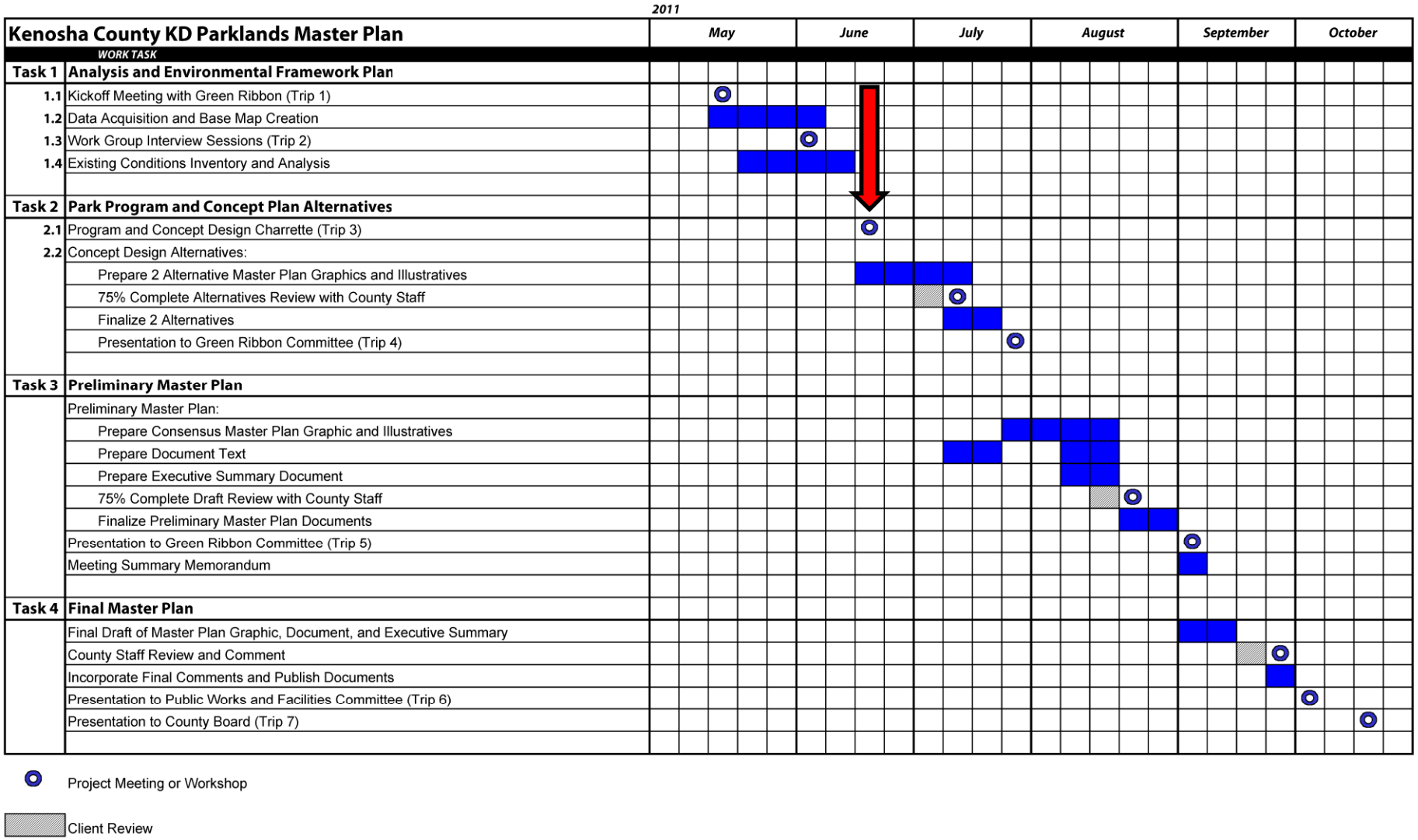
Kenosha County

# KD Park Master Plan

# Today's Agenda

- Process / Schedule Update
- Case Studies
- Results of Site Analysis
- Site Development Assessment
- Restoration Potential Assessment
- Vision Statement
- Program Ranking Criteria
- Discussion of Program Elements
- Preliminary Program Location

# Project Process and Preliminary Schedule



# What have we been up to?

- Interviews with Work Groups (6/8, 6/29)
- JJR/SmithGroup Internal Charrette (6/20)
- Site Opportunities and Constraints Analysis
- Case Studies of Sustainable Destinations

# Case Studies

UK, Sweden, Michigan, Montana, Oregon, California, Illinois, New York, Wisconsin

1 BRE Innovation Park, England

2 Hagaby Eco-Village, Sweden

3 MUD Project, MT

4 WARM Training Center, MI

5 City of Sacramento Sustainability Implementation Plan 2011, CA

6 The Grove, IL

7 Michigan Energy Options, MI

8 Urban Ecology Center, WI

9 Center for Neighborhoods Technology, IL

10 Mequon Nature Preserve, WI

11 The Eden Project, England

12 Freshkills Park, NY

13 Oak Hammock Marsh, Canada

14 Northerly Island, IL

15 CBF, MD

16 Midwest Renewable Energy Association, WI

# Urban Ecology Center

Milwaukee, Wisconsin

- Environmental education organization
- Two community centers adjacent to Milwaukee County parks as outdoor laboratories:
  - Woods and riparian habitat
  - Nature-themed playground
  - Lagoon
  - Live animal demonstrations
- Hands-on science / sustainability exercises for local school students
- Courses: Composting, water safety, lake ecology, river exploration etc.
- Center at Riverside Park = green building, offices, classrooms

http://www.urbanecologycenter.org/

# Missoula Urban Demonstration Project-MUD

Missoula, Montana

A local organization committed to providing community members with the knowledge and resources to lead a sustainable lifestyle.

MUD provides several different programs and services to the community, including:

- Backyard Sustainability Workshop Series
  'Hands-on learning opportunities, encouraging the integration of sustainable practices into everyday life'
- Urban Sustainable Living Demonstration Site
  'Showcases real-world sustainable living practices and designs in a publicly accessible residential neighborhood setting'
- Youth Education Program in Sustainability
  'Educates Missoula-area students through fun, community-based sustainable living experiences, fostering an appreciation of these ideals and practices at an early age'
- Truck Share and Tool Library

http://www.mudproject.org/

# BRE Innovation Park

Watford, Hertfordshire, England

- Demonstration development for future of sustainable buildings
- 10 houses, each built in a different sustainable method to reduce ecological footprint and carbon emissions
- Over 400 different emerging sustainable construction technologies on display
- Progressive health center
- Community landscape and greenhouse

http://www.bre.co.uk/page.jsp?id=962

# Freshkills Park

Staten Island, New York, New York

- Formerly the world's largest landfill
- 3x the size of Central Park
- Range of recreational opportunities
- Design, ecological restoration and cultural / educational programming emphasizes environmental sustainability and a public concern for human impact on the earth
- Full build-out in 30 years; short term focus:
  - Providing public access to site interior
  - Showcasing its unusual combination of natural and engineered beauty, including creeks, wetlands, expansive meadows and spectacular vistas of New York City

http://www.nycgovparks.org/parks/freshkillspark/

# Midwest Renewable Energy Association

Custer, WI

- Non-profit organization dedicated to promoting renewable energy and sustainable living through education and demonstration
- ReNew the Earth Institute: 4200 sf building, 20 ac site with displays, library, offices, workshop room, conference room, kitchen
- Annual Energy Fair: Showcases advancements in sustainable energy and living, >20,000 attendees, 200 workshops, 275 exhibitors
- Provides advanced training workshops on sustainable technologies, including photovoltaic, solar hot water, wind, and alternative construction methods

http://www.midwestrenew.org/

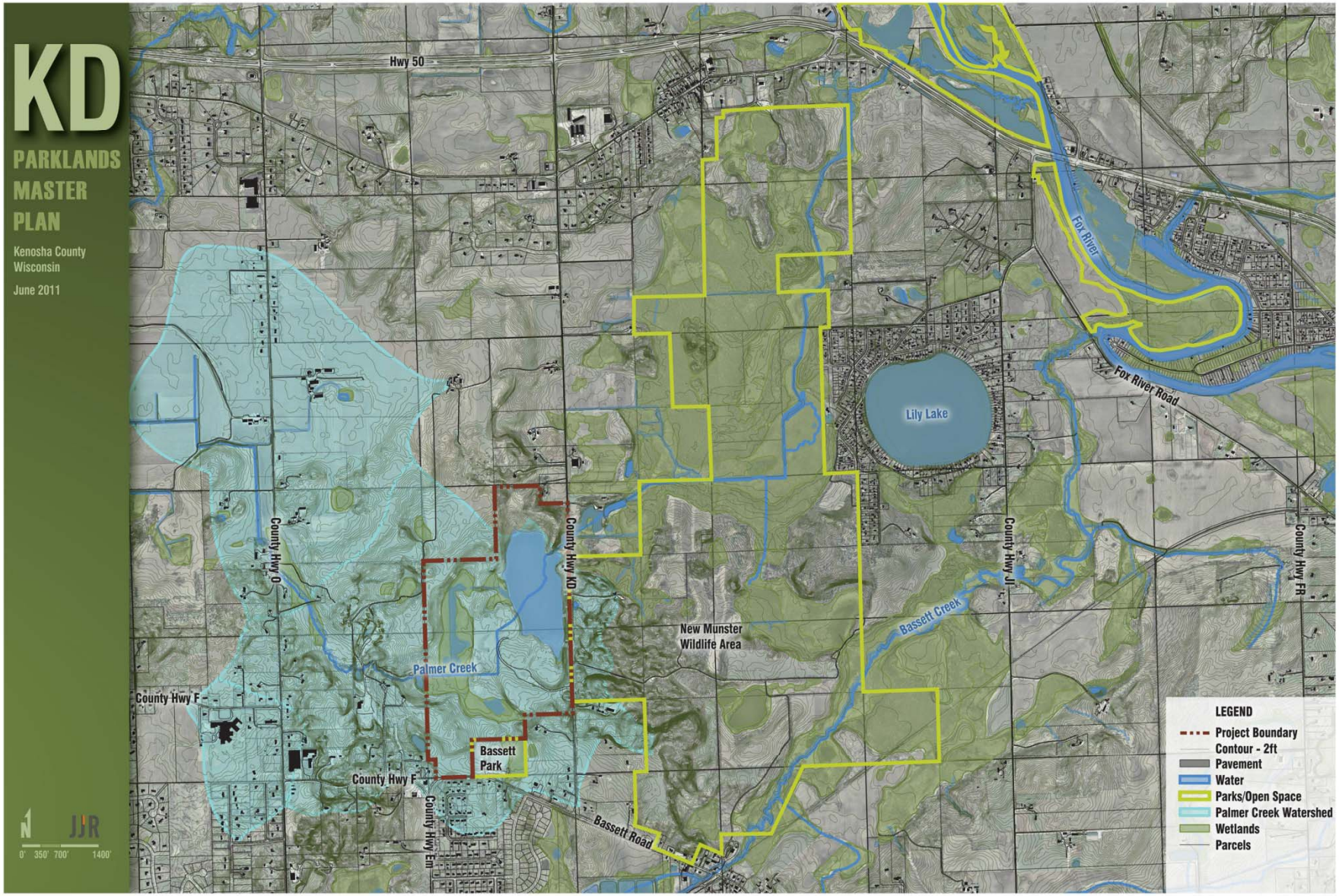
# Eden Project

Cornwall, England

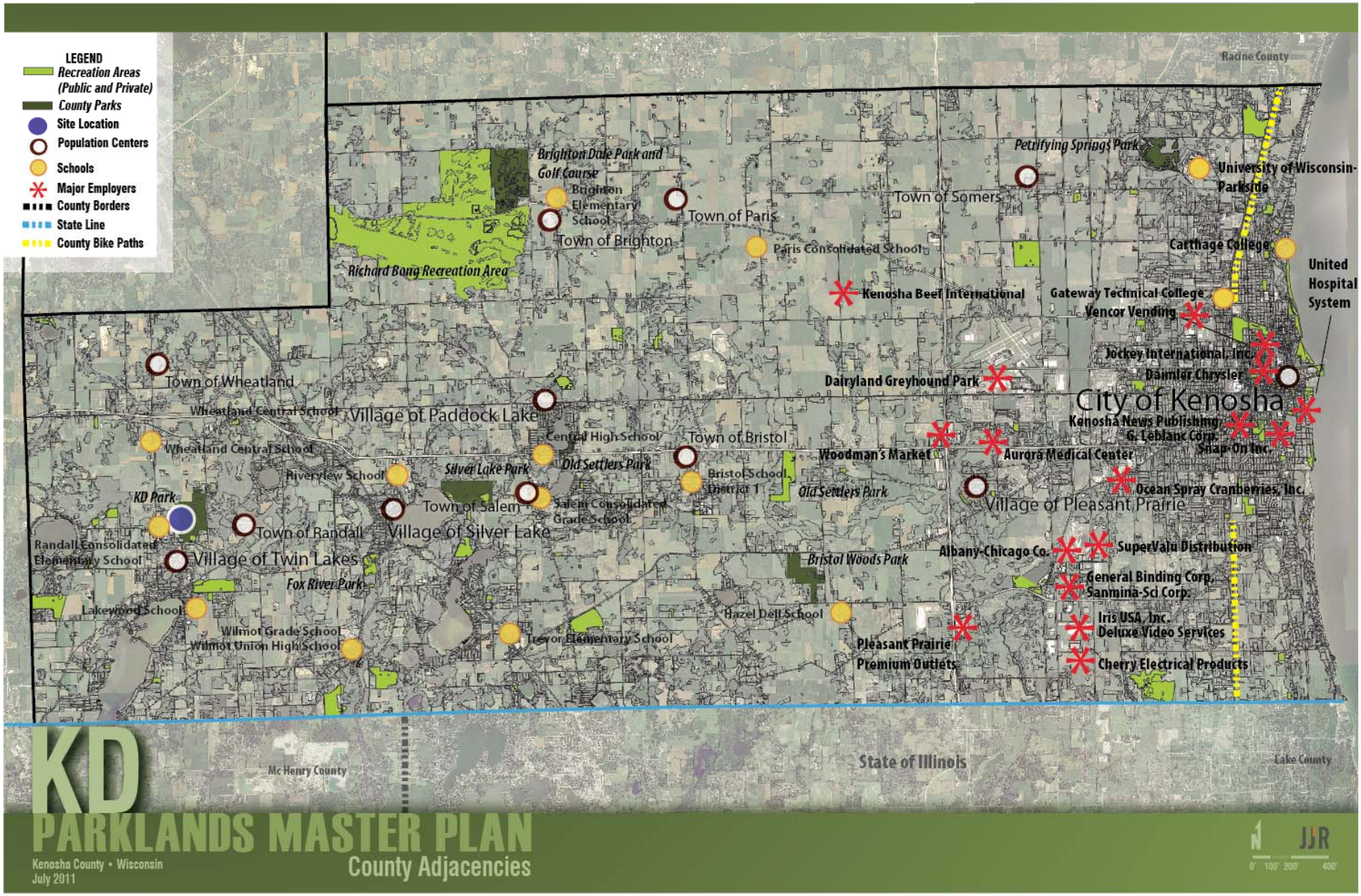
A global garden and research hub integrated into a reclaimed mining site. Objectives include:

- Running transformational social and environmental projects
- Providing entertainment:  Arts, theatre and music events
- Creating renowned gardens
- Researching plants and conservation
- Running operations in the greenest method possible
- Providing learning experiences for students

# Local Context

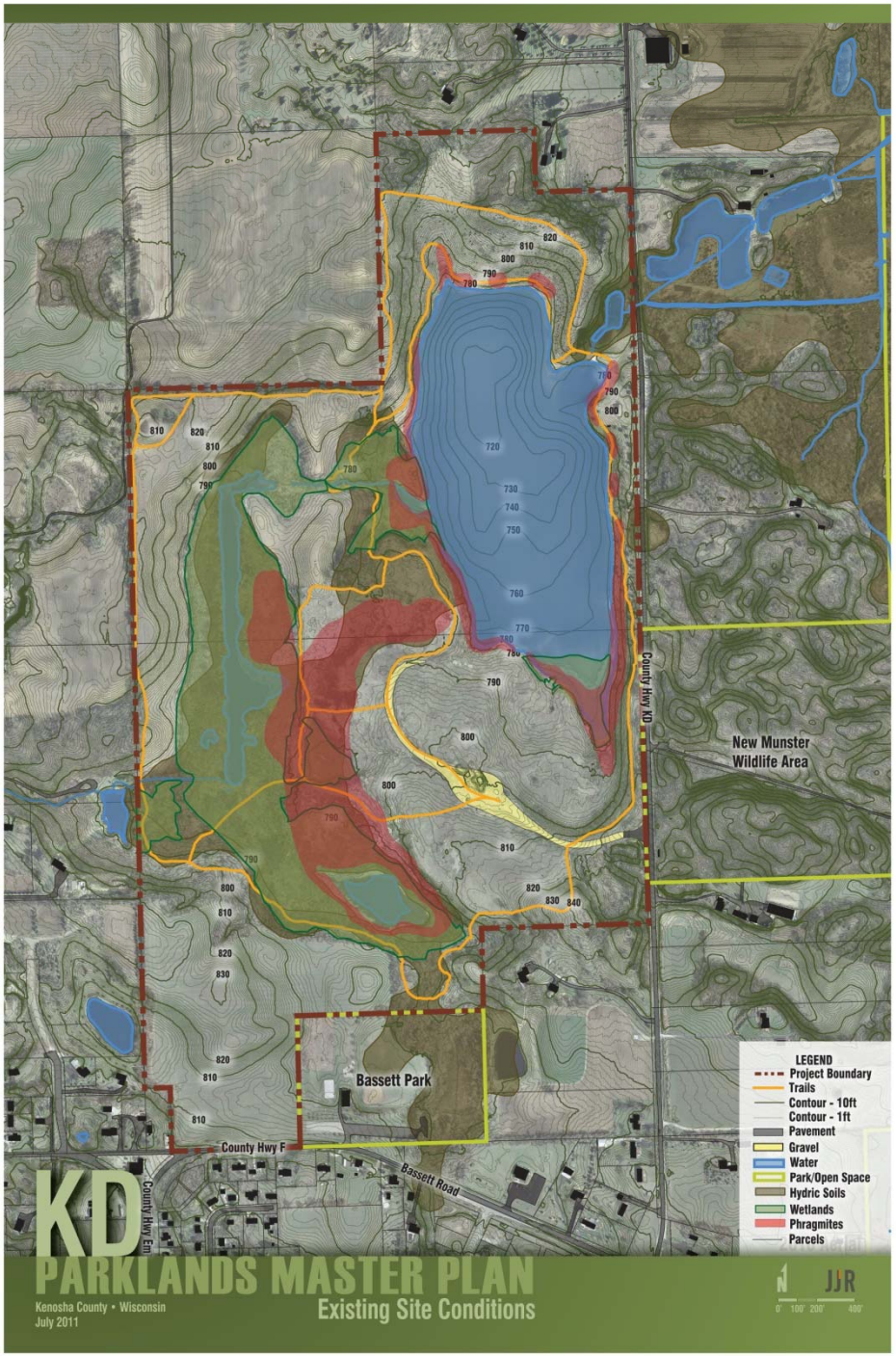


# Regional Context



# Site Analysis

- Existing topography – 1 foot contour interval
- Existing trails
- Soil boring locations
- Water and drainages
- Wetlands
- Hydric soils
- Phragmites infestation areas



# 2010 Aerial Photo

# 1995 Aerial Photo

- End of active quarry operations
- Shows extent of disturbance

# 1937 Aerial Photo

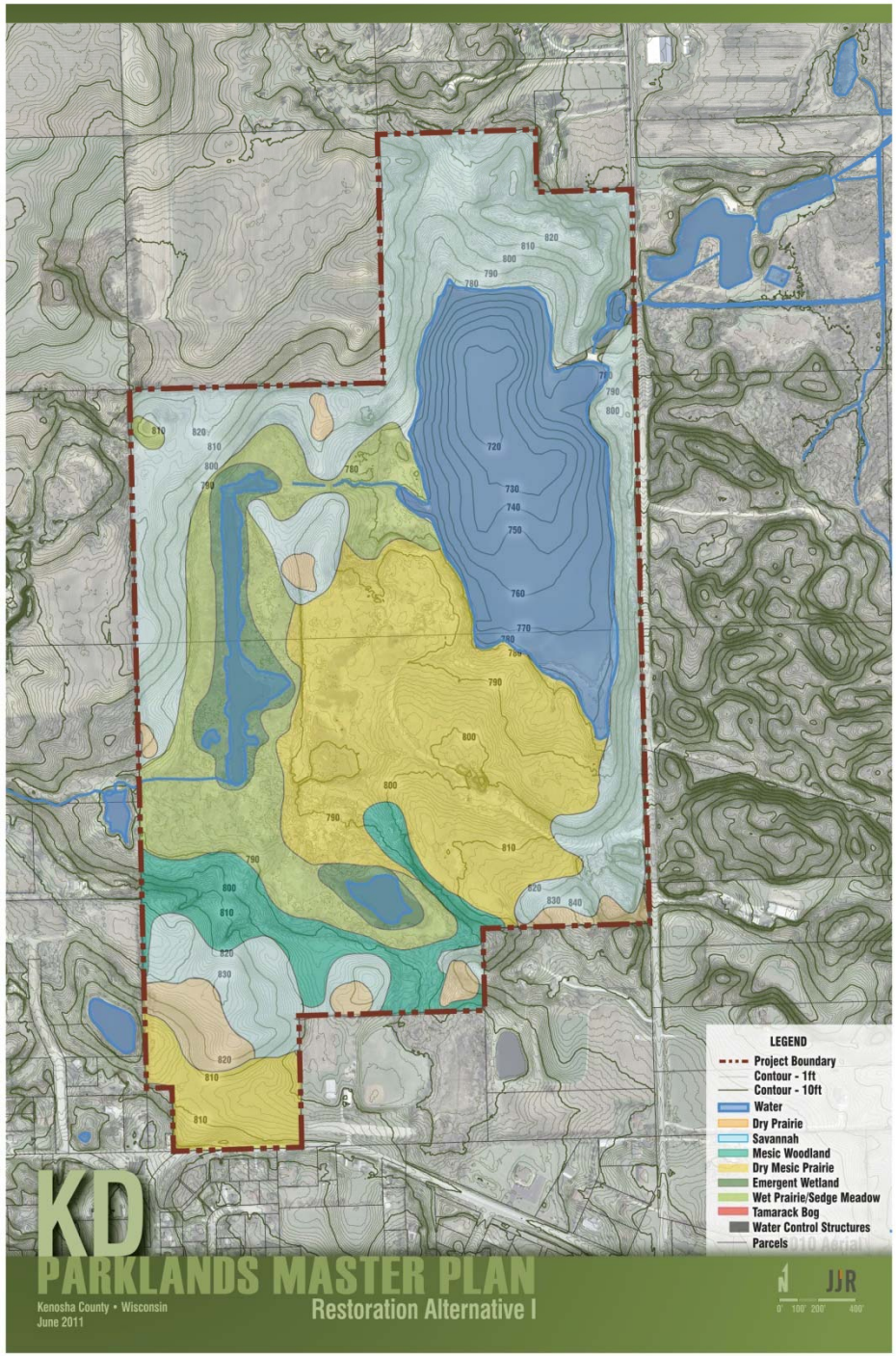
- Agricultural fields are predominent land use

# Site Restoration

## Alternative 1

**LEGEND**

- Project Boundary
- Contour - 1ft
- Contour - 10ft
- Water
- Dry Prairie
- Savannah
- Mesic Woodland
- Dry Mesic Prairie
- Emergent Wetland
- Wet Prairie/Sedge Meadow
- Tamarack Bog
- Water Control Structures
- Parcels

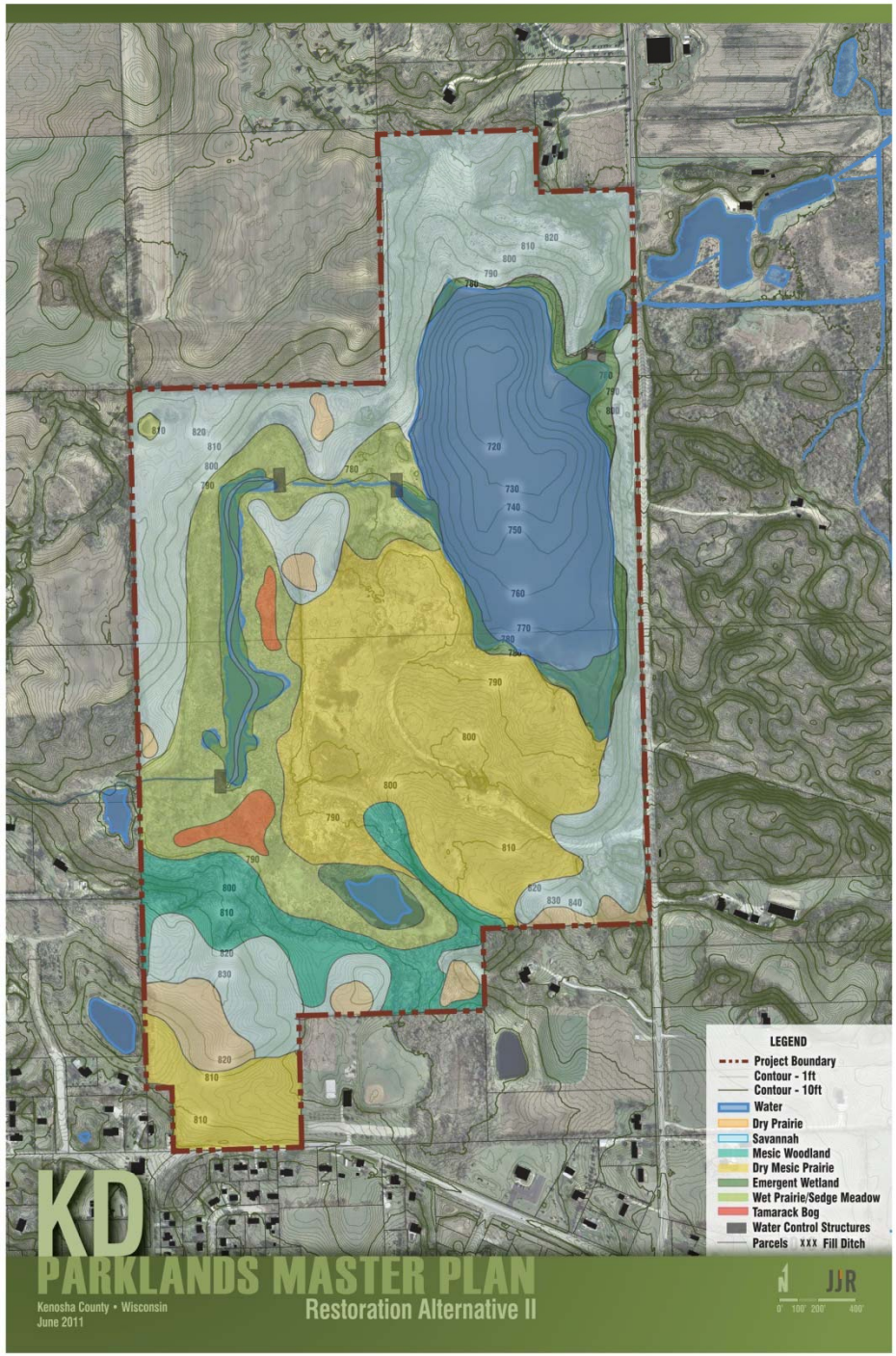


# Site Restoration

## Alternative 2

**LEGEND**

- Project Boundary
- Contour - 1ft
- Contour - 10ft
- Water
- Dry Prairie
- Savannah
- Mesic Woodland
- Dry Mesic Prairie
- Emergent Wetland
- Wet Prairie/Sedge Meadow
- Tamarack Bog
- Water Control Structures
- Parcels



# Development Suitability Analysis

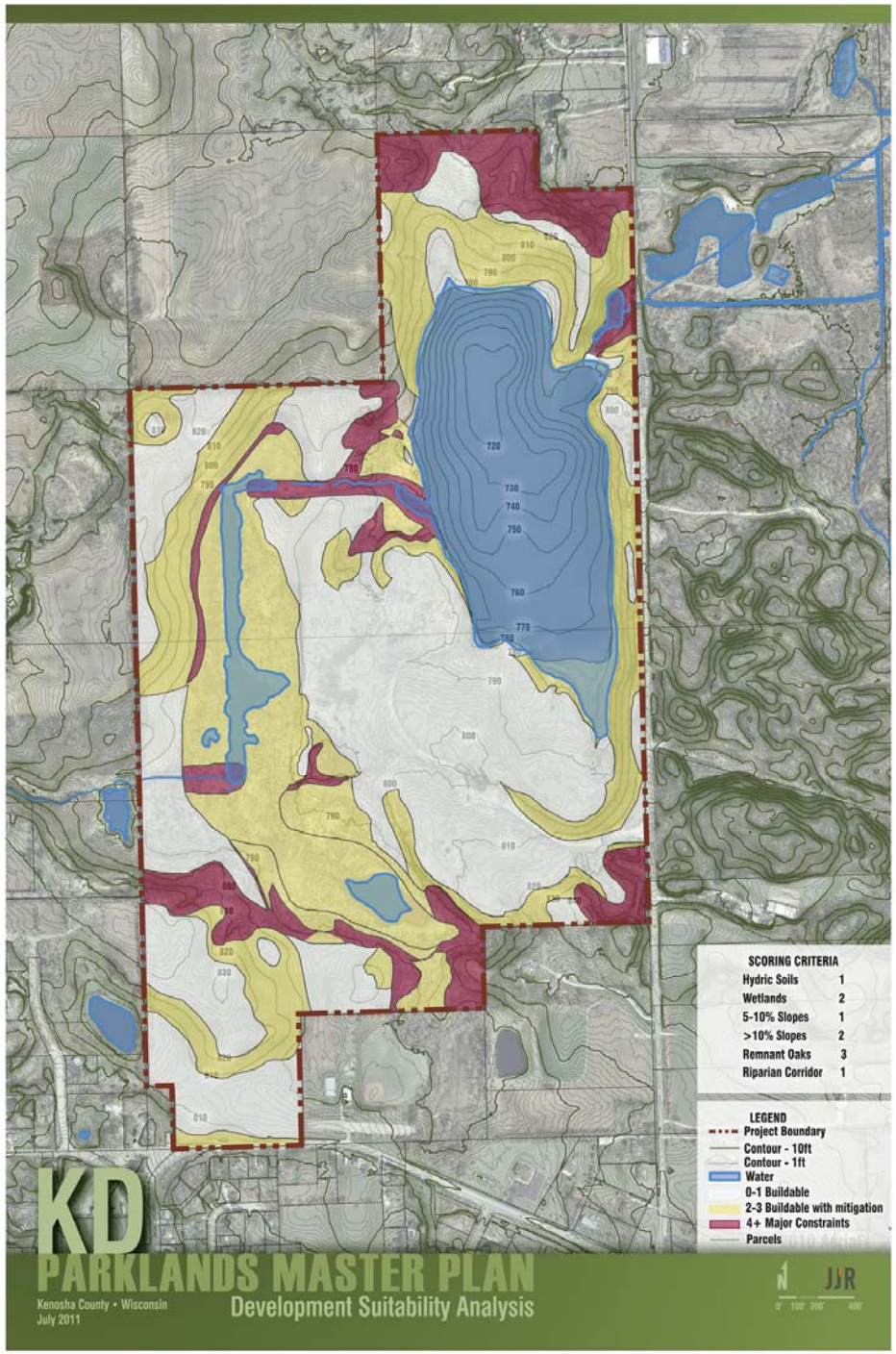
White = Score 0-1, Few constraints

Yellow = Score 2-3, Buildable with mitigation

Red = Score 4+, Major constraints

Scoring Criteria:

- Hydric Soils 1
- Wetlands 2
- 5-10% Slopes 1
- >10% Slopes 2
- Remnant Oaks 3
- Riparian Corridor 1



# Vision Statement

"This park will function as a **quality of life** enhancing, **instrument of change** for our Community. It will be designed and developed to provide two distinct, yet connected experiences – **education and recreation**.

**SUSTAINABLE LIVING** is the principle that integrates and unifies these two experiences."

- Immersion approach
- Benchmark model park
- Facilitate behavioral changes
- User friendly
- Encourage participation
- Showcase daily living practices
- Sustainable recreational activities
- Real-world laboratory
- Showcase clean-energy technologies
- Collaborate: Public, Private, Academic
- Challenge people to question lifestyle
- Encourage exploration/adoption of practices

# Ranking Criteria for Program Elements

1. Does the program element meet the vision for the park?
2. Does it provide a regional or local draw?
3. Does it support multiple user groups?
4. Can it be accommodated by the site conditions?
5. Is it fundable?

# Potential Program Elements

## Infrastructure / BMPs

**Renewable Energy Production and Exhibits**

- Biodiesel
  - Biodiesel demonstration
- Solar
  - Solar PV demonstration
  - Solar Umbrellas
- Wind
  - Wind spire / turbine demonstration
- Geothermal
  - Geothermal wells in lake
  - Geothermal wells in land
- Hydroelectrical
  - Small-scale generation from dam
- Misc
  - Exercise bikes for generating power
  - Charging stations

Black – On work group lists

Green – From work group meeting standards

Blue – Design team

# Potential Program Elements

## Infrastructure / BMPs

**Sustainable Design Building Techniques and Exhibits**

- Passive Solar Structure (s)
- "Off the grid building"
- Net Zero
- Alternative/evolving materials

**Sustainable Water Processing**

- Filtration Systems natural and mechanical
- Manual water pumping
- Graywater technologies
- Phytoremediation

**Sustainable Stormwater Management Strategies and Exhibits**

- Porous Pavements
- Native plantings
- Rainwater harvesting
- Weather/microclimate studies

Black – On work group lists

Green – From work group meeting standards

Blue – Design team

# Potential Program Elements

## Infrastructure / BMPs

**Ecological restoration**

- Wetland bank (s)
- Prairie restoration
- Oak/savanna restoration
- Integration of food/energy species (i.e. oil producing nuts)
- Underwater habitat creation and monitoring

**Signage / Wayfinding**

- Signage built by construction program
- Signage for landscape / ecological education
- Signage of history of the site
- Signage with virtual links for more information
- Evolving signage as site matures

**Information Technology**

- IT virtual information bank
- Virtual laboratory
- Wireless access
- Technology provider testing ground

Black – On work group lists

Green – From work group meeting standards

Blue – Design team

# Potential Program Elements

## Program / Activities

**Active Water Recreation**

- Fishing
  - 4-H youth fishing tournament
- Swimming
- Wind-surfing / paddle-boarding
- Kayaking
- Canoeing

**Scuba diving**

- Sub-merged platform
- Staging area at lake edge
- Sunken destinations/features

**Active Land Recreation**

- Ropes Courses
- Integration/expansion of adjacent sports fields
- Yoga
- Climable trees
- Long distance running
- Dog sledding

Black – On work group lists

Green – From work group meeting standards

Blue – Design team

# Potential Program Elements

## Program / Activities

**Passive Land Recreation**

- GPS training
- Orienteering
- Geo-caching
- Letter-boxing
- Birding

**Site History**

- Gravel pit exhibit
- Living History events
- History of the park site exhibit (s)
- Waste interpretation at dump site

**Astronomy**

**Campfire areas**

- for twilight programs

Black – On work group lists

Green – From work group meeting standards

Blue – Design team

# Potential Program Elements

## Program / Activities

**Events**

- Long distance races
- Boy / Girl Scout programs
- Hot air ballooning
- Mini-triathlon
- Master Woodland Stewards
- Concerts
- Local food market

Ecological Processes

- Organic soil reclamation
- Apiary / natural pollinators
- Water quality testing program
- Invasive species study / exhibit
- Wetland soil assessment

**Dog Park**

- Traditional dog park
- Dog training / competitions

Black – On work group lists

Green – From work group meeting standards

Blue – Design team

# Potential Program Elements

## Program / Activities

**Flora / Fauna Research**

- Bat research
- Fish research
- Amphibian research
- Bird research
- Insect research

**Art Installations**

- Sculpture design contest
- Sculptures using old quarry equipment
- Reclamation art
- Invasive re-use as art
- Nature-based sculpture

**Evolution of a working landscape**

**Sustainable park management / model practices**

**Technical Job Training**

- Regional small scale biomass training
- Alternative energy
- Horticulture/landscape
- Water technologies

Black – On work group lists

Green – From work group meeting standards

Blue – Design team

# Potential Program Elements

## Spaces / Acreages

**Ecological Restoration (see BMPs)**

**Agriculture**

- Bee hives
- Permaculture demonstration
- Crops for biomass production
- Local food production
- Urban farming
- Range/pasture land
- Model farming coop with adjacent farmers

**Archery range / walk**

**Specialty Gardens**

- Medicine wheel garden
- Butterfly/insect garden
- 4 season gardens
- Learning garden for horticulture training
- Adopt – a –tree

**Fitness Stations**

Black – On work group lists

Green – From work group meeting standards

Blue – Design team

# Potential Program Elements

## Spaces / Acreages

**Labyrinth using gravel from pit**

**Frisbee golf course**

**Small scale biomass facility**

- Community drop off point and collection area
- Biomass facility
- Invasive fuel facility (i.e. phragmites)

**Outdoor gathering spaces (small)**

- Outdoor theater
- Outdoor classroom spaces

**Outdoor gathering spaces (large)**

- Concert/special event venue
- Large scale gathering space

**Soil studies**

- Soil and water living labs
- Soil drilling sites
- Open cut/cross section viewing

Black – On work group lists

Green – From work group meeting standards

Blue – Design team

# Potential Program Elements

## Spaces / Acreages

**Children's areas & playgrounds**

- Children's garden
- Wheelchair swing
- Children's playground
- Integrated playgrounds
- Nature based play design
- Accessible tree house(s)
- Neighborhood play at Bassett Park

Black – On work group lists

Green – From work group meeting standards

Blue – Design team

# Potential Program Elements

## Facilities / Buildings

**Boat ramp for EMS access**

**Fishing pier / access**

**Observatory / light pollution display**

**Green house**

**Learning laboratory**

**Roads and parking**

**Viewing tower**

**Bridge to Munster Wildlife Area**

**Toilet and shower facilities**

**Back of house equipment storage**

**Orientation center**

**Recreation center and aquatics**

Black – On work group lists

Green – From work group meeting standards

Blue – Design team

# Potential Program Elements

## Facilities / Buildings

**Trails**

- Additional hiking trials
- Cross country skiing / snowshoe
- Limited bike trails
- Zipline trail
- Link to regional trails/greenways
- Immersion trail with nodes
  - Boardwalks
  - Tree canopy walk
  - Suspended ridge walk
  - Underwater trail / access
  - Bird watching blinds / stands

**Temporary gathering structures**

**Retreat center**

**Food service / catering kitchen**

Black – On work group lists

Green – From work group meeting standards

Blue – Design team

# Potential Program Elements

## Facilities / Buildings

**Alternative construction demonstration building**

- Building made with 100% recycled / reclaimed materials
- Strawbale construction
- Earthen construction

Black – On work group lists

Green – From work group meeting standards

Blue – Design team

# Potential Program Elements

## Infrastructure / BMPs

| Program Elements | Potential User Groups | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Recreational | Ecological | Primary Education | Higher Education/Research | Corporate/NGO | Tourism | Vocational | Funding/Partner Opportunities | Total Ranking |
| **Infrastructure/BMPs** | | | | | | | | | |
| Renewable Energy Production and Exhibits | | | 3 | 3 | 3 | 3 | 3 | 3 | 18 |
| Sustainable Design Building Techniques and Exhibits | | | 3 | 3 | 3 | 3 | 3 | 3 | 18 |
| Sustainable Water Processing | | | 2 | 2 | 2 | 2 | 2 | 2 | 12 |
| Sustainable Stormwater Management Strategies and Exhibits | | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 13 |
| Ecological restoration | 2 | 2 | 2 | 2 | 3 | 2 | 3 | 1 | 17 |
| Information Technology | | | 2 | 2 | 2 | | 2 | 2 | 10 |
| Signage / Wayfinding | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 1 | 22 |

**Ranking Key**

1 = Local Attraction

2= Local and County-Wide Attraction

3= Local, County-Wide and Regional Attraction

| |
|---|
| Base Level Elements |
| Ranking Greater Than 10 |
| Ranking Greater Than 15 |

# Potential Program Elements

## Program / Activities

| Program Elements | Potential User Groups | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Recreational | Ecological | Primary Education | Higher Education/Research | Corporate/NGO | Tourism | Vocational | Funding/Partner Opportunities | Total Ranking |
| **Program / Activities** | | | | | | | | | |
| Active Water Recreation | 2 | 2 | 1 | | 2 | 2 | | 1 | 10 |
| Scuba diving | 3 | 2 | | 2 | | 3 | 2 | 3 | 15 |
| Active Land Recreation | 2 | | 2 | | 2 | 2 | | 1 | 9 |
| Passive Land Recreation | 2 | 3 | 2 | | | 2 | | 1 | 10 |
| Astronomy | 2 | 2 | 2 | 2 | | 2 | 2 | 1 | 13 |
| Campfire areas for twilight programs | 2 | 2 | 2 | | 2 | 2 | | 1 | 11 |
| Site History | | 2 | 2 | 2 | | 3 | | 1 | 10 |
| Research | | 3 | 2 | 3 | 3 | 2 | 3 | 3 | 19 |
| Events | 2 | 2 | 2 | 2 | | 3 | | 2 | 13 |
| Ecological Processes | | 2 | 2 | 2 | | 3 | | 1 | 10 |
| Dog Park | 2 | | | | | | | 1 | 3 |
| Art Installations | | | 2 | 2 | | 3 | 2 | 2 | 11 |
| Evolution of a working landscape | | 3 | 2 | 2 | | 2 | | 1 | 10 |
| Sustainable park management / model practices | | 2 | | 2 | 3 | | 3 | 1 | 11 |
| Technical Job Training | | | 3 | 3 | 3 | | 3 | 3 | 15 |

**Ranking Key**

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# Potential Program Elements

## Spaces / Acreages

| Program Elements | Potential User Groups | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Recreational | Ecological | Primary Education | Higher Education/Research | Corporate/NGO | Tourism | Vocational | Funding/Partner Opportunities | Total Ranking |
| **Spaces** | | | | | | | | | |
| Agriculture | | 2 | 2 | 3 | | 2 | 3 | 2 | 14 |
| Archery range / walk | 2 | | | | 2 | 2 | | 1 | 7 |
| Fitness Stations | 1 | | | | | | | 1 | 2 |
| Labyrinth using gravel from pit | 2 | | 2 | | | 2 | | 1 | 7 |
| Specialty Gardens | 2 | 2 | 2 | 2 | 3 | 3 | 2 | 2 | 18 |
| Frisbee golf course | 2 | | | | | 2 | | 2 | 6 |
| Small scale biomass facility | | | 3 | 3 | 3 | | 3 | 3 | 15 |
| Children's areas & playgrounds | 2 | | 1 | | | 2 | | 2 | 7 |
| Outdoor gathering spaces (large) | | | | | | 3 | | 2 | 5 |
| Outdoor gathering spaces (small) | | 2 | 2 | 2 | | 2 | | 2 | 10 |
| Soil studies | | 2 | 2 | 2 | | 2 | | 2 | 10 |

**Ranking Key**

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| |
|---|
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| Ranking Greater Than 10 |
| Ranking Greater Than 15 |

# Potential Program Elements

## Facilities / Buildings

| Program Elements | Potential User Groups | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Recreational | Ecological | Primary Education | Higher Education/Research | Corporate/NGO | Tourism | Vocational | Funding/Partner Opportunities | Total Ranking |
| **Facilities / Buildings** | | | | | | | | | |
| Boat ramp for EMS access | 2 | 2 | | 3 | | | 2 | 2 | 11 |
| Fishing pier / access | 2 | 2 | 2 | 2 | | 2 | | 2 | 12 |
| Observatory / light pollution display | | 2 | 2 | 2 | | 2 | 2 | 2 | 12 |
| Green house | | | 2 | 2 | | 2 | 2 | 2 | 10 |
| Learning laboratory | | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 21 |
| Trails | 3 | 2 | | | | 3 | | 2 | 10 |
| Roads and parking | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 1 | 22 |
| Viewing tower | 2 | 2 | 2 | 2 | | 2 | | 1 | 11 |
| Bridge to Munster Wildlife Area | | 3 | 2 | 2 | | 3 | | 1 | 11 |
| Toilet and shower facilities | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 1 | 22 |
| Back of house equipment storage | 1 | 1 | | 2 | | | 2 | 2 | 8 |
| Orientation center | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 23 |
| Recreation center and aquatics | 2 | | 2 | | 2 | | | 2 | 8 |
| Temporary gathering structures | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 23 |
| Retreat center | | | 3 | 3 | 3 | 3 | 3 | 2 | 17 |
| Food service / catering kitchen | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 1 | 22 |
| Alternative construction demonstration building | | | 2 | 3 | 3 | 3 | 3 | 3 | 17 |
| | 60 | 72 | 90 | 90 | 67 | 102 | 73 | | |

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| Ranking Greater Than 10 |
| Ranking Greater Than 15 |

# Programming Framework

5 Zones of Common Physical Characteristics:

A: The Hill

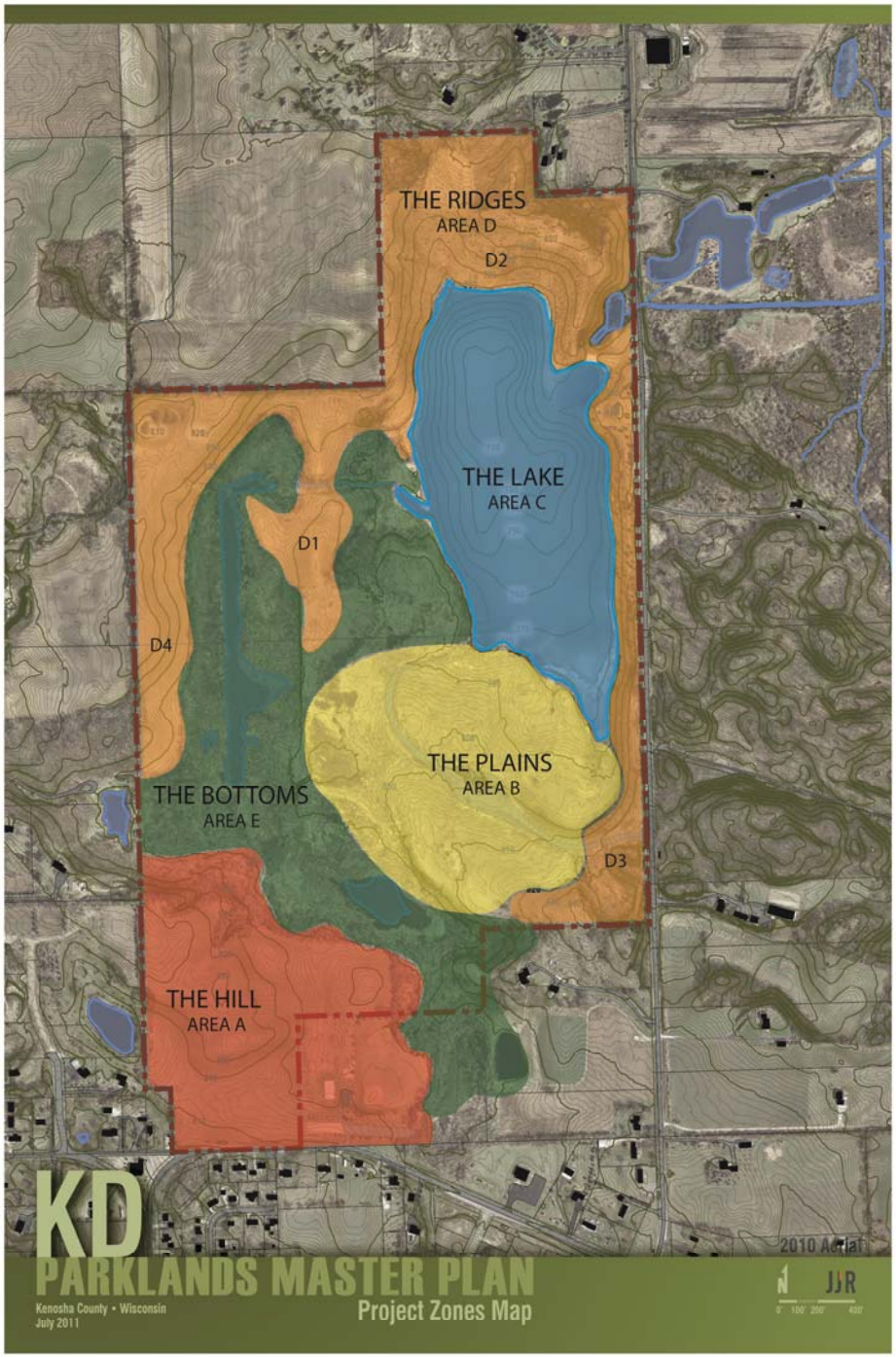
B: The Plain

C: The Lake

D: The Ridges

E: The Bottoms

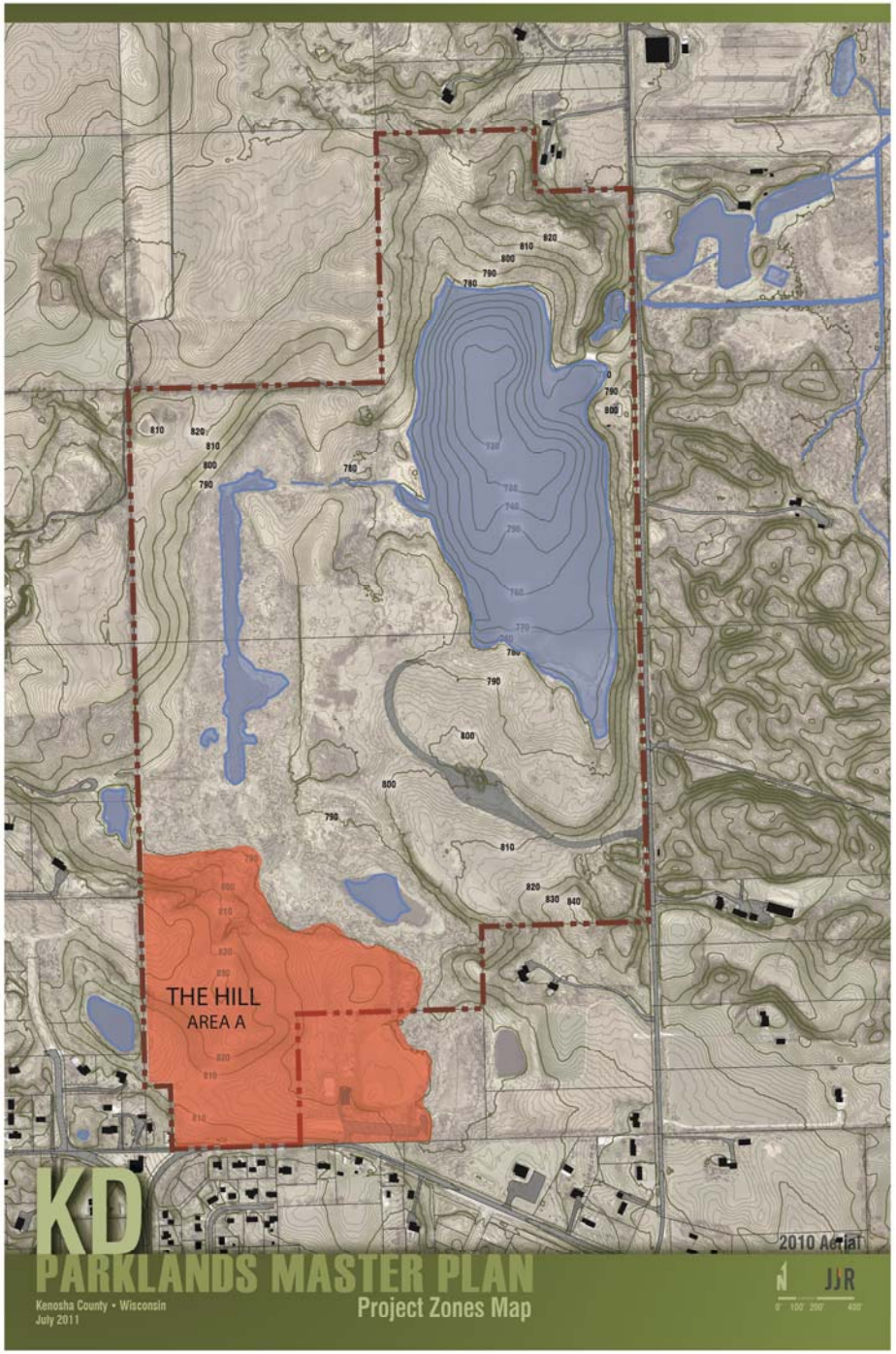
Illustrates potential site fit and synergies, drives alternatives



# Programming Framework

**A: Hill**

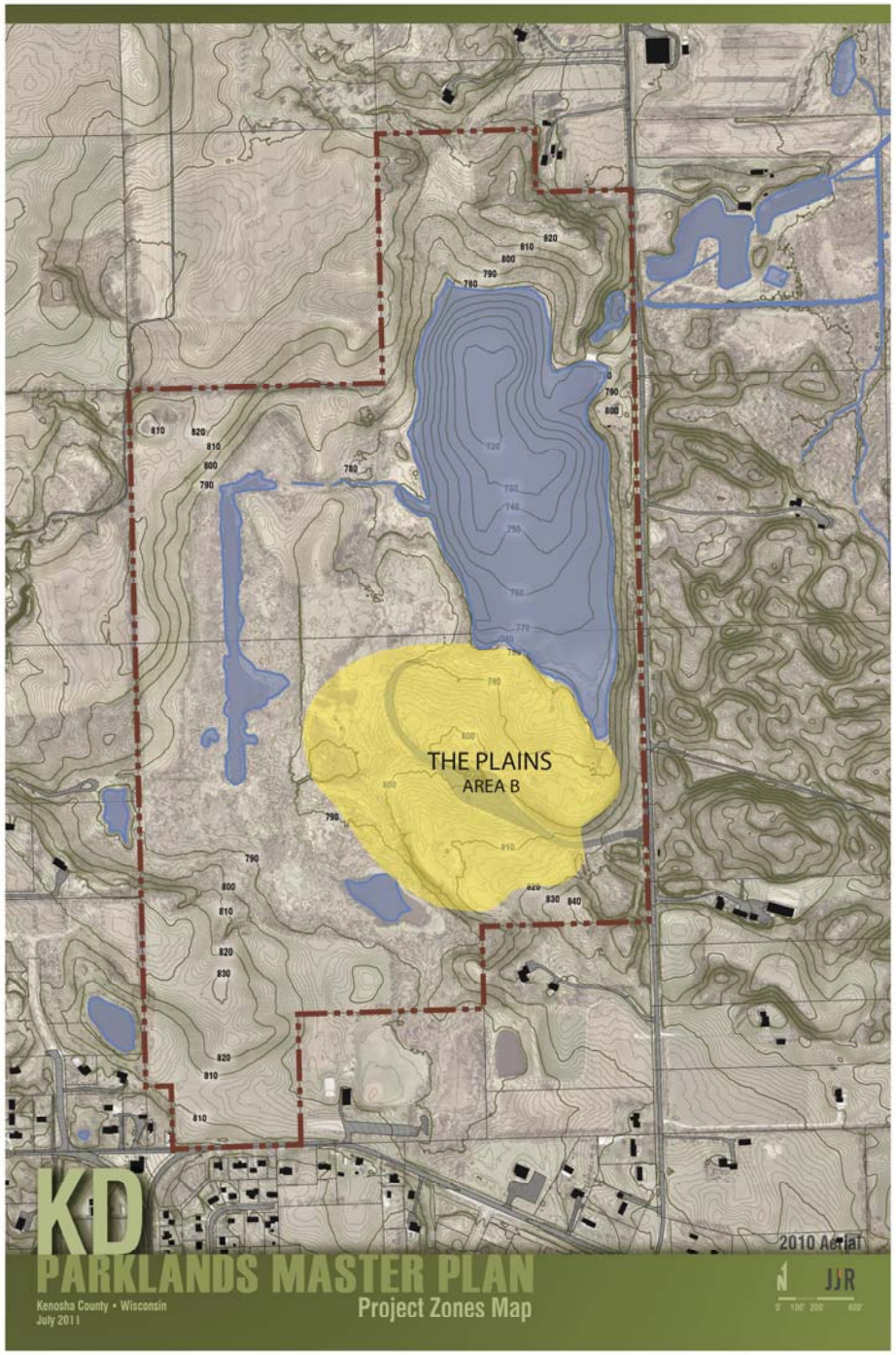
- Dog park enhancements/training
- Outdoor sports (complement Bassett Park)
- Sustainable agriculture
- Recreation center/aquatics
- Bike trails
- Large outdoor gatherings
- Expanded parking
- Park maintenance and operations
- Biomass initiatives
- Wind/alternative energy
- Playground(s)
- Greenhouses/agriculture
- Viewing tower



# Programming Framework

**B: Plain**

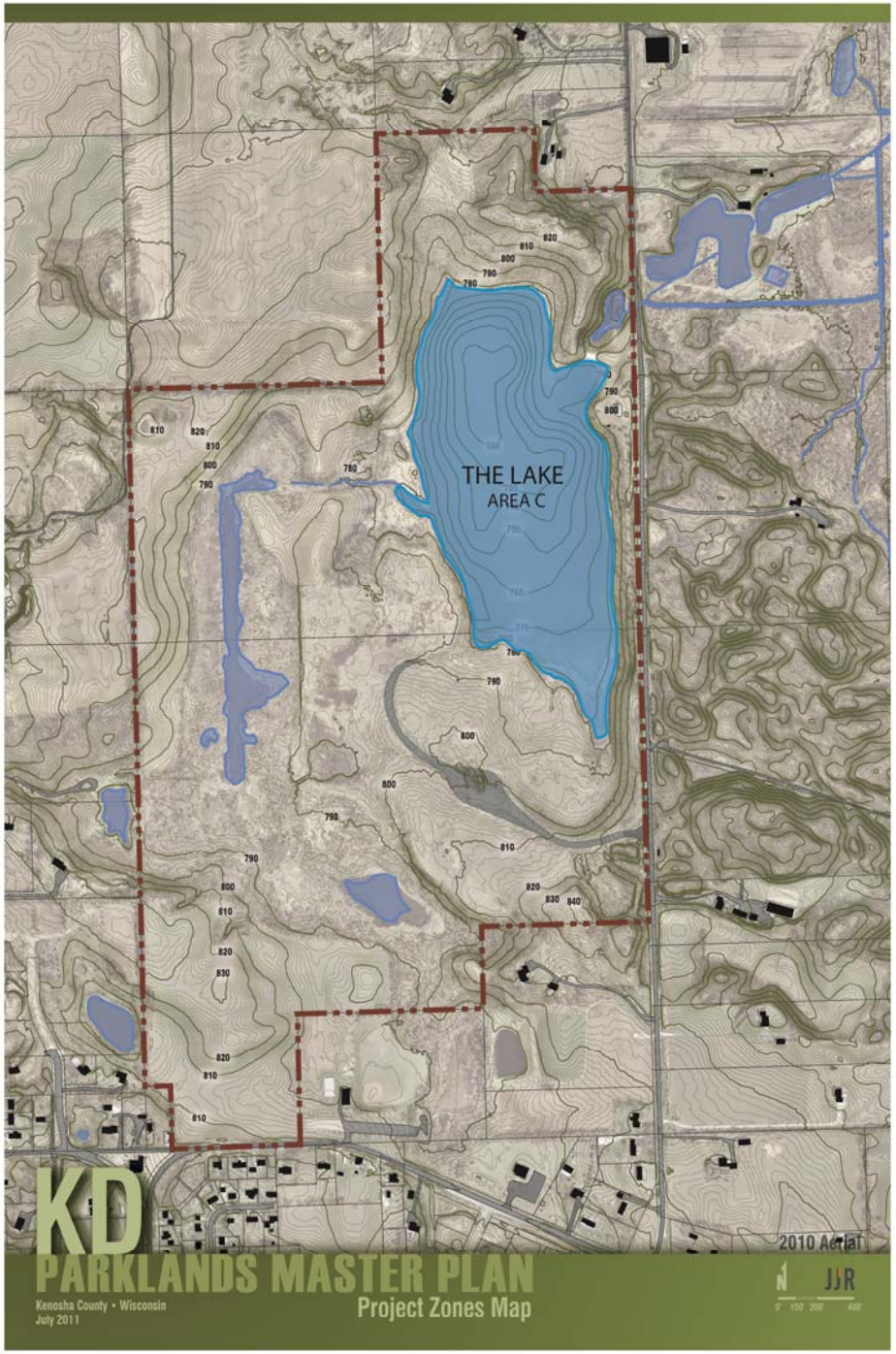
- Biomass initiatives
- Alternative materials campus
- Visitor support center
- Birding
- Reclamation art
- Buildings/facilities (already a disturbed part of site)
- Passive solar structure
- General lake support
- Solar technologies
- Scouts/camping



# Programming Framework

**C: Lake**

- Diving
- Fishing
- Canoeing/kayaking
- Water research
- Boardwalks
- Immersion trail
- Phragmites/water edge demonstration
- Dam research
- Geothermal
- Small-scale hydroelectric pilot
- Subsurface reclamation art

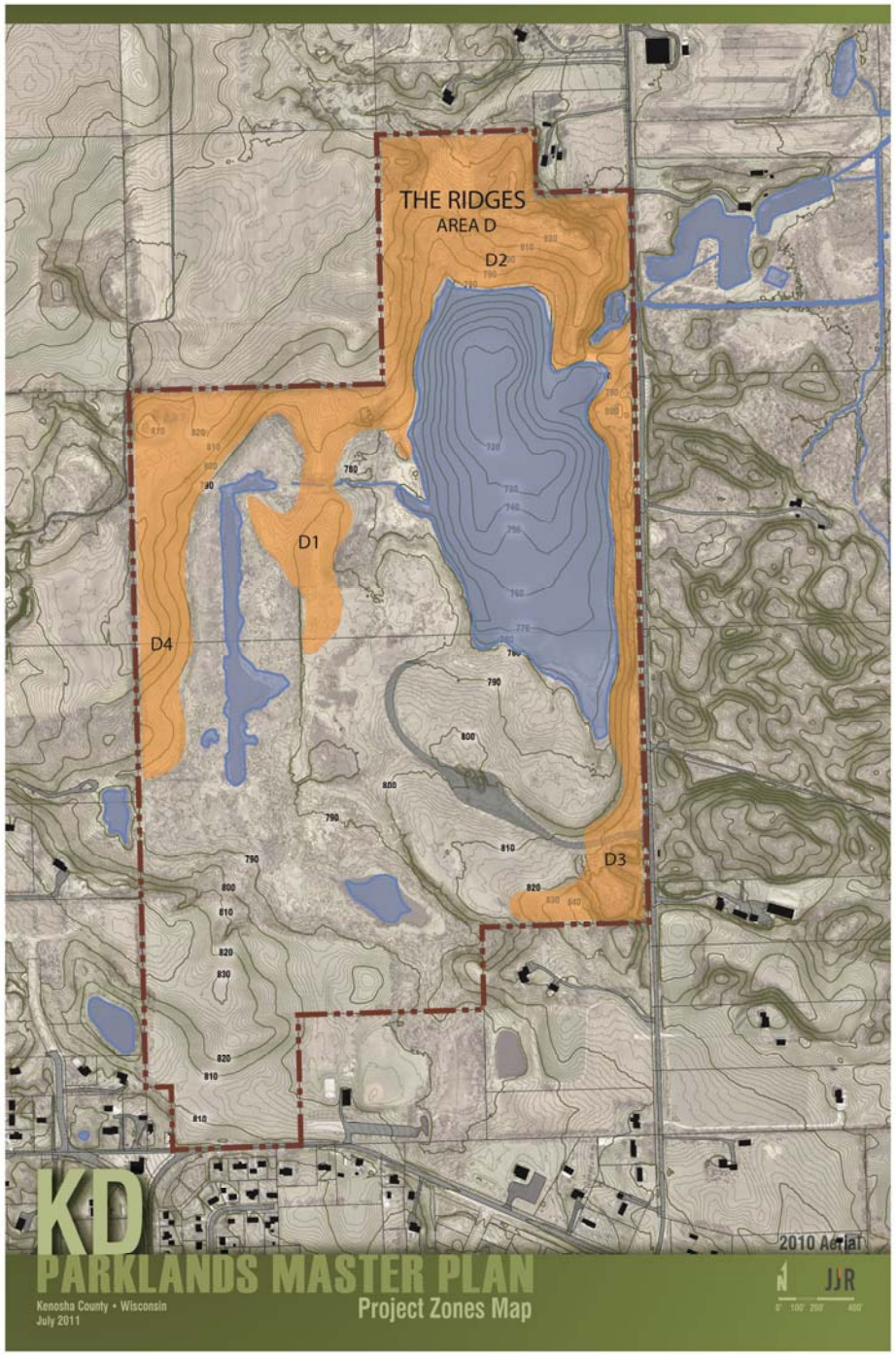


# Programming Framework

**D: Ridge**

- **1.** **-** Outdoor gathering/classroom
  - Scouts/camping
  - Small-scale agriculture
  - Alternative energy (wind)
  - Viewing tower/overlook
  - Rangeland/pasture

- **2.** **-** Restoration area
  - Overlook w/nodes
  - Wind
  - Solar

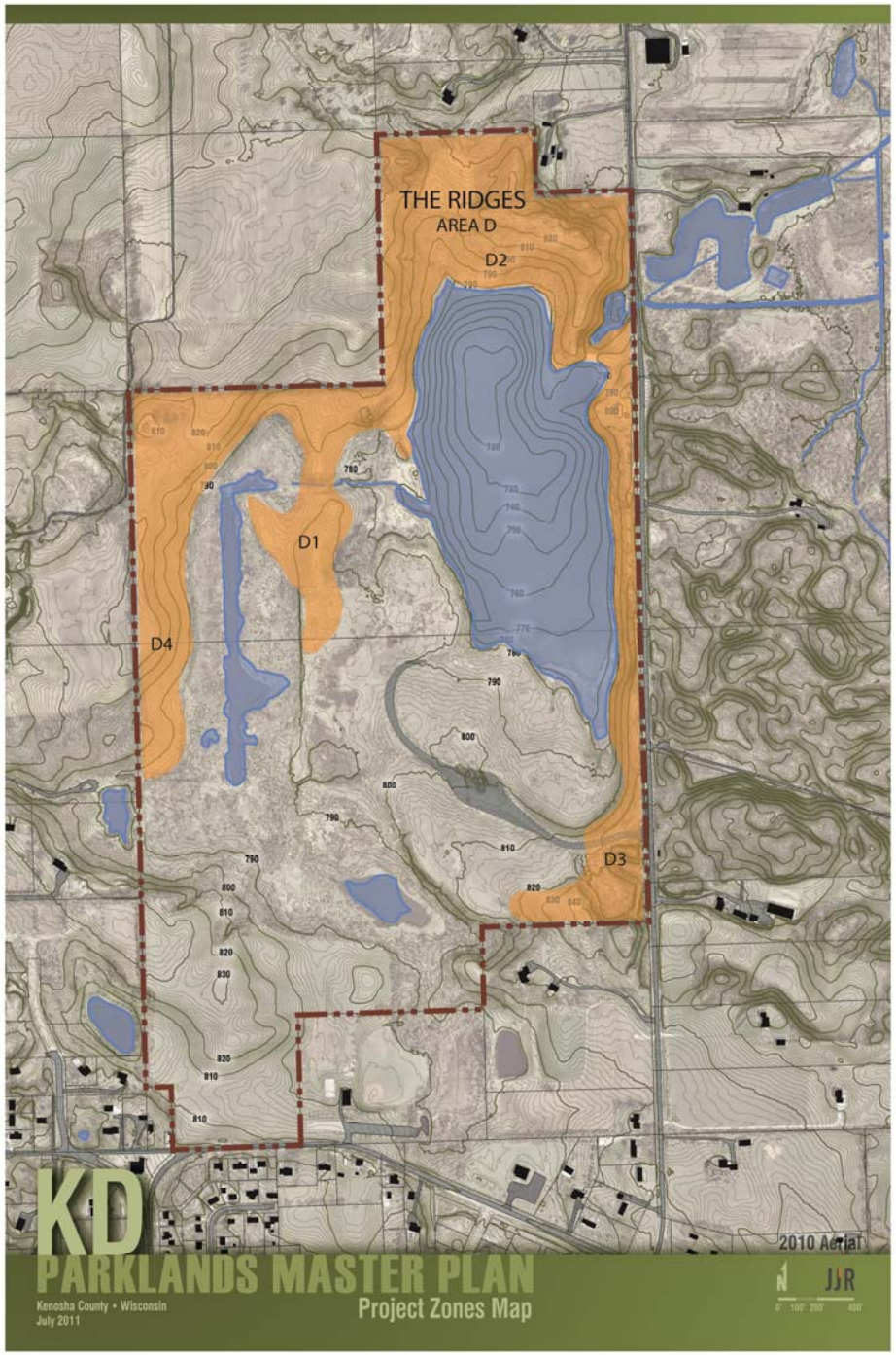


# Programming Framework

**D: Ridge**

- **3.** **-** Waste/industrial heritage interpretation
  - Reclamation art
  - Immersion walk
  - Bridge to New Munster Wildlife Area

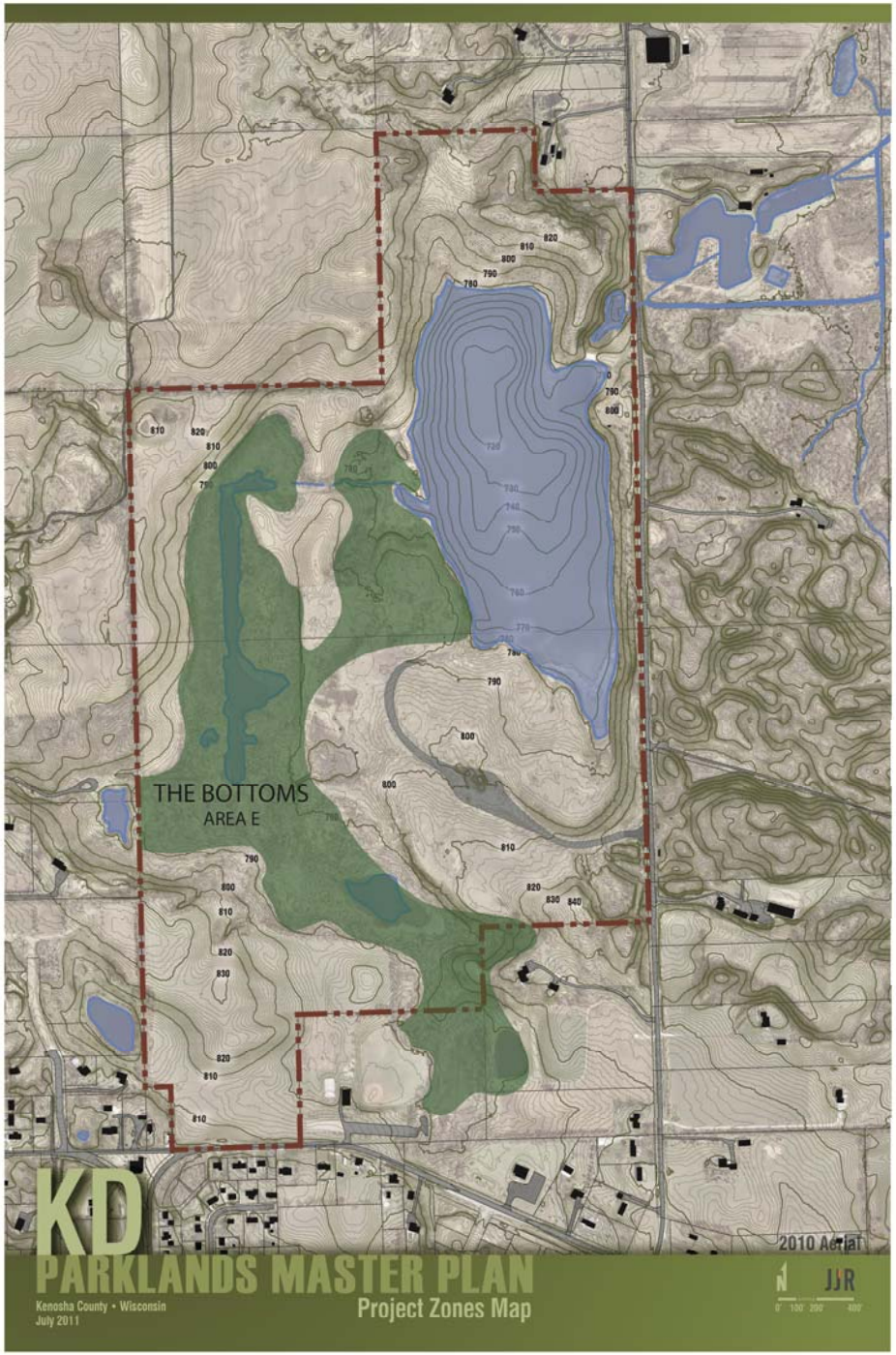
- **4.** **-** Restoration area
  - Wind
  - Geological plots/horticulture research area
  - Interpretive
  - Renewable fuel source for biomass facility



# Programming Framework

**E. Bottoms**

- Immersion walk
- Interpretation
- Restoration area
- Water studies
- Productive landscape/invasives management demonstration
- Boardwalks
- Canoeing/kayaking
- Bat studies/support



# Programming Framework

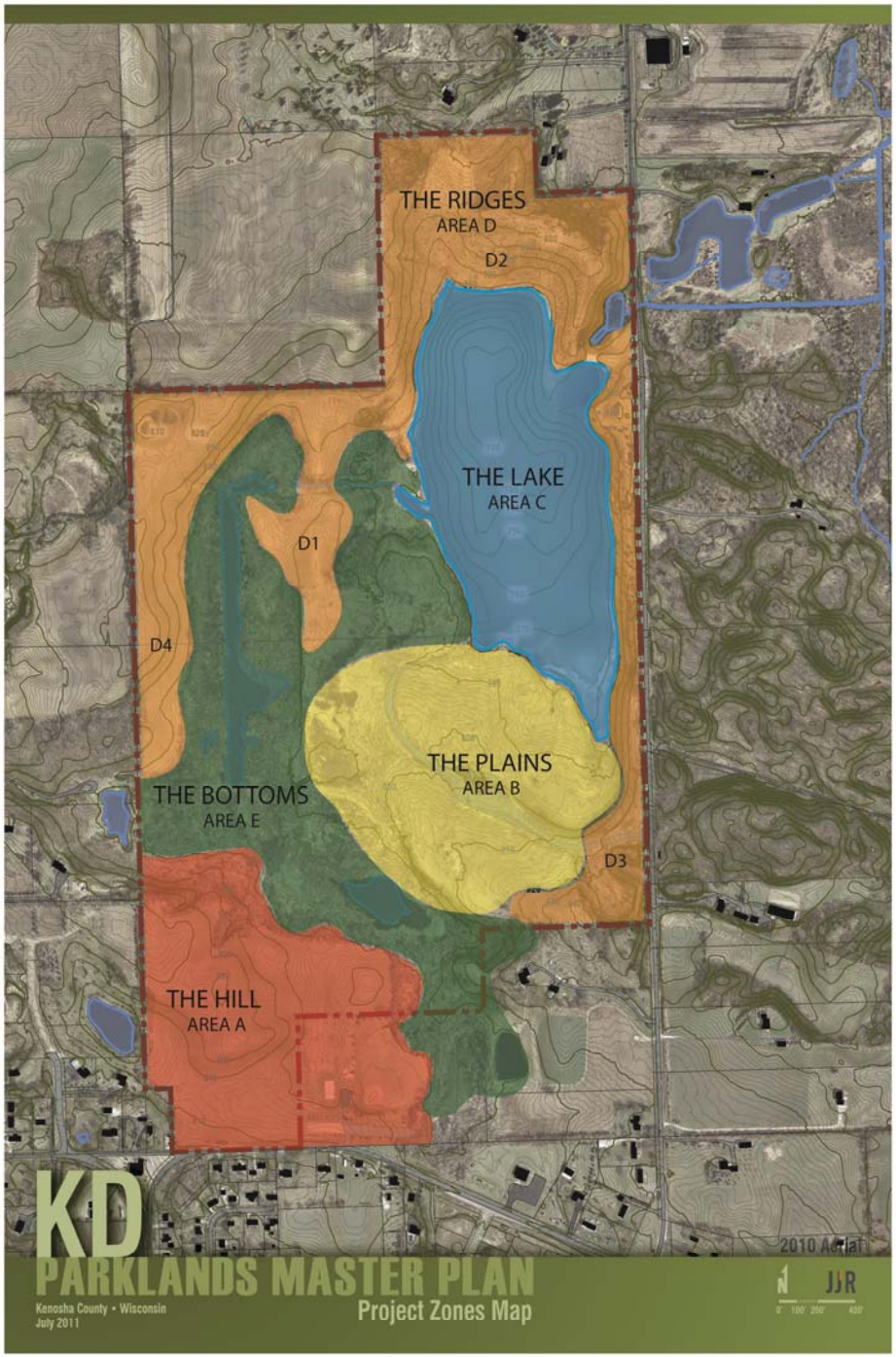
5 Zones of Common Physical Characteristics:

A: The Hill

B: The Plain

C: The Lake

D: The Ridges

E: The Bottoms

Illustrates potential site fit and synergies, drives alternatives