

Meeting of the Planning Commission March 28, 2019

Highlights from the:

Lebanon Hills Regional Park Natural Resource Management Plan

March 2019


DRAFT



Request of Planning Commission

- Feedback regarding the plan
- Recommend the release of the draft NRMP for public review and comment

Project Schedule

Date	Tasks	Phase
August 2017	Project start	Initiation
September-December 2017	<ul style="list-style-type: none"> • Research & findings • Existing conditions • Stakeholder meetings 	Research & Findings
January-February 2018	<ul style="list-style-type: none"> • Public Open House • Planning Commission, County Board 	
January-March 2018	<ul style="list-style-type: none"> • Issues and opportunities • Develop approaches, priorities, and recommendations • Stakeholder meetings 	Concept Development
April-December 2018	<ul style="list-style-type: none"> • Additional field work • Preliminary Draft Plan • Pubic Open House, Planning Commission, County Board 	
 January 2018 – April 2019	<ul style="list-style-type: none"> • Complete Draft Plan 	Complete Draft Plan
April-May/June 2019	<ul style="list-style-type: none"> • Public review (45 days) 	Public Review
May-June/July 2019-	<ul style="list-style-type: none"> • Plan adoption 	Plan Adoption

Plan Consistency

Aligned with existing set of County plans:

- Parks Mission
- Natural Resources System Plan Vision
- Master Plan, approved 2015

Balance recreational use of the park with natural resource stewardship.



MASTER PLAN FOR
LEBANON HILLS REGIONAL PARK
Adopted March 17, 2015
Dakota County Parks || Dakota County Office of Planning
|| HKGi || AES || Barr Engineering



The water, vegetation, and wildlife of Dakota County parks, greenways, and easements will be managed to conserve biodiversity, restore native habitats, improve public benefits, and achieve resilience and regionally outstanding quality, now and for future generations.



Purpose of the NRMP



To develop comprehensive goals, approaches, implementation strategies and work plans that will reverse the downward trend in natural resource quality and will restore diverse and sustainable natural communities within the recreational context of the park.

LHRP NRMP Goals

1. Ecological Services
2. Ecosystem Resiliency
3. Biodiversity
4. Restore and Protect Natural Areas and Processes
5. Rare Features
6. Balance with Recreation
7. Leverage External Funding



Prairie Meadow Burning by George Catlin (1832) depicts Native Americans burning prairie.

Findings: Challenges

- Altered Natural Systems
- Reduced Ecological Connectivity
- Climate Change
- Pests and Diseases
- Habitat Fragmentation
- Stormwater Management
- Potentially Impactful Recreational Activities
- Invasive Plants and Animals
- Genetic Isolation of Floral and Faunal Populations
- Loss of Species Diversity

Findings: Opportunities

- Core Habitat Area
- Ecological Connectivity
- Remnant Plant Communities
- Diverse Wildlife
- Rare plant and wildlife species
- Reintroduction of Appropriate Species
- Wetlands
- Lakes
- Community Support
- Parks Natural Resources Program
- Public Use and Engagement
- Contemporary Master Plan

Current Restoration Status

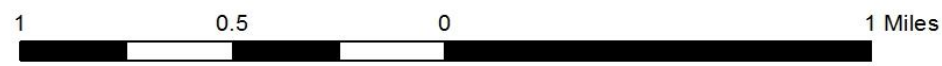
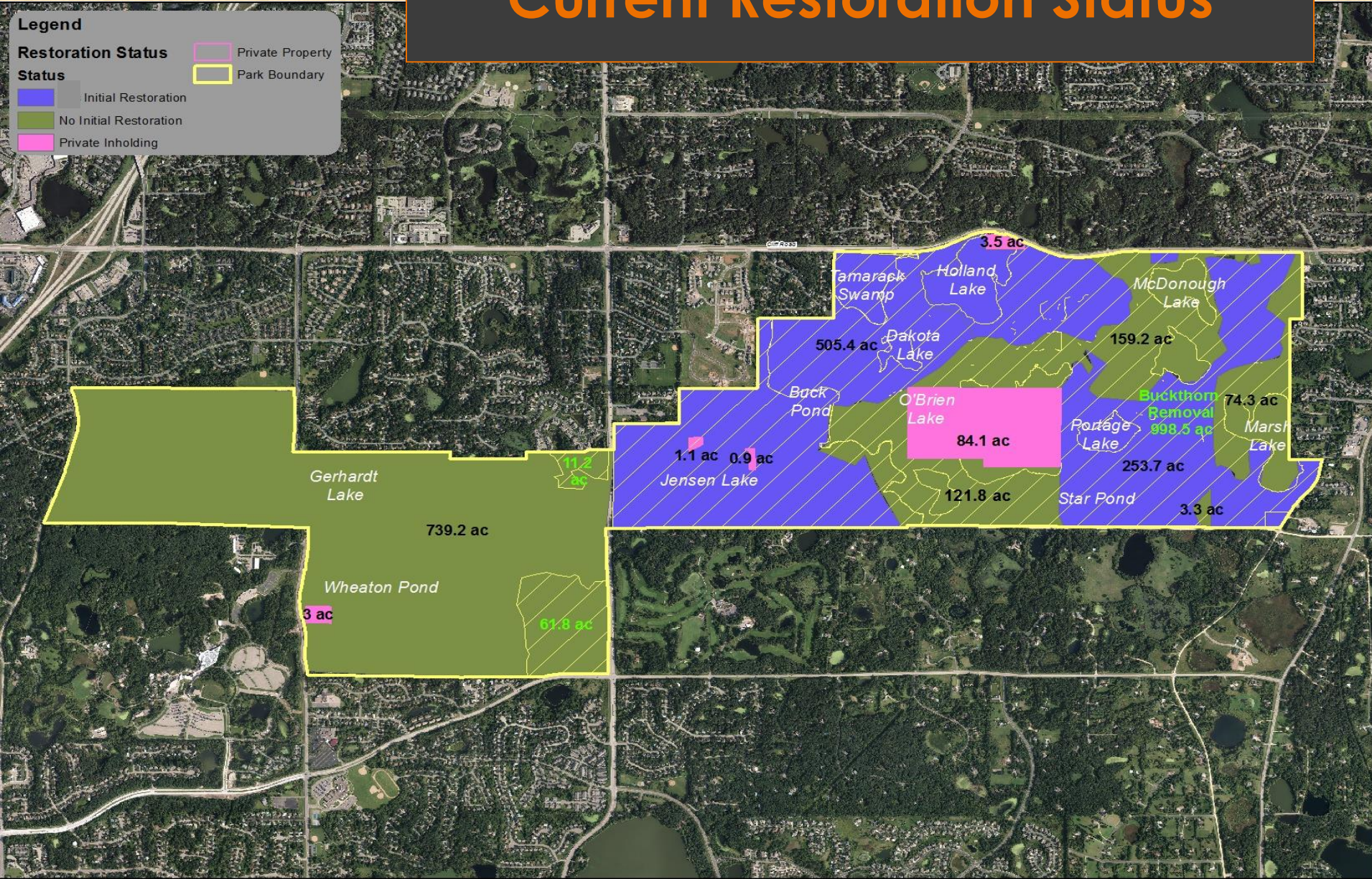
Legend

Restoration Status

- Initial Restoration
- No Initial Restoration
- Private Inholding

Status

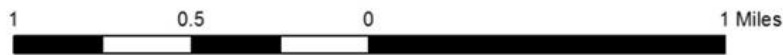
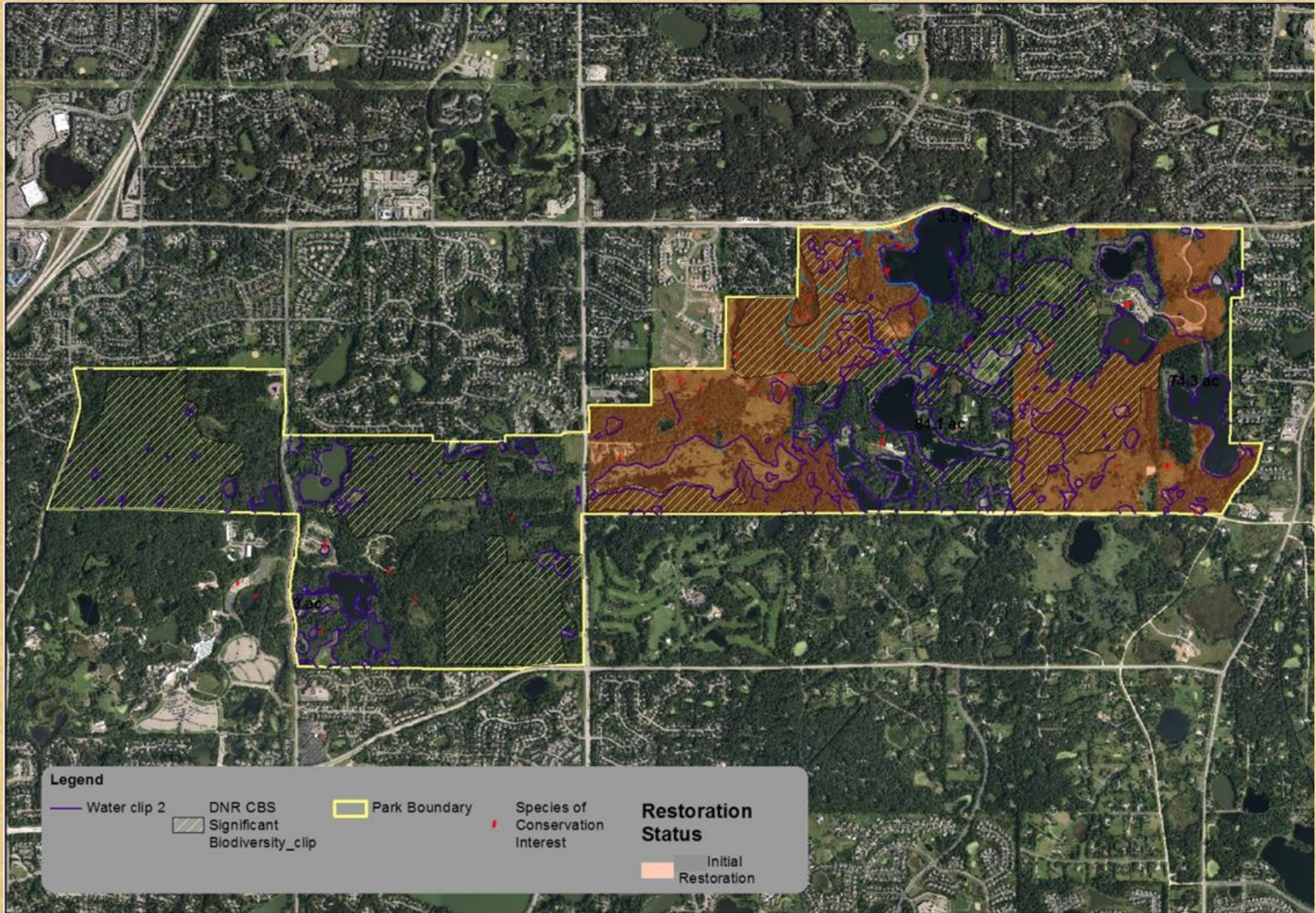
- Private Property
- Park Boundary



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Aerial Photography from Dakota County GIS, 2016 Air Photo, Leaf On

Important Natural Features of Lebanon Hills

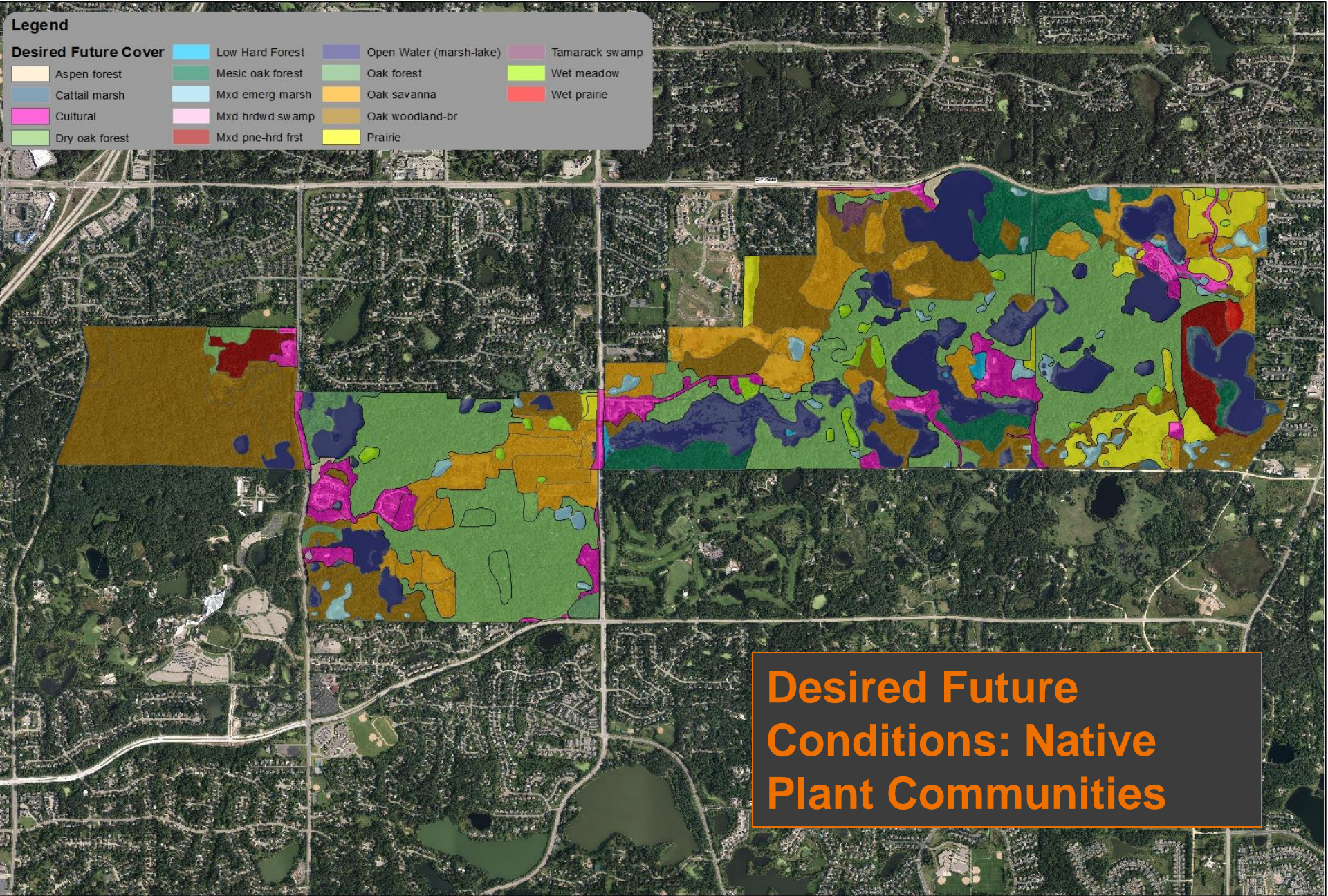


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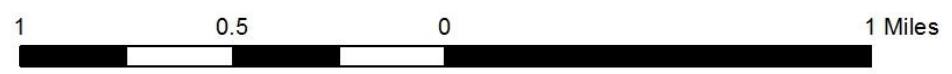
Aerial Photography from Dakota County GIS,
2016 Air Photo, Leaf On

Legend

Desired Future Cover			
	Low Hard Forest		Open Water (marsh-lake)
	Aspen forest		Oak forest
	Mesic oak forest		Oak savanna
	Mxd emerg marsh		Oak woodland-br
	Cattail marsh		Prairie
	Cultural		Wet prairie
	Dry oak forest		Mxd hrdwd swamp
	Mxd pne-hrd frst		Tamarack swamp
			Wet meadow



**Desired Future
Conditions: Native
Plant Communities**

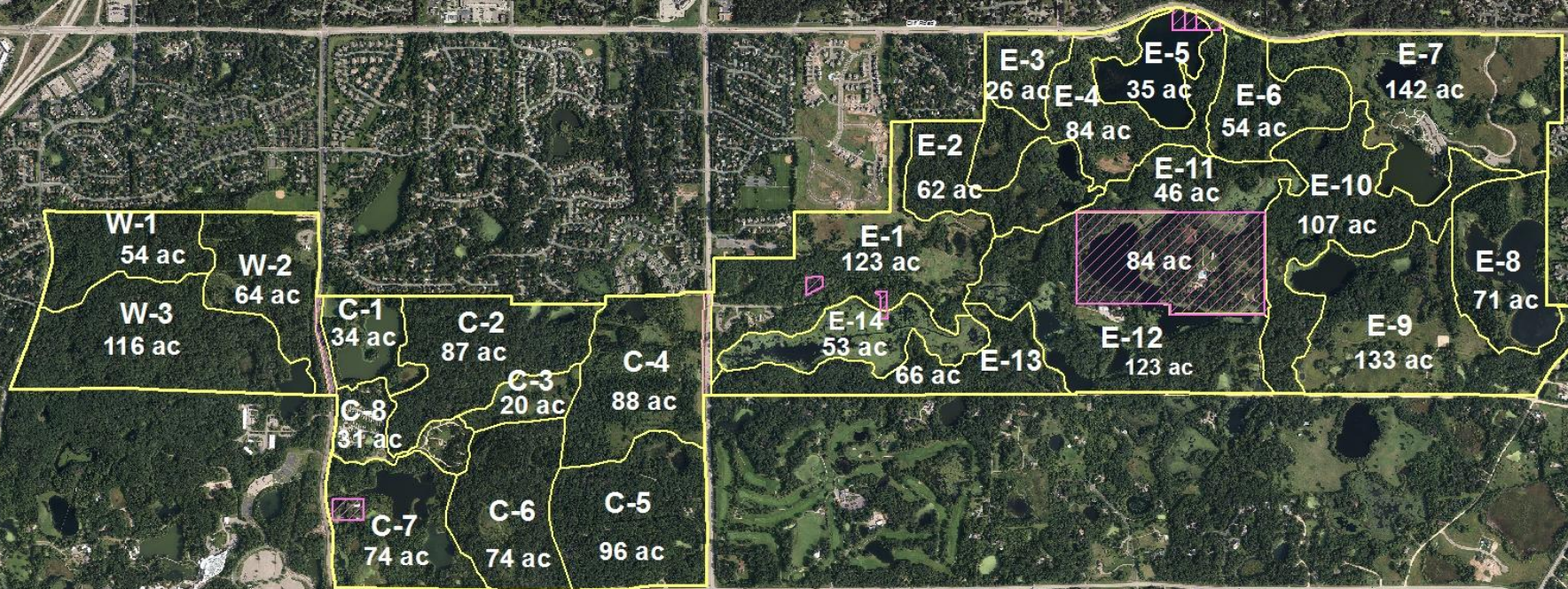


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Management Units

Legend

- Private Property
- Park Boundary



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Aerial Photography from Dakota County GIS, 2016 Air Photo, Leaf On

Prioritization Criteria

- Quality, diversity, integrity
- Connectivity; proximity to restored areas
- High visibility; education; community interest
- Rare or uncommon features
- Restorability; effort; disruption
- Sustainability
- Ecological impact value; secondary benefits; buffering potential
- Site sensitivity
- Plan consistency
- Urgency



Target Plant Communities and Management Units

Prevailing Themes:

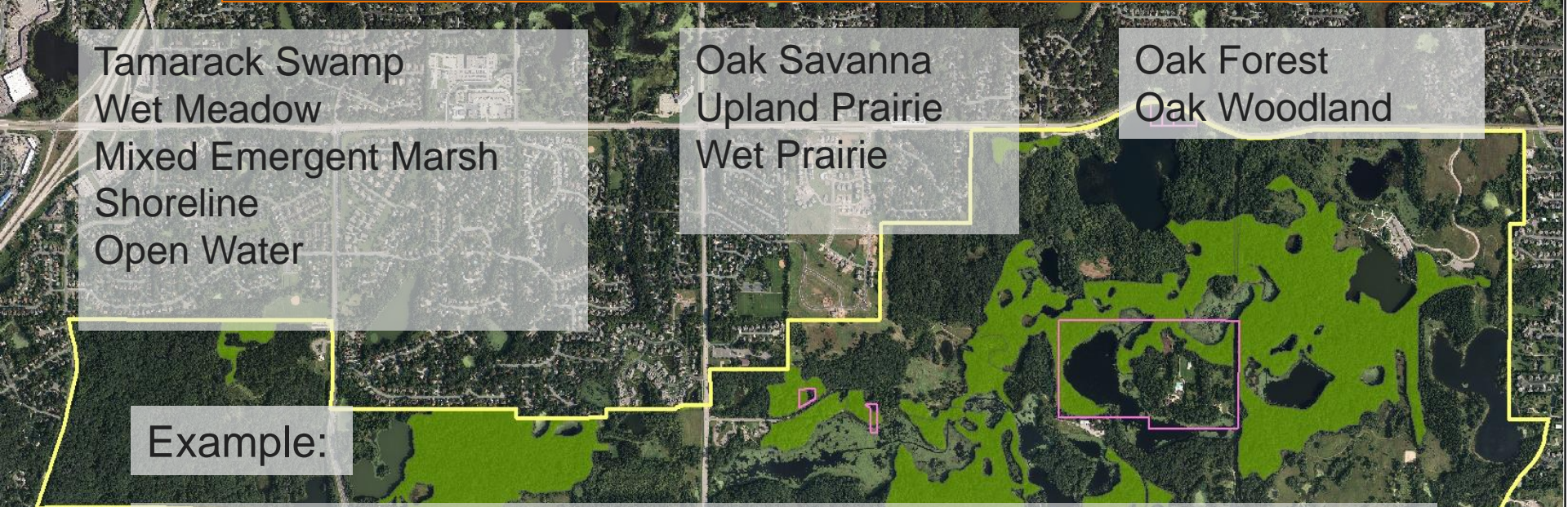
- Restoring degraded natural areas
- Converting nonnative vegetation
- Restoring wetlands that were impacted by row crop farming
- Improving the quality of existing native plant communities
- Anticipating shifts in native plant community type
- Naturalizing visitor-use areas and areas impacted by recreation facilities

Legend

Desired Future Cover

- Dry oak forest
- Private Property
- Park Boundary

Target Plant Communities and Management Units



MHs37—Southern Dry-Mesic Oak Forest

Natural History

“In the past, catastrophic disturbances were rare in MHs37. An analysis of Public Land Survey records indicates that the rotation of catastrophic fires was in excess of 1,000 years, and the rotation of catastrophic windthrow was about 390 years. Events that resulted in partial loss of trees, especially light surface fires, were much more common, with an estimated rotation of about 20 years.”

High Priority Natural Features

- Remnant prairies/savannas
- Old-growth, oak-dominated woodlands and forests
- Wetlands
- Lakes and stream channels
- Species of greatest conservation need
- Groundwater infiltration or sensitivity areas
- Steep slopes and areas of high relief
- Restored areas
- Connecting areas
- High-use and significant recreation areas



Recreation and Natural Resource Management Recommendations

Bring natural resource focus and perspective to all park use areas

- Capital Improvement Projects
- Use Areas and Cultural Areas
- Education and Outreach areas



High-use areas

Visitor Services staff



Vegetation Resources Management Recommendations

Within 20 Years:

- *Restore* the vegetation of the entire park
 - External funding
- *Stabilize* all areas of the park during the process
 - Work crews
- *Manage economically and efficiently* in the long- term
 - Fire and grazing as a management tools
 - Adaptive management
 - Monitor
 - Volunteers
 - Work crews

Vegetation Resources Work Plans

<i>5-Yr Work Plan</i>		<i>(years 1 through 5)</i>					
	Restored Acres	Remaining Acres	Restore Cost	Enhance Cost	Maintain Cost	Sum Cost	
East Segment, restored	600		\$ -	\$ -	\$ 240,000	\$ 240,000	
East Segment		180	\$ 900,000	\$ -	\$ 72,000	\$ 972,000	
Center Segment		100	\$ 500,000	\$ -	\$ 40,000	\$ 540,000	
West Segment		100	\$ 500,000	\$ -	\$ 40,000	\$ 540,000	
Total	600	380	\$ 1,900,000	\$ -	\$ 392,000	\$ 2,292,000	

*Maintenance totals assume that all restored acres are in maintenance after five years.

<i>20-Yr Work Plan</i>		<i>(years 6 through 20)</i>					
	Restored Acres	Remaining Acres	Restore Cost	Enhance	Maintain Cost	Sum Cost	
East Segment		189	\$ 945,000	\$ 200,000	\$ 2,286,000	\$ 3,431,000	
Center Segment		261	\$ 1,305,000	\$ 50,000	\$ 1,008,000	\$ 2,363,000	
West Segment		123	\$ 615,000	\$ 50,000	\$ 468,000	\$ 1,133,000	
Total	0	573	\$ 2,865,000	\$ 300,000	\$ 3,762,000	\$ 6,927,000	


	Restored Acres	Remaining Acres	Restore Cost	Enhance	Maintain Cost	Sum Cost
Sum Total	600	953	\$ 4,765,000	\$ 300,000	\$ 4,154,000	\$ 9,219,000

Wildlife Resources Management Recommendations

- Manage for the community
- Sensitive or keystone species
- Monitor wildlife
- Species of greatest conservation need
- All major wildlife taxa
- Reintroduce select lost species
- Whitetail deer and other problematic wildlife species populations



Wildlife 5-Yr Work Plan



Manage for the full complement of wildlife requirements in habitat restoration

Include wide spectrum of species, example:

- Grassland birds
- Frogs, toads, and salamanders
- Small mammals
- Pollinators

Consider individual species, example:

- Fisher nest boxes
- Blanding's turtles nest protection
- Monarch butterflies habitat improvement

Focus on declining species (Appendix B)

Consider wildlife species reintroductions

Funding

- Seek external funding
- Approximately \$300,000 of County funding designated in NRMSP



Water Resources Management Recommendations

- Subwatershed Assessment projects
- Partners outside the park
- Fish surveys
- Wetland restoration
- Sustainable trails

Water Resources 5-Yr Work Plan

BMP ID	Lake Subwatershed	BMP Type	Annual Total P Load	Total P Reduction	Construction Cost	Life Cycle Cost	Life Cycle Cost per pound of TP Removed
			[lbs/yr]	[lbs/yr]		[30 yrs]	
REG-1	Schulze	IESF Filtration Area	28.9	4.1	\$102,000	\$306,000	\$2,488
REG-5	Jensen	IESF Filtration Area	3.2	1.8	\$165,000	\$360,000	\$6,623
1M/4M	McDonough	Trail Crossing Maintenance/Repairs	NA	NA	\$33,144	\$45,144	NA
3J	Jensen	Trail Crossing Maintenance/Repairs	NA	NA	\$20,400	\$32,400	NA
5H-6H	Holland	Channel Stabilization	1	1	\$36,360	\$48,360	\$1,612
1S	Schulze	Channel Stabilization	1.5	1.5	\$48,720	\$60,720	\$1,349
AL-1	Schulze	Alum Treatment	12	11	\$40,627	\$40,627	\$107
AL-2	Gerhardt	Alum Treatment	9.8	8.8	\$45,000	\$45,000	\$170
TOTAL					\$491,251		

Plus:

- Monitor all major water bodies, ~\$6,000/yr.
- Develop a wetland plan ~\$20,000 one-time cost
- Fish surveys; (cost of materials and labor will vary)

LHRP NRMP Appendices

Appendix A. *Plant Species Inventory (including invasives) of LHRP*

Appendix B. *Wildlife Species Inventory (including Invasives) of LHRP: Observations/Indications*

Appendix C. *Acceptable Source Origin of Native Seed for LHRP*

Appendix D. *Summary of MnRAM Wetland Function and Value Ratings for LHRP Wetlands*

Appendix E. *Fish Survey 2018 Results*

Appendix F. *Herptile Survey Protocol*

Appendix G. *Pollinator Survey Protocol*

Appendix H. *Fish Survey Protocol*

Appendix I. *Public Engagement and Summary of Plan Outreach and Public Comments*

Appendix J. *Suggested Native Shrubs for Replacing Common Buckthorn*

Appendix K. *Utilities Map*

Questions and Comments

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Project Webpage:
<https://www.co.dakota.mn.us/parks/Planning/NaturalResources/Pages/lebanon-hills-management-plan.aspx>