Upper Yahara Riverside Habitat Assessment

Village of DeForest
Dane County, Wisconsin

September 2022

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Executive Summary

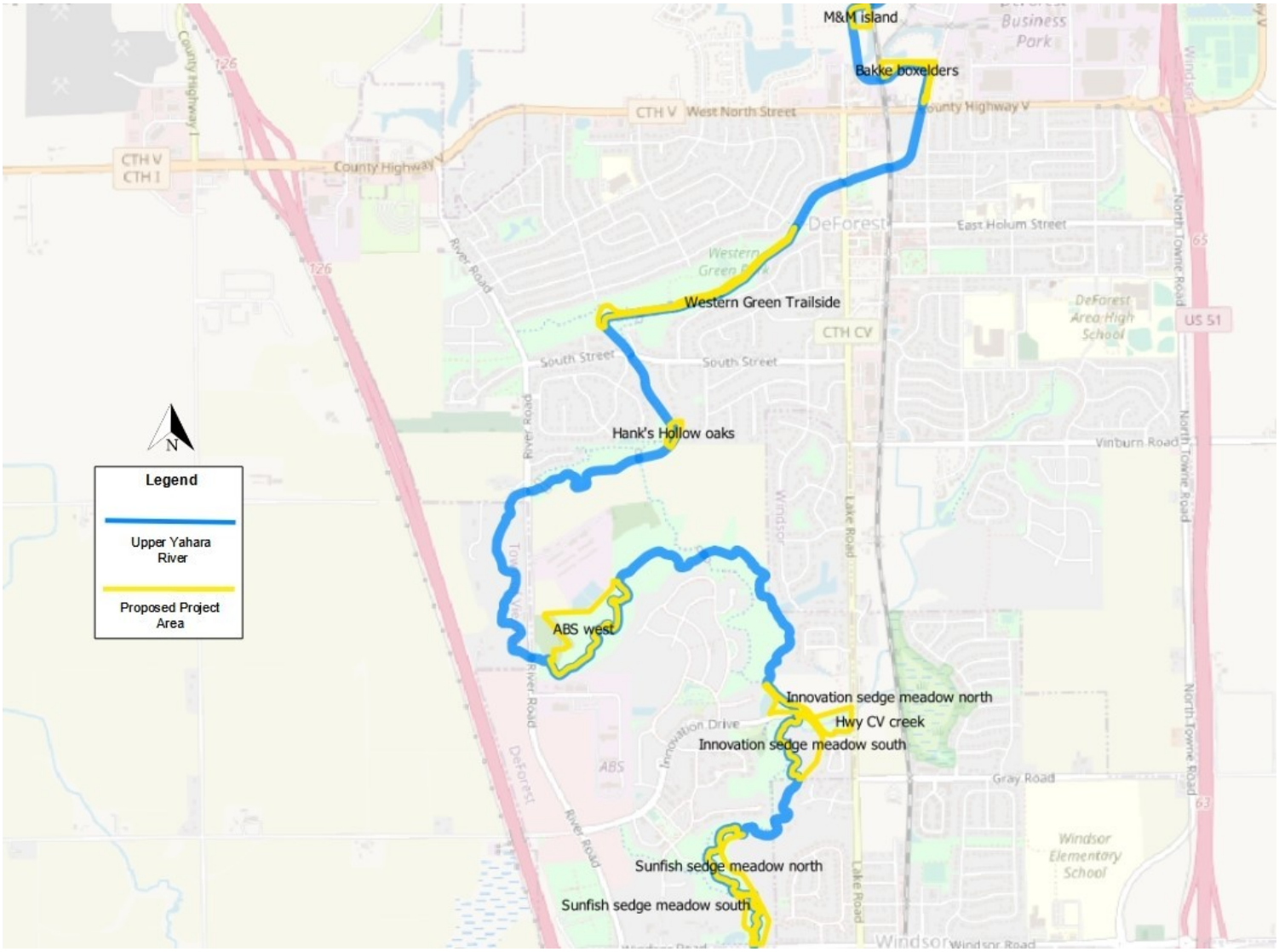
The upper Yahara River winds its way through the Village of Deforest. Any paddler who ventures downstream of South Street will be amazed at the amount of twists and turns they will take. Each of those bends in the river provides more shoreline for plants and wildlife to inhabit. Those river bends also help dissipate the energy of rushing waters during heavy rain events. All of the water that falls on and flows through the village will collect sediment and various runoff along its way. Given their position high in the watershed the village bears a great responsibility to be good stewards of that water by minimizing the unfiltered pollutants that can make their way into the river system.

For years the Village of DeForest has made ecological stewardship a top priority. A tremendous amount of work has already gone into restorations along the banks of the upper Yahara. Residents of the community, human and non-human, have been reaping the rewards and they will continue to for many years to come. Pockets of wildness are still intact all over the community and with proper care they will continue to flourish. Over a decade ago Taylor Conservation, LLC began to advise the Village of Deforest how to identify and care for their valuable natural resources. They have provided thorough assessments and plans which we have utilized as initial guidelines in our management.

The purpose of this document is to identify areas along the river that will receive the greatest benefit from future restoration projects. We prioritized areas based on high floristic quality and close proximity to healthy natural communities that we already maintain. Floristic quality is a measure of the amount of rare and uncommon plant species in a given area. It is most often the case that areas with greater floristic quality are more resilient to extreme disturbances like floods and droughts. Our objectives include preparing the community to better handle more of these extreme weather events. The other main objective is to improve available habitat to increase the layers of life that may utilize this landscape while providing a more enjoyable environment for us all to call home.

We can best maintain these areas by reintroducing the natural processes that helped them develop. Prescribed fire is our primary tool in that process. Quercus Land Stewardship Services (QLS) has been maintaining many acres of healthy natural communities along the Yahara with fire since 2014. It has been a pleasure to watch these natural communities respond so well. As invasive species continue to threaten these communities we will continue to fight them back with ancient practices and the latest techniques.

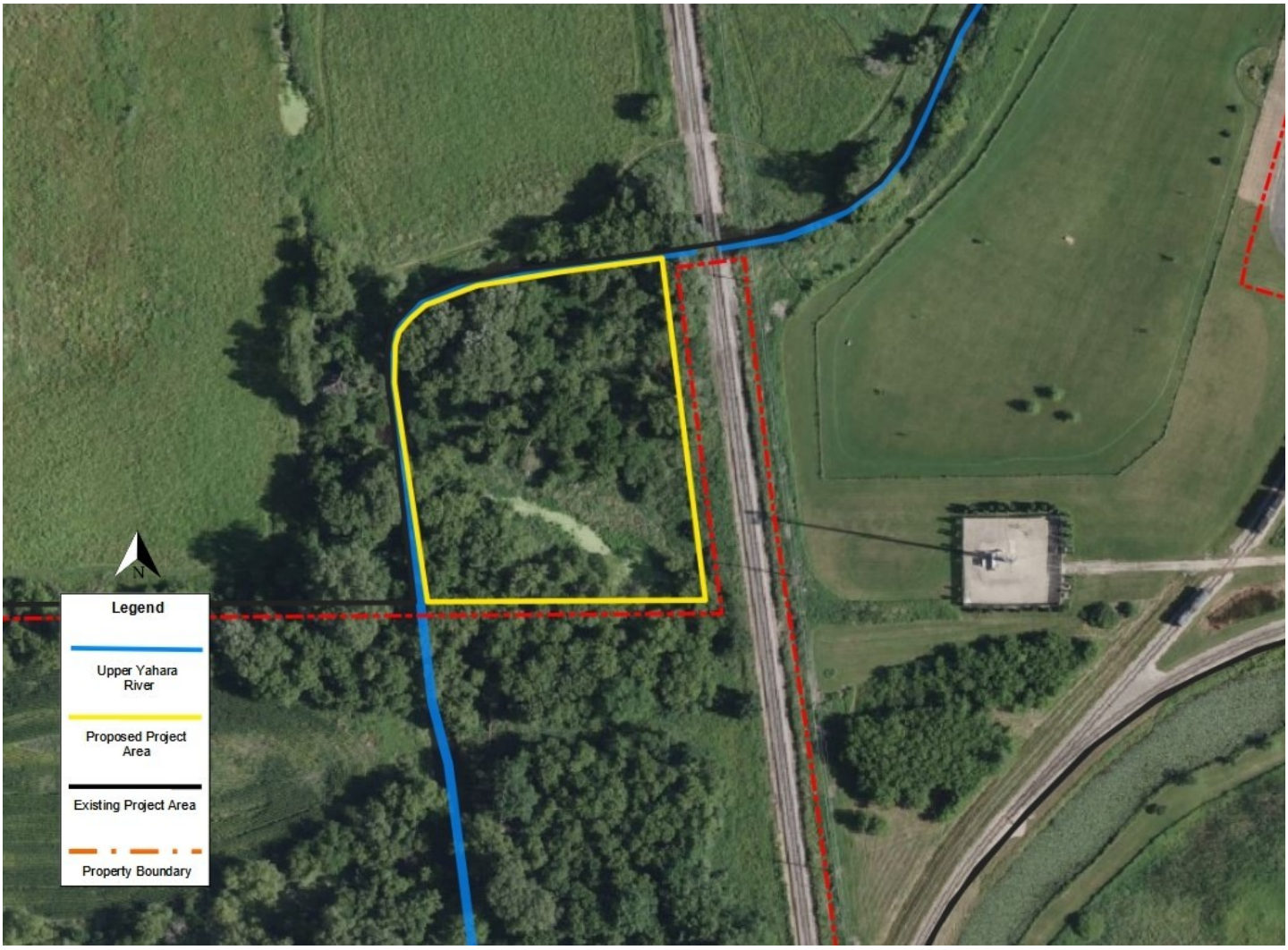
Overview of Proposed Project Areas



Proposed Project Areas

Ten proposed project areas are listed below. They are listed from north to south. A 5 year work plan is presented for each area with rough cost estimates if QLS were to perform the work. The sequence of recommended tasks is similar for most of these areas. It is the pathway that we tend to prefer, but it is not the only way to achieve our intended objectives. Any questions about tasks and/or their sequence will be addressed upon request.

M&M Island



This area hides across the river from a heavily managed 40 acre sedge meadow-lowland savanna complex that we refer to as “M&M”. There is very high floristic quality in many parts of M&M and there are signs of similar flora on this isolated 3 acre parcel that is cut off by the river and the railroad

tracks. Its lack of access lends to its neglect. Boxelder and cottonwood invasion has altered the soil moisture and decreased the sunlight. Lack of fire and periodic flooding has allowed Reed Canary Grass (RCG) to dominate the understory where sedge meadow could be. It would be ideal to link this area into our maintenance of M&M to the NW and Bakke Conservancy to the SE. Here is one way to begin restoring this area:

First Year

Girdle less desirable trees and large invasive brush	***$1,250 - $1,750***
Treat herbaceous invasive weeds	***$750 - $1,000***

Second Year

Cut, treat and burn invasive brush and trees that were girdled	***$4,500 - $5,750***
Treat herbaceous invasive weeds	***$750 - $1,000***

Third Year

Prescribed burn	***$900 - $1,100***
Treat herbaceous invasive weeds	***$750 - $1,000***
Treat RCG	***$550 - $700***
Treat brush re-sprouts	***$250 -$350***
Broadcast native seed collected from the best areas in M&M	***$2,500 - $3,000***

Fourth Year

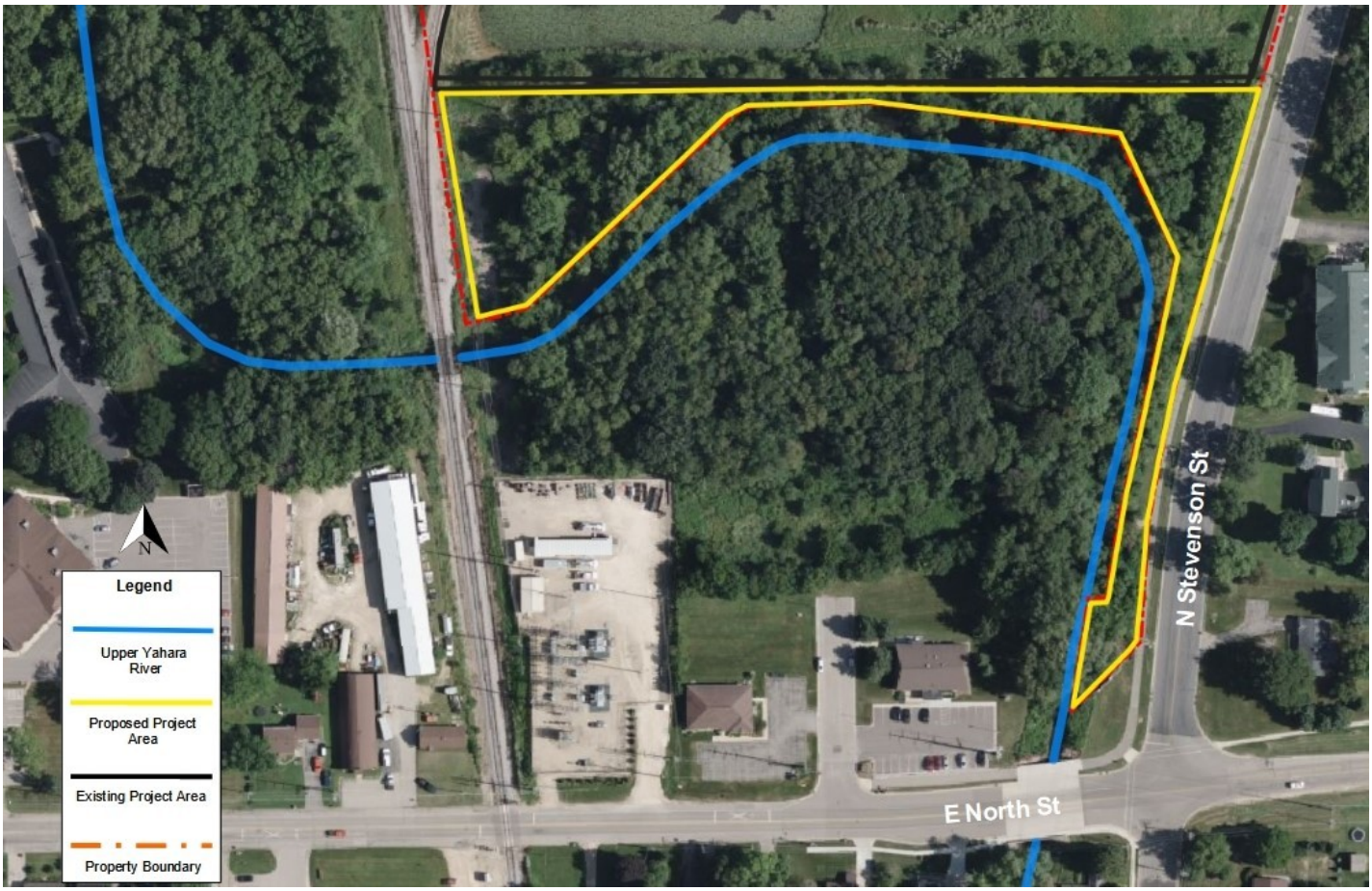
Treat herbaceous invasive weeds	***$750 - $1,000***

Fifth Year

Prescribed burn	***$900 - $1,100***
Treat herbaceous invasive weeds	***$750 - $1,000***
Treat RCG	***$550 - $700***
Broadcast more native seed collected from the best areas in M&M	***$1,500 - $2,000***

After the fifth year the site should continue to be burned biennially and scanned for invasive herbaceous weeds to treat. The costs for those tasks should remain similar, although we can expect standard increases due to inflation.

Bakke Boxelders



The floristic quality is not very high at this site. A very large American Plum tree is tucked in there along with a couple of oaks. Otherwise the area is dominated by boxelder, large invasive brush and RCG. This 2 acre parcel is worth restoring because it is adjacent to Bakke Conservancy and this margin creates a barrier between the well maintained conservancy and the Yahara. There is also greater value in restoring habitat further upstream as it all flows down. We recommend removing that barrier and blending these 2 acres into the maintenance of Bakke Conservancy. Here is one way to initiate that process:

First Year

Girdle less desirable trees and large invasive brush	***$1,150 - $1,550***
Treat herbaceous invasive weeds	***$650 - $900***

Bakke Boxelders (continued)

Second Year

Cut, treat and burn invasive brush and trees that were girdled	***$3,250 - $6,500***
Treat herbaceous invasive weeds	***$650 - $900***

Third Year

Prescribed burn with Bakke Conservancy	***$600 - $900***
Treat herbaceous invasive weeds	***$650 - $900***
Treat RCG	***$450 - $600***
Treat brush re-sprouts	***$250 -$350***
Broadcast native seed collected from the best areas in M&M	***$2,000 - $2,500***

Fourth Year

Treat herbaceous invasive weeds	***$650 - $900***

Fifth Year

Prescribed burn with Bakke Conservancy	***$600 - $900***
Treat herbaceous invasive weeds	***$750 - $1,000***
Treat RCG	***$450 - $650***
Broadcast more native seed collected from the best areas in M&M	***$1,250 - $1,750***

After the fifth year the site should continue to be burned biennially and scanned for invasive herbaceous weeds to treat.

Western Green Trailside



The 25 acre prairie planting at Western Green Park is very mature and has a great mix of species present. There is a heavily used trail system that winds through the planting enjoyed by many residents. A thin margin of invasive brush and boxelder along the south edge of the planting amounts to about 4 acres. This margin is bounded by the bike trail and the Yahara. There are some areas with some nice Bur Oaks waiting to be uncovered. Western Green Prairie would be better connected to the Yahara if the overgrowth were managed in that margin.

First Year

Cut, treat and burn invasive brush and less desirable trees	***$6,500 - $11,250***
Treat herbaceous invasive weeds	***$950 - $1,100***

Second Year

Prescribed burn with Western Green Prairie	***$700 - $1,150***
Treat herbaceous invasive weeds	***$950 - $1,100***
Treat RCG	***$550 - $700***
Broadcast native seed collected from Western Green Prairie	***$2,500 - $3,000***

Western Green Trailside (continued)

Third Year

Treat herbaceous invasive weeds	***$950 - $1,100***
Treat brush re-sprouts	***$250 -$350***

Fourth Year

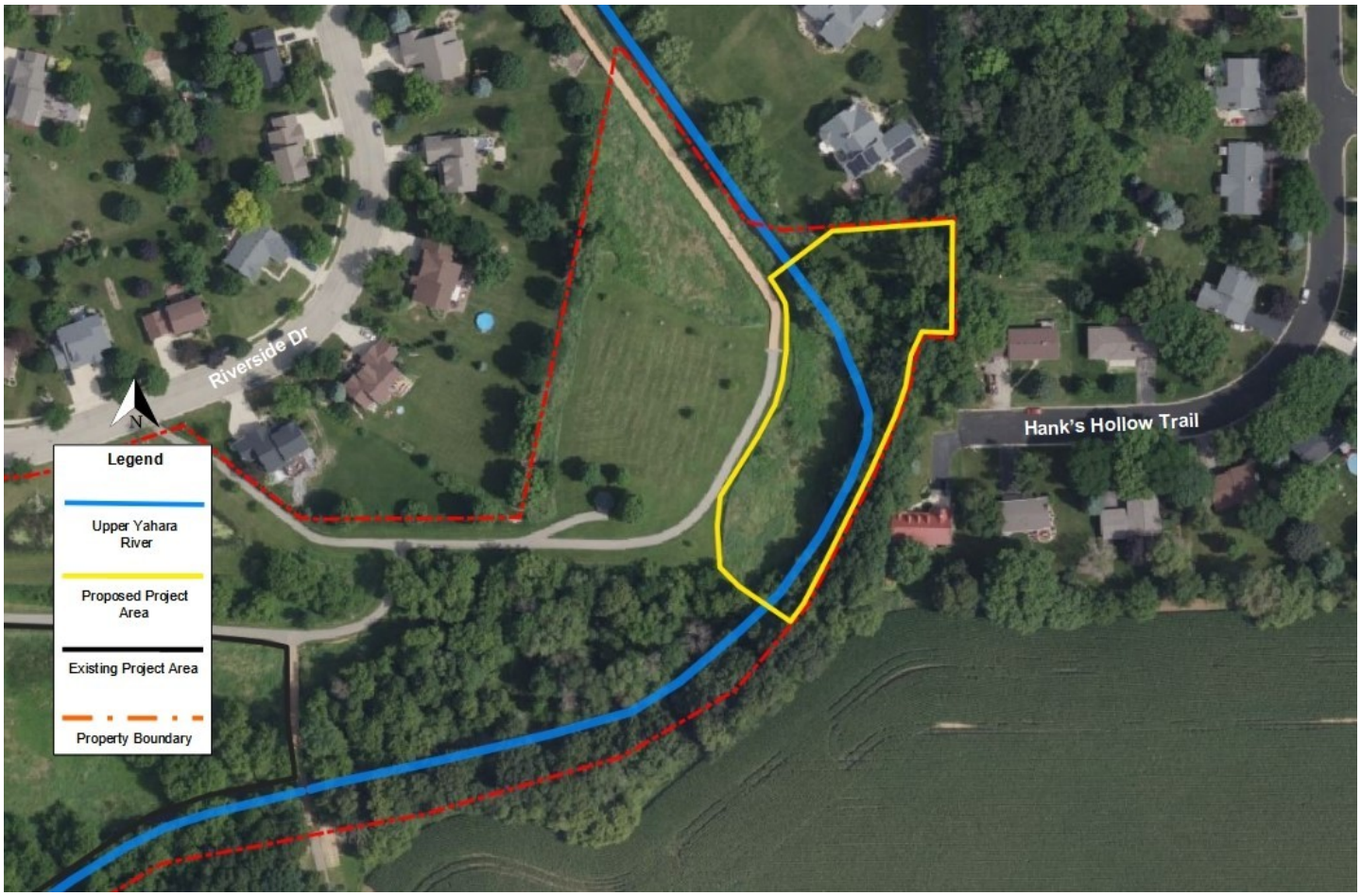
Prescribed burn with Western Green Prairie	***$700 - $1,150***
Treat herbaceous invasive weeds	***$950 - $1,100***
Treat RCG	***$550 - $700***
Broadcast more native seed collected from Western Green Prairie	***$1,500 - $2,000***

Fifth Year

Treat herbaceous invasive weeds	***$950 - $1,100***

After the fifth year the site should continue to be burned biennially and scanned for invasive herbaceous weeds to treat.

Hank’s Hollow Oaks



There is a steep bank along the turn in the river at the end of Hank’s Hollow Trail. The area amounts to about 0.5 acres. Some impressive mature Bur Oak trees are helping hold that bank together there. Their branches reach nicely across the river. It should be a priority in any neighborhood to identify the old trees and help them continue to live long lives. They link us to the past like nothing else can. These particular trees have some invasive brush and boxelder growing under and around them. We recommend clearing that understory to allow more light to reach the ground. Shade tolerant natives could be planted beneath the oaks. There is also a 0.5 acre un-mowed area in Sunnybrook Park on the west side of the river that could be transformed into a native planting. Currently it is dominated by non-native grasses.

Hank's Hollow Oaks (continued)

First Year

Remove invasive brush and encroaching trees from big oaks	***$850 - $1,150***
Treat herbaceous invasive weeds under big oaks	***$150 - $200***
Prep prairie planting area on west side of river	***$200- $250***
Broadcast native seed on west side of river and under oaks	***$950- $1225***

Second Year

Treat herbaceous invasive weeds on both sides of the river	***$225 - $325***
Treat brush re-sprouts under oaks	***$250 -$350***
Mow the prairie planting twice throughout growing season	***Done by Village***

Third Year

Treat herbaceous invasive weeds on both sides of the river	***$225 - $325***
Mow the prairie planting at least once during growing season	***Done by Village***

Fourth Year

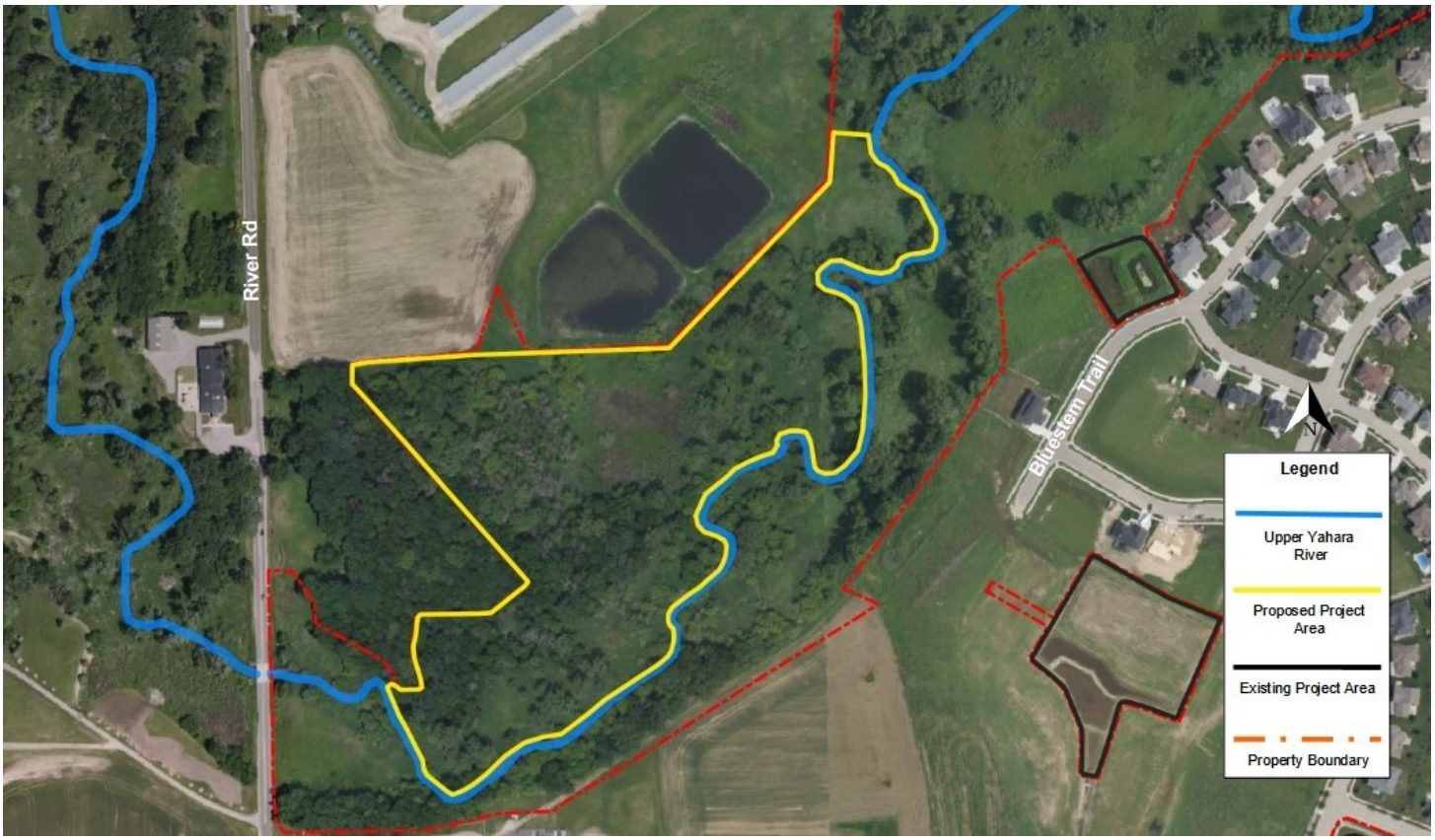
Prescribed burn of prairie planting	***$450 - $600***
Treat herbaceous invasive weeds on both sides of the river	***$225 - $325***

Fifth Year

Treat herbaceous invasive weeds on both sides of the river	***$225 - $325***

After the fifth year the site should continue to be burned biennially and scanned for invasive herbaceous weeds to treat.

ABS West



This area is about 15 acres and consists of some overgrown sedge meadow and lowland savanna. The woods that make up the west half of the unit are very rich and have a diverse display of spring ephemerals and woodland sedges. The public will likely not engage with this site much as there are no trails that lead into this area. A well maintained sedge meadow behaves like a sponge during heavy rains helping hold onto and filter that water. Even though people will not often venture back to enjoy this landscape, there is still great value in working to restore its original structure.

First Year

Girdle less desirable trees and large invasive brush	***$2,750 - $3,500***
Treat herbaceous invasive weeds	***$1750 - $2,250***

Second Year

Cut, treat and burn invasive brush and trees that were girdled	***$6,750 - $11,500***
Treat herbaceous invasive weeds	***$1750 - $2,250***

ABS West (continued)

Third Year

Prescribed burn	***$2,250 - $2,750***
Treat herbaceous invasive weeds	***$1750 - $2,250***
Treat RCG	***$1,150 - $1,450***
Treat brush re-sprouts	***$750 -$950***

Fourth Year

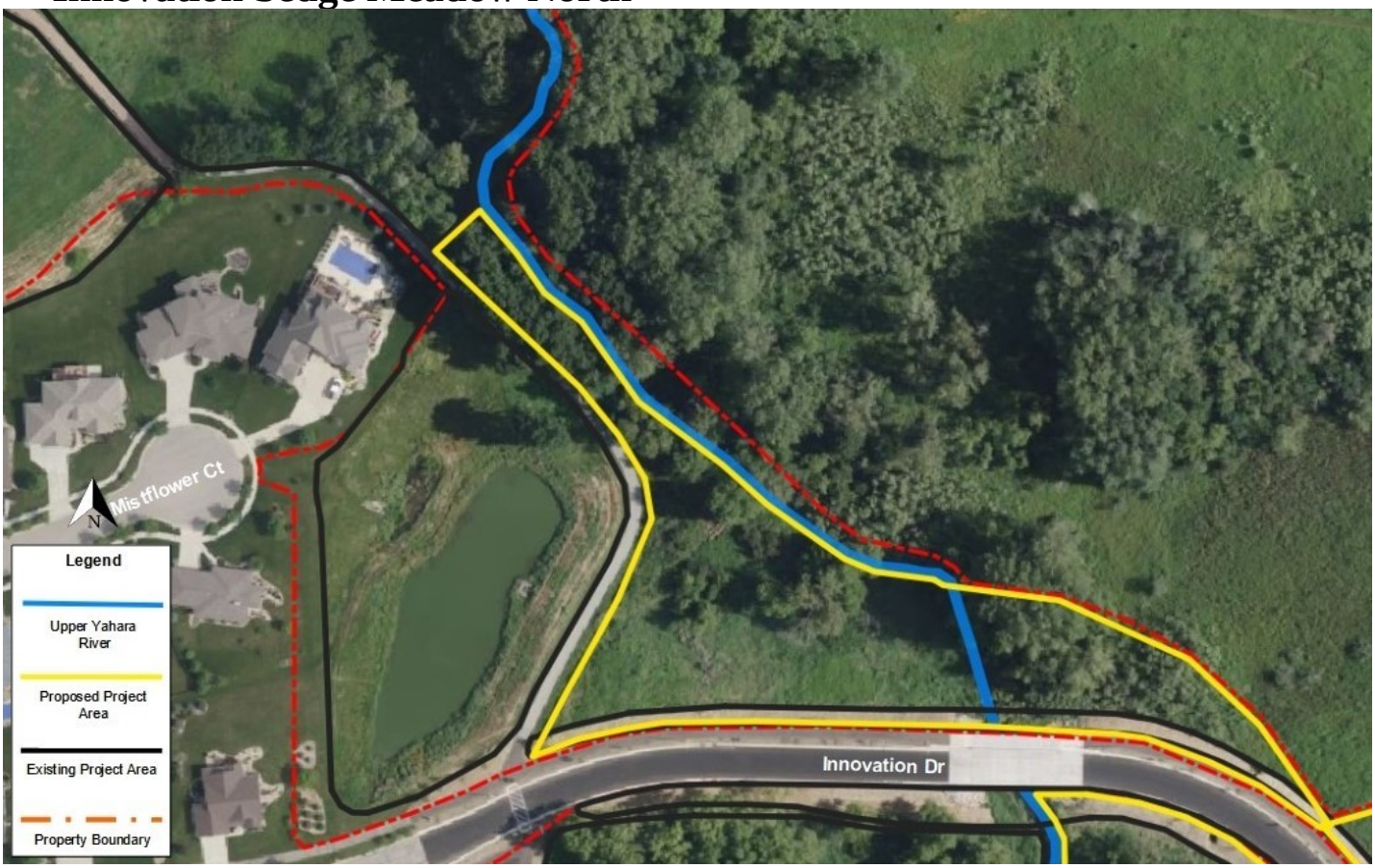
Treat herbaceous invasive weeds	***$1750 - $2,250***

Fifth Year

Prescribed burn	***$2,250 - $2,750***
Treat herbaceous invasive weeds	***$1750 - $2,250***
Treat RCG	***$1,150 - $1,450***

After the fifth year the site should continue to be burned biennially and scanned for invasive herbaceous weeds to treat.

Innovation Sedge Meadow North



North of Innovation Drive and west of the river there are 21 contiguous acres of sedge meadow and lowland savanna that have been maintained since 2015. Those acres have the highest floristic quality in the village. This 1.5 acre parcel is all that remains un-managed between those 21 acres and Innovation Drive. There is also about 0.5 acre on the east side of the river and north of Innovation Drive. Like many of the neglected areas along the river this one is overgrown with boxelder, invasive brush and RCG. This is a small site, but it could have a large impact when it comes to creating a contiguous healthy natural community. We recommend tying these 2 acres into the 21 maintained acres to the north.

First Year

Girdle less desirable trees and large invasive brush	***$750 - $950***
Treat herbaceous invasive weeds	***$550 - $800***

Innovation Sedge Meadow North (continued)

Second Year

Cut, treat and burn invasive brush and trees that were girdled	***$1,850 - $2,250***
Treat herbaceous invasive weeds	***$550 - $800***

Third Year

Prescribed burn	***$600 - $900***
Treat herbaceous invasive weeds	***$550 - $800***
Treat RCG	***$450 - $600***
Treat brush re sprouts	***$250 -$350***

Fourth Year

Treat herbaceous invasive weeds	***$550 - $800***

Fifth Year

Prescribed burn	***$600 - $900***
Treat herbaceous invasive weeds	***$550 - $800***
Treat RCG	***$450 - $600***

After the fifth year the site should continue to be burned biennially and scanned for invasive herbaceous weeds to treat.

Highway CV Creek



A small spring fed creek flows from Windsor under County Highway CV into the Village of Deforest and into the Yahara. On its way to the Yahara it flows through another area of degraded sedge meadow that has become dominated by less desirable trees and RCG. Within this 4 acre area 2 acres have become wooded while the other two acres are RCG with isolated pockets of wetland natives. We recommend returning the structure of this area to sedge meadow to allow more water filtration before it flows into that creek.

First Year

Girdle less desirable trees and large invasive brush	***$1,250 - $1,750***
Treat herbaceous invasive weeds	***$750 - $1,000***

Highway CV Creek (continued)

Second Year

Cut, treat and burn invasive brush and trees that were girdled	***$4,500 - $5,750***
Treat herbaceous invasive weeds	***$750 - $1,000***

Third Year

Prescribed burn	***$900 - $1,100***
Treat herbaceous invasive weeds	***$750 - $1,000***
Treat RCG	***$550 - $700***
Treat brush re sprouts	***$250 -$350***

Fourth Year

Treat herbaceous invasive weeds	***$750 - $1,000***

Fifth Year

Prescribed burn	***$900 - $1,100***
Treat herbaceous invasive weeds	***$750 - $1,000***
Treat RCG	***$550 - $700***

After the fifth year the site should continue to be burned biennially and scanned for invasive herbaceous weeds to treat.

Innovation Sedge Meadow South



This 9 acre degraded sedge meadow and fen has a creek running through it and at least one large spring. The wooded portion in the north contains a grove of Swamp White Oak and Bur Oak. The largest invasive Japanese Honeysuckle that we have ever seen is growing along the river edge and we would be honored to cut them down. There is a riparian area and wooded upland across the river to the

east that has been heavily managed since 2014. This 9 acres would connect nicely to the existing projects in the area.

First Year

Girdle less desirable trees and large invasive brush	***$1,950 - $2,250***
Treat herbaceous invasive weeds	***$1450 - $2,150***

Second Year

Cut, treat and burn invasive brush and trees that were girdled	***$5,750 - $7,250***
Treat herbaceous invasive weeds	***$1450 - $2,150***

Third Year

Prescribed burn	***$1,850 - $2,150***
Treat herbaceous invasive weeds	***$1450 - $2,150***
Treat RCG	***$750 - $950***
Treat brush re sprouts	***$550 -$650***

Fourth Year

Treat herbaceous invasive weeds	***$1450 - $2,150***

Fifth Year

Prescribed burn	***$1,850 - $2,150***
Treat herbaceous invasive weeds	***$1450 - $2,150***
Treat RCG	***$750 - $950***

After the fifth year the site should continue to be burned biennially and scanned for invasive herbaceous weeds to treat.

Sunfish Sedge Meadow North



Here is another degraded sedge meadow and fen. This 5 acre parcel is isolated from any trail systems so will mainly be enjoyed by non-human animals. Many of the acres directly across the river from this site have been managed for years. We have been able to begin cleaning up one bank of the river in some areas of the village. As we move further downstream there are more opportunities to start cleaning up both banks of the river. A large wildlife corridor is developing, and it is a great goal to eventually tie the whole corridor together with prescribed fire.

First Year

Girdle less desirable trees and large invasive brush	***$1,450 - $1,725***
Treat herbaceous invasive weeds	***$850 - $1,125***

Sunfish Sedge Meadow North (continued)

Second Year

Cut, treat and burn invasive brush and trees that were girdled	***$4,125 - $5,850***
Treat herbaceous invasive weeds	***$850 - $1,125***

Third Year

Prescribed burn	***$2,125 - $2,475***
Treat herbaceous invasive weeds	***$850 - $1,125***
Treat RCG	***$550 - $700***
Treat brush re sprouts	***$475 -$575***

Fourth Year

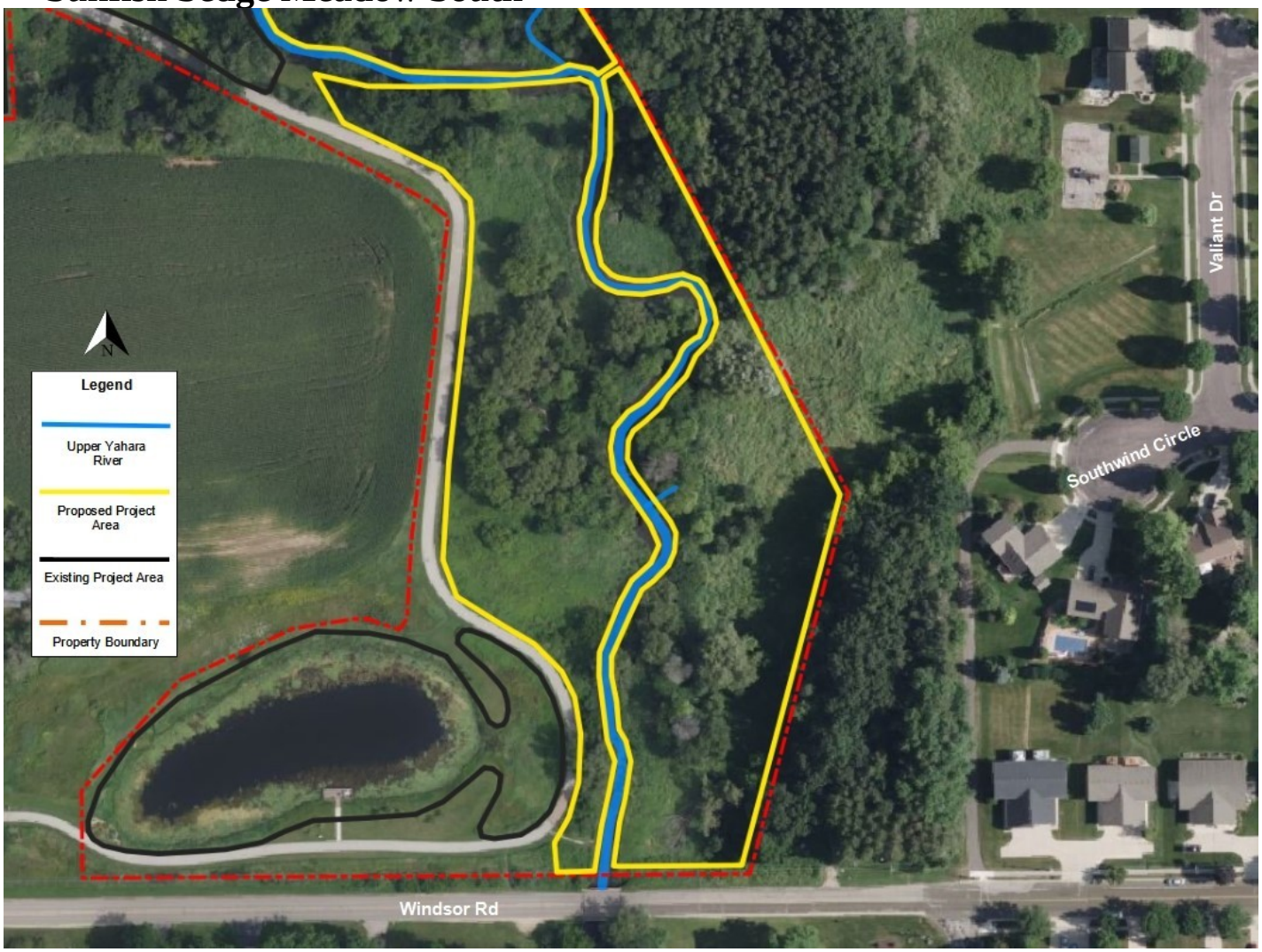
Treat herbaceous invasive weeds	***$850 - $1,125***

Fifth Year

Prescribed burn	***$2,125 - $2,475***
Treat herbaceous invasive weeds	***$850 - $1,125***
Treat RCG	***$550 - $700***

After the fifth year the site should continue to be burned biennially and scanned for invasive herbaceous weeds to treat.

Sunfish Sedge Meadow South



There are two distinct project areas shown on the map above. The 2.25 acres on the west side of the river would be a higher priority as it is closer to the bike trail and may be enjoyed more directly by the residents. It is also more connected to some acres already under management to the north. The 2.75 acres on the east side of the river is less connected to the trail system but is equally valuable ecologically. There are patches of sedge meadow and fen in both of these units with the usual overgrowth of boxelder and invasive brush that we are used to seeing along the Yahara. The prevalence of springs throughout these degraded sedge meadows and riparian zones accentuate the need to care for that water. Clean water is flowing directly from the ground in many places across the village. It is crucially important to encourage native species around these sources so that filtration may be optimized.

Sunfish Sedge Meadow South (continued)

First Year

Girdle less desirable trees and large invasive brush	***$1,475 - $2,150***
Treat herbaceous invasive weeds	***$725 - $1,325***

Second Year

Cut, treat and burn invasive brush and trees that were girdled	***$3,725 - $5,225***
Treat herbaceous invasive weeds	***$725 - $1,325***

Third Year

Prescribed burn	***$1,625 - $2,350***
Treat herbaceous invasive weeds	***$725 - $1,325***
Treat RCG	***$750 - $900***
Treat brush re sprouts	***$400 -$675***

Fourth Year

Treat herbaceous invasive weeds	***$725 - $1,325***

Fifth Year

Prescribed burn	***$1,625 - $2,350***
Treat herbaceous invasive weeds	***$725 - $1,325***
Treat RCG	***$750 - $900***

After the fifth year the site should continue to be burned biennially and scanned for invasive herbaceous weeds to treat.

You may notice a theme here that we are trying to build managed natural communities that are contiguous. Invasive species will always be able to travel into our restorations even decades down the road. The larger the area we manage the better chance we stand at keeping the invaders at bay. Threats to our restoration mostly come from the perimeter of the managed area. It is most effective to manage larger acreages with less perimeter to secure. Consider these proposed project areas and don't hesitate to reach out to us with any additional questions.