Spring Lake Solar

Vegetation Installation and Management Plan

Date: 6/30/2026
Site Location: 42.895072, -88.366128

ONEENERGY RENEWABLES • 2003 WESTERN AVE • STE 225 • SEATTLE, WA 98121
WWW.ONEENERGYRENEWABLES.COM

Contents

1 Site Overview

Spring Lake Solar is a 6 MWac solar generation facility that will be developed, engineered, and constructed by OneEnergy Development, LLC. The Project is located northwest of the intersection of County Rd I and Section Rd in the Town of Mukwonago in Waukesha County, Wisconsin.

The 28-acre project site is currently used for agricultural production and was most recently planted in soybeans. The predominant soil types on site are Miami loam, which is well drained soil, Pistakee silt loam, which is somewhat poorly drained, and Fox loam which is well drained, and the Project area does not contain wetlands.

Vegetation sampled south of the study area in an overgrown area dominated by facultative and facultative upland species such as boxelder (*Acer negundo*) and honeysuckle (*Lonicera morrowii*). Following construction of the solar facility, the site will be planted with a mix of native prairie species that will provide habitat for pollinators and other wildlife.

2 Benefits of Pollinator-Friendly Solar

There are many benefits to installing native prairie plant communities on solar sites. Pollinator friendly solar sequesters carbon into the soil through plants, while carbon emissions are simultaneously reduced by using renewable solar energy. Planting native prairie species restores soil by reducing erosion, improving soil structure, increasing carbon storage, diversifying microbial communities, and increasing soil fertility. In addition to supporting native wildlife, these improvements to the soil will increase the value of the soil for future agricultural production once the solar panels are removed. Agricultural benefits are not limited to future land use. Supporting native pollinator populations can increase yields of nearby pollinator-dependent crops such as soybeans, apples, and many vegetables.

The aesthetic benefits of pollinator habitat provide additional services to the local community for those who appreciate observing the wildflowers, birds, butterflies, and other species that are drawn to the solar site. Native prairie plants reduce stormwater runoff and improve surrounding water quality, which is an important consideration following the construction of solar projects. While the initial costs and amount of planning needed for installing and managing native pollinator habitat may be greater than turfgrass, the benefits outweigh the costs. Following the first five years of management, as the hardier native plant communities become established, reduced maintenance needs are anticipated for the remainder of the time the solar array is in operation.

3 Site Preparation and Temporary Seeding

The Project site will be in agricultural row crop production until the fall prior to construction. After row crops are harvested, a cover crop of winter wheat will be seeded at a rate of 131 lbs

per acre as recommended by the WDNR Technical Standard (1059) and the WisDOT seeding specification (630).

If grading is required, soil will not be removed from the site and will be stockpiled until it is replaced following disturbance. During construction, a cover crop of oats will be seeded at a rate of 131 lbs/acre where grading has occurred. Erosion control measures will include silt fence, sediment control logs, and erosion control blanketing. Oats will also be seeded in any areas disturbed by construction activities. The site will be mowed regularly during construction to control noxious and invasive species. After construction, discing and deep ripping may be used to decompact the soil depending on the level of compaction. The soil surface will be smoothed using a spike tooth harrow or similar implement.

Herbicides may be used to treat noxious or invasive species identified on site prior to seeding. The herbicide will be selected and applied by an Environmental Specialist. Following herbicide treatment, a waiting period may be necessary before disturbing the soil or seeding.

The Environmental Specialist overseeing site preparation activities and selecting and applying herbicide treatments for noxious and invasive species suppression will have comprehensive knowledge and experience selecting and applying herbicides for restricting invasive species and managing vegetation to encourage native plant communities. Additionally, the Environmental Specialist will have a degree in biology, botany, natural areas management, or a related field, detailed knowledge of Wisconsin flora, excellent vegetation identification skills, and experience in ecological restoration that includes overseeing and conducting native prairie restoration and vegetation assessments.

4 Permanent Seeding

Permanent seeding with a native prairie mix will occur in the fall after construction has been completed. Seeding will take place after October 15th and before the soil freezes. If seeding is delayed due to construction or weather conditions, permanent seeding will take place the following spring as early as weather and soil conditions allow.

A nurse crop of winter wheat will be added to the native seed mix to reduce weed growth and erosion until the native species are established. If seeding is delayed until the following spring, a nurse crop of oats will be used instead of winter wheat. Drill seeding is the preferred method of seeding the native prairie mix. Seed may be broadcast spread if drill seeding equipment is unavailable at the time of planting. A cultipacker would be used to improve seed to soil contact following broadcast seeding.

The upland seed mix used will be a diverse mix of around thirty native plant species designed by the Environmental Specialist to suit site-specific soil and microclimate conditions and to provide forage and habitat for pollinators. All species reach maximum heights of approximately thirty

inches to prevent vegetation from shading panels at maximum tilt. The seed mix includes flowering species with a wide range of bloom times to cover each season pollinators are active. Additionally, a lowland seed mix for hydric soils will be used where any intermittent streams or wetlands are located. The upland and lowland seed mixes can be found in Appendix B.

Changes to plant species and their proportions in the mix may be necessary depending on seed availability at the time of planting, but the diversity of species and quality of the mix will be maintained. Seed will be sourced within 175 miles of the project location if available. Seeding records that include spatial locations of seeding, seed mixes, seed tags or packing slips, seeding rate, seeding method, and date installed will be kept.

5 Vegetation Monitoring

The following objectives will be achieved through vegetation monitoring:

1. Document the presence of targeted native species.
2. Document the presence of noxious and invasive species.
3. Provide recommendations for appropriate corrective actions to promote and maintain the planned vegetative cover and limit noxious and invasive species.

Vegetation monitoring data will be collected through a timed meander survey or equivalent surveying method. Observations will be recorded and visually depicted on a site map using a GIS field application during the vegetation monitoring site visit. Observations will include the presence of any noxious or invasive species, native species, and estimated percentage of vegetation cover of each. Erosion or other issues observed on site will be recorded. Reference maps will be produced from this collected data and will be used to make management recommendations and evaluate progress toward establishing the target plant community.

Records in the GIS field application will be shared between vegetation management crews and project managers. Recommended vegetation management actions based on these observations will be communicated with the project owner within one week of a vegetation monitoring visit, and an estimated date for corrective management actions will be provided.

6 Vegetation Management

The Environmental Specialist overseeing vegetation management will have comprehensive knowledge and experience restricting invasive species and managing vegetation to encourage native plant communities. Additionally, the Environmental Specialist will have a degree in biology, botany, natural areas management, or a related field, detailed knowledge of Wisconsin flora, excellent vegetation identification skills, and experience in ecological restoration that includes overseeing and conducting native prairie restoration. The Environmental Specialist may direct employees or subcontractors that do not meet the qualifications of the

Environmental Specialist to complete vegetation management activities selected and supervised by the Environmental Specialist.

Vegetation will be managed to achieve the following objectives:

1. Establish native vegetation cover as prescribed in the selected pollinator seed mixes.
2. Maintain complete vegetation cover while limiting weed and invasive species to less than 5% cover.
3. Encourage the growth of flowering species to provide continuous forage and habitat for pollinators.

Vegetation management objectives will be measured using the following performance standards:

1. Stabilized soils will have no significant erosion, and, if any erosion does occur, corrective action will be taken and include reseeding of repaired areas with the planned vegetation.
2. Noxious and invasive weed species will have a maximum coverage of 5% of the project area.
3. The following milestones for minimum coverage of planted perennial species will be achieved:
    a. A minimum of 20% cover of planted perennial species by the end of the first growing season following seeding.
    b. A minimum of 40% cover of planted perennial species by the end of the second growing season.
    c. A minimum of 70% cover of planted perennial species by the end of the third growing season.

During the first year of establishment, vegetation will be mowed 2 to 3 times to a height of 8 inches. After the first year of establishment, vegetation will be mowed to a height of 10 to 12 inches. During the second year of establishment, vegetation will be mowed twice. During the third year of management, vegetation will be mowed once or twice. There will be a dormant mow during the fourth year of establishment. Following this establishment period, if there is a minimum of 70% cover of planted perennial species and less than 5% cover of noxious and invasive species, the site will be mowed as needed for noxious and invasive species control and to intermittently remove excess biomass. In addition to mowing the entire Project area, spot-treatment of invasive species with targeted mowing and herbicide treatment will be completed as needed, depending on observations made during vegetation monitoring visits.

A comprehensive Vegetation Management Report (VMR) will be created at the end of each calendar year and will summarize vegetation observations and management actions. The VMR

will also contain recommendations for the following year's vegetation management actions and a plan for carrying out those recommendations.

6.1 Noxious and Invasive Species Management

Plant species will be suppressed if they are likely to either outcompete the native species planted or grow to a height that would potentially shade the solar panels. Noting noxious and invasive species through well-timed site inspections and proactively controlling these species during the establishment phase is critical for the long-term success of native vegetation establishment.

Plant species will be considered invasive if they are listed in Wis. Admin. Code NR 40, which prohibits the possession, transportation, or introduction of certain invasive species in Wisconsin without a permit. The Town of Mukwonago lists Canada thistle, leafy spurge, field bindweed, wild mustard, yellow rocket, yellow dock, giant foxtail, velvet leaf, quack or witchgrass, wild hemp, wild radish, buckhorn plantain, goat's beard, harmful barberry, and burdock as noxious weed species requiring removal.

Control of noxious and invasive species may include spot-spraying, spot-mowing, hand weeding, wicking, or other methods selected by the environmental specialist and depending on the target species and time of year. Vegetation monitoring data will be used to schedule mowing before the predominant noxious or invasive species develop seeds.

If necessary, the following herbicides may be used for spot-treatment: glyphosate, triclopyr, clopyralid, or aminopyralid. Glyphosate is a non-selective systemic herbicide used to treat broadleaf weeds, grasses, and woody plants, and triclopyr is a selective systemic herbicide used to control woody and herbaceous broadleaf species. Clopyralid and aminopyralid are selective herbicides used to target broadleaf weeds, especially clover and thistle. Herbicide contact with native species will be limited and herbicides will not be used when wind speeds exceed 10 mph to prevent drift.

Other herbicides may be utilized based on the target species observed and identified for management. Environmental specialists will identify actual herbicide prescriptions based on observations during site inspections. The site will be inspected before each vegetation management visit to plan appropriate management actions.

7 Vegetative Screening

A vegetative screen will be planted along several strategic areas of the project perimeter (see Appendix A) and will be comprised of native evergreen trees and/or shrubs to obscure the project from neighboring residences. Shrubs will be a minimum of two feet tall (or in a two-gallon pot) at the time of planting, and evergreen trees will be at least four feet tall at the time of planting.

8 Vegetation Monitoring and Management Timeline

Year 0		
Seedbed Preparation	Deep ripping and discing will be used to decompact soils following construction. Herbicide will be applied as needed to remove invasive species prior to seeding.	Aug-Oct
Seeding	Wet-mesic and dry-mesic pollinator seed mixes will be seeded along with a cover crop of winter wheat. *Seeding may be delayed until the following spring from Apr to Jun.*	Oct 15th until the ground freezes
Year 1		
1st Vegetation Inspection	Timed meander survey or equivalent surveying method to monitor vegetation, and observations will be recorded in the GIS field application.	Late Apr
1st Herbicide treatment	Spot treatment of noxious and invasive species as needed. Herbicide treatment may be concurrent with mowing visit.	Variable
1st Mow	Complete site mow to control noxious and invasive species and encourage growth of native plant community.	May
2nd Vegetation Inspection	Timed meander survey or equivalent surveying method to monitor vegetation, and observations will be recorded in the GIS field application.	Jun
2nd Herbicide treatment	Spot treatment of noxious and invasive species as needed. Herbicide treatment may be concurrent with mowing visit.	Variable
2nd Mow	Complete site mow to control noxious and invasive species and encourage growth of native plant community.	Jul
3rd Vegetation Inspection	Timed meander survey or equivalent surveying method to monitor vegetation, and observations will be recorded in the GIS field application.	Late July
3rd Mow	Complete site mow to control noxious and invasive species and encourage growth of native plant community.	Aug-Sep
3rd Herbicide Treatment	Spot treatment of noxious and invasive species as needed. Herbicide treatment may be concurrent with mowing visit.	Variable
Year 2		
1st Vegetation Inspection	Timed meander survey or equivalent surveying method to monitor vegetation, and observations will be recorded in the GIS field application.	Late Apr
1st Mow	Complete site mow to control noxious and invasive species and encourage growth of native plant community.	Jun
1st Herbicide Treatment	Spot treatment of noxious and invasive species as needed. Herbicide treatment may be concurrent with mowing visit.	Variable

2nd Vegetation Inspection	Timed meander survey or equivalent surveying method to monitor vegetation, and observations will be recorded in the GIS field application.	Jun
2nd Mow	Complete site mow to control noxious and invasive species and encourage growth of native plant community.	Jul-Aug
2nd Herbicide Treatment	Spot treatment of noxious and invasive species as needed. Herbicide treatment may be concurrent with mowing visit.	Variable
Year 3		
1st Vegetation Inspection	Timed meander survey or equivalent surveying method to monitor vegetation, and observations will be recorded in the GIS field application.	Late Apr
1st Herbicide Treatment	Spot treatment of noxious and invasive species as needed. Herbicide treatment may be concurrent with mowing visit.	Variable
1st Mow	Complete site mow to control noxious and invasive species and encourage growth of native plant community.	May
2nd Vegetation Inspection	Timed meander survey or equivalent surveying method to monitor vegetation, and observations will be recorded in the GIS field application.	Jun
Optional 2nd Herbicide Treatment	Spot treatment of noxious and invasive species as needed.	Variable
Optional 2nd Mow	Complete or targeted site mow to control noxious and invasive species and encourage growth of native plant community.	Jul-Aug
Year 4		
1st Vegetation Inspection	Timed meander survey or equivalent surveying method to monitor vegetation, and observations will be recorded in the GIS field application.	Late Apr
Optional Herbicide treatment	Spot treatment of noxious and invasive species as needed.	Variable
2nd Vegetation Inspection	Spot treatment of noxious and invasive species as needed. Herbicide treatment may be concurrent with mowing visit.	Jun
Dormant Mow	Complete site mow to control noxious and invasive species and encourage growth of native plant community.	Oct-Nov
Years 5-25		
1st Vegetation Inspection	Spot treatment of noxious and invasive species as needed. Herbicide treatment may be concurrent with mowing visit.	Late Apr
Optional Herbicide treatment	Spot treatment of noxious and invasive species as needed.	Variable
2nd Vegetation Inspection	Spot treatment of noxious and invasive species as needed. Herbicide treatment may be concurrent with mowing visit.	Jun
Optional Dormant Mow	Mow every three years to remove thatch.	Oct-Nov

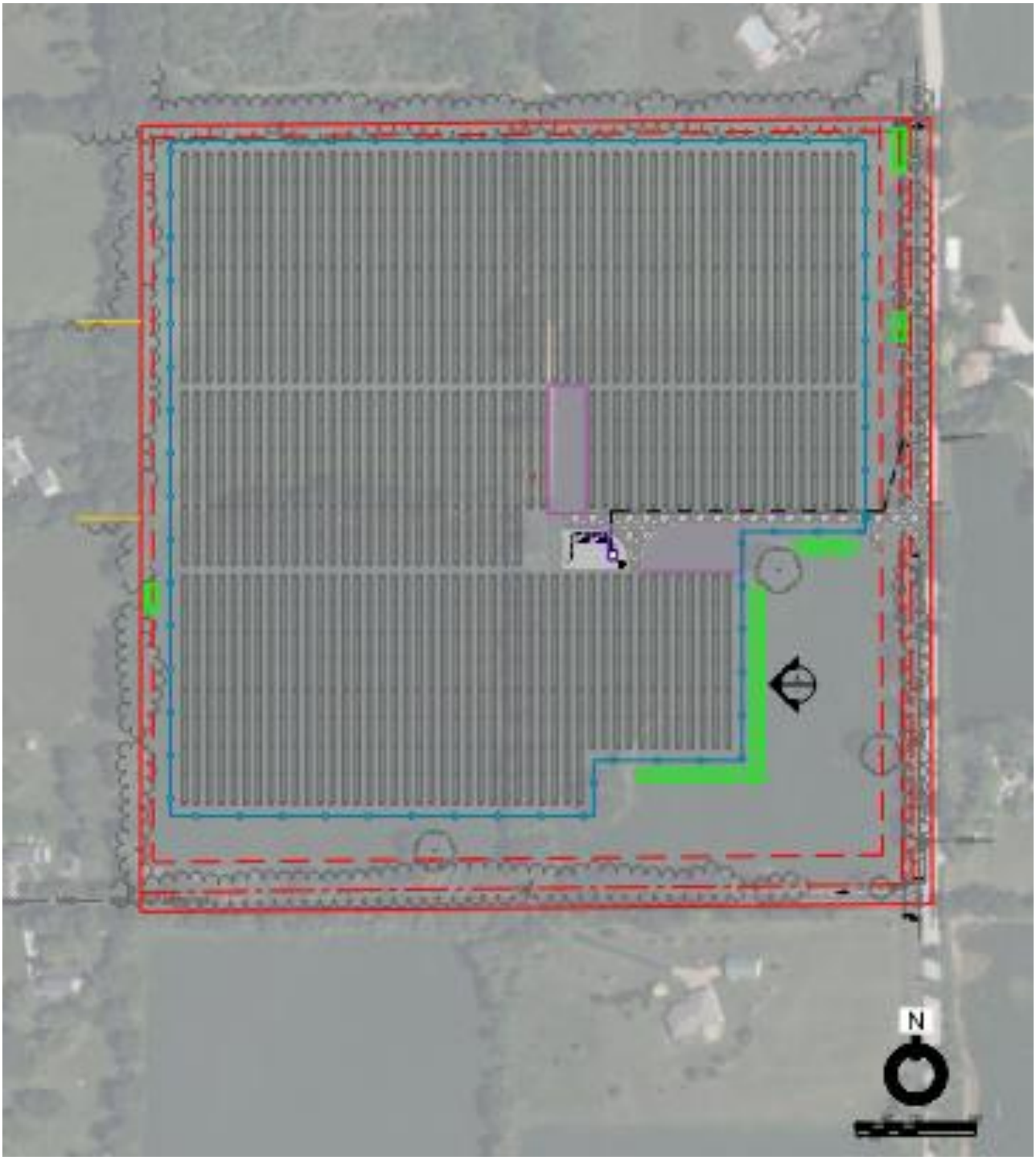
9 References

Siegner, K., Wentzell, S., Urrutia, M., Mann, W., & Kennan, H. (2019) Maximizing land use benefits from utility scale solar: A cost benefit analysis of pollinator-friendly solar in Minnesota. *Yale Center for Business and the Environment*. https://cbey.yale.edu/research/maximizing-land-use-benefits-from-utility-scale-solar.

Walston, L. et al. (2018) Examining the potential for agricultural benefits from pollinator habitat at solar facilities in the United States. *Environmental Science & Technology 52* (13), 7566-7576. https://doi.org/10.1021/acs.est.8b00020.

Walston, L. et al. (2020) Modeling the ecosystem services of native vegetation management practices at solar energy facilities in Midwestern United States. *Ecosystem Services* (47), 101227. https://doi.org/10.1016/j.ecoser.2020.101227.

10 Appendix A – Site Plan



11 Appendix B – Pollinator Seed Mixes

Percentage of mix is the based on seed weight.

Upland Mix

Common Name	Scientific Name	% of Mix	Seeds/ft^2
Grasses			
Sideoats Grama	*Bouteloua curtipendula*	27.27%	6.61
Blue Grama	*Bouteloua gracilis*	7.27%	11.75
Plains Oval Sedge	*Carex brevior*	2.55%	2.98
June Grass	*Koeleria macrantha*	1.82%	14.69
Little Bluestem	*Schizachyrium scoparium*	33.45%	20.28
Prairie Dropseed	*Sporobolus heterolepis*	0.36%	0.24
Forbs			
Common Yarrow	*Achillea millefolium*	0.36%	2.62
Anise Hyssop	*Agastache foeniculum*	0.09%	0.33
Prairie Onion	*Allium stellatum*	0.73%	0.32
Lead Plant	*Amorpha canescens*	1.36%	0.88
Wild Columbine	*Aquilegia canadensis*	0.18%	0.28
Common Milkweed	*Asclepias syriaca*	0.36%	0.06
Butterfly Milkweed	*Asclepias tuberosa*	0.91%	0.16
Whorled Milkweed	*Asclepias verticillata*	0.10%	0.20
Sky Blue Aster	*Symphyotrichum oolentangiense*	0.18%	0.59
Upland White Goldenrod	*Solidago ptarmicoides*	0.73%	1.88
Partridge Pea	*Chamaecrista fasciculata*	2.73%	0.30
Lanceleaf Coreopsis	*Coreopsis lanceolata*	1.09%	0.88
White Prairie Clover	*Dalea candida*	4.55%	3.49
Purple Prairie Clover	*Dalea purpurea*	5.82%	4.23
Rough Blazing Star	*Liatris aspera*	0.27%	0.18
Spotted Bee Balm	*Monarda punctata*	0.18%	0.66
Large-flowered Beardtongue	*Penstemon grandiflorus*	0.73%	0.41
Prairie Wild Rose	*Rosa arkansana*	0.09%	0.01
Black-eyed Susan	*Rudbeckia hirta*	2.09%	7.77
Gray Goldenrod	*Solidago nemoralis*	0.09%	1.10
Ohio Spiderwort	*Tradescantia ohiensis*	0.45%	0.15
Hoary Vervain	*Verbena stricta*	1.73%	1.95
Heartleaf Alexanders	*Zizia aptera*	0.36%	0.18
Golden Alexanders	*Zizia aurea*	2.18%	0.97

Seeding Rate: 85.9 seeds/ ft^2

Lowland Mix

Scientific Name	Common Name	% of Mix	Seeds/ft^2
Grasses			
Carex scoparia	*Pointed-broom Sedge*	1.40%	2.81
Carex stipata	*Common Fox Sedge*	6.85%	5.56
Carex vulpinoidea	*Brown Fox Sedge*	4.65%	11.1
Juncus dudleyi	*Dudley's Rush*	0.15%	11.46
Juncus effusus	*Common Rush*	0.40%	9.55
Elymus virginicus	*Virginia Wild Rye*	55.60%	5.58
Poa palustris	*Fowl Bluegrass*	9.00%	27.93
Forbs			
Anemone canadensis	*Canada Anemone*	3.65%	0.7
Symphyotrichum novae-angliae	*New England Aster*	1.30%	2.05
Verbena hastata	*Blue Vervain*	0.90%	2
Lobelia siphilitica	*Great Blue Lobelia*	0.35%	4.18
Lycopus americanus	*Water Horehound*	0.45%	1.4
Lythrum alatum	*Winged Loosestrife*	0.01%	0.72
Mimulus ringens	*Monkey Flower*	0.10%	5.49
Alisma subcordatum	*Water Plantain*	1.95%	2.79
Pycnanthemum virginianum	*Virginia Mountain Mint*	0.65%	3.41
Tradescantia ohiensis	*Ohio Spiderwort*	7.29%	1.39
Zizia aurea	*Golden Alexanders*	5.30%	1.39

Seeding rate: 99.50 seeds/ft^2