RACINE ROOT RIVER

BRINGING THE FOCUS BACK TO THE RIVER
ACKNOWLEDGMENTS

CLIENT | Root River Council

CONTACT | Ben Lehner

CDS DIRECTOR | Carolyn Esswein

PROJECT ASSISTANT | Kristy Stelter

CDS ADVISOR | Mark Keane

CDS STAFF | Justin Garrity
            Ben Penelesky
            Andreya Veintimillia
            Nancy Chu-Rossi

Funded by the Wisconsin Coastal Management Program and the National Oceanic and Atmospheric Administration, Office of Ocean and Coastal Resource Management under the Coastal Zone Management Act, Grant # NA12NOS4190091
TABLE OF CONTENTS

ACKNOWLEDGMENTS |

TABLE OF CONTENTS |

INTRODUCTION |

FOCUS AREA |

MARSUPIAL BRIDGE |
Existing Conditions
Drawings
Perspectives

WATER STREET STREETSCEAPE |
Existing Conditions
Drawings
Perspectives

EAST BLUFF OUTLOOK |
Existing Conditions
Option 1
Option 2

PLANTINGS |
Assorted
Perennial
Conifer
Rain Garden
Ornamental
In the Summer of 2013, Racine's Root River Council commissioned Community Design Solutions to provide design concepts for three focus areas along Racine's Root River, a marsupial bridge, Water St. streetscaping, and an outlook on the east bluff.

Community Design Solutions is a design outreach program within the School of Architecture and Urban Planning at the University of Wisconsin-Milwaukee. CDS serves communities and neighborhoods by providing preliminary design and planning services to promote positive physical change within these communities.

CDS provided three marsupial bridge concepts underneath the 6th St. bridge to connect the existing bike path to a future bike path on the east bank of the river. CDS also recommended material options for each bridge concept. The final concept is a wood and concrete bridge running through the center of the bridge footings with expanding and contracting widths.

CDS approached the Water St. Streetscaping concepts as phasing plans. Two phases are proposed: a short term solution including on-street bike lanes ending in a public plaza and a long term solution, including an off-street bike/pedestrian path bordered by a bioswale and plantings, terminating into a second public plaza option.

CDS provided two east bluff outlook concepts, the first acting as an extension of the existing steel wall, the second acting as a wooden bridge. Each outlook is accompanied by two different park schemes, one including a public structure, the other focusing on learning gardens to benefit the local schools.
1. Marsupial Bridge
2. Water St. Streetscape
3. East Bluff Outlook
Marsupial Bridge
EXISTING CONDITIONS  Looking South to the 6th Street Bridge
Standing on the East Bank Under the 6th Street Bridge _EXISTING CONDITIONS_
DESCRIPTION

- Suspended along south side of bridge footings
- Linear path to overlook resting area
- Path angles for softer turn onto the east bank bike path
- 10 feet wide
- Sunlight exposure
- Overhead protection
PRELIMINARY BRIDGE CONCEPT 2

DESCRIPTION

- Suspended along south side of bridge footings
- Linear path
- 10 feet wide
- Sunlight exposure
- Overhead protection
PRELIMINARY BRIDGE CONCEPT 3

DESCRIPTION

- Suspended bridge through existing footing openings
- Linear path
- 10 feet wide minimum
- Expands to 20 feet wide to incorporate seating
- Planters along the railing
- Maximum overhead protection
DESCRIPTION
- Suspended through middle of the existing bridge footings
- Linear path
- 10 feet wide
- Sunlight exposure
- Overhead protection
- East and west lookout areas extending from main bike path

DESCRIPTION
- Suspended along south side of bridge footings
- Linear path
- 10 feet wide
- Sunlight exposure
- Overhead protection
- Lookout areas on the north and east sides of bridge
BRIDGE SECTION

DESCRIPTION

- Suspended bridge through existing footing openings.
- Linear path
- 10 feet wide minimum
- Expands to 20 feet wide to incorporate seating.
- Planters along railing
- Maximum overhead protection

MATERIALS

- Pre-cast concrete
- Wood planking
- Wood railings
- Wood pattern change in planking to delineate bike lane from seating area.

The marsupial bridge design is a linear design through the existing footings of the 6th St. bridge. It will connect the existing bike trail to a future bike trail on the east bank of the river. Due to the west bank bike trails sloped characteristics a structural engineer will be needed to resolve safe passage issues on and off the bridge.
VIEW FROM BIKE PATH

Marsupial Bridge
Water Street Streetscape
EXISTING CONDITIONS  Looking West to the Root River
Looking down Water Street at the Racine Street Intersection

EXISTING CONDITIONS
DESCRIPTION |

- On-street bike lanes on both sides of road.

- On-street lanes terminate to an off-street bike lane at the end of Water St.

- Bike lane continues along river to future 6th St. marsupial bridge.

- Minimal street improvements.

- Public plaza option 1 located at the terminus of Water St.

- Trellis above off-street bike lane along north side of public plaza.

- South side of plaza is planted with trees to separate property lines.

- Open greenspace in plaza allowing a view to the river from Water St.

- Plaza made-up of porous pavers.

Phase 1 is suggested as a temporary solution with on-street bike lanes that can easily be transitioned into the Phase 2 design. The public plaza is not part of the phasing process, but one option of how to design a public space.
WATER STREET PHASE 1

Street Section

8'  5'  5'  8'  3'

Public Plaza Plan_Option 1

Water Street Streetscape
WATER STREET PHASE 2

DESCRIPTION |

- Off-street bike/pedestrian path

- Bioswale on the south side of proposed path ending in a reed bed in the plaza.

- Bike lane continues along river to future 6th St. marsupial bridge.

- Planting area on the north side of proposed bike path.

- Public plaza option 2 is located at the terminus of Water St.

- Public art is suggested in the circular open greenspace of the public plaza. (Possible local artist competition)

- Central planting

- Tree grove on east end of the plaza to provide shaded seating.

- Plaza made-up of porous pavers in two shades.

Phase 2 is suggested as a long-term solution with an off-street bike/pedestrian lane. It replaces the on-street parking and bike lane illustrated in Phase 1 concept. A bioswale is placed as a stormwater management feature to be carried up Water St. to the west as well as a buffer between pedestrians and traffic. Phase 2 also provides a second public plaza design option featuring public art.
WATER STREET PHASE 2

Street Section

Public Plaza Plan_Option 2

Water Street Streetscape
VIEW OF OPTION 2 PUBLIC PLAZA
EXISTING CONDITIONS  Looking South to the 6th Street Bridge
Standing on the East Bank Under the 6th Street Bridge _EXISTING CONDITIONS_
DESCRIPTION |

- Reduced parking.

- Bioswale to the west terminates at the public park.

- Built structure for public gatherings. (Possible design competition)

- Mounded greenspace, adjacent to structure, allows for seating and play.

- Pedestrian pathways placed along the edge of the bluff.

- Native trees and plants throughout public park.

- Paths connect in with the existing public park.

- Bridged outlook.
  - Planted railing
  - Wood construction
  - Concrete pillars

- Additional sidewalk along steel retaining wall railing.

- Planter box railing along outlook edge.

Outlook Plan
VIEW FROM PUBLIC PARK

34 East Bluff Outlook
DESCRIPTION |

- Elimination of all parking.

- Bioswale to the west from Water St. is continued up through the public park.

- Pedestrian pathways placed along the edge of the bluff.

- Continuing education gardens are placed throughout the public park.
  - Conifer
  - Perennial
  - Rain Garden
  - Ornamental
  - Assorted conifer and perennial

- Pathways connects in with the existing public park.

- Circular outlook.
  - Wood/Metal Railing
  - Wood Planked lower platform
  - Concrete upper platform
  - Concrete pillars with still bracing
  - Wooden stairs from lower to upper platform.

- Additional sidewalk along steel retaining wall railing.
VIEW FROM BELOW BLUFF
VIEW FROM PUBLIC PARK
There are five different gardens placed in option 2 of the public park. Garden 1 is a rain garden that will connect to the bioswale underground to travel down Water St. and filter into the river at the formerly suggested public plaza. Garden 2 is a conifer garden showcasing various pine trees and coniferous plants. Garden 3 is the ornamental. It is the eye-catchingly beautiful garden with a rainbow of colors. Garden 4 is a perennial garden housing many plants and flowers that will attract native butterflies. Garden 5 is an assortment of all four of the previous gardens. It is positioned at a point of the park directly in front of the street/sidewalk to introduce to passerby what the park has to offer. Each garden will be accompanied by signage explaining the different plant species and the needs they require and benefits they give. These gardens will be useful as outdoor classrooms for the local schools.
GARDEN MAP

1. Rain Garden
2. Conifer Garden
3. Ornamental Garden
4. Perennial Garden
5. Combination Garden

[Diagram of garden map with numbered areas and color-coding for different garden types.]
Rain Garden

Fire Witch _Dianthus gratianopolitanus_

This German cultivar is small in size, but delivers a generous amount of blooms. Forms a short, tight mound of blue, grass-like foliage. The flowers are a deep raspberry red and have that classic carnation fragrance. Highly tolerant of heat, this plant thrives in well-drained soils.

**Note:** Preferably plant amongst edging rocks as ‘filler’ of a dry creek bed.

| Height | 6’8” |
| Spread | 12’ |
| Sunlight | Full Sun |
| Bloom | May to June |

Helianthus _Helianthus Sunshine Daydream_

‘Sunshine Daydream’ is an excellent tall background plant for the perennial garden, with a long bloom period from June through August. Numerous fully double flowers are golden yellow, with petals recurving toward the stem. It is known as a perennial sunflower. Cut flowers last a long time.

**Note:** Act as one of the anchor plants for attracting wildlife (butterflies) with its bright color.

| Height | 5-6’ |
| Spread | 3-4’ |
| Sunlight | Full Sun |
| Bloom | June – August |

Lavender, Munstead _Lavandula angustifolia_

Munstead has small leaves and strongly scented, lavender-blue flowers on long stems. It is one of the hardiest lavender to grow.

**Note:** another attractive ‘filler’ amongst plants alongside the dry creek bed.

| Height | 30” |
| Spread | 2’ |
| Sunlight | Full Sun |
| Bloom | ———— |
RAIN GARDEN

Salvia_Salvia farinacea

One of the most beautiful deep violet-blue colors for the summer garden, Victoria has large, colored spikes, all summer long on compact plants. Attract birds & butterflies. The shiny leaves are what set this species apart from other Salvia, which bear velvety-dull leaves. Victoria is an excellent choice for difficult dry spots in the garden [or alongside of a dry creek bed].

Height | 18-24”
Spread | 18-24”
Sunlight | Full Sun
Bloom | Mid-summer, until frost

Thyme_Thymus xcitriodorus

A creeping thyme with rounded green leaves and pale pink flowers. Use in tea, chicken and fish for the lemon flavor. One of the most vigorous and hardy thyme to grow in sunny, well drained soil in a rock garden.

Height | 6”
Spread | 6”
Sunlight | Full Sun
Bloom | ————

Blue Star Juniper_Juniperus squamata

Forms a mounded shape of bright, steel-blue foliage. Slow growing. Can be used as a groundcover or in mass plantings. Full sun to light shade. Prefers the cooler climates of the Northern States.

Height | 30”
Spread | 2’
Sunlight | Full Sun
Bloom | ————

Note: treat rain garden as a ‘dry creek bed’ design, and here are some photos to show plants alongside the edge to add interest to the landscape whether the condition is dry or wet.
It is suggested that rain gardens be designed as a ‘dry creek bed’. Plants are added alongside the edge of the bed to add interest to the landscape whether the condition is dry or wet. The garden will hold any water overflow during heavy rain periods to avoid flooding and will remain dry as the pictures above during dry periods.
### White Fir _Abies concolor_

- **Height**: 50’
- **Spread**: 30’
- **Sunlight**: Full Sun
- **Zone**: 4-7

Blue-green needles and light colored new growth give this plant a cheerful appearance. One of the most desirable pyramidal evergreen trees in the landscape. Prefers moist, well drained soils.

### Silberlocke Korean Fir _Abies koreana_

- **Height**: 12-15’
- **Spread**: 8-10’
- **Sunlight**: Full Sun
- **Zone**: 5-7

New growth on this Korean fir re-curves to reveal striking silvery-white undersides. Cones are formed near the top of the tree and are an attractive steely blue color. Dense and slow growing, this fir makes an eye-catching addition to any landscape.

### Globe Blue Spruce _Picea pungens_

- **Height**: 3-5’
- **Spread**: 5-6’
- **Sunlight**: Full Sun
- **Zone**: 3-7

Compact, rounded to mound shaped with beautiful blue foliage. Valuable as an accent or specimen plant. Very slow growth.
CONIFER GARDEN

**Russian Cypress** *Microbiota decussate*

- **Height**: 12”
- **Spread**: 3-4’
- **Sunlight**: Full Sun to Full Shade
- **Zone**: 2-6

A dwarf, densely branched evergreen with low-spreading form and foliage that resembles arborvitae. Bright green summer color turning bronze in winter. Grows in both full sun and full shade. Hardy to -40° F.

**Dwarf Balsam Fir** *Abies balsamea*

- **Height**: 2’
- **Spread**: 3.5’
- **Sunlight**: ------------
- **Bloom**: ------------

This is a lovely, dwarf evergreen conifer with a densely-branched, rounded growth habit. It is a compact, broad and mound-like conifer with tidy green foliage which looks fresh all year round. Some protection from hot summer sun is required, and it’s also advisable to keep it well watered during periods of hot, dry weather. The slow growth rate of little more than an inch per year makes it an ideal low maintenance plant for the rock garden, border or even as a foundation plant.

**Butterfly Bush** *Buddleia x davidii*

- **Height**: 5 - 6’
- **Spread**: 5 - 6’
- **Sunlight**: Full Sun
- **Bloom**: June to October

Fragrant magenta purple and blue flowers on a nicely spreading shrub with attractive small blue green foliage. Vigorous growth habit, good cut flower, attractive to butterflies.
Helianthus _Helianthus Sunshine Daydream_

- **Height**: 5-6’
- **Spread**: 3-4’
- **Sunlight**: Full Sun
- **Bloom**: June – August

‘Sunshine Daydream’ is an excellent tall background plant for the perennial garden, with a long bloom period from June through August. Numerous fully double flowers are golden yellow, with petals recurving toward the stem. It is known as a perennial sunflower. Cut flowers last a long time.

*Note: Act as one of the anchor plants for attracting wildlife [butterflies] with its bright color.*

Blue Star Juniper _Juniperus squamata_

- **Height**: 30”
- **Spread**: 2’
- **Sunlight**: Full Sun
- **Bloom**:  

Forms a mounded shape of bright, steel-blue foliage. Slow growing. Can be used as a groundcover or in mass plantings. Full sun to light shade. Prefers the cooler climates of the Northern States.

*Note: treat rain garden as a ‘dry creek bed’ design, and here are some photos to show plants alongside the edge to add interest to the landscape whether the condition is dry or wet.*

Thyme _Thymus xcitriodorus_

- **Height**: 6”
- **Spread**: 6”
- **Sunlight**: Full Sun
- **Bloom**:  

A creeping thyme with rounded green leaves and pale pink flowers. Use in tea, chicken and fish for the lemon flavor. One of the most vigorous and hardy thyme to grow in sunny, well drained soil in a rock garden.
Morning Light Grass _Miscanthus sinensis_

Height | 4’
Spread | 2-4’
Sunlight | Full sun
Bloom | September to October

Silver variegated Maiden grass have neat narrow leaves, very upright good for screening. Great as mass planting or specimen.

Shenandoah Switch Grass _Panicum virgatum_

Height | 3-4’
Spread | 18-24”
Sunlight | Full Sun
Bloom | -----------

‘Shenandoah’ has a burgundy-red colored foliage. The foliage starts out as deep green but takes on the red color thru summer.

Hamlen Grass _Pennisetum alopecuroides_

Height | 1-2’
Spread | 12-18”
Sunlight | Full Sun
Bloom | -----------

The dwarf fountain grass ‘Hamlen’ is a great grass as a specimen or in mass plantings. The leaves are narrow and arched, and has seed-heads that resemble bottle brushes which are a rose-copper in color.
**Star Magnolia** _Magnolia stellata_

Pink buds open to incredibly full and wonderfully fragrant pale pink flowers in spring. Centennial Blush is a prolific bloomer with flower buds formed at almost every node yielding a fantastic floral display of delicate pink covering the entire plant. Attractive medium green foliage on an interesting branching structure follows in the summer turning yellow to bronze in autumn. Can be grown as a large shrub or a small tree, perfectly suited for small urban gardens.

**Plant Details**

- **Height**: 12-18’
- **Spread**: 10-15’
- **Sunlight**: Full Sun to Part Shade
- **Zone**: 4-9

---

**Paperbark Maple** _Acer griseum_

This small tree has rich red-brown exfoliating bark that is beautiful all year long, especially in winter when accentuated by snow. Fall color of the small, trifoliolate leaves will vary from year to year. A slow growing tree, it is well worth the wait. Have patience.

**Plant Details**

- **Height**: 20-30’
- **Spread**: 10-15’
- **Sunlight**: Full Sun
- **Zone**: 5-7

---

**Fernleaf Buckthorn** _Rhamnus frangula_

A handsome plant with cutleaf, fern-like foliage on an upright spreading plant. Good yellow fall color. Attractive small berries turn red in summer and mature to black in the fall. Fruits savored by birds.

**Plant Details**

- **Height**: 10-15’
- **Spread**: 10-12’
- **Sunlight**: Full Sun
- **Zone**: 4-9
### Regent Saskatoon Serviceberry _Amelanchier alnifolia_

- **Height**: 4-6’
- **Spread**: 4-8’
- **Sunlight**: Full Sun
- **Zone**: 2-7

A nicely shaped shrub form of juneberry. Large white flowers. The dark purple to black fruit is sweet and good for eating and making jelly.

### Gold Pillar Barberry _Berberis thunbergii_

- **Height**: 3-4’
- **Spread**: 4’
- **Sunlight**: Full Sun
- **Zone**: 4-7

Similar in shape to ‘Helmond Pillar’, but with bright golden foliage and red new growth. Bright orange-red fall foliage is stunning. In side by side tests with other yellow barberry varieties, Sunjoy® proved to be very burn resistant.

### Fire Witch _Dianthus gratianopolitanus_

- **Height**: 6’8”
- **Spread**: 12’
- **Sunlight**: Full Sun
- **Bloom**: May to June

This German cultivar is small in size, but delivers a generous amount of blooms. Forms a short, tight mound of blue, grass-like foliage. The flowers are a deep raspberry red and have that classic carnation fragrance. Highly tolerant of heat, this plant thrives in well-drained soils.

*Note: Preferably plant amongst edging rocks as ‘filler’ of a dry creek bed.*
PERENNIAL GARDEN

**Palace Purple Coralbells** *Heuchera micrantha*

- Height | 12-18”
- Spread | 12-18”
- Sunlight | Full Sun to Partial Shade
- Bloom | ~

Rose-red, pink or white bell shaped flowers are produced on tall stems from early to midsummer. Leaves are basal, round and arranged in a nest shaped pattern.

**Black Eyed Susan** *Rudbeckia fulgida*

- Height | 24”
- Spread | 18-24”
- Sunlight | Full Sun
- Bloom | ~

Black-eyed Susan is an easy to grow perennial with large flower heads of golden yellow and black to brown centers. The dark green foliage sits at the bottom on the tall daisy-like flowers and blooms from July to September.

**Solomon’s Seal** *Polygonatum falcatum*

- Height | 24”
- Spread | 24”
- Sunlight | Partial Sun/ Shade
- Bloom | ~

A beautiful perennial related to the native Solomon’s Seal except with variegated leaves. It grows in sun or partial shade. Flowers are white followed by dark berries. 2-3 plants will form a nice clump in three years.
**Blue Cadet Hosta**

- **Height**: 3’
- **Spread**: 18-24”
- **Sunlight**: Full Shade
- **Zone**: June - July

The durable blue round leaves form a tight mound. Brings that great blue color to small garden spaces or containers. It is a very dependable Hosta.

---

**Frances Williams Hosta**

- **Height**: 22”
- **Spread**: 48”
- **Sunlight**: Partial Shade to Partial Sun
- **Bloom**: June-July

Giant, blue-green leaves have very wide, chartreuse to yellow margins. The Leaves are leathery, corrugated, and slug resistant. White flowers are displayed just above magnificent foliage.

---

**Blue Mammoth Hosta**

- **Height**: 34”
- **Spread**: 48”
- **Sunlight**: Shade
- **Bloom**: June - July

An enormous Hosta with large 16” by 12” leaves having a deep blue-green color and are heavily corrugated. Introduced by Hosta guru Paul Aden. The flowers are a near white and bloom from mid-June to mid-July. A large specimen plant for just the right spot or under ornamental trees.
COMBINATION GARDEN

- Paperbark Maple _Acer griseum_
- Fire Witch _Dianthus gratianopolitanus_
- Shenandoah Switch Grass _Panicum virgatum_
- Fernleaf Buckthorn _Rhamnus frangula_
- Globe Blue Spruce _Picea pungens_
- Lavender, Munstead _Lavandula angustifolia_
COMBINATION GARDEN

Thyme _Thymus xcitriodorus_

Silberlocke Korean Fir _Abies koreana_

Star Magnolia _Magnolia stellata_

Helianthus _Helianthus Sunshine Daydream_

Hamlen Grass _Pennisetum alopecuroides_