

FUNctional Landscapes



Thursday August 2, 2018 12:10 – 12:50
Mark Canney, Lincoln Parks & Recreation

This "All Things Green" series is sponsored by the Nebraska Statewide Arboretum, UNL Institute of Agriculture & Natural Resources, Lincoln Parks & Recreation & the Downtown Lincoln Association



What is the **Parks
Department** doing to
be more **ecologically
friendly**?





CELEBRATE POLLINATORS IN LINCOLN PARKS!

Mayor Chris Beutler issued a proclamation for National Pollinator Week for the week of June 1-25, 2017, encouraging residents to learn how they can make their landscapes pollinator-friendly. He was joined at the Pioneer Woman sculpture in South Antelope Park by a group of summer day campers, who planted milkweed, which is essential for monarch butterflies. National Pollinator Week was established by Congress ten years ago to address the decline of pollinators, including monarch butterflies and bees.

"We are hearing more and more about the importance of pollinators like birds, bees, butterflies and other insects to our environment," Mayor Beutler said. "Our Parks and Recreation Department manages over 7,000 park areas in our City, and half of that is managed as greenway providing habitat for wildlife including pollinators."

Also attending event was Randall Gilbert of Lincoln, a representative of the Save the Monarchs organization. The group provided about 400 milkweed plants to the City, including those planted by the campers from Irving and Calvert Recreation Centers in Antelope Park. Some were included in the 3,000 perennial flowers and grasses planted by volunteers at Woods Park Saturday. Others were planted at Union Plaza, Lakeview Park and the Rotary Strolling Garden.



POLLINATOR WEEK June 18th – June 24th 2018

DIRECTORS MESSAGE

Parks are for people and pollinators!

Mayor Beutler recently signed the National Wildlife Federation's Mayoral Monarch Pledge indicating the City of Lincoln's commitment to help save the monarch butterfly and other pollinators by prioritizing restoration and enhancement of their habitat.

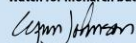
Beginning in the mid-1990's, populations of monarch butterflies began to decline dramatically, particularly in eastern states. The primary cause was the disappearance of milkweed plants in farm fields of the midwest resulting from increased use of GMO corn and soybeans. The central plains are an important part of the monarch annual migration path.

The decline of monarch butterflies reflects an overall pattern of declining populations of pollinators, including bees, butterflies, moths, and some birds. These pollinators are important in growing the crops that we eat.

As you visit Lincoln's parks you will see "pollinator gardens" in many areas. These plantings of native plants, including milkweed, supports monarchs, and provide needed habitat for our native pollinators. We hope that you will stop and view the abundance of life in pollinator gardens in Lincoln's parks. You can also be part of the effort to sustain pollinators by including native plants in your home landscape. Many native plants are very attractive and well adapted to extremes for our climate – hot and cold, wet and dry.

GET OUT. BE ACTIVE. HAVE FUN!

Watch for monarch butterflies and other pollinators!



Lynn Johnson, Parks and Recreation Director



2015 Received “Blazing Star Award” from the Nebraska Forest Service & Nebraska Statewide Arboretum



“For more than 10 years of planting and promoting native plants and pollinator habitat in public spaces”

- Nebraska Statewide Arboretum

**Parks and
Recreation is
FUNdamental to
Lincoln!**



10

FUNctional LANDSCAPES



1 Reduced mowing practices to create “Long Grass Areas”



WHY CREATE LONG GRASS AREAS?

The Lincoln Parks and Recreation implementation of reducing mowing in parks has multiple benefits to our community. This practice is also consistent with the City of Lincoln Municipal Code and Stormwater Drainage Design Standards, as well as state and federal guidelines.

Environmental Benefits

- Reduces pesticide use
- Reduces excess nutrient and sediment runoff
- Improves native plant germination and regeneration
- Improves biodiversity
- Enhances riparian habitat
- Improves dissolved oxygen levels
- Increases bank stability
- Reduces competition with weeds
- Reduces noise pollution
- Ground water recharge
- Creates bird and butterfly habitat

Educational Benefits

- Addresses Nature Deficit Disorder
- Creates opportunities for local school curriculum

Social Benefits

- Reconnects people to nature
- Encourages exploration of flora and fauna

Economic Benefits

- Reduces fuel cost and equipment usage

Aesthetic Benefits

- Adds color, character and texture

2 Creating a vegetative buffer along stream, water & lake edges.

City of Lincoln Design Standards 2.05 Stormwater Drainage Design Standards

Minimum Corridor: Minimum flood corridor shall mean the existing channel bottom width plus 60 feet plus six times the channel depth and the corridor will be centered on the channel, as shown in Figure 1 or aligned such that the corridor follows the natural flow of flood waters. (Added 5-10-04; Resolution No. A-82748)

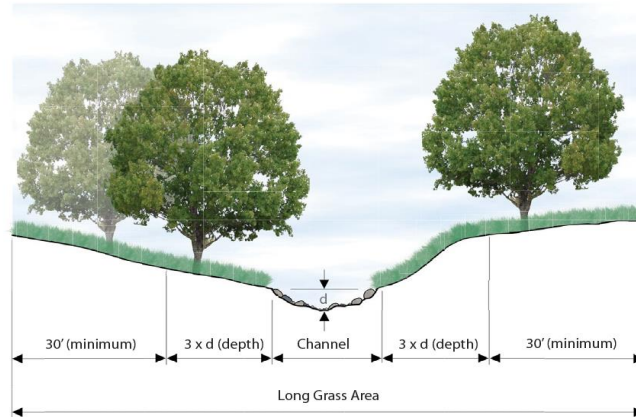


Figure 1: Minimum Flood Corridor

**3 Reducing the amount of chemical applications
(herbicides & pesticide) in park landscapes.**



Dandelions provide an early and easily available food source for pollinators.

4 Creating **FUN**ctional landscapes with rain gardens & bioswales.



Rain garden featuring pollinator favorites - goldenrod, aster and switchgrass.

Water Quality Improvement Projects



ROBERT'S
PARK

Plants currently in bloom include Yellow Prairie Coneflower & Purple Coneflower.

5

**Integration of native plants into all landscape projects
– especially signature or landmark spaces.**



**CENTENNIAL
MALL**

Chief Standing Bear Sculpture surrounded by native plants used by the Ponca.

6

Conversion of Long Grass areas into Prairie in the Parks.



TAYLOR PARK

This prairie mix includes a blend of little bluestem & sideoats grama.

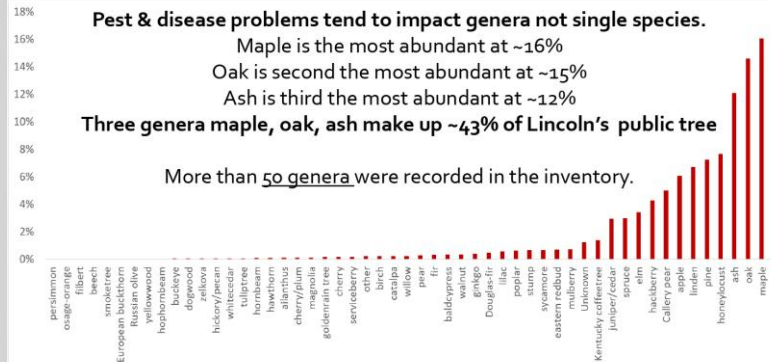
7 Diversification of Street Tree List.



Oak trees provide habitat to as many as (557) caterpillar species.

Tree Inventory

Lincoln's current genus level of diversity



genus/genera = maples, oaks, ash, etc.
 species = red maple, white ash (and associated cultivars), etc.

Tree inventory was completed in the Summer of 2017.

8 The installation of Pollinator Gardens in new & existing parks.



Locating pollinator gardens near trails helps the public to become familiar with plants like Wild Quinine.

9

Passive areas in new parks are seeded to native a mix rather than traditional fescue creating “Prairie in the Park”.

Prairie in the Park

Yearlong Mixtures (Fescue & Plus Native Grass)



- This mixture is ideal for parks and public spaces where a yearlong green cover is desired.
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Wildflower Mixtures (Fescue & Plus Native Wildflowers)

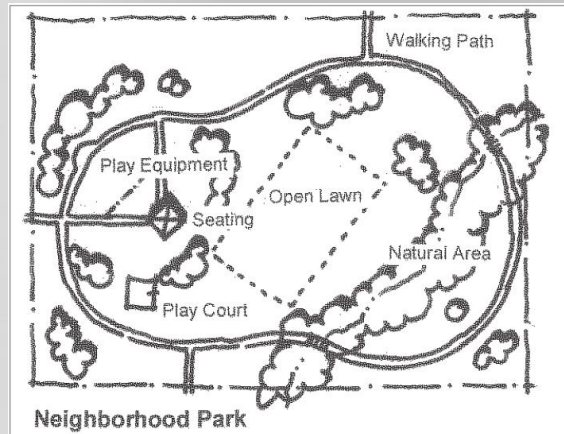


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Incorporating wildflowers with natives in new parks allows the public to get comfortable with the aesthetics.

Design Elements of Neighborhood Park Per Comprehensive Plan



PROPOSED REVISION

- Playground
- Fitness Station
- Seating (Park Benches)
- Play Court (Typ. 1/2 Basketball Court)
- Park Shelter with Picnic Tables
- Hard Surface Walks
- Open Lawn/Informal Playfield
- **Landscaping & Prairie in the Park**

10 Milkweed has been incorporated into seed mixes.



Milkweed serves as the only food source for monarch caterpillars.

A graphic illustration featuring a dense silhouette of tall grass and various insects, including butterflies and dragonflies, against a white background. The word "ACTION" is prominently displayed in the center in a bold, olive-green, sans-serif font. The entire graphic is framed by a light gray border.

ACTION

ACTION

- Analysis
- Design Approach
- Implementation
- Management Practices





ANALYSIS

URBAN PRAIRIE PARKLANDS

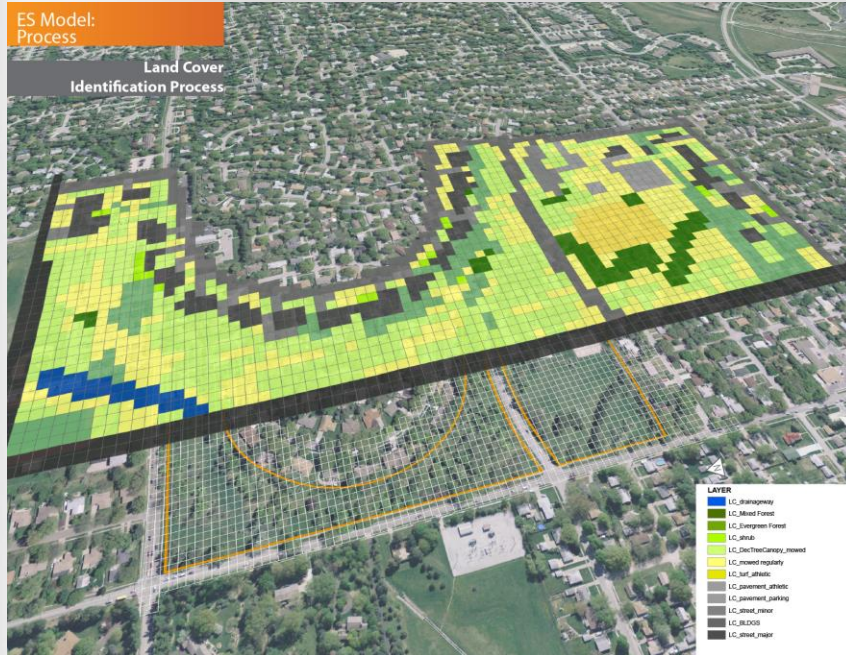
I want to examine the ecological, economical and social human-created, long-grass prairie ecosystems in midwestern parklands to develop a strategy for municipal systems to improve potentially manage and maintain these grasslands; and also

**Urban
Prairie
Parklands**

David Ross
University of Nebraska, Fall 2012
Program of Landscape Architecture
Undergraduate_Capstone Project

By David Ross

LAND COVER IDENTIFICATION PROCESS



CONVERSION FROM MOWED TO LONG-GRASS



ECOLOGICAL FRAMEWORK DIRECTS DESIGN

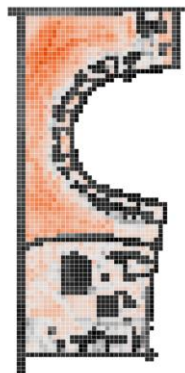
ES Model: Roberts Park

The final ecological design framework for Roberts Park, which is based on the cumulative overlay analysis of all ES indicators, can eventually be integrated into the design and production of an Illustrative Master Plan for the park. The ecological framework is a value-based systematic approach to design, but should not be the sole input for all design decisions. Customary analyses of the site's physical features and dynamics should also be integrated into the decision making process.

For example, while the model indicates high potential areas for long-grass establishment (darker orange), it does not aid in determining what particular species would best thrive. Integrating knowledge of the site's topography, soil moisture content and microclimatic zones for example (all part of standard site analyses), will help to ensure the highest rate of establishment.

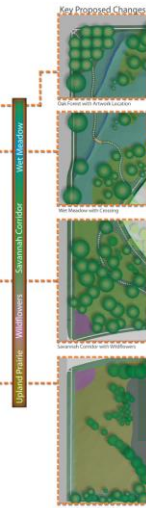


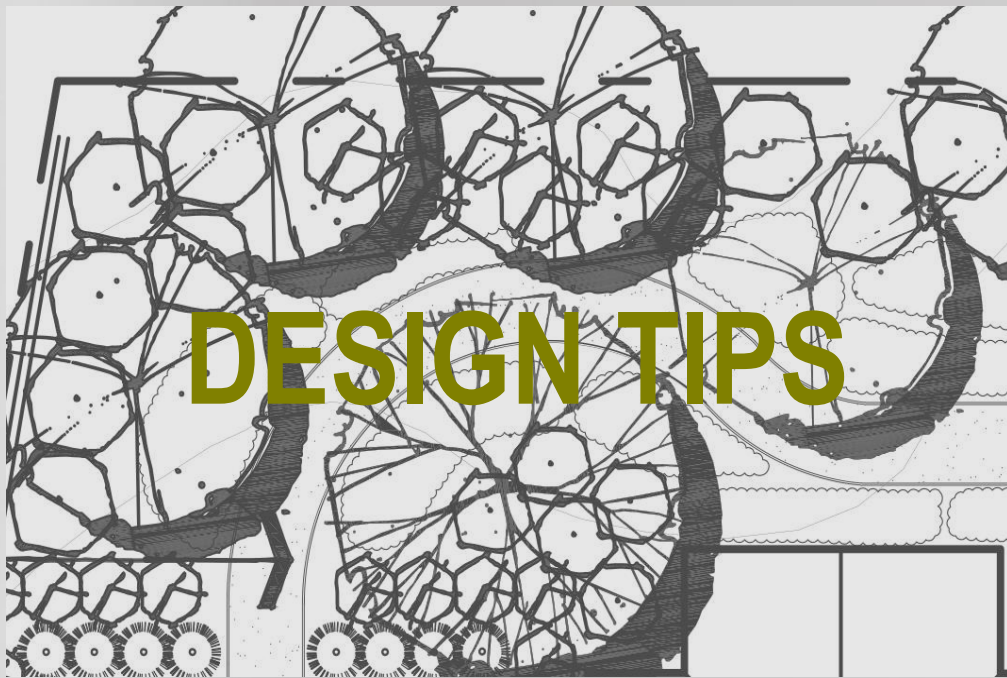
ES Design Framework



High Low
Priority
Establishment

Illustrative Framework





PLANT IN MULTIPLES



Purple Gayfeather and Swamp Milkweed woven together.

UNION PLAZA

ADD NATIVE PLANTS INTO TRADITIONAL LANDSCAPES



Incorporating Swamp Milkweed into traditional landscapes with hydrangea.

STYLIZED PRAIRIE



Swaths of Little Bluestem and a blend of Sorbaria and Bee Balm are aesthetically pleasing & functional.

FOUR SEASON INTEREST



Allium in the Spring, Blackeyed Susan – Summer, Amsonia – Fall and Little Bluestem for the Winter.

MULCH LESS



Reducing mulch and using plants as “living mulch” creates layering, reduces costs and more opportunity for plant diversity.

ALWAYS PLANT NATIVES?

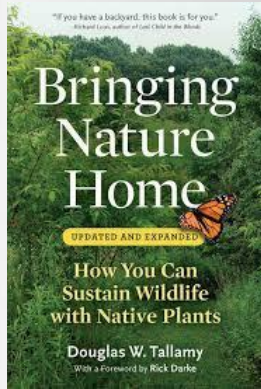
New research out of the Royal Horticultural Society (RHS) that shows the issues is not so cut-and dried.



ALWAYS PLANT NATIVES?

- George Weigle, in his article “Save the Pollinators? It’s not as simple as “plant native plants” – coined the phrase peony guilt.
- As in “How dare you plant a non-native peony in your high country desert garden!”
- Do pollinators, such as bees care what flower they drink from?

ALWAYS PLANT NATIVES?



“If their mouthparts work, they don’t care if it’s native or non-native.”

Dr. Doug Tallamy, an entomology professor the University of Delaware and author of “Bringing Nature Home”

ALWAYS PLANT NATIVES?

“field studies in public and private gardens have shown no consequential evidence that the introduction of some non-native plants have any significant negative impact on resources available for local pollinators. In fact, creating near-native designed landscapes may have a mutualistic benefit in the maintenance of pollinator populations”



ALWAYS PLANT NATIVES?

“The reason non-native plants often do better in our organic gardens is because native plants actually grew in very different conditions than are present in and around our cities and towns and anywhere that humans have spent much time, which is pretty much everywhere we have gardens.”

– Phil Nauta *The Smiling Gardener*

LURIE GARDEN

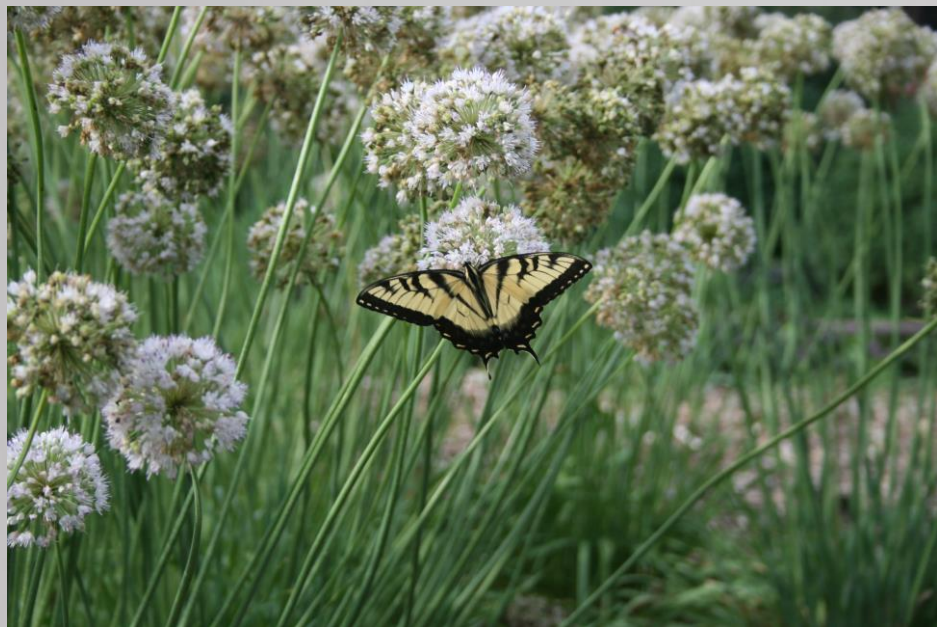
MILLENNIUM PARK CHICAGO by Piet Oudolf & Robert Israel



Non-native *Perovskia atriplicifolia* 'Little Spires' (Russian sage) inter-planted with native *Erngium yuccifolium* (rattlesnake master) creates both a beautiful and ecologically important habitat for pollinators of all types

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TIPS FOR POLLINATOR GARDENS

1. Focus on plants that are native to your area.
2. To extend your garden season (early spring and late fall) include non-natives both annuals and perennials that provide nectar and pollen for pollinators.
3. Regardless of plant origin (native or non-native) the more flowers your garden can offer throughout the year, the greater number of bees, hoverflies and other pollinating insects it will attract and support.

ACTION IMPLEMENTATION

- Private & Public Partnership
- Parks & Recreation Staff
- Volunteers



IMPLEMENTATION PROJECT:

Pioneer Woman PLANTING EVENT

May 12, 2017









Planting was completed by more than (60) volunteers from the Arbor Day Foundation, Parks & Recreation Staff, the Country Club Neighborhood Association and the Womans Club of Lincoln.

More than (40) varieties of native and native adaptive perennials, grasses and forbs were planted as part of the sensory garden focusing on pollinators using a variety of plant sizes including plugs, quarts and gallon containers.











Pioneer Woman restored, arbor completed and sensory garden with focus on pollinators completed.



PATIENCE IS REWARDED



Starting with plugs will create a complete landscape in approximately 3 years.

MANAGING YOUR LANDSCAPE VS. MAINTAINING

Maintaining a landscape means to resist deterioration.

- It means to keep things looking the same.
- The problem with this approach is that turf, flowers, shrubs, and trees are living things—they're constantly changing and evolving.
- Adjusting to these changes is critical.

Managing a landscape means to guide future change and development in order to foster growth.

- It requires the landscape manager to be ready to adapt to everything Mother Nature throws its way.

ALL LANDSCAPES NEED MANAGEMENT



- Removing tree suckers.
- Removing tree seedlings.
- Removing undesired plant material.
- Controlling aggressive plants.
- Regular clean out and disposal of contaminated sediment and soil.

SHIFTING RESOURCES



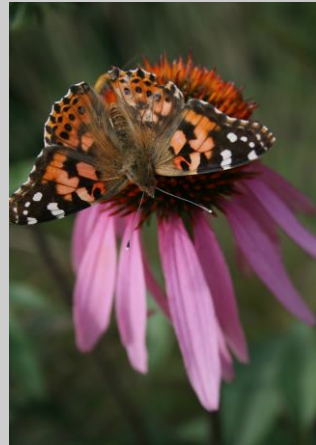
Mowing – a required maintenance practice for traditional park landscapes needs to be balanced with managing practices.

A LANDSCAPE IS ALWAYS CHANGING



Plants will move, shift and reseed creating movement in the landscape – Rotary Strolling Garden.

VALUE OF INSECTS



"There are 1.4 billion insects per person on this planet and we need (almost) every one of them." NATIONAL GEOGRAPHIC

VALUE OF INSECTS



Without **insects** to help break down and dispose of wastes, dead animals and plants would accumulate in our environment and it would be messy indeed. **Insects** are underappreciated for their role in the food web. They are the sole food source for many amphibians, reptiles, birds, and mammals.

Insects are worth a cool \$57 billion to the United States economy each year. NATURE JOURNAL OF SCIENCE

WINDSCREEN PHENOMENON



"The windscreen phenomenon is probably one of the best illustrative ways to realize we are dealing with a decline in flying insects,"

MORE THAN 75% decline over 27 years in total flying insect biomass



"Fireflies, like these in a forest in the Netherlands, have disappeared from some areas in North America and Europe where they were once abundant. PAUL VAN HOOFF/MINDEN PICTURES

SHARING IS CARING



Monarch and Swallowtail are among the many caterpillars that create holes in the leaves of plants.



POLLINATOR PLACES IN PARK SPACES

- Rotary Strolling Garden
- Union Plaza
- Mahoney Park Pollinator Beds
- Holmes Lake Golf Clubhouse
- Pioneer Woman at Antelope Park
- Holmes Lake Shoreline
- Lakeview Park
- Airport Entry Corridor
- Piersen Bed at 33rd & Sheridan
- Pioneers Park Nature Center
- Woodsdale Boulevards
- Woods Park Pollinator Garden
- Prairie in the Woods at Woods Park
- Piedmont Park



ROTARY STROLLING
GARDEN



ROTARY STROLLING
GARDEN



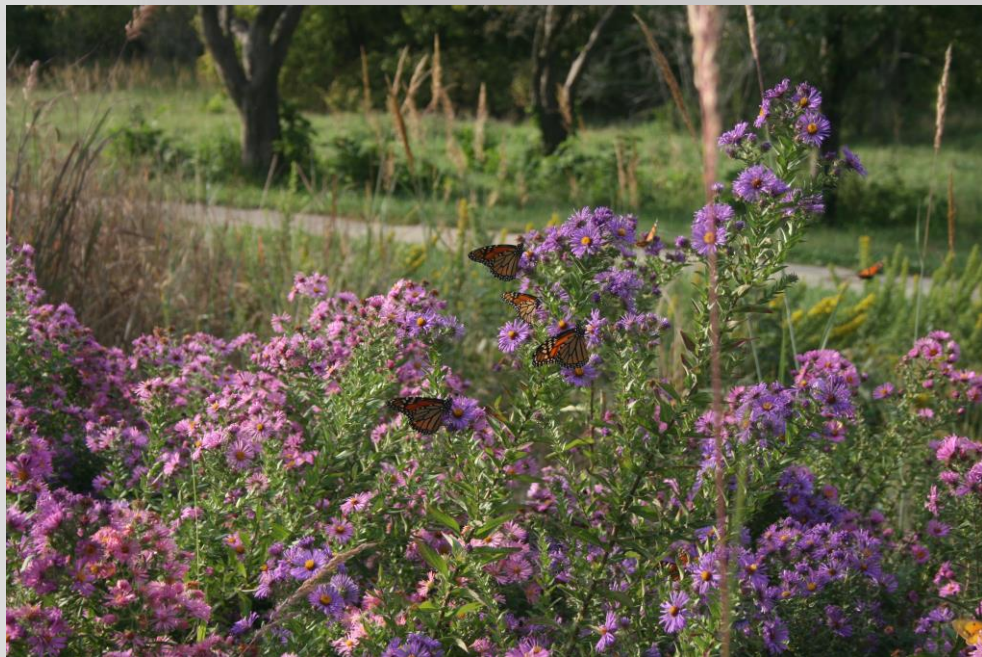
ROTARY STROLLING
GARDEN



ROBERTS PARK



TAYLOR PARK



MAHONEY PARK



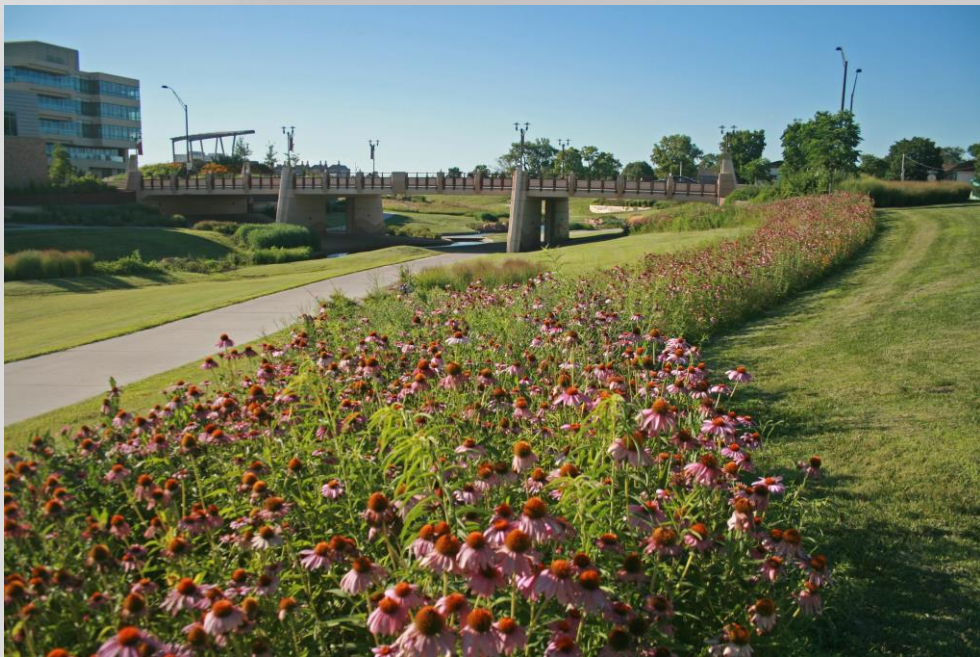
WOODS PARK



LAKEVIEW PARK



UNION PLAZA



UNION PLAZA



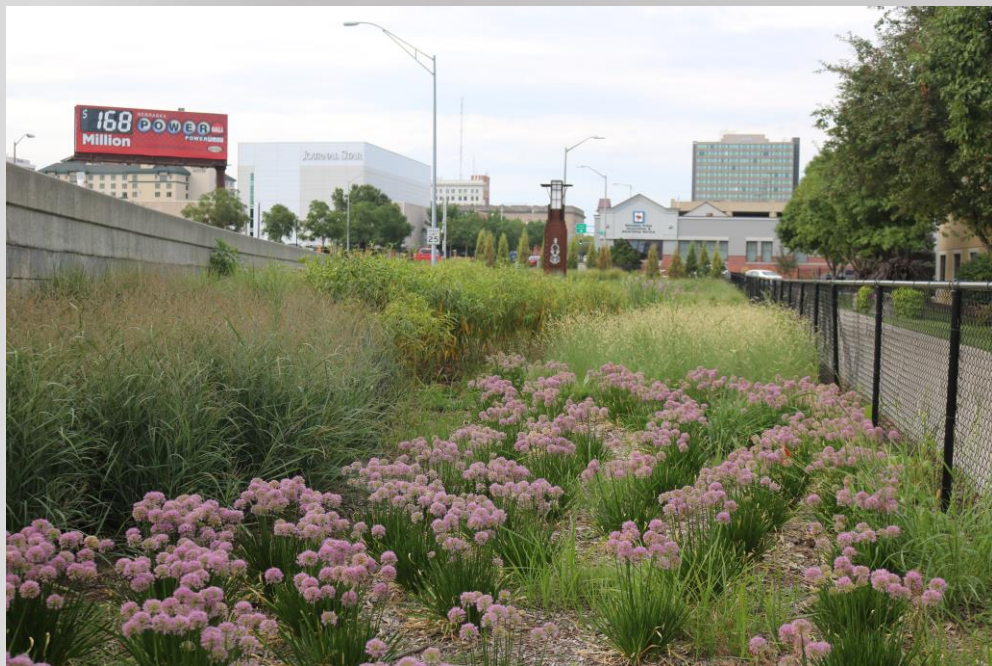
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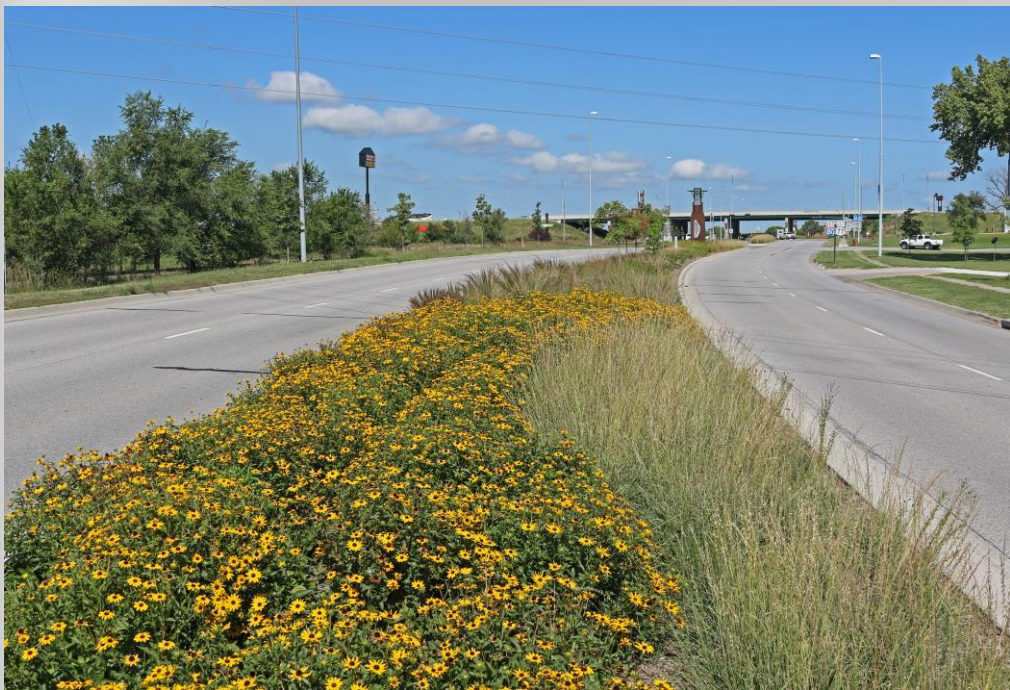
UNION PLAZA



9TH & S



AIRPORT
ENTRY WAY



AIRPORT
ENTRY WAY



AIRPORT
ENTRY WAY



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ENTRY WAY

POLLINATOR PROJECTS IN PARKS 2018

- Pollinator Gardens at Piedmont
- Pollinator Garden at Woods Park Tennis Center
- Rain Gardens at Woods Tennis Center
- Additional Plantings at Union Plaza
- Airport Entry Corridor Infill Planting
- Conversion of 25% of Long Grass to Prairie in the Park (various locations)





For more information contact:

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or visit

<http://lincoln.ne.gov/City/parks>

