McMAHON
ENGINEERS ARCHITECTS

NATIVE PRAIRIE & AQUATIC PLANT FUNCTIONALVALUES AND SERVICES AT STORMWATER PONDS

PRAIRIE - FUNCTIONAL VALUES AND SERVICES

- Goose Control – The medium to tall prairie plants substantially reduce the presence of geese when there is at least 30 feet of prairie around the shoreline of the pond. Geese are naturally fearful of the presence of predators that could be present in the thick prairie vegetation and will avoid walking through the prairie. The wider the prairie the better it functions. Most neighbors do not want geese staging on their lawns all day.

- Soil Erosion Protection – The thick and deep rooted prairie plants (roots are typically 5 to 15 feet deep) hold the soil in place which protects and stabilizes the side slopes of the stormwater pond.

- Shoreline Protection – The deep rooted prairie plants hold the shoreline soil in place protecting the banks from eroding backward into the side slopes.

- Pollution Filtering/Reduction – The diverse prairie plants uptake nutrients that are deposited on the banks when the pond fills with stormwater.

- Wildlife Habitat – A high quality diverse prairie provides excellent wildlife habitat for urban environments that are otherwise lacking due to development.

- Beneficial Insects/Pollinators - The wildflowers provide food for butterflies and pollinators which attracts songbirds and helps pollinate fruit trees in the community. Wildflowers support high densities hoverflies (beneficial), that substantially reduce aphid populations in the surrounding community landscapes and local soybean fields.

- Aesthetically Attractive – The prairies have approximately 80 to 105 species of wildflowers, grasses and sedges, which provides a variety of color in the prairie from late May to November. The prairie looks different every two or three weeks as new species of wildflowers bloom and the prairie grasses turn a burgundy/gold color in the fall.

- Sustainable – The prairie is sustainable indefinitely by producing millions of seeds each year that will germinate and fill in any gaps. Many prairie plants are long lived with some lasting 25 years and a few 100 years.

- Economical – Prairies are economical given all the functions and values that a prairie serves at a site. The long-term cost of mowing (labor and maintenance) is avoided, saving funds indefinitely.

NATIVE PRAIRIE & AQUATIC PLANT FUNCTIONALVALUES AND SERVICES AT STORMWATER PONDS (continued)

AQUATIC PLANTS IN THE SAFETY SHELF - FUNCTIONAL VALUES AND SERVICES

- Algae Reduction – The plants shade the water which lowers the water temperature in the pond resulting in lower amounts of algae in the pond. This saves thousands of dollars/pond/year by avoiding the need of chemical treatment to reduce algae.

- Shoreline / Bank Erosion Control – The emergent aquatic plants substantially reduce wave action which protects the shoreline from erosion.

- Stabilization of Bottom Sediments – The roots stabilize and hold the sediments in-place which improves water quality and clarity.

- Algae Coverage – The plants hide algae that may be present since the wind typically blows algae that is produced in the ponds into the shoreline/safety shelf areas that contain emergent vegetation.

- Goose Control – The plants are generally over two feet tall which deters geese from using the pond. Geese are fearful of the presence of predators that may not be seen along the shoreline due to the presence of tall aquatic plants combined with the prairie.

- Pollution and Nutrient Filtering / Reduction – The plants uptake substantial amounts of nutrients and other pollutants during the growing season which reduces the presence of algae and improves water quality.

- Mosquito Predator Habitat – The diverse emergent aquatic plants provide ideal habitat for mosquito predators (ex.- dragonflies) which control the presence of mosquitoes.

- Aesthetically Attractive – The majority of public prefer to see native aquatic plants versus and open safety shelf area covered with algae. There are typically 6 to 9 different species of aquatic plants in the safety shelves.

- Sustainable – The native aquatic plants will be present long-term by the dense root system present in the safety shelf sediment that will develop new stems any time there is a gap in the vegetation.

- Economical – Native aquatic plants are economical given all the important functions the plants serve at a site. They almost always eliminate the need for chemical treatment to reduce algae.

- Wildlife Habitat – A diverse mix of native aquatic plants provide food and shelter for various species of wildlife including shoreland birds, egrets, herons, ducks, amphibians, turtles, mink and other small mammals.