STAFFORD FIELD MANAGEMENT PLAN

LAKE LOTAWANA HOMEOWNERS ASSOCIATION

JACKSON COUNTY, MISSOURI

January 2025

Project No. 24063.01

ALLSTATE CONSULTANTS

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CONSERVATION DEPARTMENT MISSOURI
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The Bee & Butterfly Habitat Fund

Executive Summary

The purpose of this Stafford Field Management (Plan) is to provide the guidance and management necessary to fulfill the Lake Lotawana Homeowners Association (HOA) intentions now and in the future for the property. It is the desire to create more native plant species diversity and insect pollinator habitat, along with improving overall wildlife habitat and maintaining watershed protections, on Stafford Field. The HOA also intends to improve aesthetics, the viewshed and pathway usability for residents that use Stafford Field. In addition, the HOA intends, with this management plan, to provide a thoughtful plan for community event space and parking. The HOA has developed a comprehensive map of planned use space for Stafford Field that guides future HOA leadership and staff in delivering and maintaining the intended planned uses.

This plan was developed in cooperation with the Missouri Department of Conservation and the Bee and Butterfly Habitat Fund.

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A. Stafford Field Existing Conditions

Stafford Field is an approximately 55-acre open space owned by the HOA. The property is a former private airstrip sold to the HOA with the condition it remain an open "parkland." The property was sold with deed restrictions that prohibit commercial or agricultural uses. The site is periodically mowed for hay and has numerous walking paths. It is very popular among dog owners who enjoy walking and allowing their dogs to run. Stafford Field is also the site for the popular "Lotasmoke Barbeque" event held every October. The map on the following page shows the general location of Stafford Field.

On April 9, 2024, Allstate Consultants (Allstate) and HOA members met on-site with Andy Carmack, Private Lands Biologist with the Missouri Department of Conservation (MDC), to discuss habitat development and management options compatible with the current public uses, including the annual Lotasmoke Barbeque event. Cool season grasses dominate the site, predominantly fescue. Some invasive species were observed, including pampas grass and Sericea lespedeza.

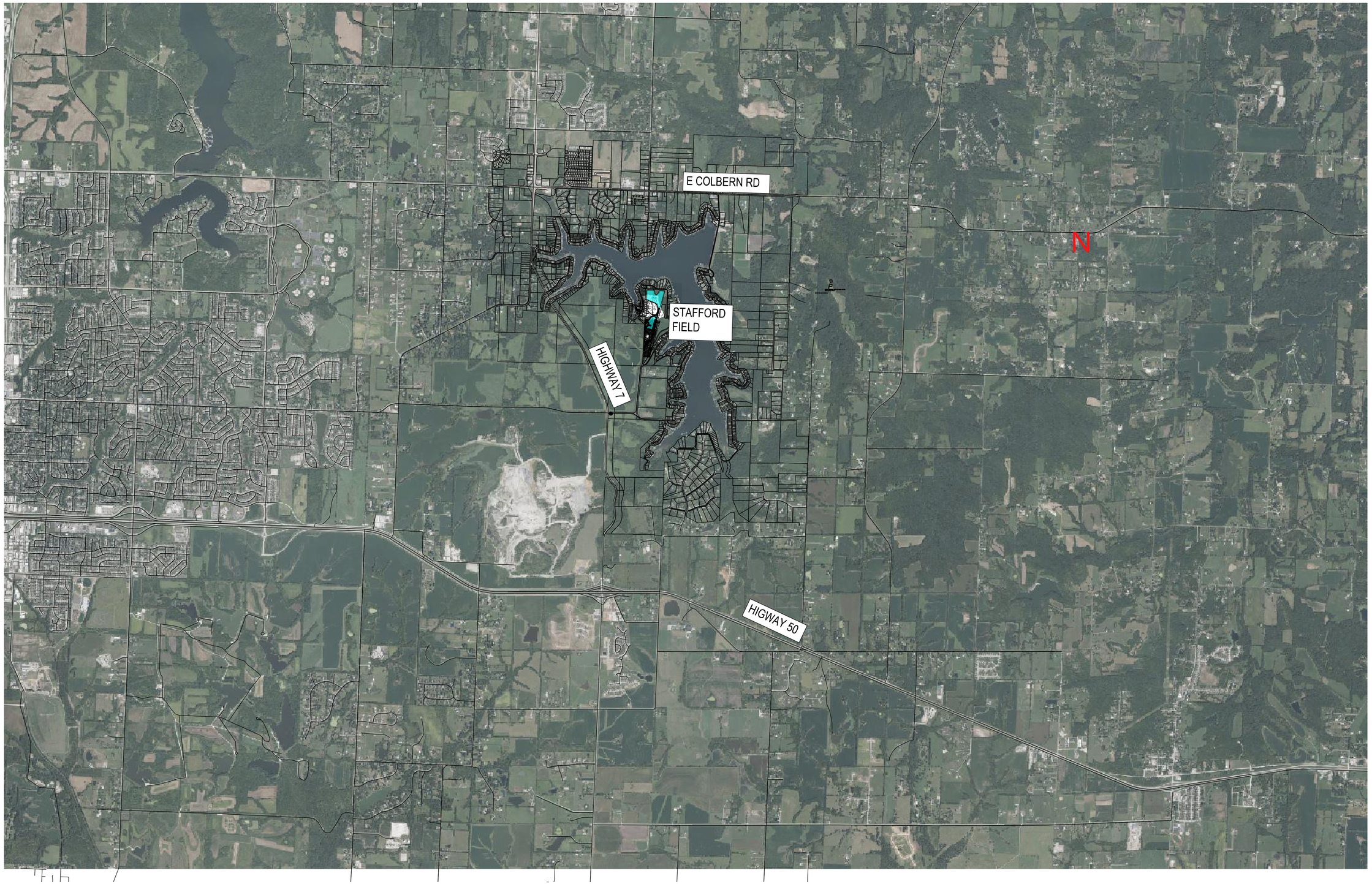
B. Missouri Department of Conservation Recommendation

The MDC has assisted with aspects of this management plan and will be helping find financial assistance in the form of matching grants. It was recommended the HOA increase plant species diversity, emphasizing pollinator and monarch butterfly habitat. Also, to reach out to the Bee and Butterfly Habitat Fund (BBHF), a nonprofit conservation organization working to improve habitat for native and non-native pollinators.

The HOA with Allstate reached out to BBHF to discuss partnering opportunities and received a verbal partnership commitment that includes a commitment to donate seed mixes to accomplish the replanting. An agreement will be drafted and executed between the HOA and BBHF at the appropriate stage. In order to initiate the partnership, the HOA must apply online to the BBHF and complete the application form at the following link https://forms.monday.com/forms/1a1f173667600becf6ce279b74afaba3?r=use1.

The HOA may hire a professional conservation contractor for some or all of seed establishment phase work. The HOA staff will do future long-term management work for the property.

PROPOSED NATIVE GRASS AND WILDFLOWER PLANTINGS



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MISSOURI STATE CERTIFICATE OF AUTHORITY #2007004004

PROPOSED NATIVE GRASS AND WILDFLOWER PLANTINGS
AT STAFFORD FIELD
LAKE LOTAWANA ASSOCIATION, INC.
LAKE LOTAWANA, JACKSON COUNTY, MISSOURI

NOT FOR PRELIMINARY CONSTRUCTION

DATE
12-18-2024

REVISED:

JOB NUMBER
24063.02

SCALE
1"=120'

SHEET
1

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C. Objectives

The HOA has developed the following management plan objectives for Stafford Field.

1. Improve plant diversity and habitat conditions for native and non-native pollinators while improving aesthetics, viewsheds, pathway use for the lake residents and watershed management.
2. Have dedicated event space and parking space to accommodate large public events.
3. Remain in compliance with deed restrictions associated with Stafford Field.

C. Seed Mix

The BBHF recommends two different pollinator seed mixes for the projects they support. While a wide range of pollinator species use and benefit from each seed mix, one mix is tailored to honey bees, and the other provides habitat for monarch butterflies and other pollinators. The recommendation is to establish separately on approximately 50% of the site each seed mix. The BBHF Honey Bee and Monarch Butterfly Seed Mixes have different planting and management considerations (see Seeding Plan).

Unit 1- BBHF's Missouri Monarch Mix (12.29 acres)
The Monarch Butterfly Seed Mix contains a minimum of 40 different wildflower species. This seed mixture contains a combination of annual, biennial, and perennial plants that will establish over time. Patience is necessary when growing a diverse mix of native wildflowers and milkweed species based germination and growth cycles. The establishment of this plot uses the 'Sleep, Creep and Leap' philosophy: in year 1, the planting appears to be asleep; in year 2, it starts to creep; and in year 3, it leaps as a successful project.

The HOA will need to do extensive education to the members on the project in order to establish expectations for the plot preparation, seeding and growth maturity cycle of Sleep, Creep and Leap.


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Habitat Projects
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PROPOSED NATIVE GRASS AND WILDFLOWER PLANTINGS

NOTES:

1 WALKING PATHS ARE SHOWN SCHEMATICALLY FOR REFERENCE OF WALKING PATHS TO BE DETERMINED BY THE LAKE LOTAWANA ASSOCIATION

LEGEND:

- WALKING PATHS / BURN BREAK (SEE NOTE1)
- UNIT 1 — MONARCH MIX 12.29 AC.
- UNIT 2 — HONEY BEE MIX 8.26 AC.
- UNIT 3 — GREEN FESCUE & CLOVER MIX / BURN BREAK 19.08 AC.

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Unit 2 - BBHF's Honeybee Mix (8.26 acres)
Many of the species included in the Honeybee Seed Mix do not germinate until the soil temperature reaches 60°F. The HOA should expect the plot to initially appear to have a low diversity of flowering plants. In the first year, slow-establishing plants will still be at the seedling stage in early summer. By mid-to-late summer, these plants will grow rapidly, and many will begin to flower. In subsequent years, perennials and biennials will achieve a strong presence in the field. Expect the composition of flowering plants to evolve and change slightly each year.

Unit 3 - Fescue and Clover Mix and Burn Breaks (19.08 acres)
Overseed the existing cool season grass (typically fescue) with naturalized Dutch white clover at a rate of 1/3 pound per 1,000 square feet. This species is a short, low-growing clover that provides pollinator habitat and accommodates heavy traffic with minimal maintenance. This mix, when mowed will serve as suitable prescribed fire burn breaks controlling the extent of prescribed burning on Units 1 and 2.

D. Site Preparation

Units 1 and 2

Since Round-up Ready soybean crops are not an option for this project, a less optimal (but still effective) site prep strategy has been recommended by BBHF and MDC personnel. Apply a glyphosate herbicide twice during the next growing season. The first application will be to kill cool-season grasses in Late April/early May. As the grasses die, broadleaf weed seeds lying dormant in the seedbed will be allowed to germinate. A mid to late-September application will kill the cohort of broadleaf weeds.

This method involves terminating grasses using multiple herbicide applications throughout 1+ growing seasons. While this plan can control grasses, it is much less effective at controlling the early successional weeds (thistle, pigweed, kochia, etc.) that will almost certainly appear on the site once the grasses have been terminated or set back. Glyphosate should be applied according to the following recommendation, which will include the need for spot applications.

Glyphosate Application Guide
An effective management tool to terminate existing vegetation on the site is to apply a treatment of Glyphosate following the prescription of:

- Apply a Glyphosate herbicide application at a rate of 2 quarts/acre.
- Herbicide should be applied with no more than 10 gallons of solution (herbicide plus water) per acre and include Ammonium Sulfate (AMS) at a rate of 17 pounds/100 gallons of water.
- Herbicide should be applied on a sunny day when air temperatures are between 60° and 85°F.
- Herbicide should be applied when relative humidity is less than 80%.
- Herbicide should not be applied within 2 hours of sunrise or sunset.
- Apply in a manner where the herbicide makes as much contact with the still green and growing vegetation as possible.

After spraying, put up signs with the appropriate re-entry period to discourage pedestrians and pets from using the area prior to the herbicide being absorbed by the plants. Most information suggests a 12-hour re-entry period and the herbicide safety recommendations on the label should be adhered too.

Unit 3

No preparation is necessary. Overseed with the recommended rate above between December and February with a plan for annual overseeding as needed.

E. Seeding

The seeds provided by the BBHF will require planting during the "dormant" (winter) season. The seeds must go through at least two or three "freeze/thaw" cycles to stimulate germination. Ideally, the seed mix should be planted from December to January.

If substantial residue exists after the plot preparation, a no-till seed drilling at 1/8 – ¼ inch depth is recommended (and generally a more effective method). If there is not much plant residue, the seeds can be broadcast.

If broadcast seeding is the only option and heavy residue exists, a prescribed fire is recommended in Units 1 and 2 to remove residue and will allow much better seed to soil contact when broadcasting seed. Broadcasting involves spreading the seeds over the surface of the soil. Then use a cultipacker or harrow to shallowly incorporate seed into the soil to increase seed-to-soil contact. Snow and rain will also help incorporate the seeds into the soil seed bed. This technique does an excellent job of ensuring that tiny seeds are not planted too deep in the ground, which would negatively affect their germination and growth. **It is critically important to have a high seed-to-soil contact ratio using the broadcasting method.** If the broadcast seeds do not fall on bare soil, their germination rate will be significantly reduced, which will negatively impact the establishment of your project.
It is more difficult to spread seed mixes precisely by broadcasting seeding. As a result, mixes that will be applied using the broadcast seeding method should include a high proportion of an inert 'carrier 'such as rice hulls. Rice hulls are biodegradable and inexpensive, and they are an effective carrier to evenly spread a small amount of seed over a large field area. Seed mixes

that will be broadcast-seeded receive a much higher proportion of filler than seed mixes, which are seeded using a seed drill.

F. Management and Maintenance

Establishment Period

Because of deed restrictions using the BBHF recommended “gold level” soybean stubble for establishing the pollinator seed will not be possible. Therefore, the HOA will have to establish a more aggressive management of cool-season grasses and nuisance weeds during the establishment period. Pollinator seed establishment can be slowed by residual cool-season grasses and nuisance weeds. Mowing at the right time can help knock back these grasses and weeds, and prevent setting of weed seed. The mowing will also help stimulate the growth and establishment of desirable pollinator plants.

It is critical to establish a frequent mowing that prevents mulch from covering the young, fragile seedlings. Mow before the vegetation reaches 20" to 24" tall (knee-high) and mow to 6" to 12" tall (calf-high). During the first year of establishment, more frequent, regular mowing will be needed to control the first year's annual weeds. Sites should be kept at a height of 12 inches on average throughout the growing season.

Post-Establishment

Mowing and the Monarch Butterfly Life Cycle

After the establishment period, it is critical to time any mowing activities throughout the growing season to avoid interfering with the monarch butterfly’s life cycle. The eastern monarch butterfly performs an epic migration each year. In the spring, they migrate from northern Mexico to Canada. In the fall, they return to the mountains of northern Mexico. The migration passes through the states east of the Rocky Mountains. It takes three to four generations of monarchs to complete the northward migration. On the journey north, reproduction occurs on a variety of milkweed species. The southward migration takes one generation. Adults stop to feed on flowering plants (non-milkweed) along the way.
Areas that include milkweed, avoid mowing from April 1-October 15. Mowing during high monarch reproduction or migration periods can damage eggs, larval and pupal stages, or adult monarchs. Monarchs prefer to lay eggs on young, tender milkweed. In areas where monarch activity is low for an extended period during the summer, mowing in mid-summer can improve monarch habitat by causing milkweed plants to regrow fresh shoots. If mowing is needed in the monarch mix, it should ideally be done from October 15 to March 31. If mowing is required outside of that window, please consult Elsa Gallagher with BBHF.

Herbicides

Herbicide applications conducted in the late fall after wildflower species have become dormant are the most effective technique for controlling and eliminating cool-season grasses in an established pollinator project. Cool-season grasses remain actively growing following a hard freeze when other plants are dormant, and they can be terminated by applying Glyphosate

when air temperatures are 60°F or warmer on a sunny day. This technique allows you to selectively impact the cool-season grasses without affecting the desired wildflower species and warm-season grasses.

Best Practices for Controlling Cool-Season Grasses in Pollinator Habitat

1. Hay or use prescribed fire in late summer to remove vegetative material which may prevent herbicide from contacting actively growing smooth brome and fescue. Time haying or burning so that there will be enough time for the cool season grasses to regrow to a height of at least 6".

2. Wait a minimum of 7 days after the first hard freeze of the fall to ensure the dormancy of your desired plant species. This herbicide application can take place very late in the year, if the air temperature is at least 60°F at the time of spraying.

4. After dormancy is reached, apply Glyphosate herbicide. This application will not harm the native warm season grasses or wildflowers that have gone dormant for the season but will eliminate the actively growing cool season grasses.

5. Spray with Glyphosate on a sunny to mostly sunny day while the air temperature is at least 60°F. Make sure the herbicide is being applied to the green and still actively growing cool-season grasses.

Prescribed Fire

Prescribed fire mimics the natural cycle of prairie landscapes. Benefits include reducing the risk of wildfires, preventing woody encroachment, restoring nutrients to the soil, and improving the germination of many native prairie plants. Prescribed fire should be applied in rotation to protect habitats for pollinators and other wildlife. Your management objectives determine the appropriate time for a prescribed burn.

Conduct burns when warm-season plants are mostly dormant, but cool-season grasses are growing. Burn before cool-season grasses have set seed. If you wish to promote wildflowers, a growing season burn conducted in late summer into late fall can improve wildflower abundance and diversity. This practice will become routine after the third year of establishment. It will need to be conducted in an approximate three-year rotation.

G. Work Schedule for Establishment and Maintenance by Year

2025

January:
Apply online to the BBHF for seed using the following link: https://forms.monday.com/forms/1a1f173667600becf6ce279b74afaba3?r=use1. If contracting is necessary for glyphosate herbicide applications in April/May and September, the HOA should seek bids at this time for herbicide treatment, and, if necessary, for seeding installation. The HOA should also seek optional bids for "as-needed" prescribed burning of plant residue after herbicide treatment. The hiring of a contractor(s) for any aspect of establishment will depend on whether the HOA has the proper equipment for herbicide, seeding and burning, as well as staff training.

April:
In mid-April, mow the areas to be planted close to the ground to minimize thatch after herbicide application has been completed and provide a field boundary for the spray crew. In late April/early May, spray Units 1 and 2 with the glyphosate mix described in section D to kill cool season grasses.

September:
In mid-September, spray Units 1 and 2 again with the glyphosate mix described in Section D to kill broad-leaf weeds and residual grasses in preparation for dormant seeding. Check with Andy or Elsa or Allstate to determine if residue must be burned off before seeding, particularly if broadcast seeding is to be used. If so, mow burn lines and finalize burn contracts. Order Dutch clover seed for Unit 3.

November:
Units 1 and 2 seed mixes arrives from BBHF. Store in a cool, dry place.

December:
In mid to late December, no-till drill or broadcast the seed on the units according to the plan on Sheet 1. If completed by HOA staff with existing equipment, an ATV with a small broadcaster will work fine, but may require more time to complete. Follow up with a cultipacker or harrow to ensure good seed-to-soil contact. Broadcast the Dutch white clover seed on Unit 3.

2026

Spring/Summer:
Mow as often as necessary to maintain the vegetation height in Units 1 and 2 at 6"-12" high. Mow Unit 3 and burn lines as needed. See mowing recommendations in Section F.

2027

Herbicide treat for residual weeks and/or invasive species such as Sericea lespedeza.

2028/2029

Conduct prescribed fire treatment as noted in Section F, or, bush hog pollinator areas if prescribed fire is not possible.

H. Budget*

A rough budget has been established below to aid in project funding. Please review carefully including the footnote. The budget does not include periodic on-call engineering support, nor the cost of any equipment purchase.

Conservation Budget - Stafford Field				
Line Item	**Rate/Acre**	**Acres**	**Total/Acre**	**Item**
Two Herbicide Treatments (Glyphosate or approved equivalent) - Low Cost	$128.04	20.55	$2,631.22	$2,631.22
Two Herbicide Treatments (Glyphosate or approved equivalent) - High Cost	$866.32	20.55	$17,802.88	$17,802.88
Prescribed Burning Plan	$0.00	0	$0.00	$3,045.14
Prescribed Burning (Maintenance)	$72.52	20.55	$1,490.29	$1,490.29
Interseeding Clover into Fescue - Clover	$451.18	19.08	$8,608.51	$8,608.51
Monarch Seeding (assumed highest published rate)	$2,908.68	12.29	$35,747.68	$35,747.68
Honeybee Pollinator Mix	$1,943.46	8.26	$16,052.98	$16,052.98
Light Mowing (Establishment Period) - Low Cost	$53.44	20.55	$1,098.19	$1,098.19
Heavy Mowing (Establishment Period) - High Cost	$435.00	20.55	$8,939.25	$8,939.25
Herbicide Spot Treatment (Establishment Period)	$64.02	20.55	$1,315.61	$1,315.61
Signage and/or Signage Posts for BBHF Seeding Areas	$0.00	0	$0.00	$3,000.00
Low Cost Sub Total (includes low cost herbicide and mowing)				$72,989.62
High Cost Sub Total (includes high cost herbicide and mowing)				$96,002.34
Total Cost Range			$72989.62 - $96,002.34	

*This budget assumes hiring out all work to contractors. It is based on 2024 NRCS Easement Cost List. The NRCS cost estimates were doubled based upon recommendation of NRCS engineers. If Lotawana staff do the work, cost should be closer to ½. Monarch seed and Honeybee Pollinator Mix will be donated by BBHF.

I. Potential Cost-share

The HOA should continue to coordinate with MDC and other conservation entities for potential cost-sharing or in-kind services and opportunities for this project.