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Statement of the Problem

The objective of this project is to create recommendations for a 5 year plan for Hopkins Family Park, with a focus on developing and modifying a design layout for a 73 acre area of interest.

Background

- Currently resides on 41 acres
- Hopkins family will donate more land as the park develops
- Eventually will reside on the entire 200 acre Hopkins family estate
- Lack of funding is holding back further expansion
- Continuation of work from last year's teams

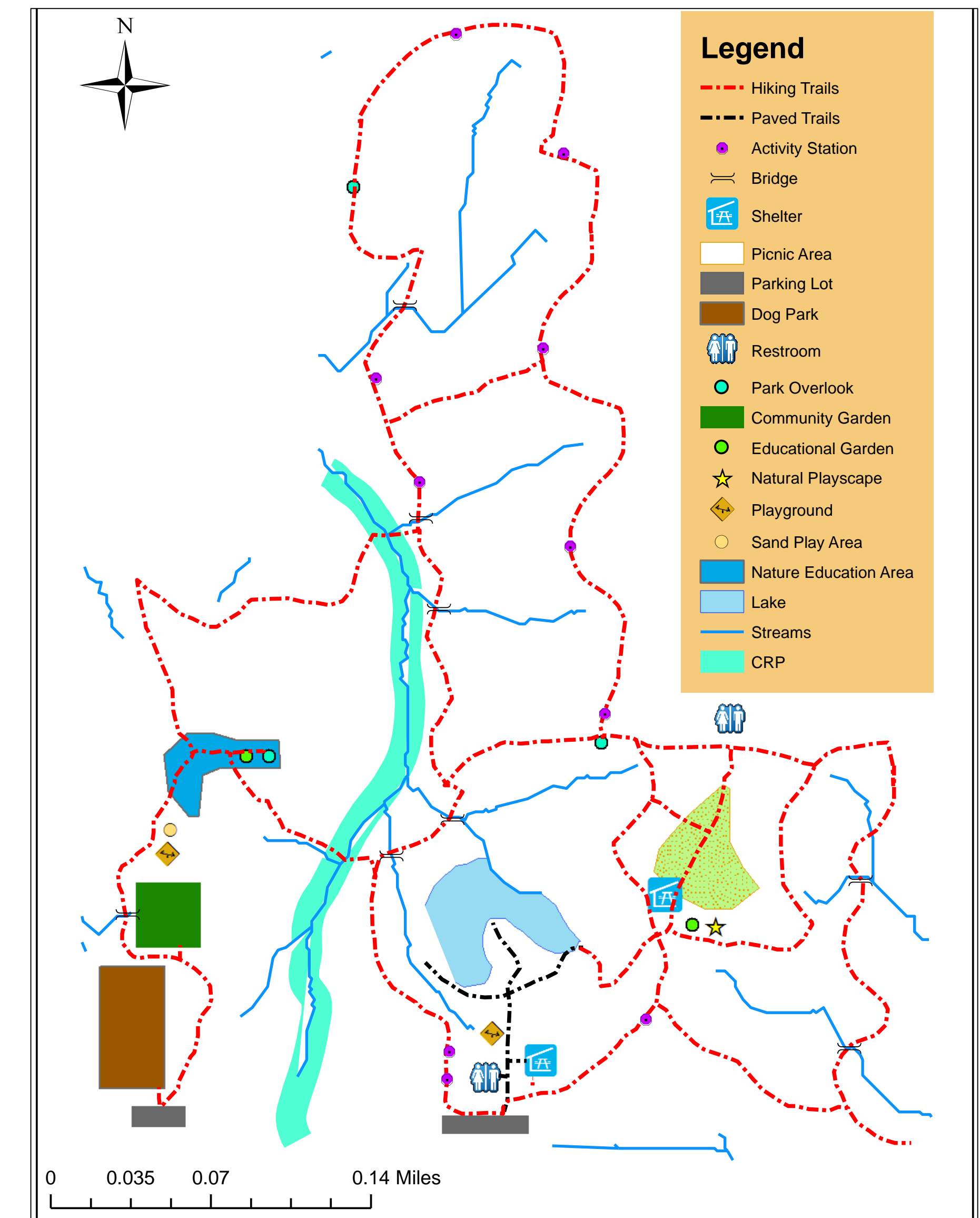
Global/Societal Impact & Sustainability

- Introduces local vegetation to improve aesthetic appeal and ecological function
- Restores vegetation cover to reduce erosion
- Provides recreational amenities and opportunities to promote a healthier lifestyle
- Increases carbon stores for air purification and greenhouse gas reduction
- Creates educational opportunities for learning about local animals and vegetation

Final Design

Recommended Feature Layout

- Feature placement was an iterative process
- Complementary placement of features
- Features were placed based on site suitability rating
- Strategic placement throughout the park for an efficient use of space
- Over 3 miles of hiking trails link features throughout the park



Constraints

- Infrastructural Constraints:
- Vectren power substation on adjacent land
  - Power lines running over the site
  - Conservation Reserve Program (CRP) land
  - Drainage infrastructure and risers

Planned Features

- 15 unique new features in final design
- Recreational and educational benefits
- Capitalize on natural topography and spatial properties



Budget & Timeline

Feature Cost		Vegetation Cost	
Feature	Cost	Vegetation	Cost
Hiking Trails	\$31850	Decorative Trees	\$460
Shelter House	\$3200	Barrier Trees	\$480
Restroom	\$630	Barrier	\$300
Dog Park	\$15840	Bushes	
Playground	\$1400	Grass	\$17,568
Park Overlook	\$1200	Shade Trees	\$230
Activity Stations	\$6195	<b>Total Cost</b>	<b>\$19,038</b>
Education Garden	\$9000		
Community Garden	\$0		
		<b>Total Cost</b>	
Picnic Area	\$2000	Category	Cost
Nature Education Area	\$1660	Features	\$76,093
Natural Playscape	\$2818	Vegetation	\$19,038
Sand Play Area	\$300	<b>Total Cost</b>	<b>\$95,131</b>
Parking Lot	\$0		
<b>Total Cost</b>	<b>\$76,093</b>		

Note: The total cost does not reflect tax or labor expenses

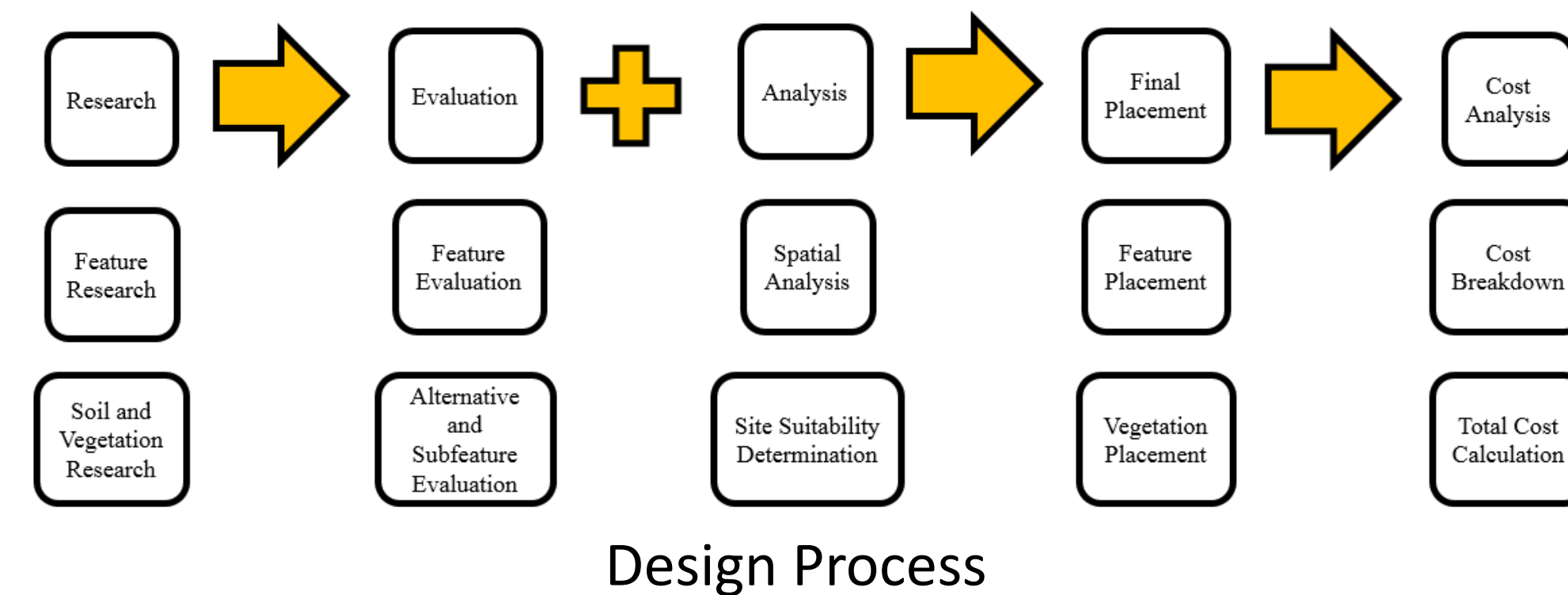


Team with park sign

Natural Constraints:

- Hilly topography
- Erosive soils
- Lack of vegetation
- Gully erosion from ephemeral streams

Alternative Solutions & Solution Evaluation



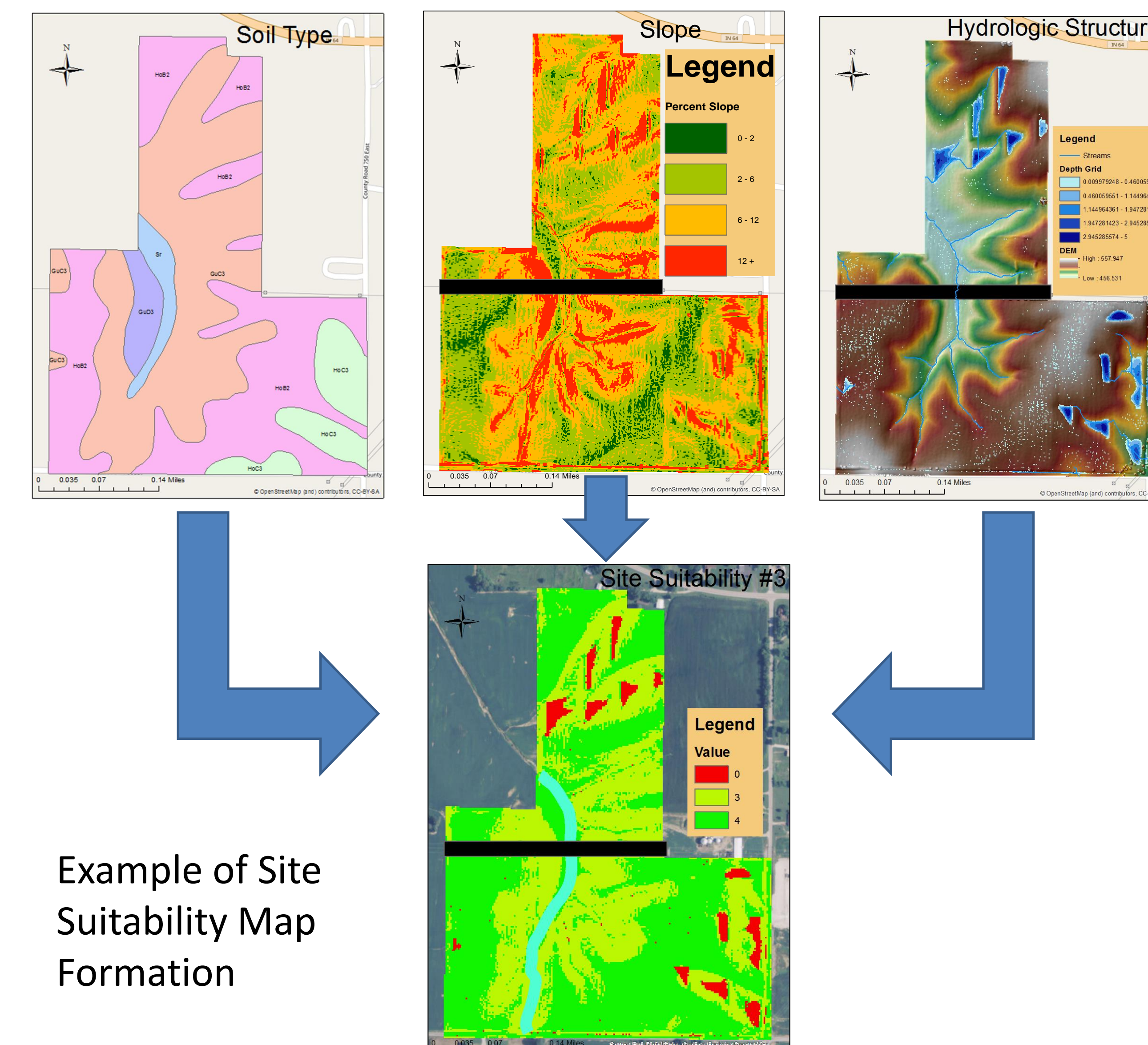
- Project was broken up into 5 major phases
- Completed from August 2016 – April 2017

Feature Evaluation

Criteria Weight	Safety		Maintenance		Ecological Impacts		Perceived Aesthetics		Community Interest		Total Score
	R	W	R	W	R	W	R	W	R	W	
Park Features	R	W	R	W	R	W	R	W	R	W	
Hiking Trails	5	25	3	9	4	16	5	5	4	12	67
Shelter House	5	25	4	12	3	12	4	4	5	15	68
Restrooms	5	25	1	3	3	12	4	4	5	15	59
Disc Golf	4	20	4	12	4	16	3	3	1	3	54
Dog Park	3	15	1	3	4	16	4	4	5	15	53
Playground	3	15	3	9	3	12	3	3	4	12	51
Splash Pad	3	15	2	6	2	8	3	3	2	6	38
Park Overlook	5	25	5	15	4	16	4	4	3	9	69
Biking Trails	3	15	3	9	4	16	5	5	4	12	57
Fishing	4	20	2	6	2	8	5	5	3	9	48
Garden(s)	5	25	2	6	3	12	5	5	1	3	51
Picnic Area	5	25	3	9	5	20	5	5	5	15	74
Natural Playscape	3	15	3	9	3	12	4	4	5	15	55
Nature Education Area	5	25	2	6	4	16	4	4	3	9	60
Activity Stations	3	15	5	15	4	16	3	3	5	15	64
Sand Play Area	4	20	4	12	3	12	3	3	4	12	59
Erosion Control Structures	3	15	4	12	3	12	5	5	5	15	59
Lighting	5	25	4	12	4	16	5	5	5	15	73

- Alternative features were determined and evaluated also
- Individualized decision matrix was used to determine the preferred version

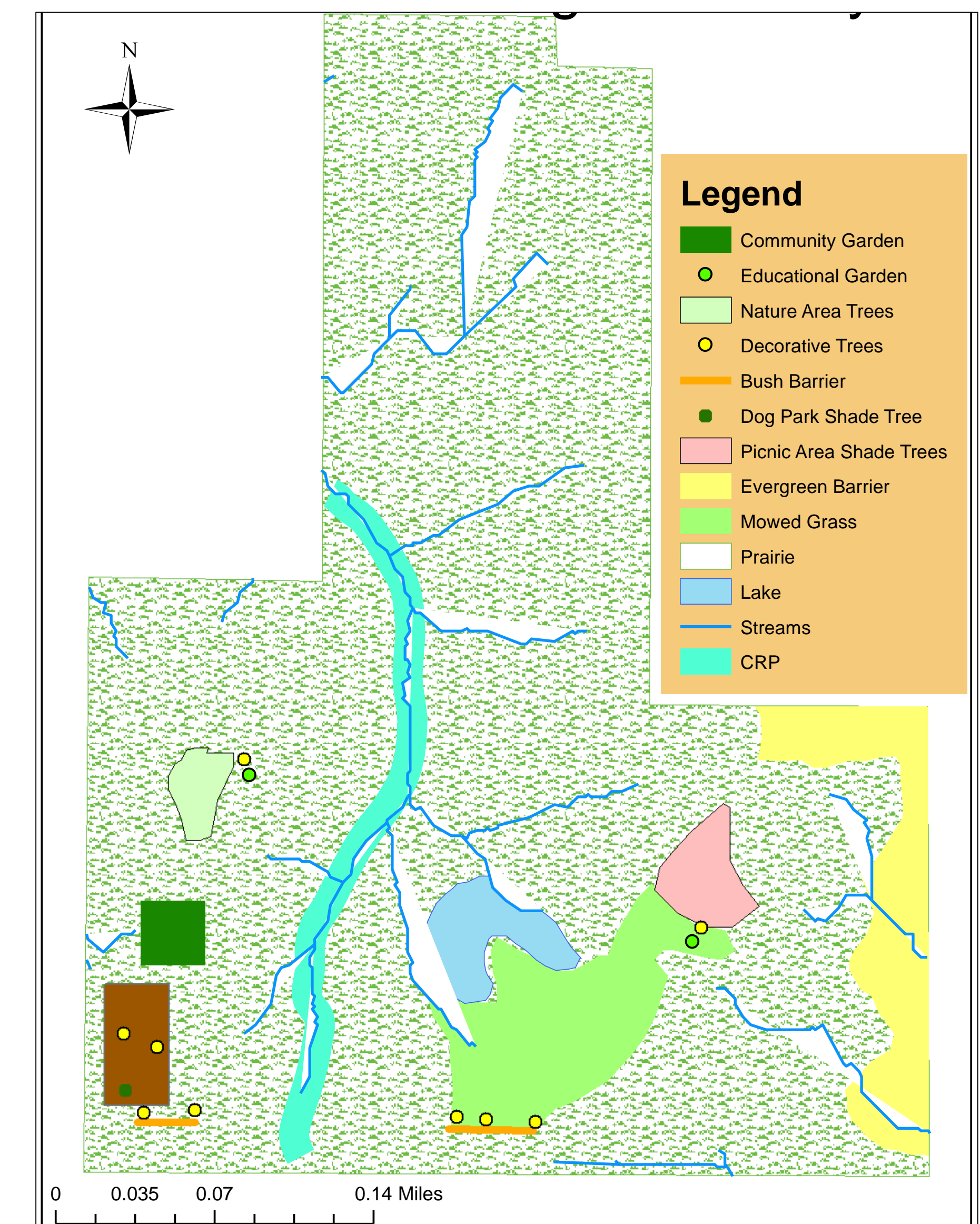
- Relevant spatial properties (11) were used to create 9 site suitability maps
- Site suitability maps were used to determine feature placement
- Soil maps were used to determine vegetation placement



Example of Site Suitability Map Formation

Recommended Vegetation Layout

- Vegetation placed after features to allow complementary positioning
- Soil properties and hydrography affected vegetation placement and species selection
- Most of the park will be restored to its native prairie state



Deliverables

The team presented the final park design and submitted a final report to the Gibson County Department of Parks and Recreation.

**Sponsor:**  
Gibson County Department of Parks and Recreation

**Technical Advisors:**  
Dr. Sara McMillan  
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Dr. Bernie Engel

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