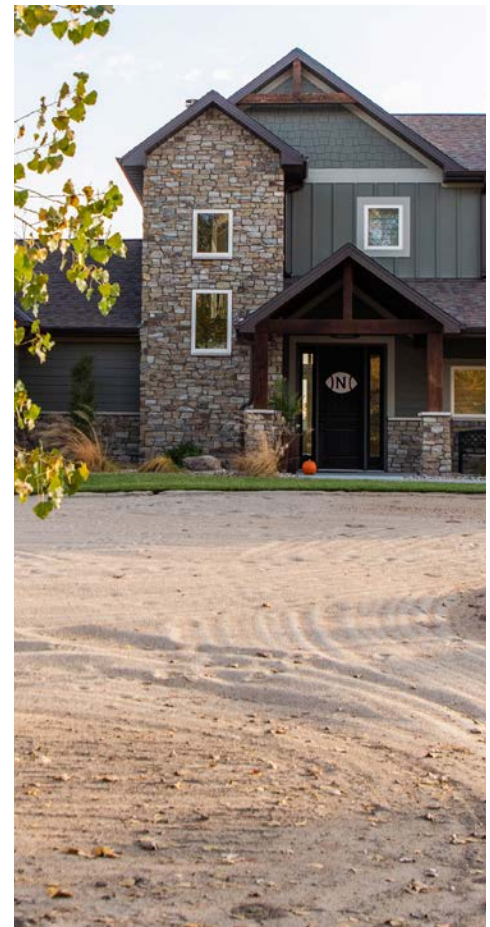




HILLS FARM LAKES



Site & Landscape Design
Guidelines



Ecological Considerations, Especially Related to Lake Water Quality

Hills Farm Lakes is located adjacent to the Platte River, and its associated riparian environment. The natural landscape in this area consists of mixed deciduous trees, dominated by Cottonwood and Willow trees. Other native or naturalized trees found in this environment include Elm, Hackberry, Ash, Honey locust, Maple, Linden, and Sycamore. Eastern Red Cedar trees are an introduced species that has become invasive. A mixture of deciduous shrubs that include Sumac, Dogwood, Plum, Juneberry and Coralberry are found growing below the tree canopies and in open areas within this environment. Numerous prairie grass and wildflower species also inhabit this environment. All these native or naturalized plants combine to create a symbiotic relationship to sustain this environment, including having significant impacts on temperature modification, soil health and stability, storm water control, water quality, animal/insect habitat, food source, etc.

New designed landscapes associated with the build out of the residential and public landscapes at the Hills Farm Lakes development should protect and sustain the existing environment. These landscapes should be designed to be long-lived with the goal to be self-perpetuating and to promote conservation.

- Stormwater run-off that enters the lake from a developed property can carry nutrients and toxins from paved areas, roofs, etc. which may lower lake water quality, including algae blooms, fish mortality and excessive weed growth. The designed site and landscape of each residential lot should help slow and filter storm water run-off and reduce harmful impacts to the lake. Grading plans, plant selections and design, etc. should be completed in an ecologically sensitive manner.
- Landscapes should be designed with plants that do not require lawn or garden fertilizers or other treatments to promote growth. Fertilizer buildup in the lake water results in excessive aquatic plant growth which inhibit swimming, boating and fish populations. Native and/or naturalized plants that can thrive in the existing soils (unamended) should be utilized. Lawn grasses which require mowing can also create excessive nutrients in the lake if clippings and other lawn debris find their way into water.
- Landscapes should be designed with plants that do not require environmentally harmful pesticides or herbicide control. These substances are known to cause damage to fish, animals and humans when absorbed (including via lake water). Wind drift, storm water runoff and accidental spillage can transfer these compounds to the lake. Native and/or naturalized plants which have shown a history of demonstrated compatibility with local insect and environmental conditions should be utilized.
- Landscapes should be designed to discourage nuisance populations, including waterfowl, insects, etc. For example, turf grass lawns are attractive to certain waterfowl species that feed in such environments. The excrement which accumulates in these areas pollute the lake with additional unwanted nutrients and which can also be unpleasant and harmful to humans. Other woody plants that set an abundance of fruit can also attract nuisance animal and bird populations. Native and/or naturalized plants which have a symbiotic compatibility with local animal, bird and insect populations will create the most desirable landscape solution.

Functional Considerations

The newly designed residential and public landscapes at Hills Farm Lakes should be designed in harmony with the existing natural conditions, but also supportive of new activities on site. The new site designs should connect people, activities, and landscape.

- The primary existing natural conditions that characterize the residential properties are sand, water and sun. Those who desire to live in these conditions will benefit from a site/landscape design that preserves and enhances these core conditions. These conditions should not be ignored or minimized in the site/landscape design of the residential lot.
- Sand is the existing ground plane natural surface at each property. Sand should be incorporated into the site/landscape design as a major design component. The sand base is an efficient functional surface. It is flexible for many activities and uses. It can be groomed. It can be molded into berms or dunes. It does not necessarily require a covering of plants or pavement to become functional. The color of the sand should be a primary determinant in the selection of the colors of introduced materials such as pavement, masonry, etc. that could be utilized in harmony with the sand.
- Water is the existing dominant natural feature at each property. All spaces and activities planned for the property (indoor and outdoor) should be focused on the lake. The lake is most interactive with the lot at the shoreline. The site/landscape design of the lot should reinforce the importance of the function of the shoreline with created views, pathways, etc. The site/landscape design should also diminish the boundary between indoor and outdoor spaces, especially when the lake is in view.
- The effect of the sun (in combination with water and sand) should be recognized in the design of the site/landscape. A balance between full sun exposure, tempered sun exposure and provision of shade should be made in the site design to provide comfort indoors and outdoors.
- The site/landscape design should be created with the goal to minimize maintenance operations such as mowing, trimming, etc. which create undesirable noise and activity.
- Site materials and landscape plants used in the design plan should be selected that will hold up well and thrive in the existing soil, light, temperature, and moisture conditions at Hills Farm. Materials and plants that function well in the existing site conditions will create a beautiful and valued environment.





Design Aesthetic Considerations

Three primary design imperatives will inform the site/landscape planning for residential lots at Hills Farm. First, the overall context of the site must be recognized- the new lake created adjacent to the Platte River within the River corridor's unique riparian habitat and environment. Landscape plants and materials utilized in the design of residential lots at Hills Farm Lake should come from, or be compatible with this context. Second, the new architecture that will be developed within this natural context must be recognized as an important component that affects the site/landscape design. Architecture and landscape must be compatible with each other and must inspire each other. Third, the site/landscape design must be developed to promote and enhance purposeful, pleasing and fulfilling experiences for people that creates community, that is, individual landscapes that aren't just for each individual lot owner, but landscapes that are compatible pieces of an overall community mosaic.

- Landscape design elements including plants, pavements, site walls, exterior lighting should be composed to enhance views to and from the lake. These elements should also be arranged to enhance views to and from the architecture of the development, i.e., homes (especially entrances), bridges, outdoor patio shade structures, etc.
- Each developable lot has similar outdoor yard "zones", including the Front Yard Zone; the Use Zone which describes spaces like outdoor patios/decks that are extensions of the home interior; the Rear Yard, which is located between the residence and the lakefront (beach); and the Lakefront Zone which includes the dock and associated structures.
- The Front Yard Zone should be designed to be compatible with other front yards in the community. This does not mean that every front yard should look or be designed the same. But each front yard should be designed based on the functional and aesthetic principles stated previously. Front yards should not be fenced, nor defined by formal (high maintenance style) hedges. Utilitarian or "service" areas as well as privacy areas should be aesthetically screened from the front yard. The front yard should be an "inviting" landscape.
- The Use Zone which is located directly adjacent to the residence (on all sides), including patios, decks, etc. should be designed with the greatest amount and attention to detail of all the outdoor zones. This zone should be designed with as much attention to detail as the residence's interior spaces. Pavements, walls, lighting, furnishings (including art) and landscape plants should be utilized to stimulate the senses and create a setting for pleasant, "four season" experiences.
- If the Use Zone does not extend all the way to retaining wall that separates the lake front from the residence, a Rear Yard Zone will exist between the residence Use Zone and a few yards from the bottom edge of the retaining wall. This area should be designed as a "buffer" between the residence outdoor use areas and the waterfront zone. It would be best designed with native or naturalized plants and materials that could transition the Use Zone to the Lakefront Zone. It could be utilized as a natural rain garden or pollinator garden to help filter stormwater runoff or to apply other conservation design practices.
- The Lakefront Zone should be designed with a minimum amount of landscape. The shoreline sand will occasionally be groomed and maintained for waterfront activities which will inhibit landscape development.



Suggested Plant Species to Consider in Design

Following are a sample of plant species that would be suitable to utilized in landscape design at Hills Farm Lakes. This is not a comprehensive list, but it does indicate species that “fit” in the larger context of the Platte River ecosystem (in the Fremont area). These plants are also tolerant of sandy soils.

Overstory Trees

- Thornless Honeylocust (*Gleditsia triacanthos* var. *inermis*) varieties such as Skyline, Shademaster.
- Disease resistant American Elm (*Ulmus americana*) varieties such as Accolade, New Horizon, Jefferson, Princeton.
- Bur Oak (*Quercus macrocarpa*) varieties.
- Swamp White Oak (*Quercus bicolor*) varieties.
- Pin Oak (*Quercus palustris*) varieties.
- Northern Red Oak (*Quercus rubra*) varieties.
- Shingle Oak (*Quercus imbricaria*) varieties.
- Chinkapin Oak (*Quercus muehlenbergii*) varieties.
- Kentucky Coffeetree (*Gymnocladus dioica*) varieties.
- Red Maple (*Acer rubrum*) varieties.
- State Street Maple (*Acer miyabei* Morton).
- Prairie Gold Aspen (*Populus tremuloides* NE Arb).
- River Birch (*Betula nigra*) varieties.
- Hackberry (*Celtis occidentalis*).
- Bald Cypress (*Taxodium distichum*) varieties.
- Northern Catalpa (*Catalpa speciosa*) varieties.
- London Planetree (*Platanus x acerifolia*) varieties such as Exclamation, Bloodgood.
- American Linden (*Tilia americana*) varieties.

Understory Trees

- Serviceberry (*Amelanchier* varieties such as Autumn Brilliance, Princess Diana, Standing Ovation).
- Eastern Redbud (*Cercis canadensis*) varieties’
- Disease resistant Crabapple (*Malus* sp.) such as Sugar Tyme, Prairie Fire, Adams.
- Hot Wings Maple (*Acer tataricum* GarAnn).
- Kousa Dogwood (*Cornus kousa*) varieties.
- Cornelian Cherry Dogwood (*Cornus mas*) varieties.
- Gray Dogwood (*Cornus racemosa*) varieties, (note: should be used for naturalizing, very aggressive).
- Pagoda Dogwood (*Cornus alternifolia*) varieties.
- Blackhaw Viburnum (*Viburnum prunifolium*) tree form varieties.
- Nannyberry Viburnum (*Viburnum lentago*) tree form varieties.

Evergreen Trees

- Ponderosa Pine (*Pinus ponderosa*) varieties.
- Eastern White Pine (*Pinus strobus*) varieties.
- Limber Pine (*Pinus flexilis*) varieties including Vanderwolf’s Pine.
- Black Hills Spruce (*Picea glauca* var. *densata*) varieties.
- Colorado Spruce (*Picea pungens*) varieties.
- Norway Spruce (*Picea abies*) varieties.
- Serbian Spruce (*Picea omorika*) varieties.
- Eastern Red Cedar (*Juniperus virginiana*) varieties such as Taylor, Canaertii.
- Juniper (*Juniperus chinensis*) varieties such as Hetzii Columnaris, Keteleeri.

Shrubs

- Redtwig Dogwood (*Cornus stolonifera*) varieties.
- Arrowwood Viburnum (*Viburnum dentatum*) varieties.
- Gro Low Sumac (*Rhus aromatica* Gro-Low).
- Staghorn Sumac (*Rhus typhina*), (note: should be used for naturalizing, very aggressive).
- Pawnee Buttes Sandcherry (*Prunus besseyi* Pawnee Buttes).
- Smooth Hydrangea (*Hydrangea arborescens*) varieties such as Annabelle, Incrediball, Invincibelle.
- Panicle Hydrangea (*Hydrangea paniculate*) varieties such as Little Quick Fire, Limelight, Bobo.
- Oakleaf Hydrangea (*Hydrangea quercifolia*) varieties such as Pee Wee, Snow Queen, Munchkin.
- Sweetspire (*Itea virginica*) varieties such as Little Henry, Scentlandia, Henry's Garnet.
- Black Chokeberry (*Aronia melanocarpa*) varieties such as Low Scape Mound, Autumn Magic.
- Coralberry (*Symphoricarpos orbiculatus*) and (*Symphoricarpos x chenaultii*) varieties such as Proud Berry, Hancock, Magic Berry.
- Sweetshrub (*Calycanthus floridus*) varieties.
- Shrub Rose (*Rosa* sp.) varieties.
- Winterberry Holly (*Ilex verticillata*) varieties.
- Japanese Spirea (*Spirea japonica*) varieties.
- Lilac (*Syringa* sp.) shrub form varieties.
- Yew (*Taxus* sp.) shrub form varieties (maintain as a natural form, not hedge).
- Boxwood (*Buxus* sp.) shrub form varieties (maintain as a natural form, not hedge).

Perennial Flowers

- Blazing Star (*Liatris spicata*) varieties.
- Goldenrod (*Solidago* sp.) varieties such as Fireworks, Little Lemon, (note: Wild Canada Goldenrod should not be used due to its aggressive growth).
- Penstemon (*Penstemon digitalis*) varieties such as Husker Red, Dakota Burgundy.
- Coneflower (*Echinacea* sp.) varieties.
- Yarrow (*Achillea* sp.) varieties.
- Primrose (*Primula* sp.) varieties.
- Black Eyed Susan (*Rudbeckia* sp.) varieties.
- Aster varieties including Smooth Aster, Aromatic Aster, etc.
- Bluestar (*Amsonia* sp.) varieties.
- Wild Geranium (*Geranium* sp.) varieties such as Biokovo, Rozanne, Bevan's Variety.
- Daisies such as Shasta, Fleabane.
- Peony (*Paeonia* sp.) varieties.
- Catmint (*Nepeta* sp.) varieties.
- Iris (*Iris* sp.) varieties such as Siberian Iris, Dwarf Iris, Wild/Blue Flag Iris.
- Daylily (*Hemerocallis* sp.) varieties.
- Salvia (*Salvia* sp.) varieties.
- Tickseed (*Coreopsis* sp.) varieties.
- Liriope (*Liriope muscari*) varieties.

Perennial Grass

- Blue Grama (*Bouteloua gracilis*) varieties.
- Sideoats Grama (*Bouteloua curtipendula*) varieties.
- Little Bluestem (*Schizachyrium scoparium*) varieties.
- Prairie Dropseed (*Sporobolus heterolepis*) varieties.
- Switch Grass (*Panicum virgatum*) varieties.
- Indiangrass (*Sorghastrum nutans*) varieties.
- Karl Foerster Feather Reed Grass (*Calamagrostis x acutiflora* Karl Foerster).
- Sedge (*Carex* sp.) varieties.

Lawn Grass

- RTF Fescue.
- Perennial Rye.
- Kentucky Blue Grass.
- Buffalo Grass.
- Native Low Growing Fescue Mix such as blend of Creeping Red Fescue, Chewings Fescue, Hard Fescue, Sheep Fescue.

Suggested Landscape Site Materials to Consider in Design

Following are a sample of site materials that would be suitable to utilized in site design at Hills Farm Lakes. This is not a comprehensive list, but it does indicate materials that would be appropriate for the overall design context of the development. Most importantly, the materials used for site design improvements must comply with the materials outlined in the architectural design standards. Colors selected for pavement materials, segmental concrete units and other wall types should be based on existing site conditions and character, i.e., "earth tones" to be compatible and an extension of the sand, soils, vegetation, etc. at the site. These earth tone colors will not contrast with the existing landscape and are not meant to. Because the site construction materials, colors, textures, etc. are an extension of the existing landscape character, they will work with any style of architecture if the architecture is designed to "fit" in the landscape.

- **Pavement Materials**

- ~ Concrete pavement, gray or buff tones.
- ~ Concrete unit pavers, earth tones.
- ~ Clay masonry pavers, earth tones.
- ~ Stone, flagstone (set on flexible or concrete base).
- ~ Cedar or Redwood plank.

- **Retaining Walls**

- ~ Segmental concrete unit walls, earth tones.

- **Planting Bed Mulch**

- ~ Hardwood shredded mulch, dark brown or natural color.
- ~ River Rock, rounded, earth tones.

- **Shade Structures (arbor, pergola, etc.)**

- ~ Cedar, Redwood, treated lumber.
- ~ Steel structure.
- ~ Concrete structure

