

Stormwater Management Basins: Native Planting Considerations



- 1) Seeds vs. Transplants – Pros & Cons of Each
- 2) Site Preparation – Must be Free of Perennial Weeds
- 3) Soil Conditions – Engineered or Local Substrate?
- 4) Plant & Seed Mix Selection - Match Site Conditions
- 5) Erosion Control Strategies – E-Mats & Nurse Crops
- 6) Post-Planting Management – Mowing & Burning
- 7) First Year Watering – Good “Insurance”

Seeds vs. Transplants

- Plants mature faster, often blooming in 1st growing season
- Seeds require 3-5 years to become completely established
- Plants cost on average 10 times more than seeds per sq. ft.
- Labor costs to install plants are much higher than for seeds
- Transplants have spaces between them where weeds grow
- Seeds will usually fill in completely in 3-5 years

Site Preparation & Soils – Make it or Break It!

- The planting site must be entirely free of perennial weeds, grasses, and woody plant material, roots, etc.
- Engineered soils typically have very low weed content
- If planting into local substrate, it may be necessary to add organic matter to enhance infiltration & water retention
- Compacted layers of local soils must be broken up to provide water infiltration and proper drainage
- Fertilization is rarely necessary, except for deficiencies of Phosphorus, Potassium, Calcium, or Magnesium. Use organic Phosphorus fertilizer to protect surface waters

Transplant Species & Seed Mix Selection

- Select species to match soil texture, drainage rates, expected maximum water depth, and inundation time
- Use widely adaptable, “generalist” plant species that can tolerate periodic flooding and mid-summer dry-down
- Use grasses and sedges for soil stabilization and weed control by virtue of their dense root systems
- Intersperse forb transplants among the grasses & sedges
- Tall prairie grasses provide high-functioning soil cover and water absorption, but can become dominant over time

Erosion Control Strategies for Seedings

- Erosion control blankets (E-mat) are usually mandatory, unless there are only gentle grades ($< 2\%$), in which case only areas subject to channeling need to be matted
- Avoid heavy duty mats, especially coir or thick excelsior blankets. These will restrict the emergence of forb seedlings. Use light duty straw, excelsior, or jute matting
- A nurse crop of oats seeded at 1 lb. per 1000 sq. ft. for spring seedings will provide rapid soil stabilization
- Dormant seedings should be completed by Sept. 15 with a cover crop of oats at the rate of 3-4 lbs. per 1000 sq. ft.

Post- Planting Management for Transplants

- Weed control is essential in the first year. The use of pre-emergent herbicides in infiltration basins may not be possible. Straw or shredded hardwood mulch often wash or float away. Hand weeding is costly & a recurring event
- A fairly heavy E-mat can be laid down, and small incisions cut into it, where each plant is then inserted. Smaller plugs (32s, 50s, and 72s are quicker to install and cheaper than quarts or gallons, and labor costs are less
- Weeds will still germinate and emerge at the incisions in the E-mat, requiring monthly weeding before they grow too large to pull, or set seed that will reinfest the planting

Post- Planting Management for Seedlings

- 1st Year: When weeds reach one foot, cut back to 6 inches. String trimmers are usually best, due to moist soil conditions often limiting access by wheeled or tracked vehicles.
- 2nd Year: When biennial weeds just finish blooming, cut to a height of one foot to prevent formation of viable seeds.
- 3rd Year: If possible, burn in spring to remove old plant debris to stimulate new growth of natives & control woody invaders.. If soils are too wet in spring, burn in fall when soil are drier.
- If burning is not possible, mowing down to the ground in fall when soils are dry is a reasonable substitute for burning.

Post- Planting Watering – Your “Insurance” Policy

- Transplants installed in spring will often require watering, especially if dry weather occurs in the spring or summer of the first growing season after installation. No watering should be required thereafter in ensuing years.
- Transplants installed in September benefit from a watering at the time of planting, but should not require further watering that year or in the following spring.
- Fall “dormant” seedlings typically do not require watering in the following spring when germination occurs, except in a dry spring. Spring or early summer seedlings will exhibit significantly higher germination rates when watered weekly.