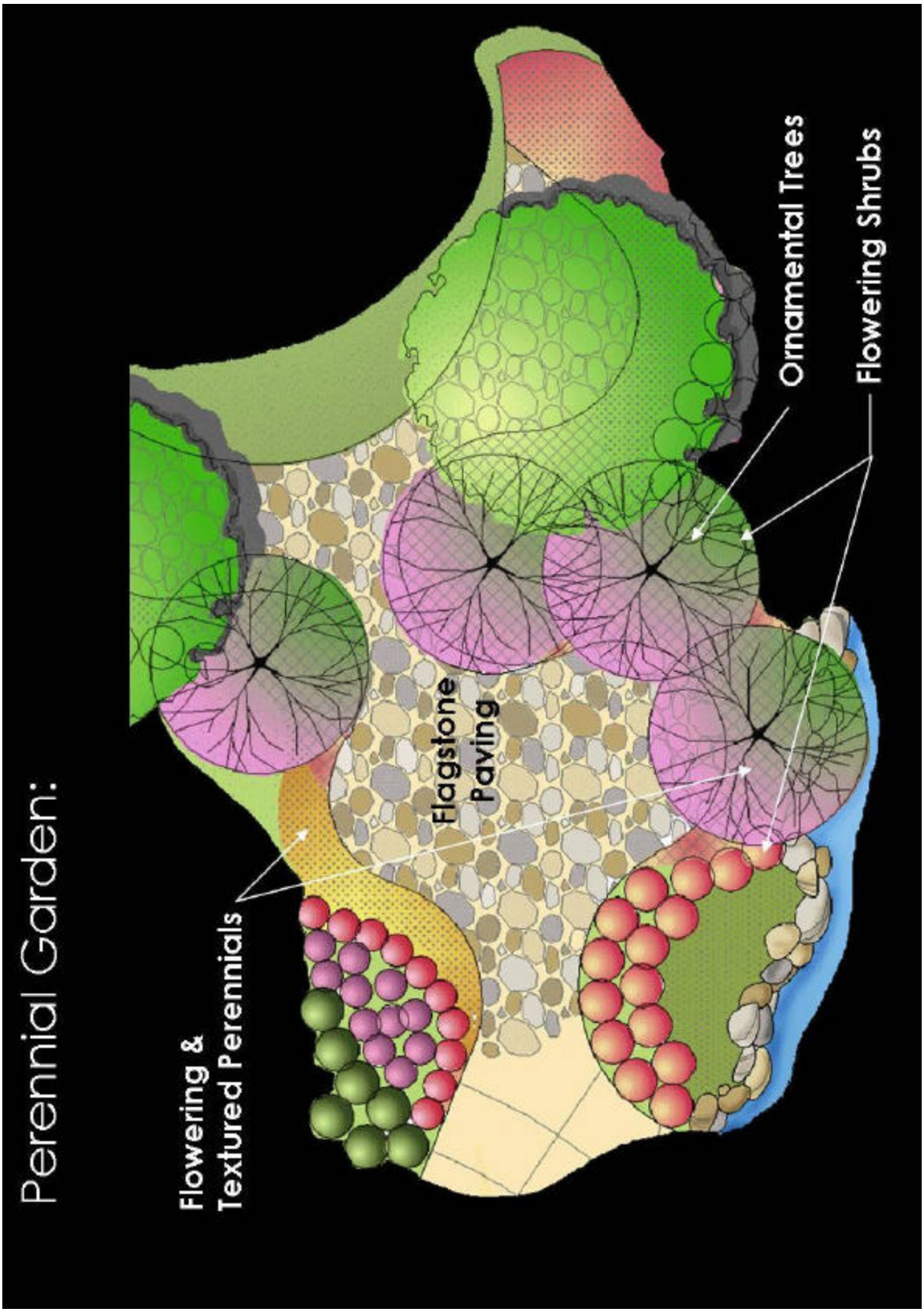
- Located directly to the east of the Perennial Garden is the **Children's Garden**. The Children's Garden is designed to be a playful environment. The eastern edge of the flagstone path that provides access through the Perennial Garden would convert into a manicured, bluegrass or turf fescue lawn that acts as the central area of the Children's Garden. This oval shaped lawn would be bordered by overstory and ornamental trees.

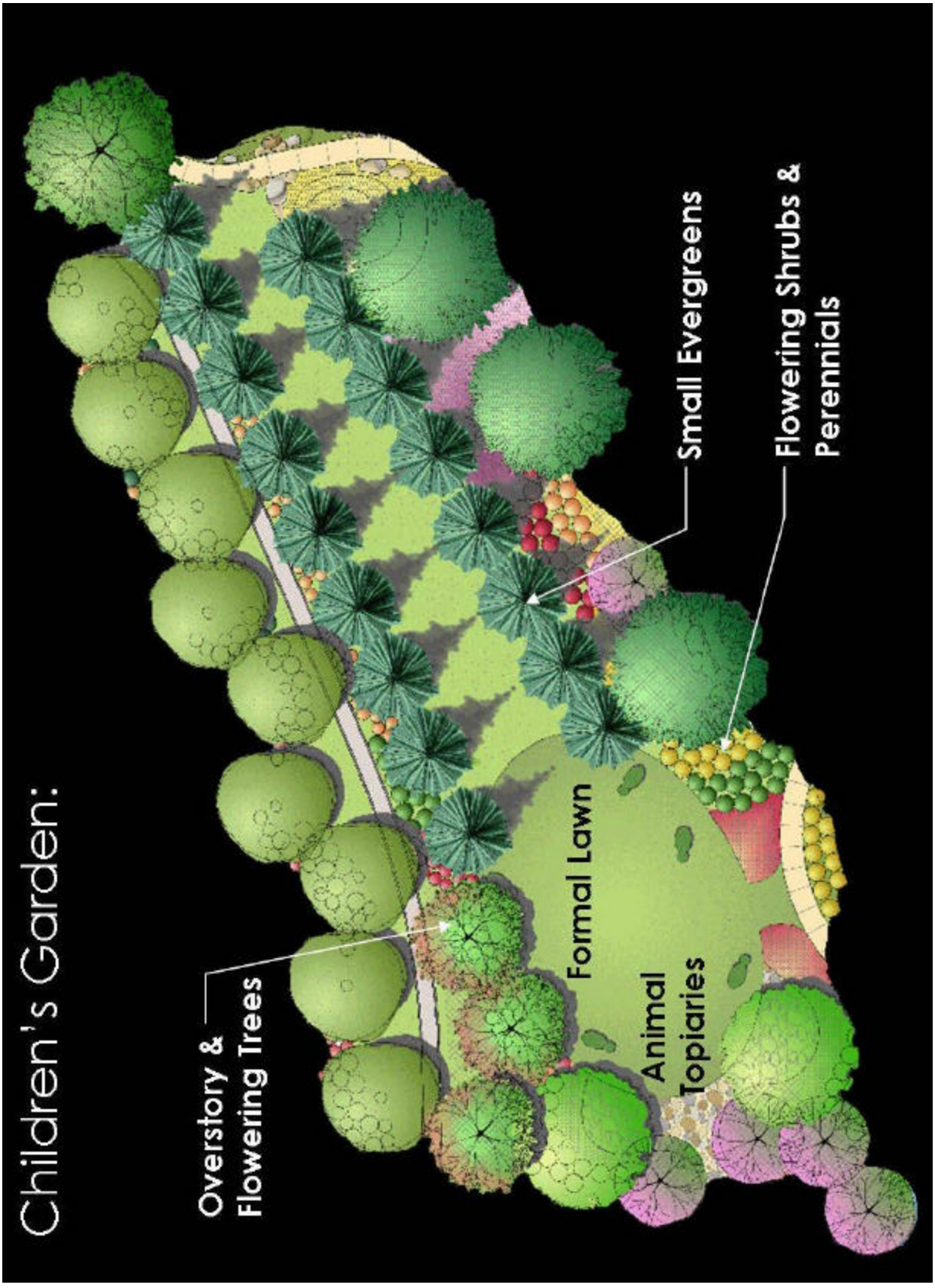
  Animal topiaries would be constructed and placed at the perimeter of the lawn. Animal forms to be used should include familiar and unfamiliar grazers, such as cattle, deer, bison, elk, horses, camels, etc. The lawn would be designed for visitor access and use.

  As the lawn progresses to the east, it becomes linear. The width of the lawn narrows from west to east to create a forced perspective view. This design feature has been utilized throughout history and represents features that can still be seen in many European arboretums and gardens. Evergreen trees would border the linear portion of the lawn to create a formal space. Flowering shrubs and perennials would be planted at the base of the evergreen trees to provide a complete buffer between this area and the Woodland Garden located to the south.

- The **Woodland Pocket Garden** is located to the south of the Children's Garden, south of the arboretum stream. The Woodland Pocket Garden is a very small, shady area that is embedded in the larger Woodland Garden. It would be planted with a variety of shade-tolerant shrubs, perennials and groundcovers. It would also be a location for sculpture placement and benches. A small gravel path should provide access through the area. It should be known as a pleasant place at the arboretum to rest, pause, and relax.


Prairie Garden:
Native Shrubs:
•Sumac, American Plum, Elderberry
Native Trees:
•Hackberry, Ash, Maple...
Tallgrass Prairie
Shortgrass Prairie
Native Grasses and Wildflowers
RR Tracks


Perennial Garden:
Flowering & Textured Perennials
Flagstone Paving
Ornamental Trees
Flowering Shrubs


Children's Garden:
Overstory & Flowering Trees
Formal Lawn
Animal Topiaries
Small Evergreens
Flowering Shrubs & Perennials

The Woodland Pocket Gardent should be designed to be a desirable, intimate location to sit in the shade and listen to the adjacent stream, songbirds or the breeze rustling the leaves of the shade trees above. It should be designed so that the temperature difference between this environment and a sunny area at the arboretum could approach ten or more degrees (cooler).

Initially, at the inception of the arboretum development, the Woodland Pocket Garden should be planted with species that will tolerate a large amount of sun or not planted at all. Until the Woodland Garden is established overhead, shade-tolerant species will not survive in the Woodland Pocket Garden area. Many years or decades of growth will be required in the Woodland Garden to provide an environment that will support the Woodland Pocket Garden.

- The **Woodland Garden** occupies the largest amount of space in the arboretum. This is due to the fact that numerous overstory deciduous tree species that exhibit wide-spreading canopies at maturity will need to be planted in the area in order to create a woodland environment. Unlike many commercial landscapes, this area at the arboretum should exhibit spacing for trees as close as twenty or twenty-five feet. This type of spacing, over time, will create a shady, woodland environment. Numerous shrubs and small ornamental trees should also be planted in this area so that a variety of woody plant types can be displayed.

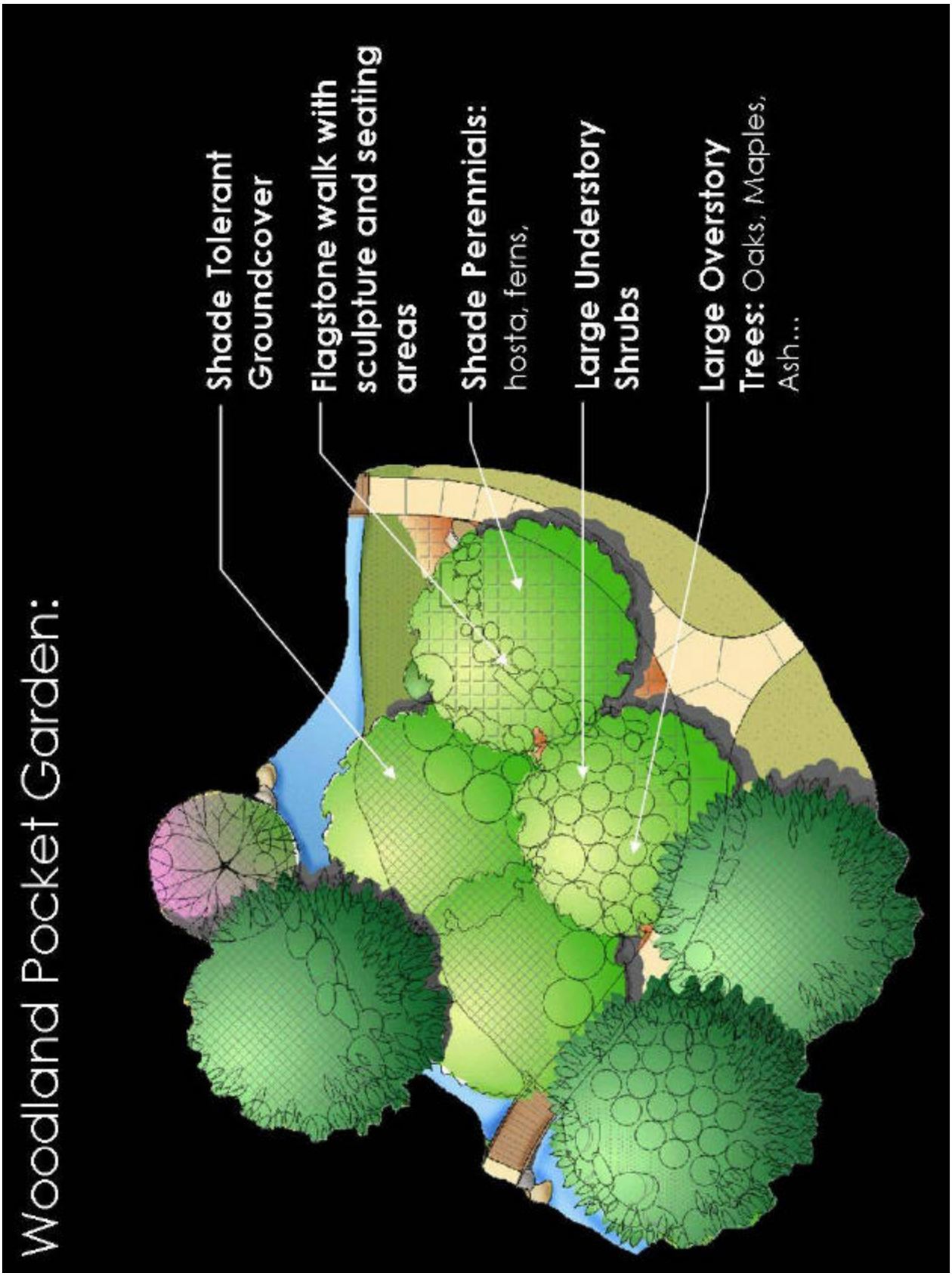
  The Woodland Garden is located south of the arboretum stream, between the stream and the south perimeter fence in the middle part of the site. It is bordered to the west by the Prairie Garden (which should create a memorable contrast for visitors to experience) and to the east by the Heritage Garden. Two primary paths would carry visitors through the Woodland Garden. Both should be constructed with concrete for low maintenance. However, it would be desirable for a combination of turf and groundcover to be established below the overstory trees so that visitors could also walk throughout the area on a natural surface if they so choose.

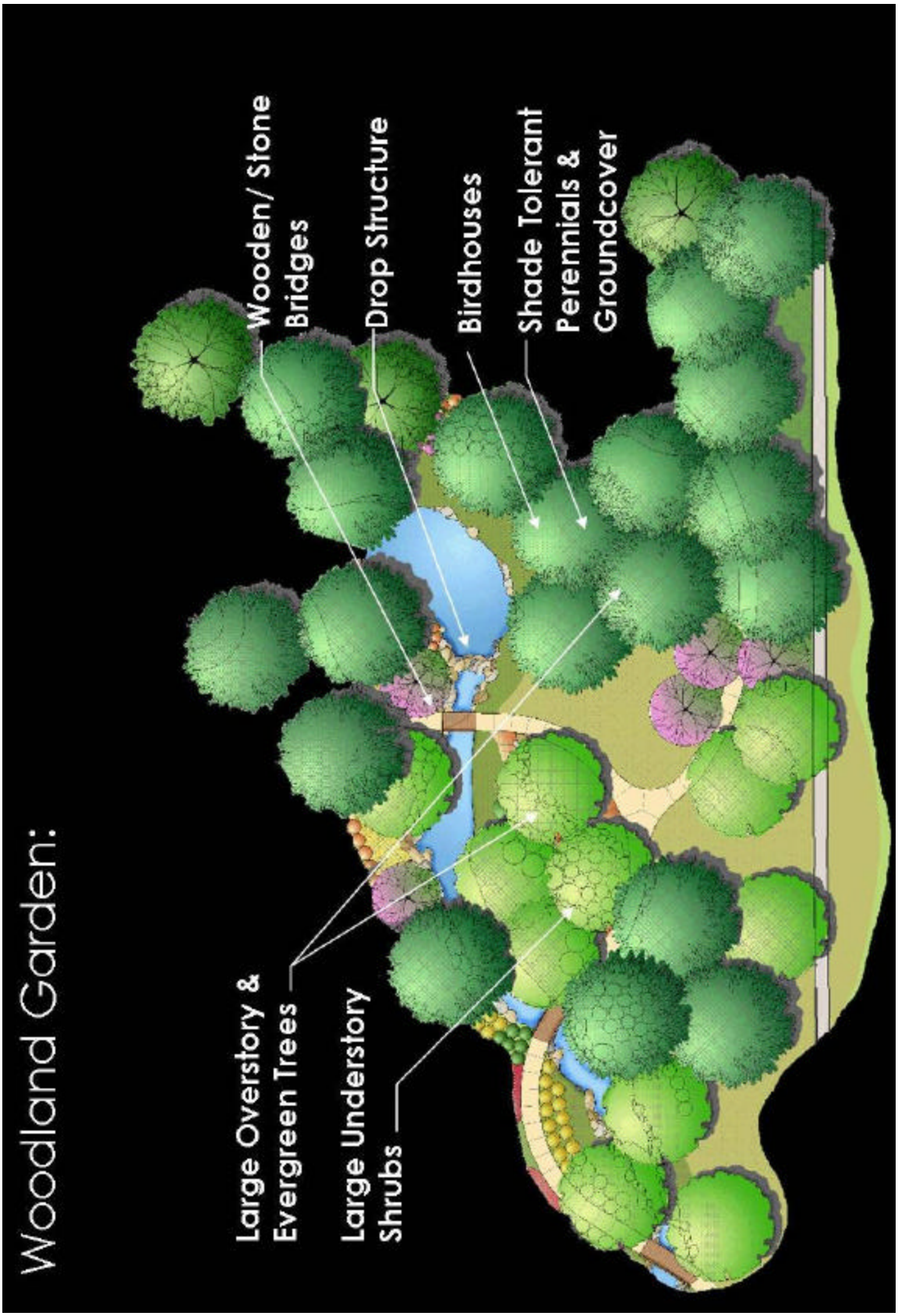
  As the western path that is routed through the Woodland Garden approaches the Water/Wetland Garden, it would follow the arboretum stream. At this location the arboretum stream would widen, and a series of drop structures could be constructed to provide some low falls. These drop structures would provide the pleasant sound of trickling water, and would help set the stage for the next arboretum garden area.

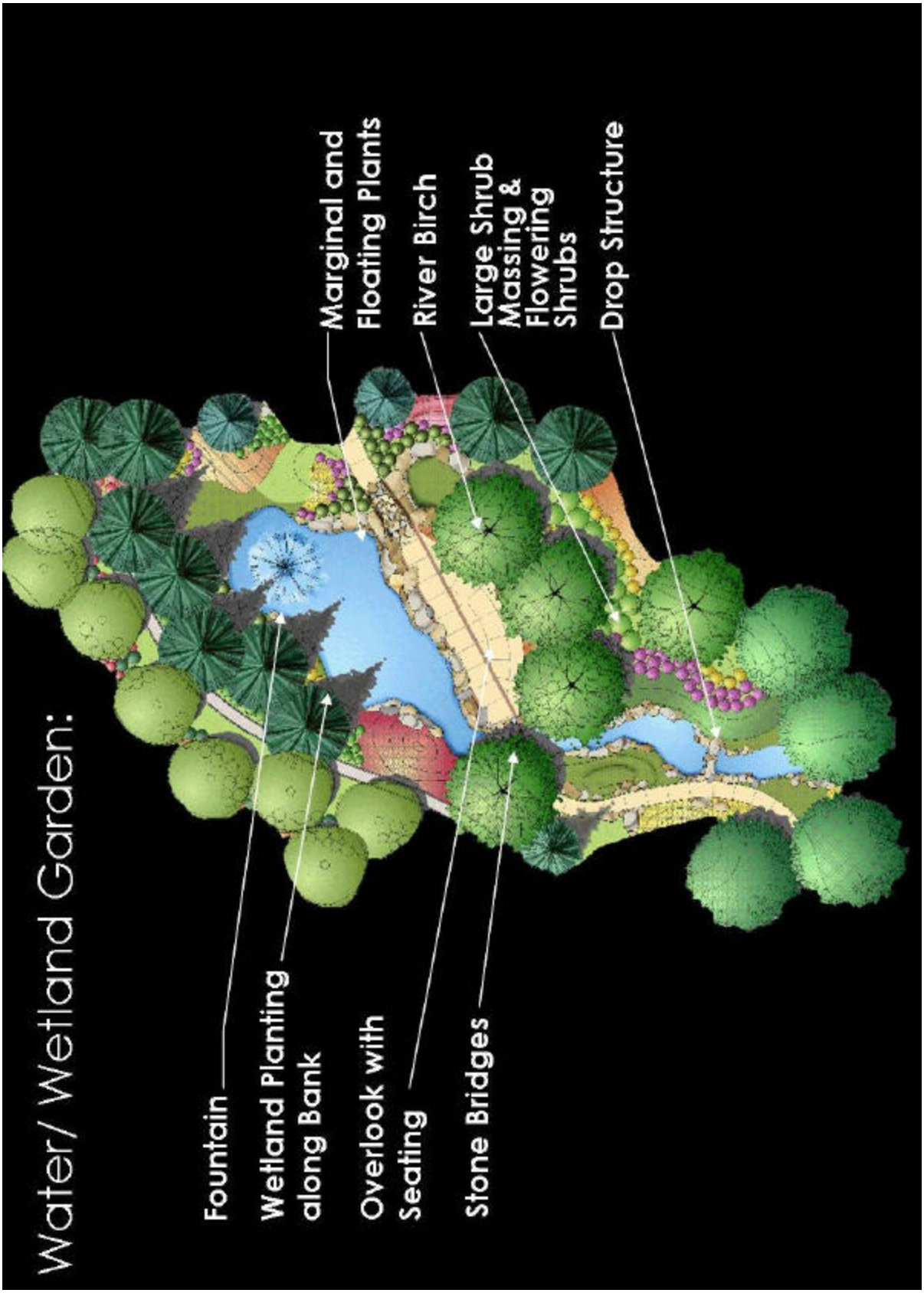
- Located to the north of the Woodland Garden, across the arboretum stream is the **Water/Wetland Garden**. This garden is situated at and around the former Zoo duck pond. The existing pond would be renovated, and the banks of the pond would then be planted with wetland species. The pond itself could be renovated to support a variety of marginal and floating plants, including hardy water lilies. A water fountain should be located in the pond to assist with aeration and water quality.

  Visitors who would enter this area of the arboretum from the Woodland Garden to the south would cross the arboretum stream over a stone bridge. The path would widen at this location and a seating area that would overlook the pond would be developed. To the rear of the seating area (south) a series of earth mounds could be constructed to separate this garden from the Heritage Garden and future ice rink. Trees would provide shade at this seating location as views to the pond (to the north) or back to the Children's Garden (to the west) would be available. The seating area pavement would merge into a rocky pond edge that would also act as a safety barrier so that visitors could get a close-up view of the aquatic plants. Fish should be introduced to the pond to enhance this garden experience.

- The **Heritage Garden** is located directly to the east of the Woodland Garden. It would be designed around a series of secondary, gravel walkways that are intertwined with the main concrete arboretum path. Each gravel walkway would define a small planting area that would display introduced plants


Woodland Pocket Garden:
Shade Tolerant Groundcover
Flagstone walk with sculpture and seating areas
Shade Perennials: hosta, ferns,
Large Understory Shrubs
Large Overstory Trees: Oaks, Maples, Ash...


Woodland Garden:
Large Overstory & Evergreen Trees
Large Understory Shrubs
Wooden/ Stone Bridges
Drop Structure
Birdhouses
Shade Tolerant Perennials & Groundcover


Water/ Wetland Garden:
Fountain
Wetland Planting along Bank
Overlook with Seating
Stone Bridges
Marginal and Floating Plants
River Birch
Large Shrub Massing & Flowering Shrubs
Drop Structure

that were brought to Nebraska from other locations by previous generations. These types of plants include, daylilies, peonies, iris, bulbs, perennial garden fruits and vegetables such as rhubarb, and the like.

This area would be open and sunny. Volunteer garden organizations could be enlisted to help with the planting and maintenance of this area. Demonstrations could be held at different times of the year. Perhaps a partnership and connection with the Stuhr Museum could be made with the display of these plantings.

- The **Alpine Garden Plaza** is located at the northeast corner of the arboretum site. It would be positioned south of the former Zoo Diet and Care Center, which would be renovated for storage and support for the proposed ice rink. It is recommended that a second train depot be considered for construction to the east of the Alpine Garden Plaza. This depot location could be used for a drop-off and pick-up location for skaters that would function in tandem with the previously discussed depot location near the existing parking lots located near the arboretum entrance to the west.

  The Alpine Garden Plaza would be designed to provide a large open plaza space for gatherings, ice rink open space and the like. The surface of the plaza should be constructed with unit pavers (brick or concrete). It should be designed to accommodate adequate seating, a fire ring (for cool autumn, winter and spring evenings), pedestrian lighting and banner poles. It should exhibit a festive atmosphere. Electrical capacity should be designed to accommodate extensive Christmas lighting. Conduit and wiring should be considered for a public address system, including the ability to play music.

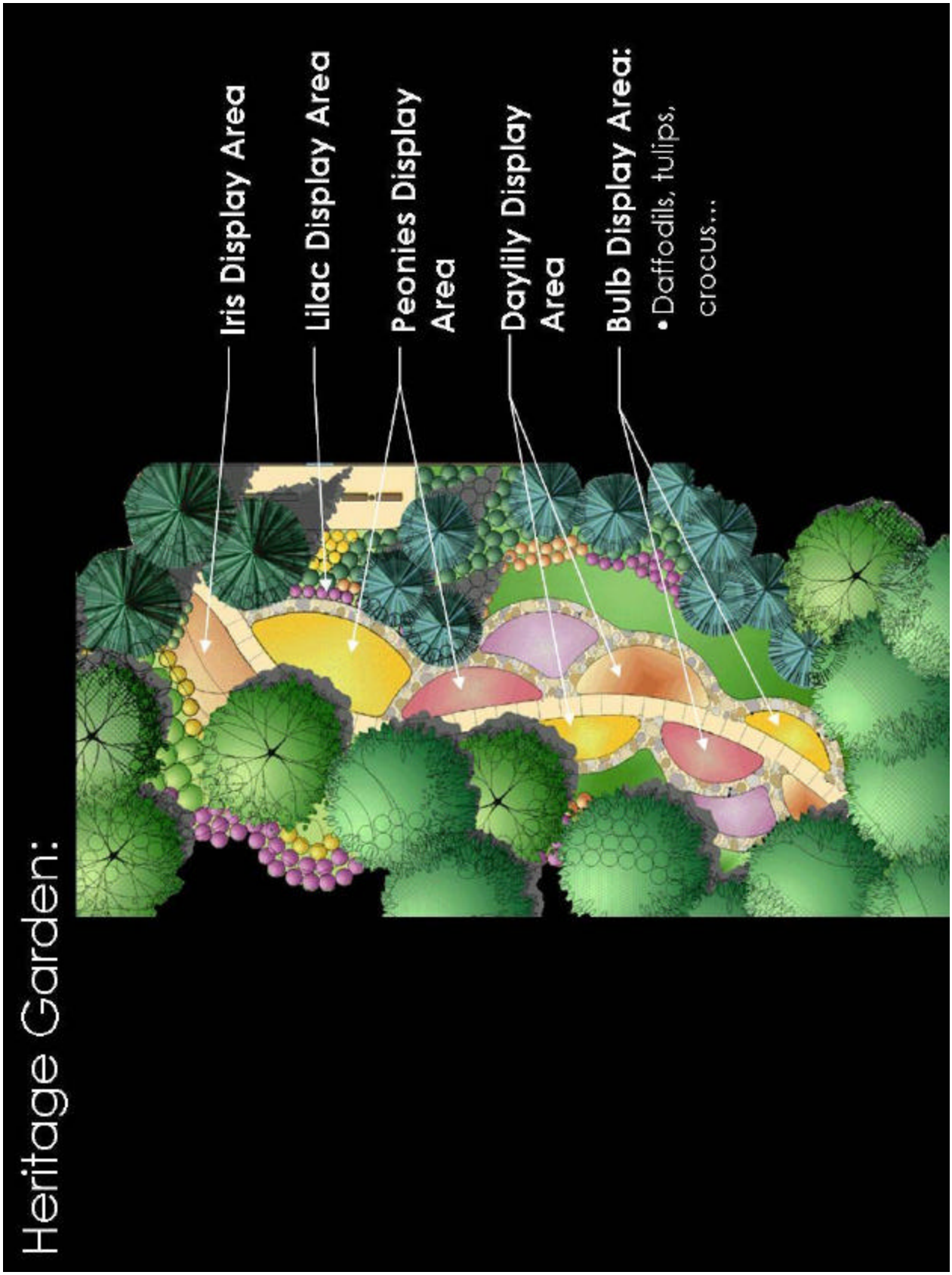
  The planting areas that surround the plaza should be constructed with large rock outcroppings. Evergreen trees and alpine plants (or plants that exhibit the texture and form of alpine plants) should be installed among the rock outcroppings.

- Prior to the construction of any major arboretum features, including planting, portions of the existing infrastructure at the site, including water distribution, electrical, sanitary sewer and storm sewer will need to be upgraded. Increased capacities to accommodate larger load demands for water, storm sewer and electrical will be especially critical. It will be advantageous for much of this construction to be completed prior to extensive development of arboretum facilities so that there are minimal impacts to the finished portions of the project.

- A minimal amount of earthwork operations will be necessary to prepare for the construction of the arboretum on this site. In addition, a minimal amount of demolition will be required to prepare the site. The existing fountain will require some demolition and repair, as will portions of the existing stream and pond. New bridge work will be required. And new earth mounds should be constructed near the Water/Wetland Garden and Alpine Garden Plaza. Finally, most of the existing site should be prepared for planting as garden areas are installed. Existing natural areas should be worked and soil amendments incorporated into new planting areas.

- Infrastructure for a new irrigation system should be constructed prior to any garden area implementation. Irrigation main lines should be installed at the outset. Ideally, each garden area should be controlled individually so that the different requirements for each planting type can be incorporated into the design. Following is a general description of the irrigation systems required for each garden area:

  Formal Garden- All planting beds in the Formal Garden should exhibit a permanent, automated irrigation system with shrub spray heads. Quick coupler valves should be


Heritage Garden:
Iris Display Area
Lilac Display Area
Peonies Display Area
Daylily Display Area
Bulb Display Area:
• Daffodils, tulips, crocus...


Alpine Garden Plaza:
Rock Outcropping
Shrubs & Perennials among Outcroppings
Seating
Evergreen Trees
Ice-skating Rink Entrance
Brick/ Concrete Pavers

located near pavements so that supplemental watering of shrubs and ground covers can occur during drought, and so that pavements can be washed if required. Overspray of pavements in this area should be avoided.

Rose Plaza- All planting beds in the Rose Plaza should exhibit a permanent, automated irrigation system with low trajectory shrub spray heads, or drip irrigation lines. It is important to apply water to roses without spraying foliage, if possible. Quick coupler valves should be located near pavements so that supplemental watering and pavement washing can occur, if necessary. Overspray of pavements in this area should be avoided.

Sensory Garden- Planting beds in the Sensory Garden that are located adjacent to amphitheatre seating areas should exhibit a permanent, automated irrigation system with shrub spray heads or drip irrigation lines. Quick coupler valves should be located near the seating areas. Overspray of pavements in this area should be avoided. The large areas behind the amphitheatre stage and between the railroad tracks and the garden could be irrigated with large lawn rotor type sprinkler heads.

Prairie Garden- Quick coupler valves should be located near the Prairie Garden pathways. No other type of irrigation system is required at this area. Once established, this area should not require supplemental water.

Perennial Garden- A drip irrigation system should be installed in this area.

Children's Garden- Lawn rotor type spray heads should be utilized to provide coverage for the turf and planting areas in the Children's Garden. This system should be automated.

Woodland Pocket Garden- A drip irrigation system should be installed in this area.

Woodland Garden- Lawn rotor type spray heads should be utilized to provide coverage for the turf and planting areas in the Woodland Garden. This system should be automated.

Water/Wetland Garden- Planting areas in the Water/Wetland should exhibit a permanent, automated irrigation system.

Heritage Garden- A drip irrigation system should be installed in this area. Quick coupler valves should be located near the seating areas. Overspray of pavements in this area should be avoided.

Alpine Garden Plaza- A drip irrigation system should be installed in this area. Quick coupler valves should be located near the seating areas. Overspray of pavements in this area should be avoided.

- The former Zoo stream that connected the formal water fountain to the duck pond should be preserved. It will need to be renovated to create a more nature setting for an arboretum site, but the routing of the stream works well with the arboretum concept. Rock ledges should be constructed along the edge of the stream, and the stream bed itself should be lined with rock and gravel. Planting areas should be developed directly adjacent to the stream so that they are integrated naturally with it. Any required repairs to the stream bed so that it will hold water should also be made. Renovations and modifications to the mechanical systems that make the stream functional should also be made.

- Two train depots are indicated on the master plan. It is not mandatory that both are constructed. However, it would be convenient in the future, as the arboretum gains popularity to have two stops for train access, especially to assist with access from existing parking lots to the ice rink. The train depots are not enclosed, conditioned buildings. Rather they should be designed and constructed as open air shelters to provide shade for waiting visitors. The depot near the main entrance could be designed to reflect a traditional Midwestern depot. The depot near the ice rink could be designed to reflect a depot building that might be observed in the Colorado Rockies, since it is located adjacent tot he Alpine Garden Plaza.

- The community picnic pavilion is shown to be located north of the former Zoo entrance building, between it and the Castle. This is the current location of a park road, but it is recommended that this road be removed between the existing parking lot to the east and the existing parking lot to the west. Those parking lots would be connected by a new park road that would be routed to the north of the Stolley house. This would provide ample space to accommodate a new arboretum entrance and the community picnic pavilion with excellent adjacencies to the community playground and arboretum/park visitor center.

- Numerous bridge crossings over the arboretum stream are indicated in the master plan. Most of these crossings should be made with prefabricated wood bridge trusses. These would fit nicely with the other arboretum features and plantings. However, at the Water/Wetland Garden crossings, the bridges should be constructed with stone. The stone bridges would enhance the effect of stone ledges, walls and stream banks in this area.

- All of the arboretum garden areas have been described previously. However, a large number of planting areas located at the perimeter of the arboretum have not been described because they are not a part of any of the themed planting areas. Nevertheless, these perimeter areas are as important as any planned for the arboretum. They provide a natural buffer from the train tracks, and also provide a visual screen between the interior of the arboretum and the adjacent neighborhood. They will help soften the effect of the perimeter fencing. At the north edge of the arboretum, the perimeter plantings will screen the effect of the adjacent parking lot.

BUDGET

Cost figures presented in this master plan are estimates, not final construction costs. These figures are presented to assist in the development of project budgets. Estimated costs are based on experience with similar projects, industry standards, and information provided by project landscape architects, architects and engineers. Figures are stated in terms of today's dollars (2004). A list of estimated costs for projects is shown in Exhibit B.

LANDSCAPE MASTER PLAN

STOLLEY PARK ARBORETUM

EXHIBIT A

GRAND ISLAND, NEBRASKA

January, 2004

The Clark Enersen Partners
Architecture
Landscape Architecture
Engineering
Interiors

EXHIBIT A: DESIRED PLANT SPECIES (JANUARY 2004)

Abies concolor	**Concolor Fir**
Acer campestre	**Hedge Maple**
Acer ginnala	**Amur Maple**
	Flame
Acer platanoides	**Norway Maple**
	Columnare
	Crimson King
	Emerald Queen
	Summershade
Acer rubrum	**Red Maple**
	Armstrong
	Autumn Blaze
	Red Sunset
Acer saccharinum	**Silver Maple**
	Blair
	Silver Queen
Acer saccharum	**Sugar Maple**
	Bonfire
	Green Mountain
Acer tataricum	**Tatarian Maple**
Acer truncatum	**Shantung Maple**
	Pacific Sunset
Aesculus hippocastanum	**Horsechestnut**
Alnus glutinosa	**Alder**
Amelanchier arborea	**Serviceberry**
	Autumn Brilliance
	Cole
	Princess Diana
Amelanchier alnifolia	**Saskatoon Serviceberry**
	Regent
Aronia arbutifolia	**Red Chokeberry**
	Brilliantissima
Aronia melanocarpa	**Black Chokeberry**
	Viking
	Iroquois Beauty
Berberis koreana	**Korean Barberry**
Berberis thunbergii	**Japanese Barberry**
	Var. atropurpurea
	Var. a. Crimson Pygmy
	Var. a. Rose Glow
	Kobold
	Sparkle
Betula lenta	**Sweet Birch**
Betula nigra	**River Birch**
	Heritage
Calycanthus floridus	**Sweetshrub**
Caragana arborescens	**Siberian Peashrub**
Carpinus betulus	**Hornbeam**
Carpinus caroliniana	**American Hornbeam**

Carya cordiformis	**Bitternut Hickory**
Carya glabra	**Pignut Hickory**
Carya ovata	**Shagbark Hickory**
Carya tomentosa	**White Hickory**
Catalpa speciosa	**Northern Catalpa**
Ceonothus americanus	**New Jersey Tea**
Celtis occidentalis	**Hackberry**
	Prairie Pride
Cercidiphyllum japonicum	**Katsuratree**
Cercis canadensis	**Redbud**
	Var. alba
Chaenomeles speciosa	**Floweringquince**
	Cameo
	Jet Trail
	Texas Scarlet
Chionanthus virginicus	**White Fringtree**
Cladrastis kentukea	**American Yellowwood**
Clethra alnifolia	**Summersweet Clethra**
	Hummingbird
	Pink Spires
Cornus alba	**Tatarian Dogwood**
Cornus amomum	**Silky Dogwood**
Cornus kousa	**Kousa Dogwood**
	Var. chinensis
Cornus mas	**Corneliancherry Dogwood**
	Golden Glory
Cornus racemosa	**Gray Dogwood**
Cornus sanguinea	**Bloodtwig Dogwood**
Cornus sericea	**Redosier Dogwood**
	Baileyi
	Cardinal
	Flaviramea
	Isanti
	Kelseyi
Corylus americana	**American Filbert**
Cotinus coggygria	**Smoketree**
	Daydream
Cotoneaster apiculatus	**Cranberry Cotoneaster**
Cotoneaster divaricatus	**Spreading Cotoneaster**
Cotoneaster lucidus	**Hedge Cotoneaster**
Cotoneaster multiflorus	**Many-flowered Cotoneaster**
Cotoneaster acutifolius	**Peking Cotoneaster**
Crataegus crusgalli	**Cockspur Hawthorn**
Crataegus phaenopyrum	**Washington Hawthorn**
Deutzia gracilis	**Slender Deutzia**
Euonymus alatus	**Winged Euonymus**
	Compactus
	Nordine Strain
	Rudy Haag
Euonymus atropurpureus	**Eastern Wahoo**
Euonymus fortunei	**Wintercreeper Eunonymus**
	Var. coloratus
	Var. radicans

Forsythia ovata	**Early Forsythia**
	Meadowlark
	Northern Gold
	Northern Sun
	New Hampshire Gold
	Sunrise
	Vermont Sun
Fraxinus americana	**White Ash**
	Autumn Applause
	Autumn Blaze
	Autumn Purple
Fraxinus pennsylvanica	**Green Ash**
	Cimmaron
	Emerald
	Marshall's Seedless
	Patmore
	Summit
Ginkgo biloba	**Ginkgo**
	Autumn Gold
	Princeton Sentry
Gleditsia triacanthos var. inermis	**Honeylocust**
	Imperial
	Moraine
	Shademaster
Gymnocladus dioicus	**Kentucky Coffeetree**
Hamamelis vernalis	**Vernal Witchhazel**
Hamamelis virginiana	**Common Witchhazel**
Hydrangea arborescens	**Smooth Hydrangea**
	Annabelle
Hydrangea paniculata	**Panicle Hydrangea**
	Grandiflora
	Pee Wee
Hypericum prolificum	**Shrubby St. Johnswort**
Ilex x meserveae	**Meserve Holly**
	Blue Princess
	China Girl
Ilex verticillata	**Winterberry Holly**
	Afterglow
	Red Sprite
	Winter Red
Itea virginica	**Virginia Sweetspire**
	Henry's Garnet
Juglans cinera	**Butternut**
Juglans nigra	**Black Walnut**
Juniperus chinensis	**Chinese Juniper**
	Armstrong
	Hetzii
	Mint Julep
	Pfitzeriana
	Sea Green

Juniperus horizontalis	**Creeping Juniper**
	Bar Harbor
	Blue Chip
	Blue Rug
	Plumosa
Juniperus sabina	**Savin Juniper**
	Broadmoor
	Skandia
Juniperus scopulorum	**Rocky Mountain Juniper**
	Cologreen
	Skyrocket
Juniperus virginiana	**Eastern Redcedar**
	Canaertii
	Hillspire
	Taylor
Koelreuteria paniculata	**Goldenraintree**
Lavandula angustifolia	**Lavender**
Ligustrum amurense	**Amur Privet**
Liriodendron tulipifera	**Tuliptree**
Lonicera japonica	**Japanese Honeysuckle**
	Halliana
Lonicera xylosteum	**European Fly Honeysuckle**
	Emerald Mound
Magnolia acuminata	**Cucumbertree Magnolia**
	Elizabeth
	Ontario
Magnolia kobus	**Kobus Magnolia**
Magnolia x loebneri	**Loebner Magnolia**
	Leonard Messel
	Merrill
Magnolia stellata	**Star Magnolia**
	Royal Star
Malus sp.	**Flowering Crabapple**
	Prairiefire
	Robinson
	Selkirk
	Snowdrift
	Spring Snow
Metasequoia glyptostroboides	**Dawn Redwood**
Myrica pensylvanica	**Northern Bayberry**
Phellodendron amurense	**Amur Corktree**
Philadelphus coronarius	**Sweet Mockorange**
Philadelphus x virginalis	**Mockorange**
	Minnesota Snowflake
Picea abies	**Norway Spruce**
Picea glauca	**White Spruce**
	Densata
Picea omorika	**Serbian Spruce**
Picea pungens	**Colorado Spruce**
	Glauca
	Hoopsii
	Moerheim

Pinus banksiana	**Jack Pine**
Pinus bungeana	**Lacebark Pine**
Pinus flexilis	**Limber Pine**
	Vanderwolf's Pyramid
Pinus koraiensis	**Korean Pine**
Pinus peuce	**Macedonian Pine**
Pinus ponderosa	**Ponderosa Pine**
Pinus strobus	**White Pine**
Platanus x acerifolia	**London Planetree**
	Bloodgood
Populus deltoides	**Cottonwood**
Populus tremuloides	**Quaking Aspen**
Potentilla fruticosa	**Potentilla**
	Abbottswood
	Coronation Triumph
	Goldfinger
	Jackmanii
Prunus besseyi	**Western Sand Cherry**
Prunus x cistena	**Purpleleaf Sand Cherry**
Prunus glandulosa	**Dwarf Flowering Almond**
Prunus maackii	**Amur Chokecherry**
Prunus pensylvanica	**Pin Cherry**
Prunus serrulata	**Japanese Flowering Cherry**
Pseudotsuga menziesii	**Douglasfir**
Ptelea trifoliata	**Hoptree**
Pyrus calleryana	**Callery Pear**
	Aristocrat
	Capital
	Chanticleer
	Redspire
Quercus alba	**White Oak**
Quercus bicolor	**Swamp White Oak**
Quercus imbricaria	**Shingle Oak**
Quercus macrocarpa	**Bur Oak**
Quercus palustris	**Pin Oak**
Quercus coccinea	**Scarlet Oak**
Quercus robur	**English Oak**
Quercus rubra	**Red Oak**
Rhamnus frangula	**Glossy Buckthorn**
	Asplenifolia
Rhododendron sp.	**Rhododendron/Azalea**
	PJM
	Golden Lights
	Northern Hi-Lights
	Northern Lights
	Orchid Lights
	Rosy Lights
	White Lights
Rhdotypos scandens	**Black Jetbead**
Rhus aromatica	**Fragrant Sumac**
	Gro Low
Rhus typhina	**Staghorn Sumac**
Rhus glabra	**Smooth Sumac**

Ribes alpinum	**Alpine Currant**
	Green Mound
Rosa sp.	**Shrub Roses**
	Frau Dagmar Hastrup
	Apple Blossom
	Flower Carpet
	Carefree Delight
	Surrey Sommerwind
	Country Dancer
	Golden Wings
	Prairie Flower
	Carefree Beauty
	Nearly Wild
	Knockout
	Chuckles
	Champlain
	David Thompson
	Starry Night
Salix purpurea	**Purpleosier Willow**
	Nana (Arctic Blue)
Shepherdia canadensis	**Buffaloberry**
Sophora japonica	**Japanese Pagodatree**
Spiraea albiflora	**Japanese White Spirea**
Spiraea x bumalda	**Bumald Spirea**
	Anthony Waterer
	Froebelii
Spiraea japonica	**Japanese Spirea**
	Little Princess
Spiraea nipponica	**Snowmound Spirea**
Spiraea prunifolia	**Bridalwreath Spirea**
Spiraea thunbergii	**Thunberg Spirea**
Spiraea trilobata	**Threelobe Spirea**
Spiraea x vanhouttei	**Vanhoutte Spirea**
Spiraea fritschiana	**Korean Spirea**
Symphoricarpos albus	**Snowberry**
Symphoricarpos x chenaultii 'Hancock'	**Hancock Coralberry**
Syringa meyeri 'Palibin'	**Meyer Lilac**
Syringa microphylla	**Littleleaf Lilac**
Syringa patula 'Miss Kim'	**Miss Kim Lilac**
Syringa reticulata 'Ivory Silk'	**Ivory Silk Japanese Tree Lilac**
Syringa villosa	**Late Lilac**
Syringa vulgaris	**Common Lilac**
Syringa chinensis	**Chinese Lilac**
Taxodium distichum	**Baldcypress**
Taxus cuspidata	**Japanese Yew**
Taxus x media	**Anglojap Yew**
	Chadwickii
	Densiformis
	Everlow
	Hicksii
	Tauntonii
	Wardii

Thuja occidentalis	**American Arborvitae**
	Emerald
	Hetz Midget
	Nigra
	Techny
Thymus serpyllum	**Wild Thyme**
Tilia americana	**American Linden**
	Dakota
	Redmond
Tilia cordata	**Littleleaf Linden**
	Greenspire
	Rancho
Tilia x euchlora	**Crimean Linden**
Tilia tomentosa	**Silver Linden**
Ulmus americana	American Elm
	Delaware #2
	Liberty
	New Harmony
	Princeton
	Valley Forge
Viburnum x burkwoodii	**Burkwood Viburnum**
	Mohawk
Viburnum carlesii	**Koreanspice Viburnum**
	Cayuga
Viburnum x juddii	**Judd Viburnum**
Viburnum cassinoides	**Witherod Viburnum**
Viburnum dentatum	**Arrowwood Viburnum**
	Autumn Jazz
	Chicago Lustre
	Northern Burgundy
Viburnum lantana	**Wayfaringtree Viburnum**
	Emerald Triumph
	Mohican
Viburnum lentago	**Nannyberry Viburnum**
Viburnum prunifolium	**Blackhaw Viburnum**
Viburnum x rhytidophylloides	**Lantanaphyllum Viburnum**
	Alleghany
	Willowwood
Viburnum sieboldii	**Siebold Viburnum**
	Seneca
Viburnum trilobum	**American Cranberrybush Viburnum**
	Andrews
	Compactum
Vinca minor	**Periwinkle**
Weigela florida	**Weigela**
	Centennial
	Java Red
	Minuet
	Polka
	Samba
	Rumba
Xanthoceras sorbifolium	**Yellowhorn**
Yucca filamentosa	**Adam's-needle Yucca**

LANDSCAPE MASTER PLAN

STOLLEY PARK ARBORETUM

EXHIBIT B

GRAND ISLAND, NEBRASKA

January, 2004

The Clark Enersen Partners
Architecture
Landscape Architecture
Engineering
Interiors

Exhibit B

Stolley Park Arboretum
Budget Estimates
January 1, 2004

Component Description	Cost
A. General Infrastructure	
1. Water distribution for new irrigation system, stream/ornamental fountain, and pond features. This distributes water to entire site and all site features.	$10,000.00
2. Water distribution for drinking fountains	$5,000.00
3. Storm drainage, including 10 new drain inlets and pipe	$30,000.00
4. Power distribution for site lighting and site electrical	$15,000.00
Total, General Infrastructure	**$60,000.00**
B. Earthwork	
1. Earth berms and grading (estimated 1,500 CY fill)	$12,000.00
2. Site preparation for planting (clearing and grubbing, minor grading)	$10,000.00
Total, Earthwork	**$22,000.00**
C. Stream Renovation	
1. Earthwork and grading	$10,000.00
2. Renovation of existing stream beds and pond, including repair and rock	$15,000.00
3. Renovation of existing stream banks and pond banks, including rock	$15,000.00
4. Renovation of existing stream and pond mechanical systems, including pumps, filters, equipment	$50,000.00
5. Renovation of existing ornamental fountain	$5,000.00
6. New aeration fountain at pond	$5,000.00
Total, Stream Renovation	**$100,000.00**

Component Description	Cost
D. Renovation/Addition of Bridge Crossings	
1. Wood bridge at Sensory Garden, 15' span	$5,000.00
2. Wood bridge at Prairie Garden, 15' span	$5,000.00
3. Wood bridge at Woodland Pocket Garden, 15' span	$5,000.00
4. Wood bridge at Woodland Garden, 15' span	$5,000.00
5. Stone bridge at Water/Wetland Garden, 15' span	$7,500.00
6. Stone bridge at Water/Wetland Garden, 15' span	$7,500.00
Total, Renovation/Addition of Bridge Crossings	**$35,000.00**
E. Train Depots	
1. Train depot at main entrance, 500 square feet covered area	$12,500.00
2. Train depot at Alpine Garden Plaza, 500 square feet covered area	$12,500.00
Total, Train Depots	**$25,000.00**
F. Building Renovation	
1. Renovate former herpetarium building, 1,500 square feet	$50,000.00
Total, Building Renovation	**$50,000.00**
G. Formal Garden	
1. Demolition and site preparation, 10,000 square feet	$2,000.00
2. New perimeter wall, 350 lineal feet	$15,000.00
3. New pavement, 3,500 square feet brick or concrete pavers	$25,000.00
4. New planting areas, 4,000 square feet	$1,500.00
5. New irrigation system	$5,000.00
6. New lighting, 10 new fixtures	$15,000.00
7. New site furniture including 10 benches, 5 receptacles	$12,000.00

Component Description	Cost
8. New planting including trees, shrubs, groundcover, perennials	$10,000.00
Total, Formal Garden	**$85,500.00**
H. Rose Plaza	
1. Demolition and site preparation, 9,500 square feet	$4,000.00
2. New railroad crossing	$1,500.00
3. New pavement, 6,500 square feet brick or concrete pavers	$50,000.00
4. New pergolas, 2 each at 1,200 square feet covered area total	$30,000.00
5. New planting areas, 2,200 square feet	$1,000.00
6. New irrigation system	$5,000.00
7. New lighting, 5 new fixtures	$8,000.00
8. New site furniture including 10 benches, 5 receptacles	$12,000.00
9. New planting including trees, shrubs, groundcover, perennials	$15,000.00
Total, Rose Plaza	**$126,500.00**
I. Sensory Garden	
1. Demolition and site preparation	$1,000.00
2. New pavement, 600 SF concrete	$1,800.00
3. New seating area	$15,000.00
4. New planting areas, 4,800 square feet	$1,000.00
5. New irrigation system	$5,000.00
6. New lighting and sound infrastructure	$10,000.00
7. New planting including trees, shrubs, groundcover, perennials	$15,000.00
Total, Sensory Garden	**$48,800.00**

Component Description	Cost
J. Prairie Garden	
1. Seeding, 10,000 square feet including fine grading	$1,500.00
2. New pavement, 750 square feet concrete	$2,500.00
Total, Prairie Garden	**$4,000.00**
K. Perennial Garden	
1. Site preparation, 7,500 square feet	$2,000.00
2. New pavement, 2,000 square feet flagstone	$25,000.00
3. New planting areas, 4,000 square feet	$2,500.00
4. New irrigation system	$3,000.00
5. New planting including trees, shrubs, perennials	$7,500.00
Total, Perennial Garden	**$40,000.00**
L. Children's Garden	
1. Site preparation, 20,000 square feet	$5,000.00
2. New irrigation system	$5,000.00
3. New planting areas,10,000 square feet	$3,000.00
4. New topiaries, 5 total	$15,000.00
5. New planting including trees, shrubs, groundcover, perennials	$15,000.00
6. New lawn, 10,000 square feet sod	$2,500.00
Total, Children's Garden	**$45,500.00**
M. Woodland Pocket Garden	
1. Site preparation, 3,200 square feet	$1,500.00
2. New pavement, 500 square feet flagstone	$7,500.00
3. New planting areas	$1,000.00
4. New irrigation system	$2,500.00
5. New site furniture including 2 benches, 1 receptacle	$2,500.00

Component Description	Cost
6. New planting including trees, shrubs perennials	$3,500.00
Total, Woodland Pocket Garden	**$18,500.00**
N. Woodland Garden	
1. New pavement, 5,500 square feet concrete	$16,500.00
2. New planting areas, 60,000 square feet	$7,500.00
3. New irrigation system	$15,000.00
4. New site furniture including 3 benches, 2 receptacles	$4,000.00
5. New planting including trees, shrubs, turf	$30,000.00
Total, Woodland Garden	**$73,000.00**
O. Water/Wetland Garden	
1. Site preparation, 5,000 square feet	$2,500.00
2. New pavement, 2,000 square feet concrete	$6,000.00
3. New planting areas, 6,000 square feet	$1,000.00
4. New irrigation system	$5,000.00
5. New lighting, 5 fixtures	$7,500.00
6. New site furniture including 4 benches, 2 receptacles	$5,000.00
7. New planting including trees, shrubs, perennials, marginal plants	$20,000.00
Total, Water/Wetland Garden	**$47,000.00**
P. Heritage Garden	
1. Site preparation, 6,000 square feet	$2,000.00
2. New paths, 2,400 square feet gravel with edging	$4,000.00
3. New irrigation system	$3,000.00
4. New planting including bulbs and perennials	$5,000.00
Total, Heritage Garden	**$14,000.00**

Component Description	Cost
Q. Alpine Garden Plaza	
1. Site preparation, 10,000 square feet	$5,000.00
2. New pavement, 5,000 square feet masonry concrete pavers	$40,000.00
3. New planting areas, 6,000 square feet	$3,000.00
4. New irrigation system	$5,000.00
5. New lighting (5 fixtures) and sound systems	$15,000.00
6. New site furniture including 4 benches, 2 receptacles	$6,000.00
Total, Alpine Garden Plaza	**$74,000.00**
Total, All Improvements	**$868,800.00**