COUNCIL BLUFFS INTERSTATE SYSTEM

LANDSCAPE MASTER PLAN

IOWA WEST FOUNDATION, SEPTEMBER 2014

ADDENDUM NO. 1, MAY 2018

2020 B PEARL STREET, BOULDER, CO. 80302

chroma design

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PART 1: LANDSCAPE VISION

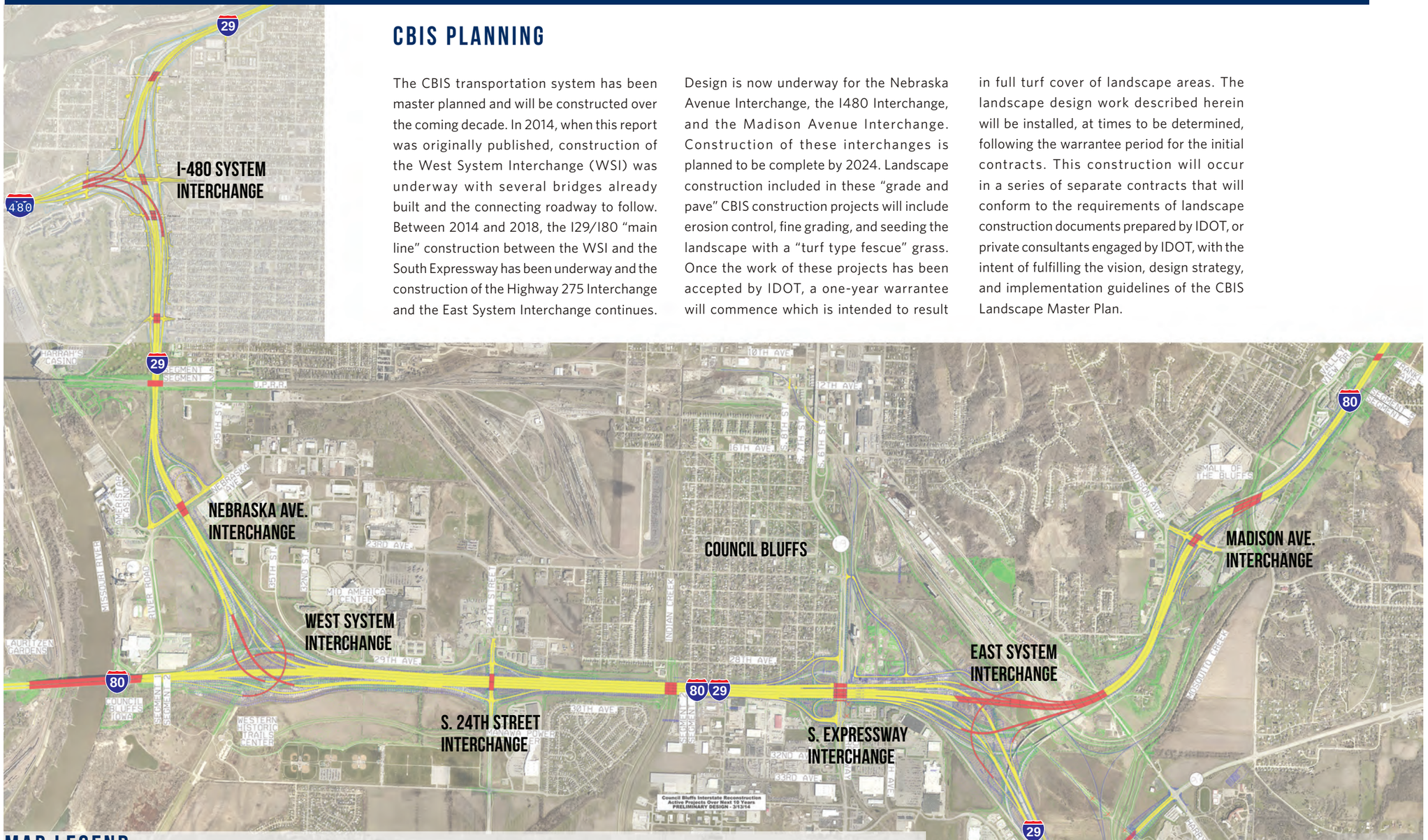


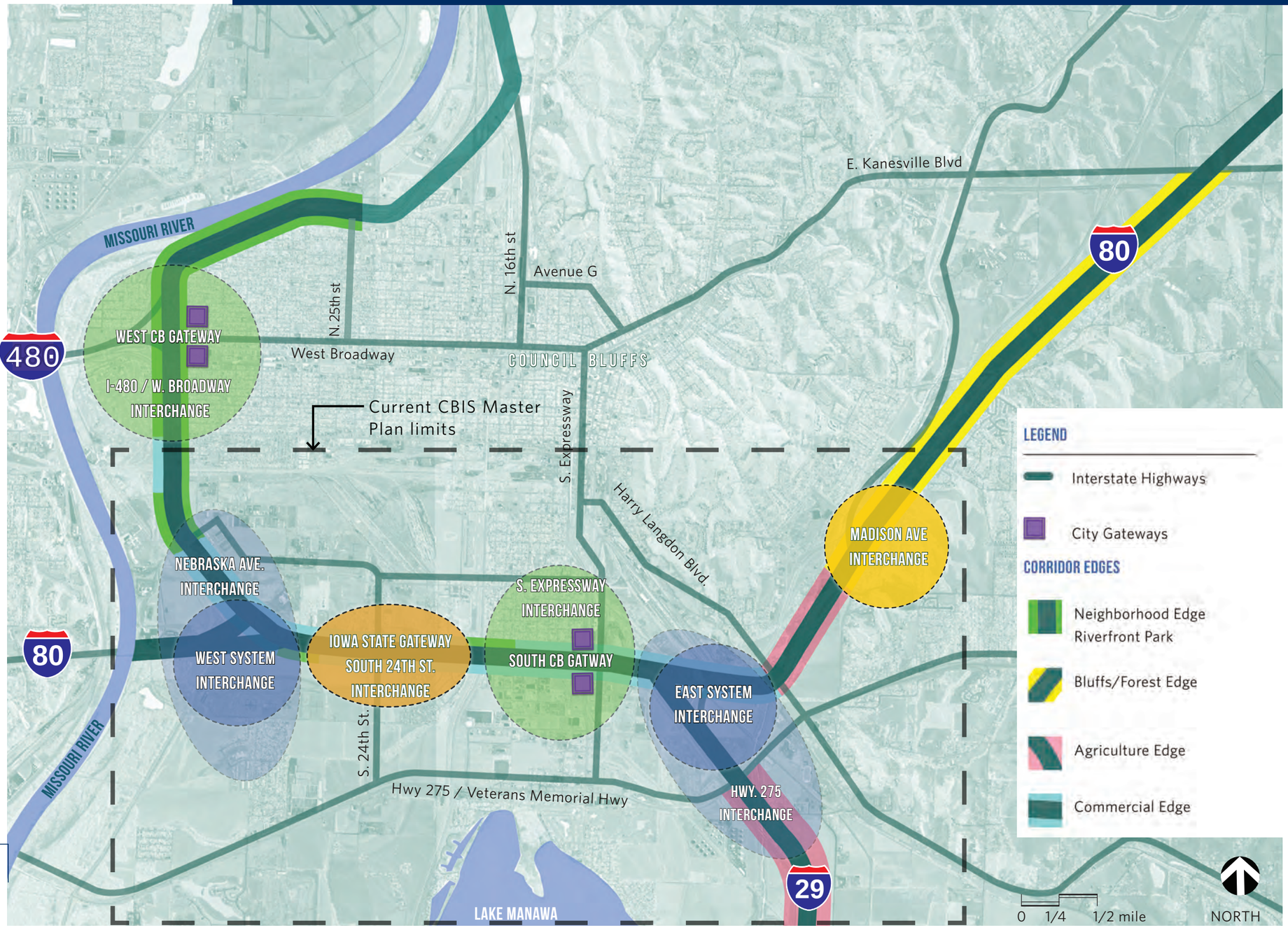
OVERVIEW

The CBIS landscape master plan proposes a design strategy for the interstate landscape within the CBIS project boundaries. This plan follows the 2007 CBIS Aesthetic Master Plan that was prepared for IDOT with input from an Aesthetics Steering Committee consisting of members from IDOT, the City of Council Bluffs, the Iowa West Foundation, and concerned citizens. This landscape master plan updates and focuses the former CBIS Aesthetics Master Plan's landscape vision, clarifies the project goals and objectives, proposes an achievable design that responds to the opportunities and constraints presented by the current transportation engineering plans, and makes pragmatic recommendations for implementation. The Iowa West Foundation has funded this design effort as a means of promoting the development of a high quality, consistent landscape design for the Council Bluffs interstate corridors that will fit into and complement the developed streetscapes within the city and the city's Streetscape Corridor Master Plan. A project steering committee consisting of representatives from IDOT, the City of Council Bluffs, and the Iowa West Foundation has guided this plan's development and approved its recommendations.

CBIS PLANNING

The CBIS transportation system has been master planned and will be constructed over the coming decade. In 2014, when this report was originally published, construction of the West System Interchange (WSI) was underway with several bridges already built and the connecting roadway to follow. Between 2014 and 2018, the I29/I80 "main line" construction between the WSI and the South Expressway has been underway and the construction of the Highway 275 Interchange and the East System Interchange continues. Design is now underway for the Nebraska Avenue Interchange, the I480 Interchange, and the Madison Avenue Interchange. Construction of these interchanges is planned to be complete by 2024. Landscape construction included in these "grade and pave" CBIS construction projects will include erosion control, fine grading, and seeding the landscape with a "turf type fescue" grass. Once the work of these projects has been accepted by IDOT, a one-year warrantee will commence which is intended to result in full turf cover of landscape areas. The landscape design work described herein will be installed, at times to be determined, following the warrantee period for the initial contracts. This construction will occur in a series of separate contracts that will conform to the requirements of landscape construction documents prepared by IDOT, or private consultants engaged by IDOT, with the intent of fulfilling the vision, design strategy, and implementation guidelines of the CBIS Landscape Master Plan.



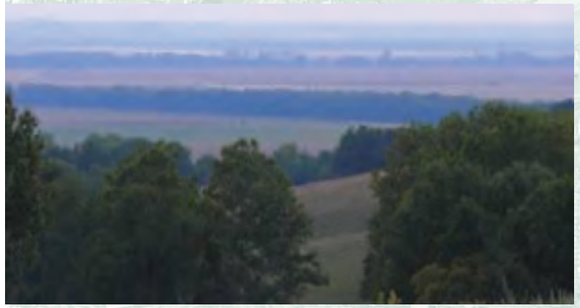


CBIS FRAMEWORK PLAN

The CBIS Framework Plan lays out the physical framework for the approach to landscape design for the interstate system. The system is broken down into interchanges and corridors. Each interchange has a unique function and layout with connections to adjacent highways and/or city streets as well as a unique identity within the system. Corridors are the sections of interstate between interchanges that pass through varying rural and urban landscapes. The CBIS interfaces with the Council Bluffs Corridor Master Plan for city streets where city gateways are either built or planned. The city gateway locations are indicated at the N. 16th Street; West Broadway; South Expressway; and E. Kanesville Boulevard interchanges.

The Vision for the CBIS landscape design is to develop a unique, contiguous, and identifiable landscape character that is distinct to this system and does not repeat interstate landscape designs seen in neighboring Nebraska or other parts of Iowa. The landscape design is planned to be bold and colorful, with consistent shapes, colors, and textures. It will be responsive to site conditions including highway safety requirements, slopes and grades, storm water systems, and solar aspect as well as the built surroundings and unique qualities of each interchange and corridor type. The design will have visual interest in all seasons and be composed of hardy grasses, forbes, shrubs, and trees. Native plants will be used as much as possible

LOESS HILLS & FARMS













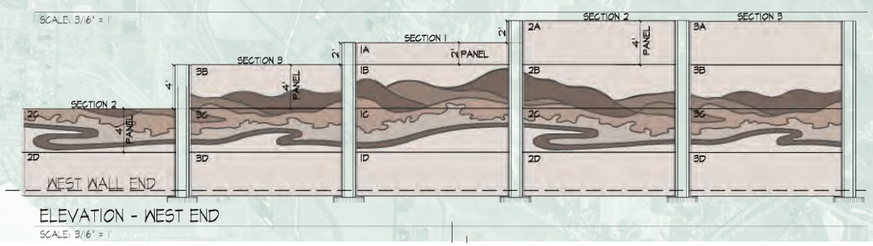


WILDFLOWERS



Council Bluffs, Iowa is located at the interface of three natural landscape zones, the open grasslands and Oak Savanna of the Iowa plains, the hardwood forests of the Loess Hills, and riparian plant associations of the Missouri River floodplain. In addition, cultural landscape types also merge at this location including those of modern agriculture, urban and suburban settlement patterns, and contemporary roads and railways.

CBIS NOISE WALL



LANDSCAPE DESIGN INSPIRATIONS



The CBIS landscape design is inspired by all of these conditions and seeks to include plant associations that draw from the indigenous grasses and wildflowers of the plains as well as the trees and shrubs of the local bluffs and the Missouri River floodplain. The cultural landscape of the interstate highway system is the dominant form-maker for this project and landscape improvements are designed as purposeful enhancements to it. Planting bed shapes are planned to mimic the configuration of river islands, crop rows, and/or the geometrics of urban land parcels.

RIVER ISLAND INSPIRATION

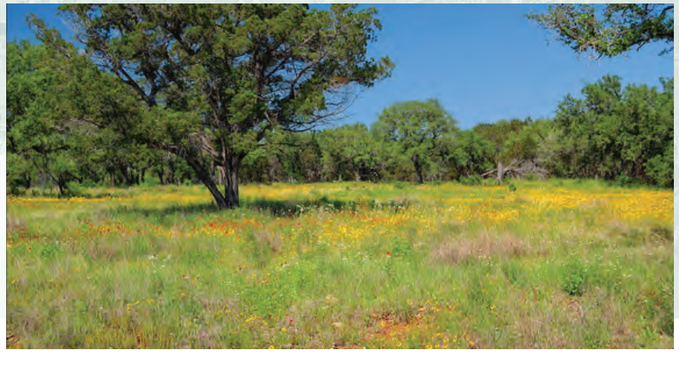


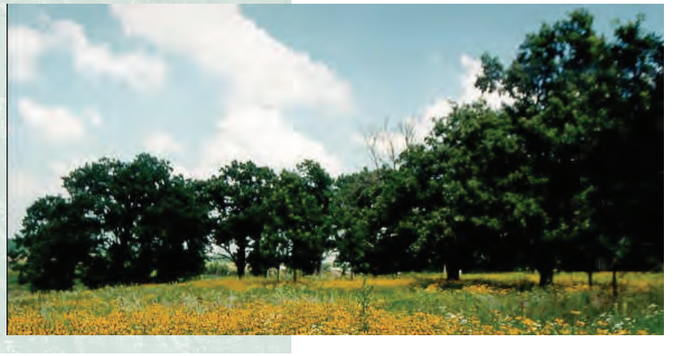


OAK SAVANNAH

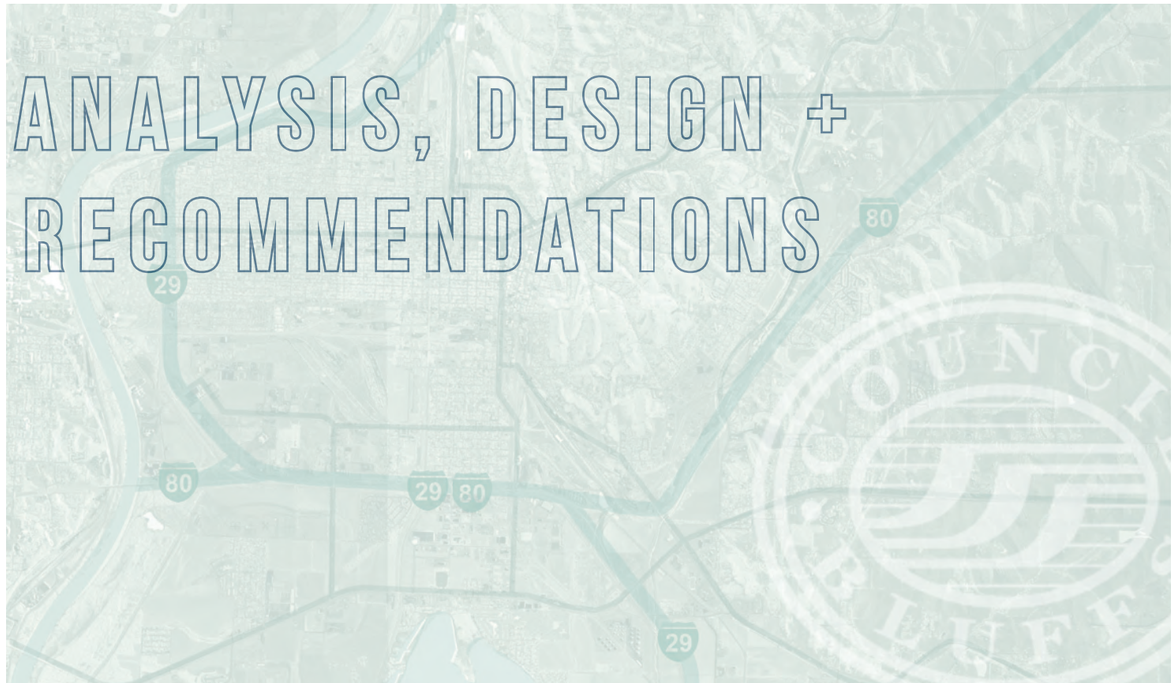








PART 2: ANALYSIS, DESIGN + RECOMMENDATIONS



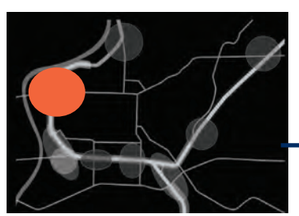
The CBIS landscape design recommendations are addressed in two parts, interchanges and corridors. The key interchanges in the system are addressed in detail setting the design parameters for the landscape in those and all other interchanges. Corridor edge types are addressed with specific recommendations for each that can be applied where those conditions exist throughout the system. The landscape designs for interchanges and corridor edge types are shown to clarify the recommended design approach for those and similar conditions throughout the CBIS.

ANALYSIS/I-480 NORTH (WEST BROADWAY) INTERCHANGE

GRADING ANALYSIS LEGEND

- 6:1 Slopes
- 3:1 Slopes
- Sloping Pond Edges
- Storm Water Detention Pond
- Top of Berm





CONDITIONS



The I480 Interchange is critically significant to the City of Council Bluffs because it provides a connection between I29 and West Broadway, the city's primary gateway corridor. In addition, it connects I29 and West Broadway with I480 and downtown Omaha. The interchange is large and complex with north and south frontage roads that parallel the interstate for over one mile. I29 is elevated through the interchange and four elevated ramps curve between the two interstate roadways. The 2018 Addendum One to the City of Council Bluff's West Broadway Master Plan proposes significant streetscape improvements for the West Broadway corridor from 36th Street to 40th Street. These improvements are planned to be separately funded and constructed by the City of Council Bluffs and will provide continuity to the corridor's identity from the city's west entrance to its downtown. The analysis plan breaks that pattern down by its topography so that a more detailed landscape pattern emerges. The design goal is to accurately implement the landscape vision so that it reinforces the found pattern with plantings that fulfill the objectives of the design

DESIGN



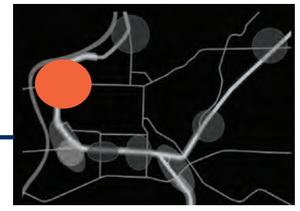
The design for the I480 Interchange landscape is composed of lowland plantings within the proposed detention ponds that are made up of trees and shrubs native to river floodplains. These plants are arranged in "islands" reminiscent of the islands of trees and shrubs that are visible within a Midwest river's banks during a flood. An outer ring of shrubs forms each island's edge and the interface with surrounding grasses and wildflowers while a densely planted grouping of trees forms the center. Thus, the design in lowland areas works with the CBIS storm water management design and mimics the natural conditions of a river floodplain. Surrounding the planted islands in lowlands, is a planting of grasses, sedges, and wildflowers that will provide a permanent and attractive ground cover that is tolerant of both flood and drought, wildflower colors chosen for these locations are yellows, oranges, and reds. On the slopes of the detention ponds as well as roadway and ramp edges, native grasses and wildflowers that are tolerant of consistently drier conditions are proposed. Wildflower colors chosen for these locations are blues and purples. Adjacent to the interstate roadways, turf type fescue grasses are proposed which will be mown in the spring and summer each year. Frontage roads at the edges of the interchange are shown lined with street trees, where possible, to add a neighborhood character and human scale to these streets. The West Broadway Corridor streetscape will be separated from the CBIS landscape by a fence and maintenance of that corridor will be the city's responsibility.



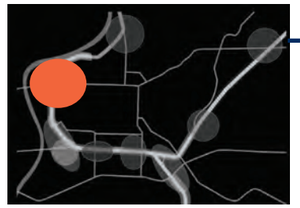


DESIGN LEGEND

- Mown Short Native Upland Grass
- Short Native Upland Grass & Blue/Purple Wildflowers
- Short Native Lowland Grass & Yellow and Orange Wildflowers
- Native Floodplain Tree and Shrub Groupings
- Native Hedgerow Trees and Shrubs
- Sloped Crushed Stone Paving at Bridge Abutments



ANALYSIS/I-480 SOUTH (WEST BROADWAY) INTERCHANGE



GRADING ANALYSIS LEGEND

- 6:1 Slopes
- 3:1 Slopes
- Sloping Pond Edges
- Storm Water Detention Pond
- Top of Berm



0 100' 200'

NORTH

CONDITIONS

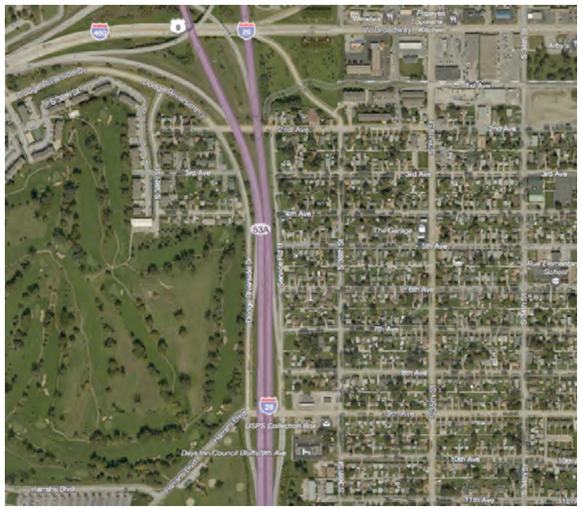


The I480 South Interchange passes through a portion of the west end neighborhood. The frontage roads have been extended to connect West Broadway to I29 access ramps north and south. The linear spaces between the interstate and frontage roads and between the frontage roads and homes are not continuous but present the opportunity for some buffer planting.

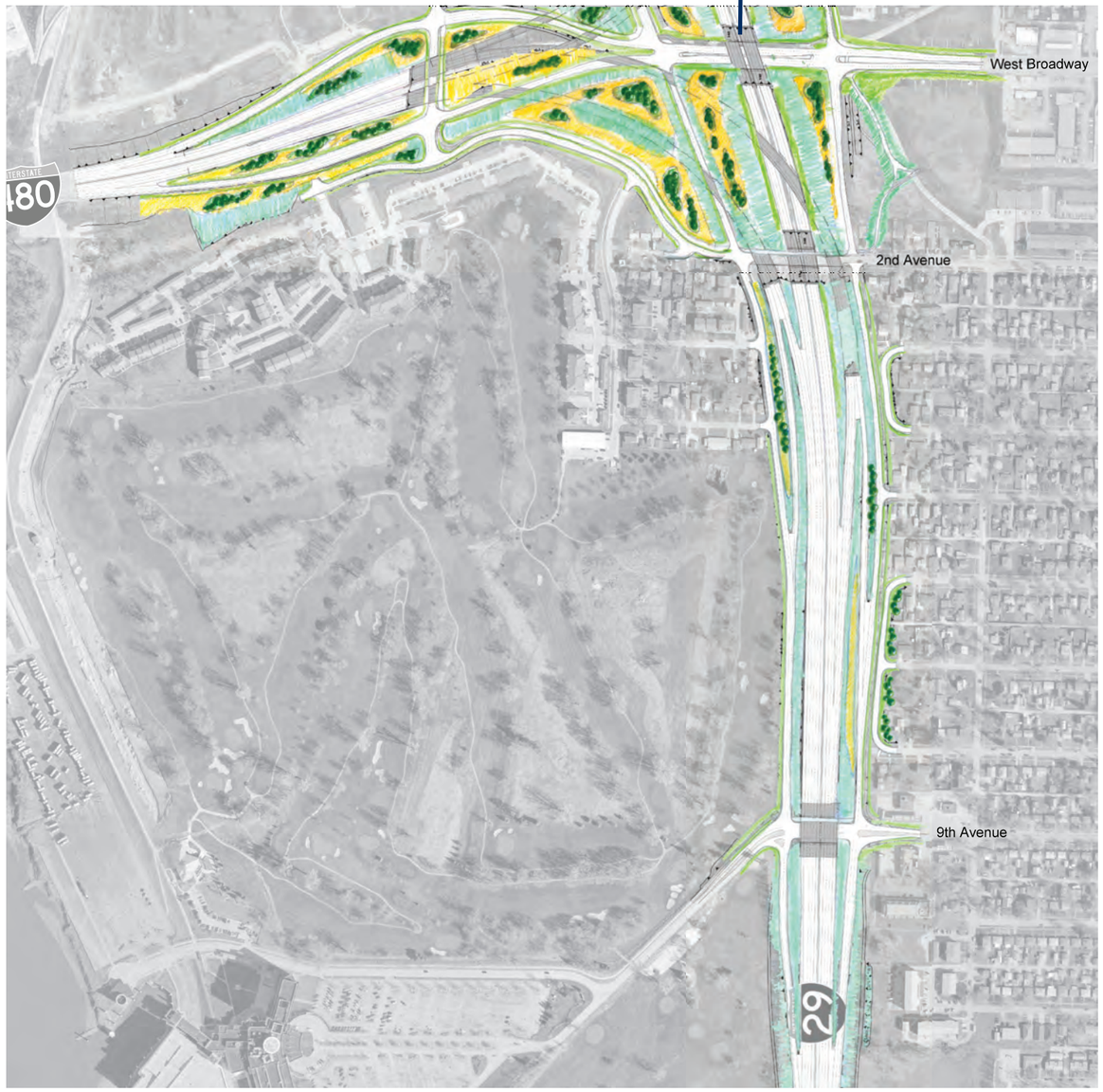
DESIGN



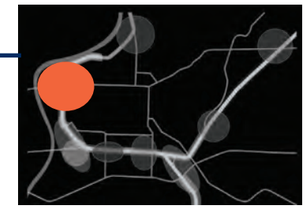
View looking southwest from West Broadway and 36th Street



Between West Broadway and 2nd Avenue, typical interchange planting is recommended with trees and shrubs proposed in the lowland storm water detention areas and native short grasses and wildflowers elsewhere. South of 2nd Avenue linear plantings of trees are proposed to visually buffer the neighborhoods wherever possible.



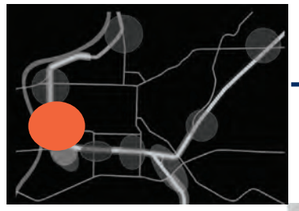
0 100' 200' NORTH



DESIGN LEGEND

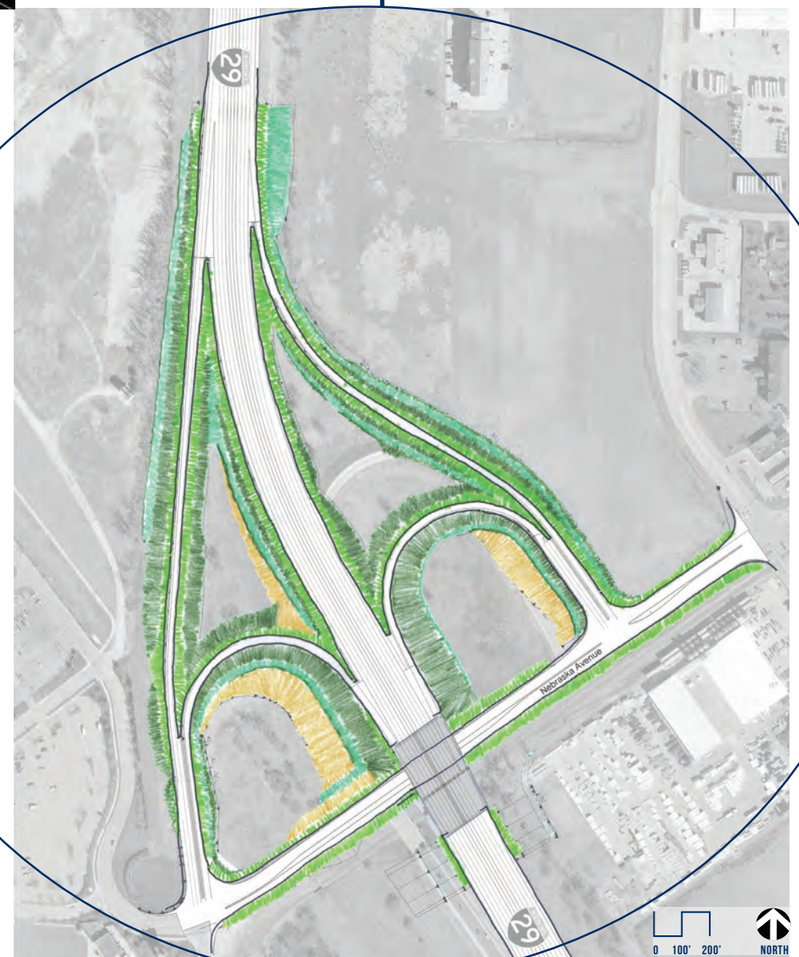
- Mown Short Native Upland Grass
- Short Native Upland Grass & Blue/Purple Wildflowers
- Short Native Lowland Grass & Yellow and Orange Wildflowers
- Native Floodplain Tree and Shrub Groupings
- Native Hedgerow Trees and Shrubs
- Sloped Crushed Stone Paving at Bridge Abutments





GRADING ANALYSIS LEGEND

- 6:1 Slopes
- 3:1 Slopes
- Sloping Pond Edges
- Storm Water Detention Pond
- Top of Berm



CONDITIONS

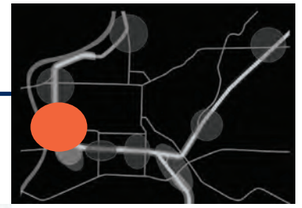


The Nebraska Avenue Interchange is being reconstructed in a similar footprint to existing and thus has limited disturbance to the infield areas between I29 and its ramps. Storm water detention will be enhanced with the addition of ponds in the infields and in linear strips along ramps.

DESIGN



Saving the existing trees in the undisturbed areas is anticipated. Enhancing those tree groupings with additional trees of similar character is proposed for those locations. Tree and shrub planting is also proposed in the lowlands created for storm water detention. The effect is to produce a Midwest savannah like landscape with a similar density of plantings throughout the interchange.





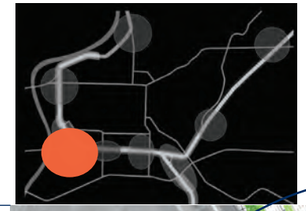
DESIGN LEGEND

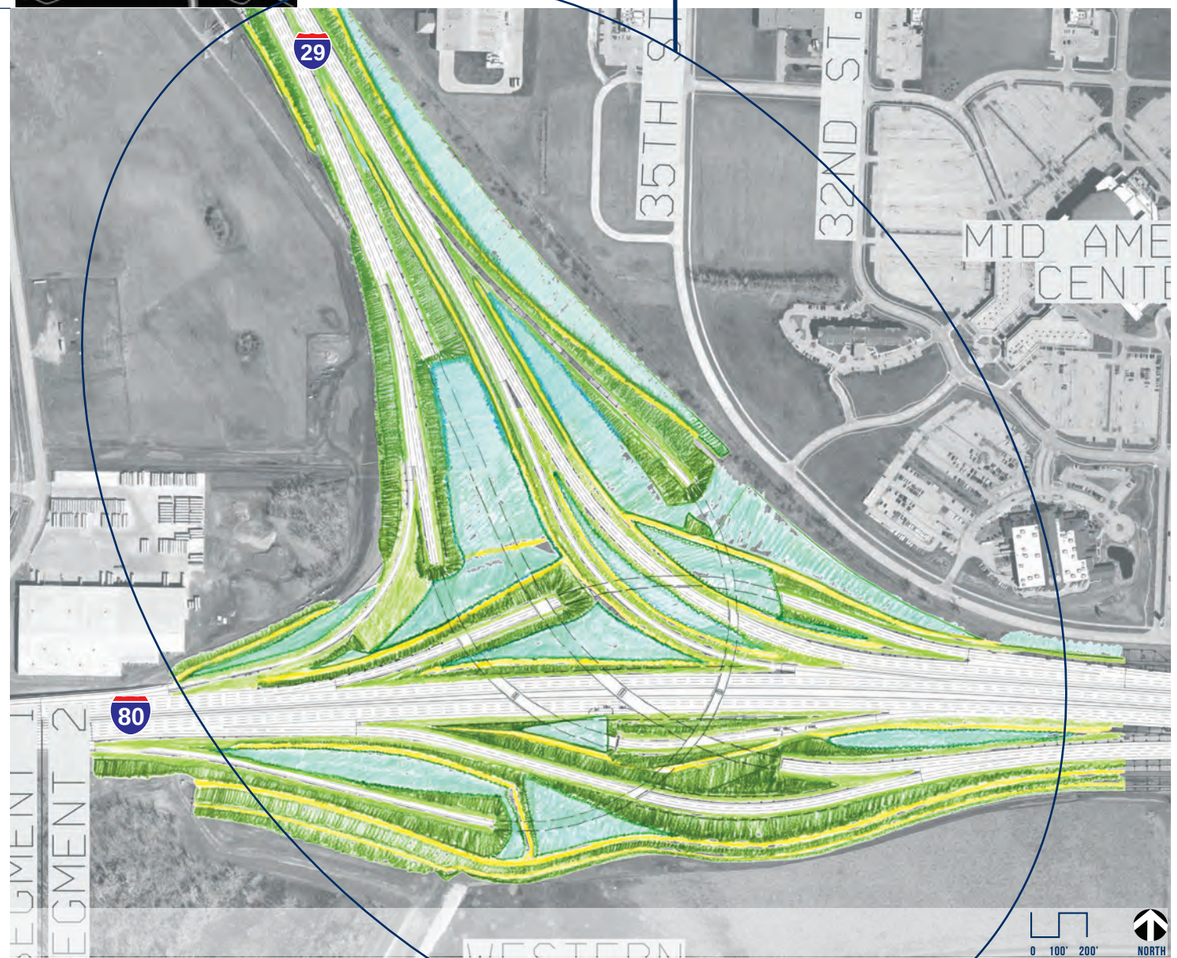
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- Native Hedgerow Trees and Shrubs
- Sloped Crushed Stone Paving at Bridge Abutments



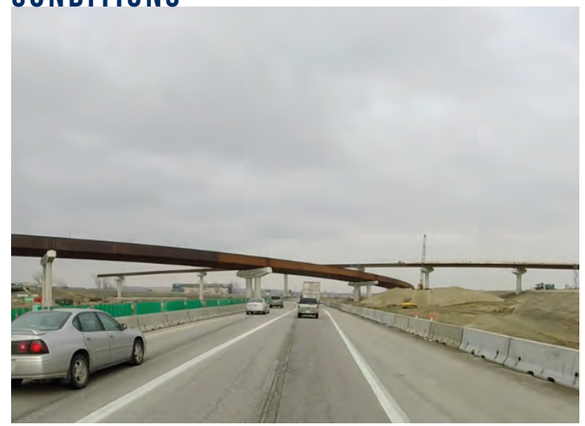
GRADING ANALYSIS LEGEND

- 6:1 Slopes
- 3:1 Slopes
- Sloping Pond Edges
- Storm Water Detention Pond
- Top of Berm





CONDITIONS

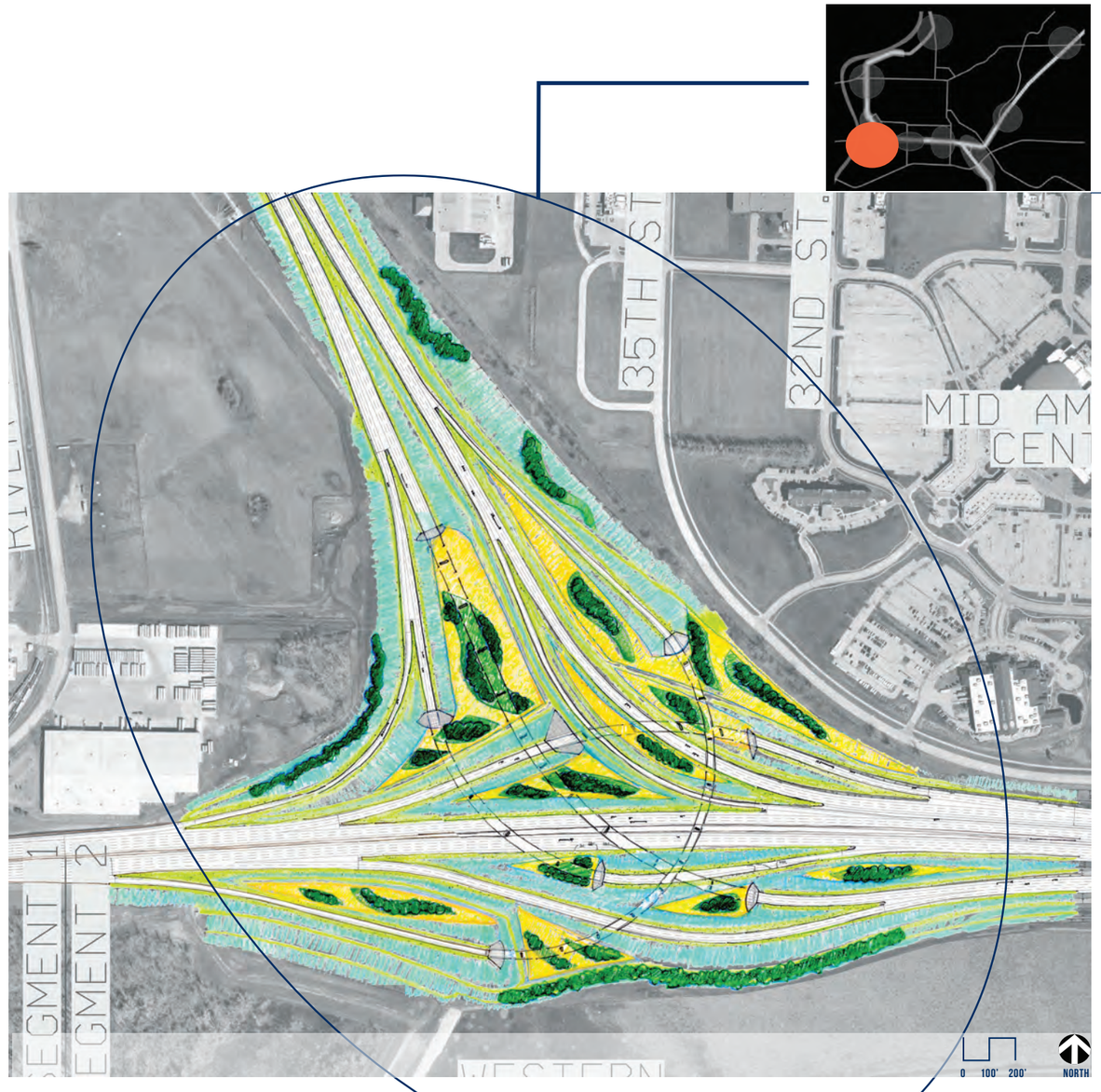


The West System Interchange (WSI) affects a large land area and involves a complex system of ramps, bridges, and at-grade roadways that slice through the landscape at acute angles. Analysis of the proposed layout and grading for the highway system at the WSI reveals an interwoven and converging landscape pattern. The analysis plan breaks that pattern down by its topography so that a more detailed landscape pattern emerges. The design goal is to accurately implement the landscape vision so that it reinforces the found pattern with plantings that fulfill the objectives of the design.

DESIGN



The proposed design for WSI is composed of lowland plantings within the proposed stormwater detention ponds that are made up of trees and shrubs native to river floodplains. These plants are arranged in "islands" reminiscent of the islands of trees and shrubs that are visible within a river's banks during a flood. An outer ring of shrubs forms each island's edge and the interface with surrounding grasses and wildflowers while a densely planted grouping of trees forms the center. Thus, the design in lowland areas works with the CBIS storm water management system and mimics the natural conditions of a river floodplain. Surrounding the planted islands in lowlands, are seeded grasses, sedges, and wildflowers that will provide a permanent and attractive ground cover that is tolerant of both flood and drought. Wildflower colors chosen for these locations are yellows, oranges, and reds. On the slopes of the detention ponds as well as roadway and ramp edges, native grasses and wildflowers that are tolerant of consistently drier conditions are proposed. Wildflower colors chosen for these locations are blues and purples. Adjacent to the interstate roadways, turf type fescue grasses are proposed which will be mown in the spring and summer each year. Edges of the interchange are also shown planted with trees and shrubs to buffer views and provide a clear and consistent edge to the interstate landscape.



DESIGN LEGEND

- Mown Short Native Upland Grass
- Short Native Upland Grass & Blue/Purple Wildflowers
- Short Native Lowland Grass & Yellow and Orange Wildflowers
- Native Floodplain Tree and Shrub Groupings
- Native Hedgerow Trees and Shrubs
- Sloped Crushed Stone Paving at Bridge Abutments



GRADING ANALYSIS LEGEND

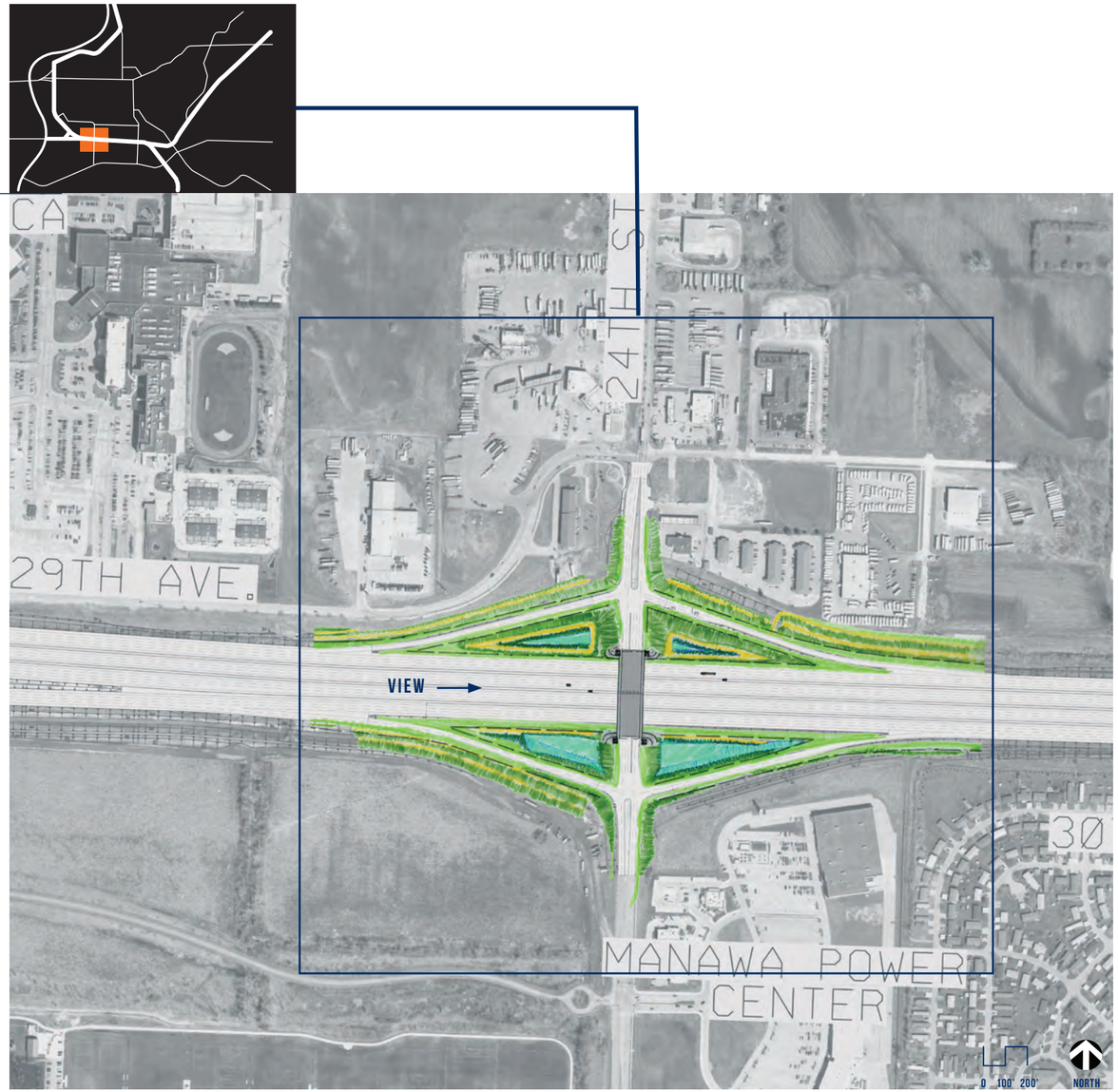
6:1 Slopes

3:1 Slopes

Sloping Pond Edges

Storm Water Detention Pond

Top of Berm



CONDITIONS

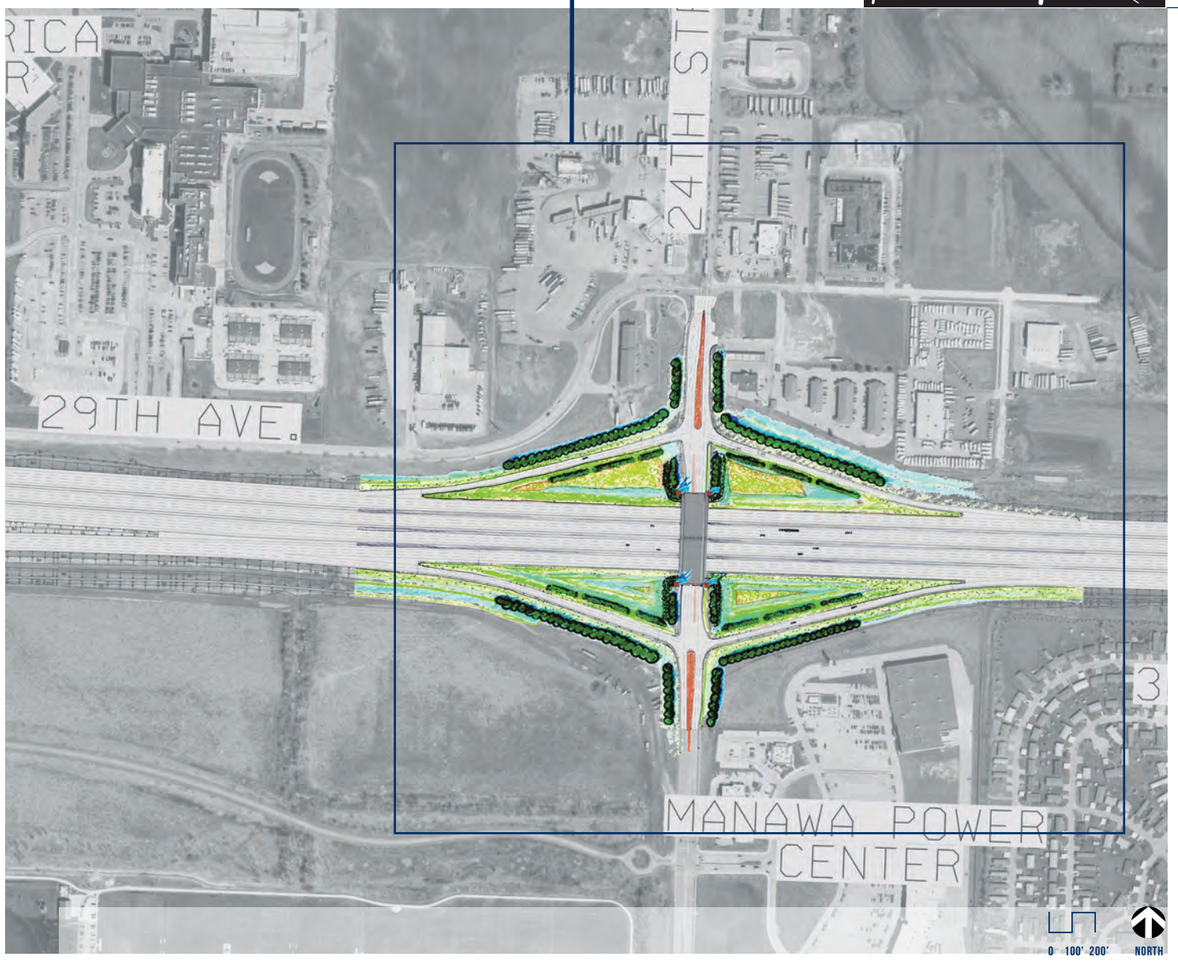


The South 24th Street Interchange, (S24) is the focus of the CBIS aesthetics recommendations with its state gateway status highlighted by four abstract metal sculptures designed by artist Albert Paley, and bridge aesthetics that include decorative overlapping steel arches above the deck and special concrete colors and finishes on the abutment walls and pier caps. These improvements follow the recommendations of the 2007 CBIS Aesthetics Master Plan. The S24 analysis plan shows long and narrow detention ponds proposed in the four interchange quadrants as well as sloped and terraced topography on all edges.

DESIGN

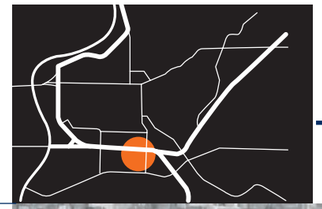


The design plan for S24 has a unique goal within the CBIS that is to frame and enhance the view of the state gateway bridge and its sculptures. Therefore, no trees are proposed within the interchange, shrubs are shown laid out in a linear fashion along ramps, and edges are enhanced with large deciduous trees to help frame and focus the key view. The landscape on S. 24th Street leading up to the bridge was designed to perform the same function and was installed in 2010 with Iowa West Foundation funding.



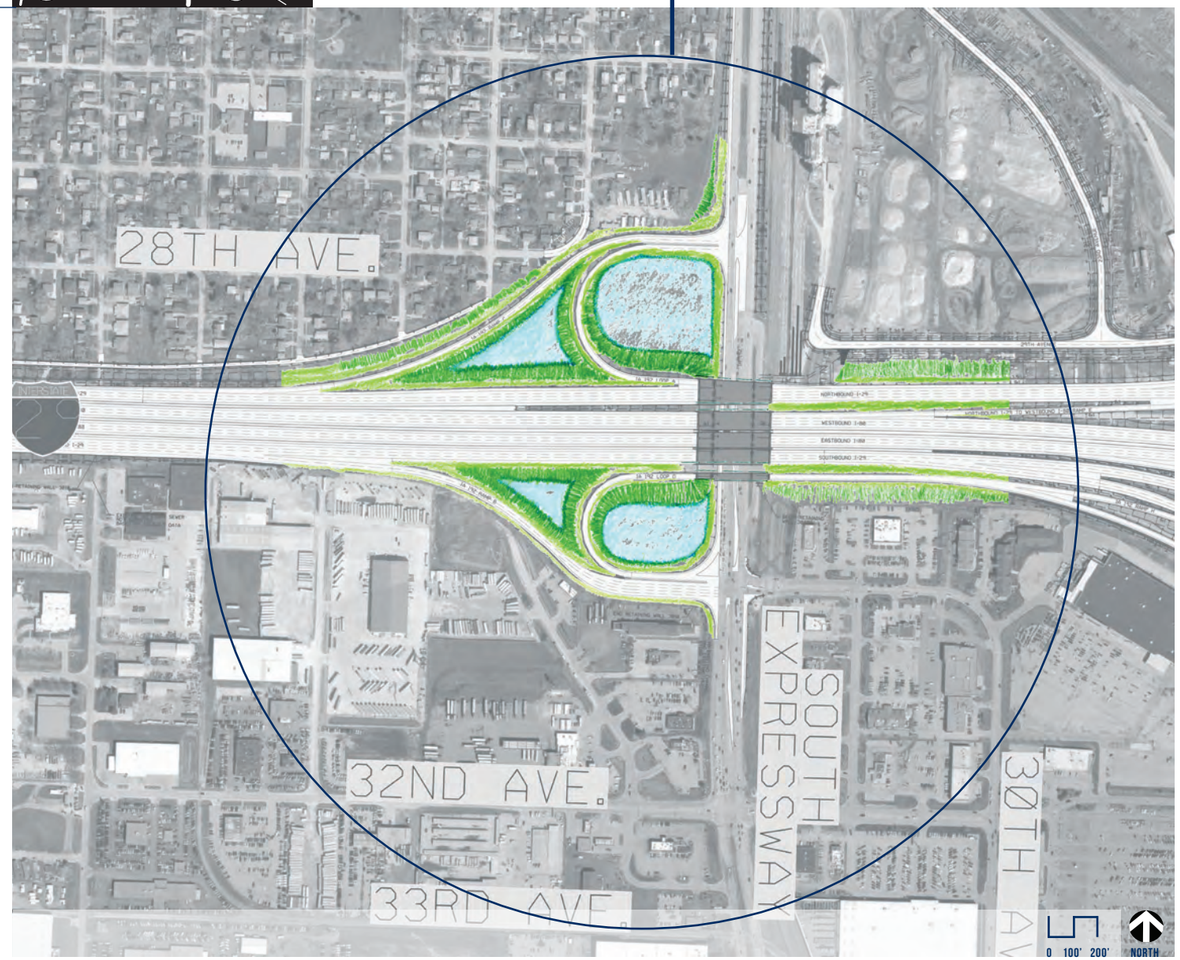
DESIGN LEGEND

- Mown Short Native Upland Grass
- Short Native Upland Grass & Blue/Purple Wildflowers
- Short Native Lowland Grass & Yellow and Orange Wildflowers
- Native Floodplain Tree and Shrub Groupings
- Native Hedgerow Trees and Shrubs
- Sloped Concrete Paving at Bridge Abutments
- Noise Wall
- Red Brick Median + Splash Strip



GRADING ANALYSIS LEGEND

- 6:1 Slopes
- 3:1 Slopes
- Sloping Pond Edges
- Storm Water Detention Pond
- Top of Berm
- North



CONDITIONS

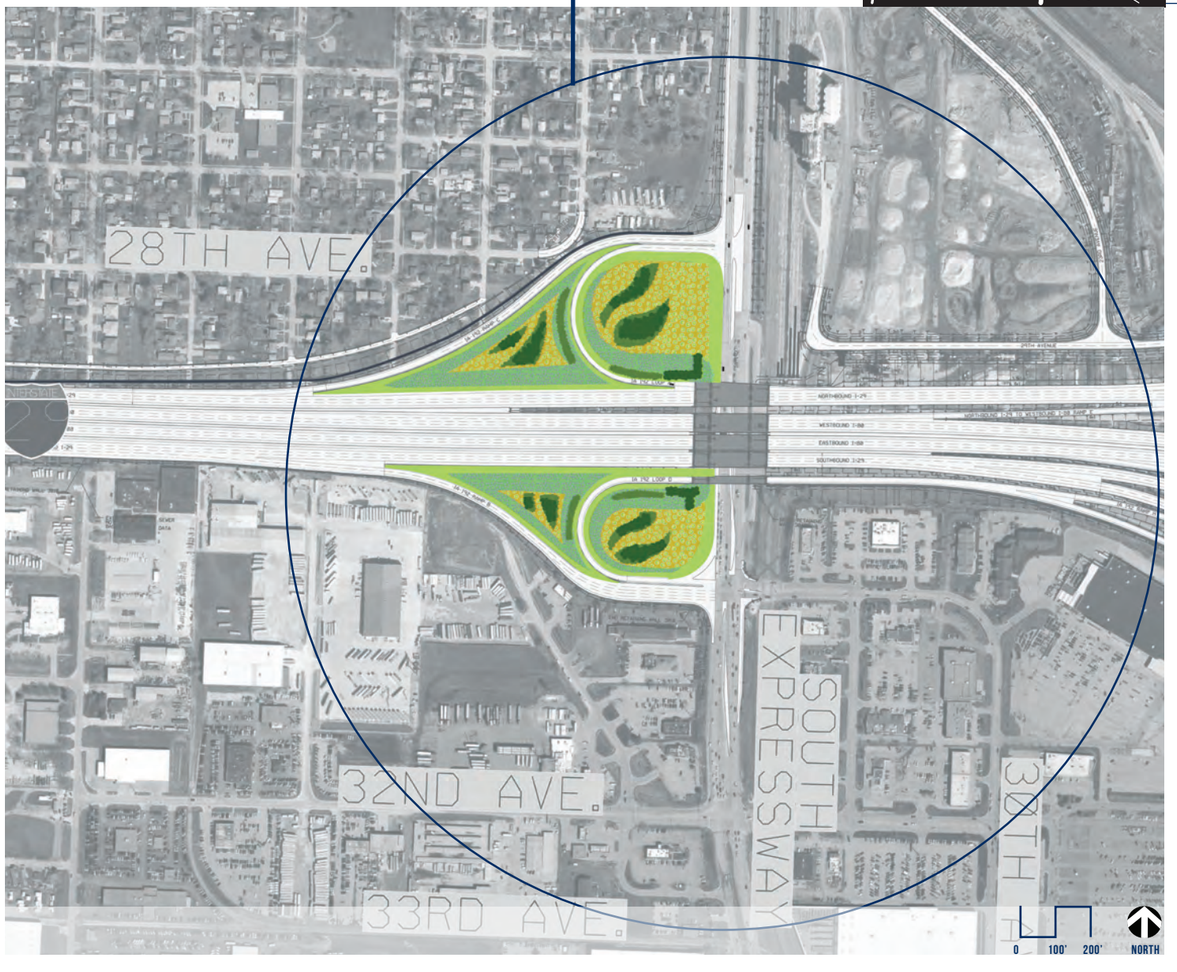


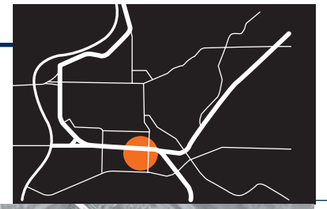
The South Expressway Interchange (SEI) Analysis Plan shows the substantial detention ponds planned for this interchange with their enclosing embankments and adjacent roadway edge slopes. Although a city gateway is planned for this section of the South Expressway, there is very little space in or around the interchange for such an improvement, therefore the proposed gateway may be located north of the interstate.

DESIGN



The design for the SEI indicates the proposed Noise Wall on the north side of the westbound on ramp. The design theme for the noise wall was developed from the recommendations found in the 2007 Aesthetics Master Plan and construction will be complete in 2014. Planted islands similar to those proposed for the WSI are shown in all four detention ponds. The same native grass and wildflower seeding mixes are proposed for lowlands, slopes, and uplands. Roadway edges again are planted with turf type fescue grasses to be mown twice each year.



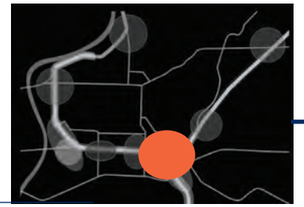


LOWLAND ISLAND PLAN



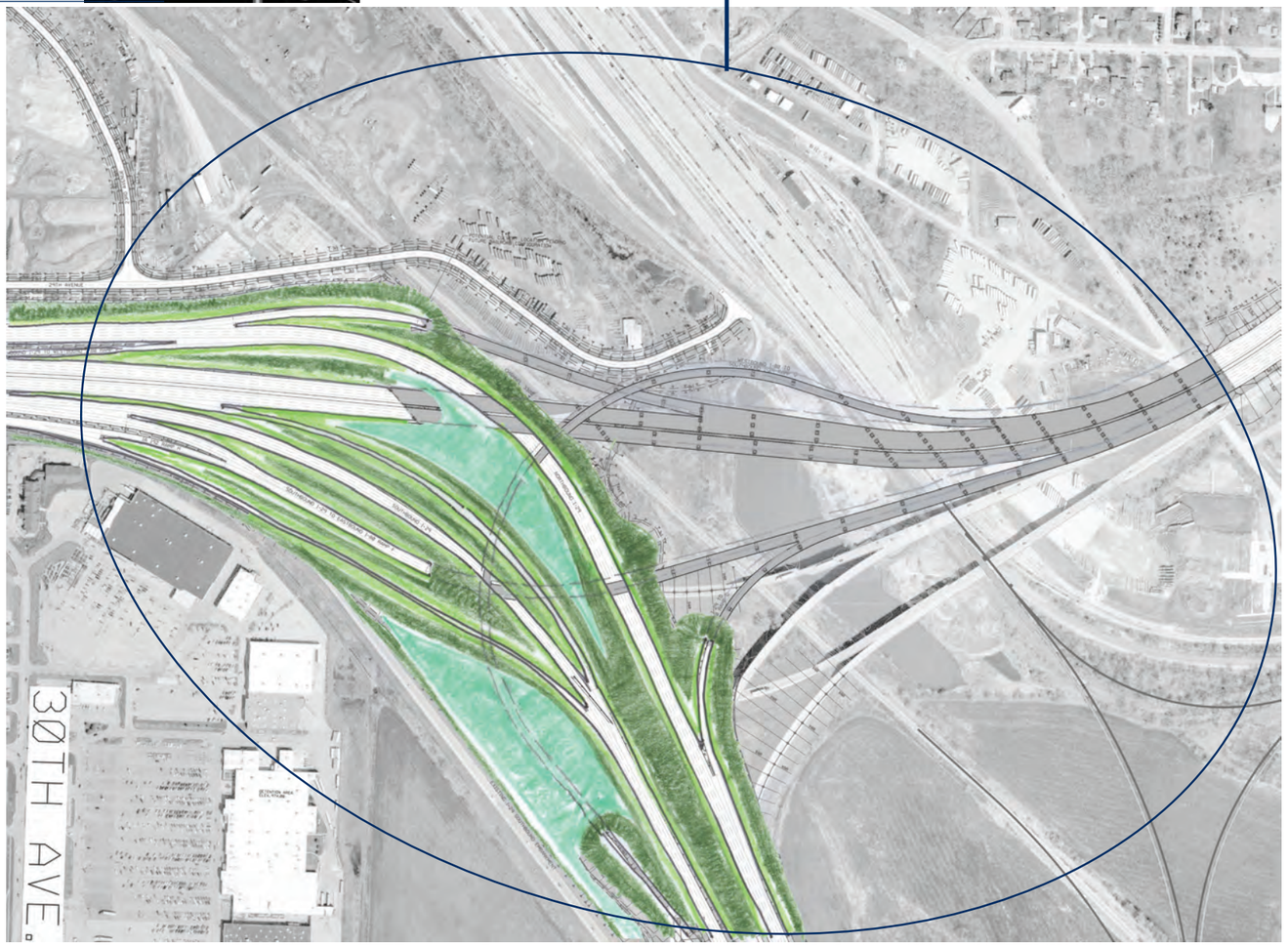
DESIGN LEGEND

- Large Deciduous Trees
- Shrubs
- Short Native Upland Grass & Blue/Purple Wildflowers
- Short Native Lowland Grass & Yellow and Orange Wildflowers
- Mown Short Native Upland Grass
- CBIS Noise Wall



GRADING ANALYSIS LEGEND

- 6:1 Slopes
- 3:1 Slopes
- Sloping Pond Edges
- Storm Water Detention Pond
- Top of Berm
- North



CONDITIONS

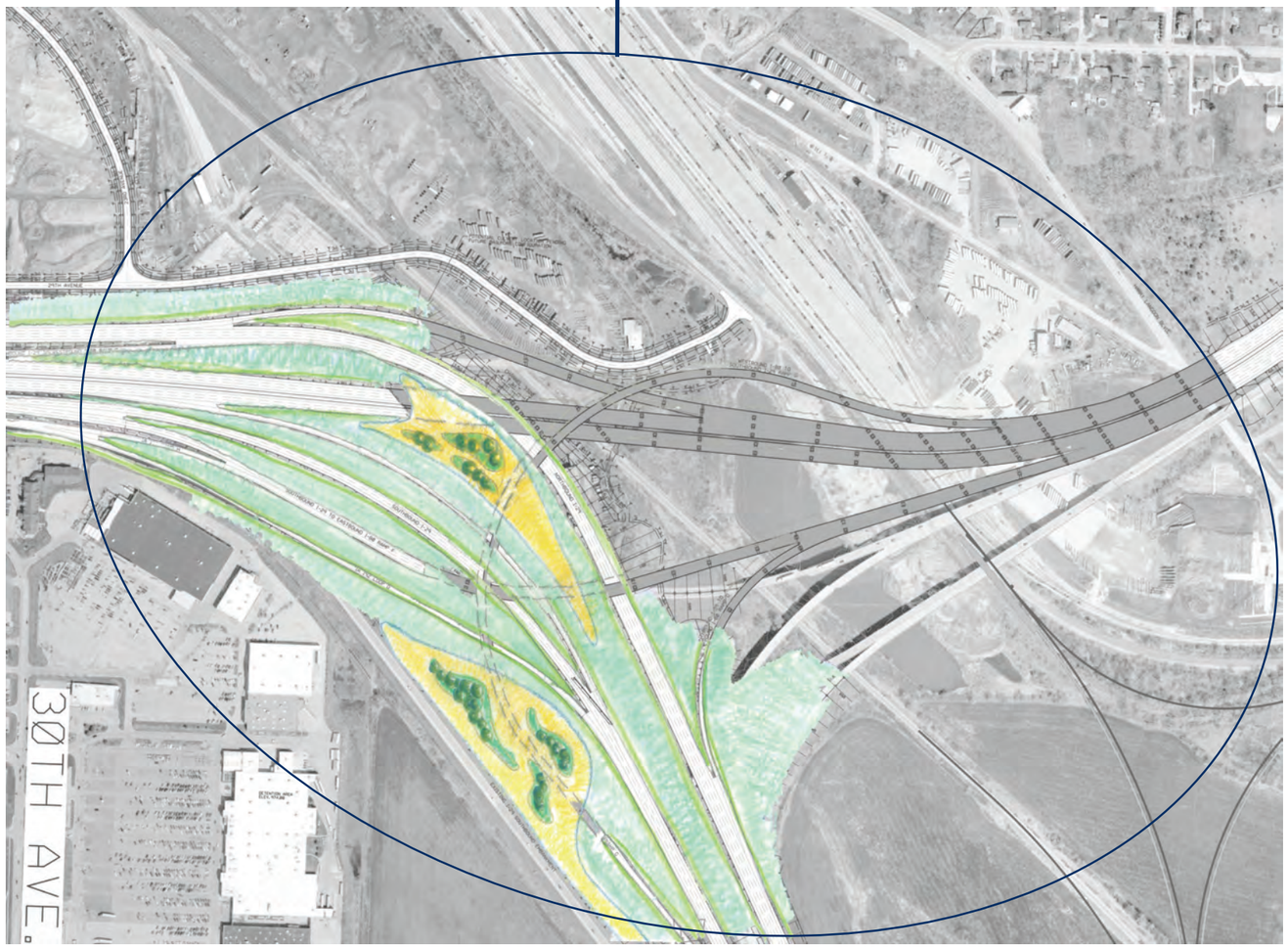


The East System Interchange is comprised of two different landscape zones, each with a dissimilar character. On the west side, the I80 and I29 roadways and ramps are on grade while the I80 roadway and ramps on the east side are on elevated bridge structures. The land on the west side is divided into long curving strips, most of which are steeply sloping away from the thoroughfares. Two large, curving storm water detention areas are located in the lowlands. The land on the east side of the interchange is not visible to motorists passing by on the bridges above. It includes water bodies, a multi use trail, a railroad right of way, commercial uses, and access roads. For these reasons, landscape improvements beyond that required by the grade and pave contracts, are not recommended on the east side of the interchange.

DESIGN

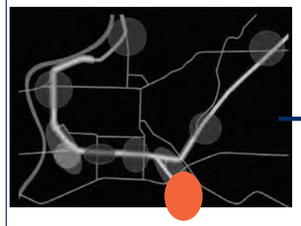


The uplands on the west side of the interchange are enhanced with upland grasses and wildflowers. The two lowland detention ponds on the west side include groupings of trees and shrubs to add visual interest and to break up the expanse. Lowland grasses and wildflowers are proposed to fill out the pond areas.



DESIGN LEGEND

- Mown Short Native Upland Grass
- Short Native Upland Grass & Blue/Purple Wildflowers
- Short Native Lowland Grass & Yellow and Orange Wildflowers
- Native Floodplain Tree and Shrub Groupings
- Native Hedgerow Trees and Shrubs
- Sloped Paving at Bridge Abutments
- Noise Wall
- Red Brick Median + Splash Strip



GRADING ANALYSIS LEGEND

- 6:1 Slopes
- 3:1 Slopes
- Sloping Pond Edges
- Storm Water Detention Pond
- Top of Berm
- North



CONDITIONS

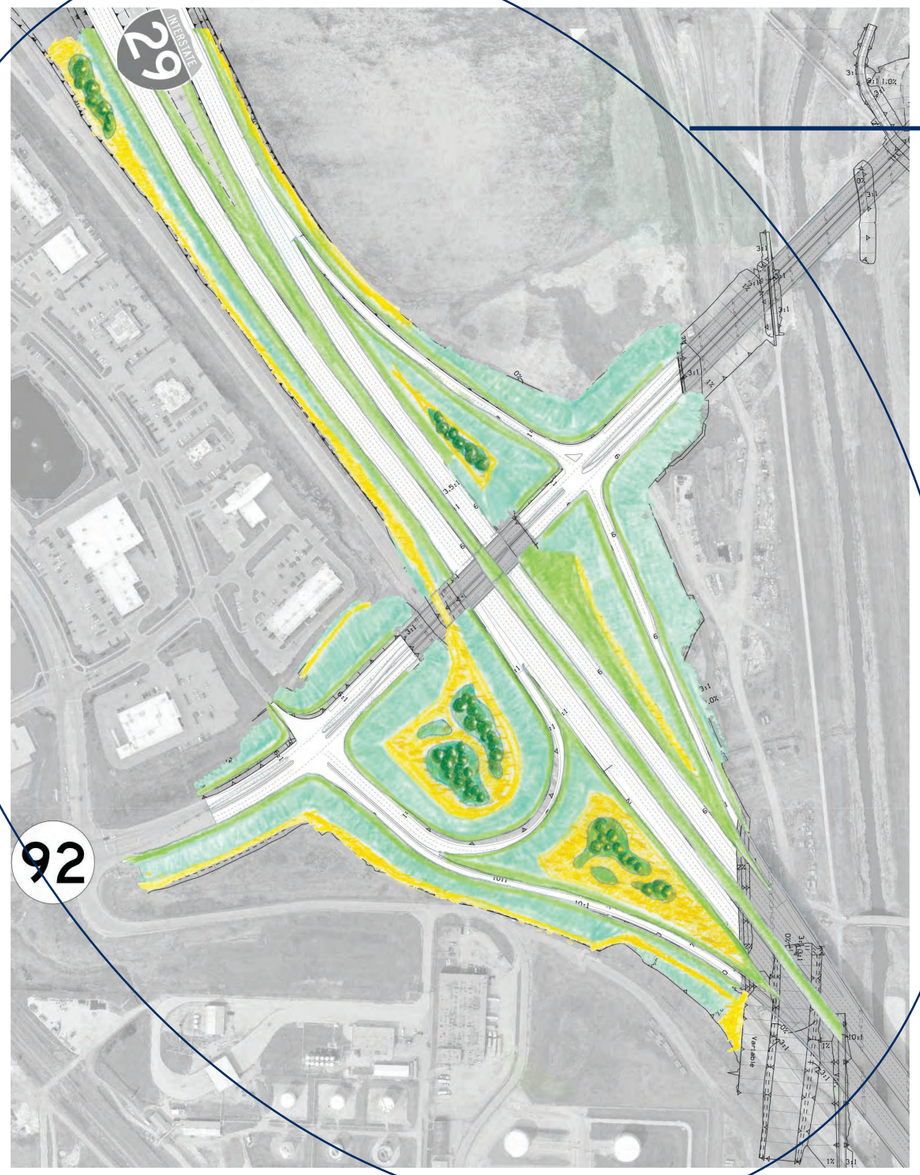


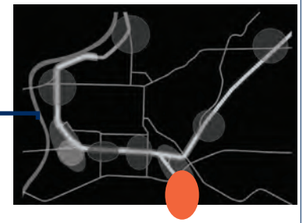
Steeply sloping, converging landforms and the Highway 275 Bridge dominate the landscape at this interchange. Two lowlands of significant size are planned for the southwest quadrant. The remainder of the land area consists primarily of upland slopes that support ramps and roadways. A consistent treatment to the uplands will enhance the landforms and visually unite the two sides of the freeway.

DESIGN



The steeply sloping uplands throughout the interchange are covered with upland grasses and wildflowers to provide a consistent and attractive character. Tree and shrub groupings enhance the lowland storm water detention ponds, and provide scale that will reduce the apparent depth of the ponds as well as the perceived height of the bridge above I29.



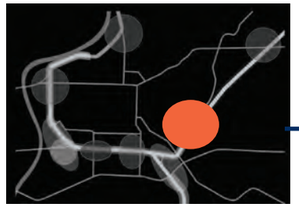


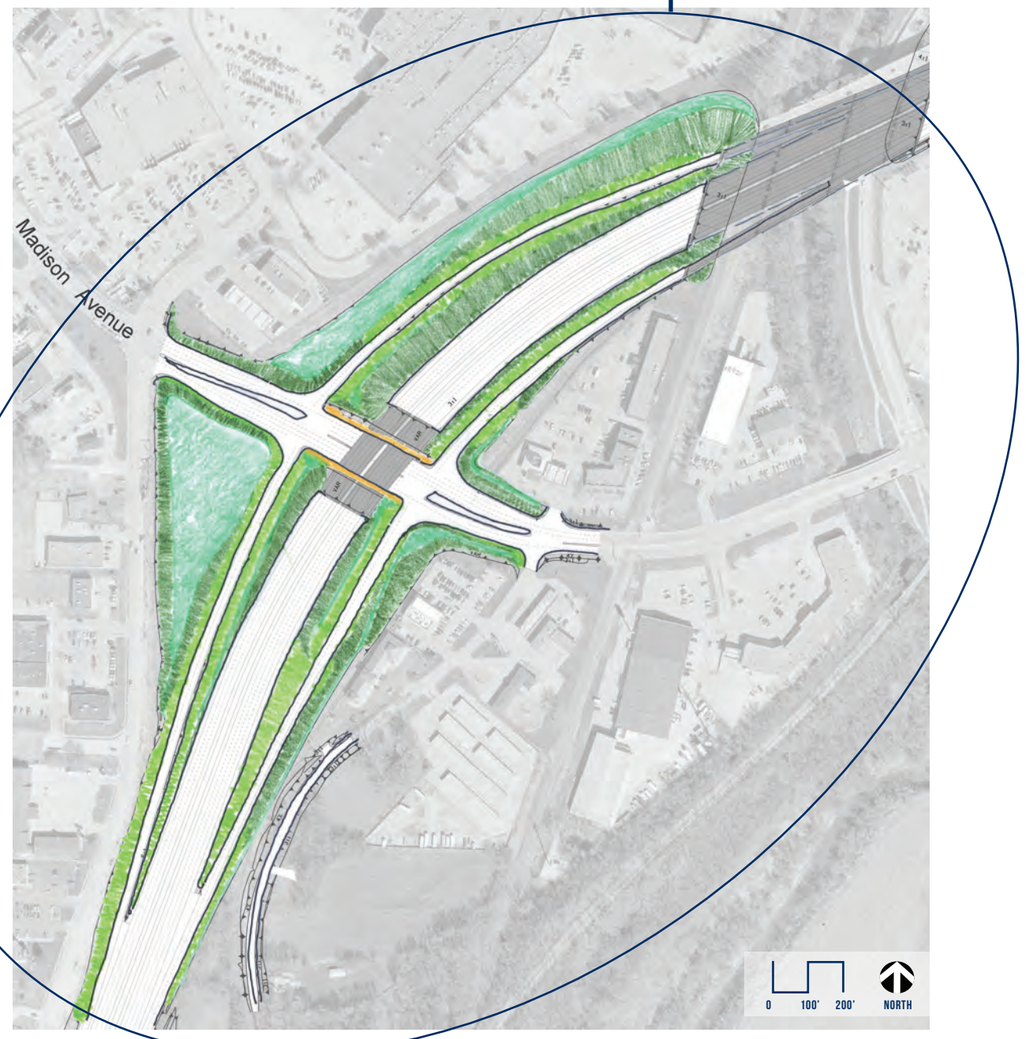
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GRADING ANALYSIS LEGEND

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CONDITIONS

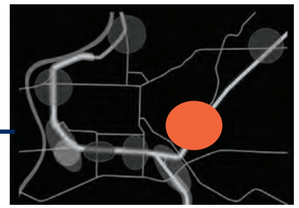


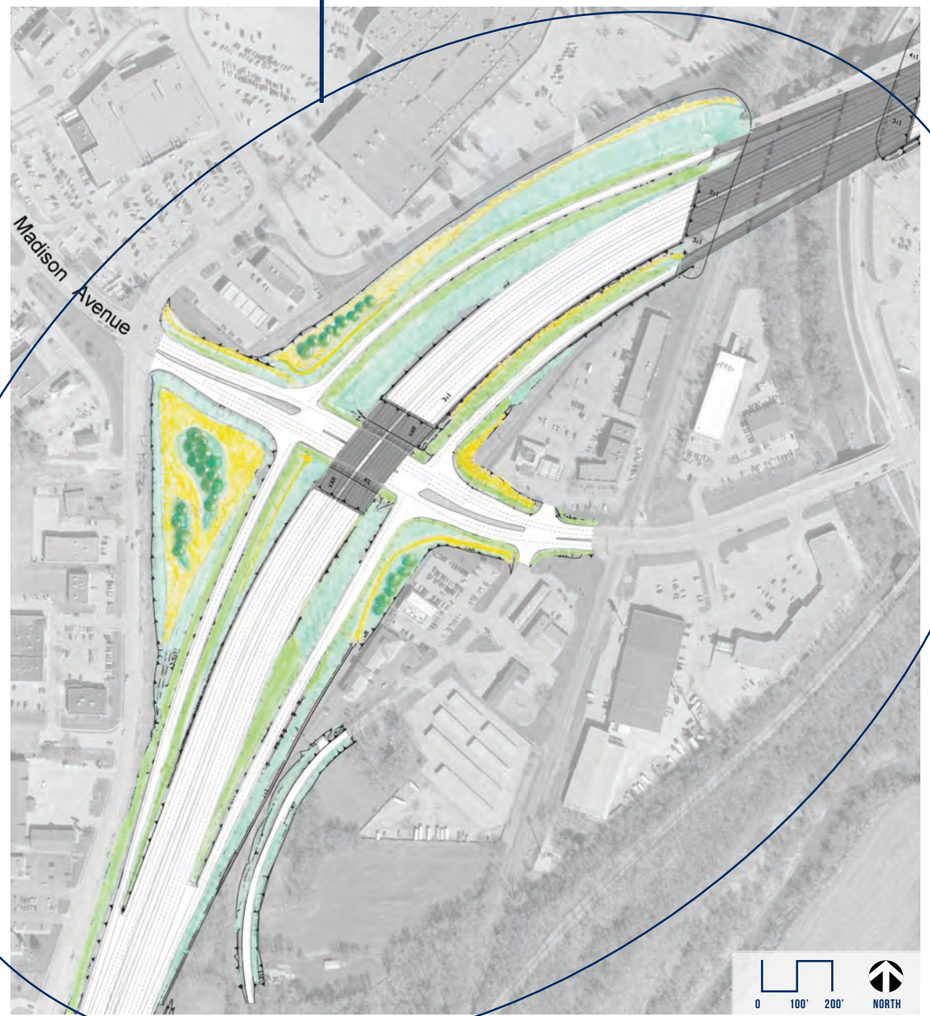
The Madison Avenue interchange has a conventional shape with long narrow areas between the ramps and I29 and the addition of wide buffer areas on the west side of the interchange. Commercial development abuts the entire interchange. The wider spaces on the west side are planned to include storm water detention ponds and present the opportunity to provide a planted buffer for the adjacent businesses.

DESIGN



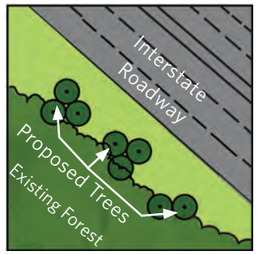
The planting design for the interchange includes buffer tree planting on the outside edge of the southeast and northwest quadrants. Tree and shrub planting in the southwest quadrant is designed to enhance the appearance of the storm water detention pond and provide an informal visual buffer from the commercial properties.





DESIGN LEGEND

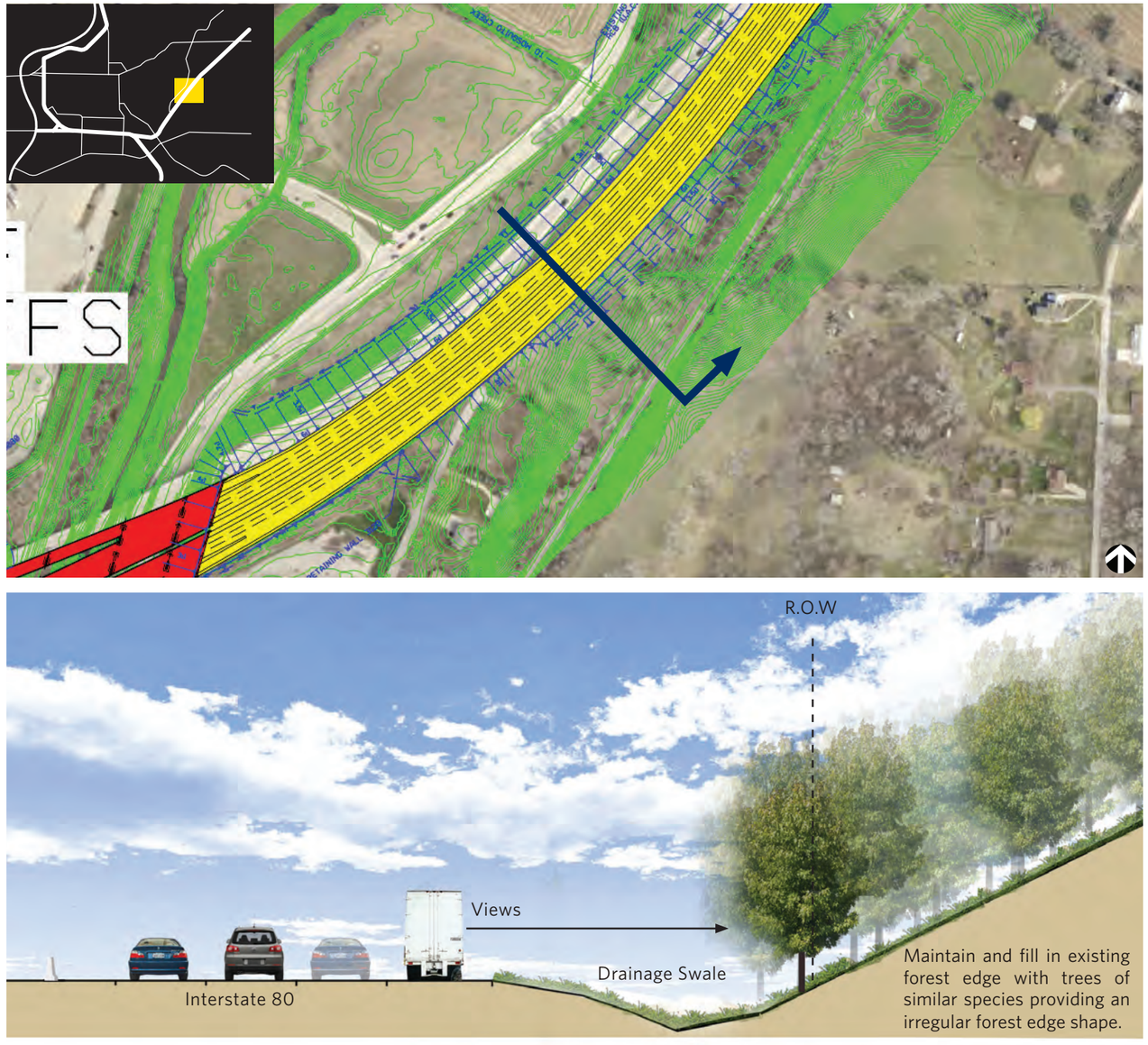
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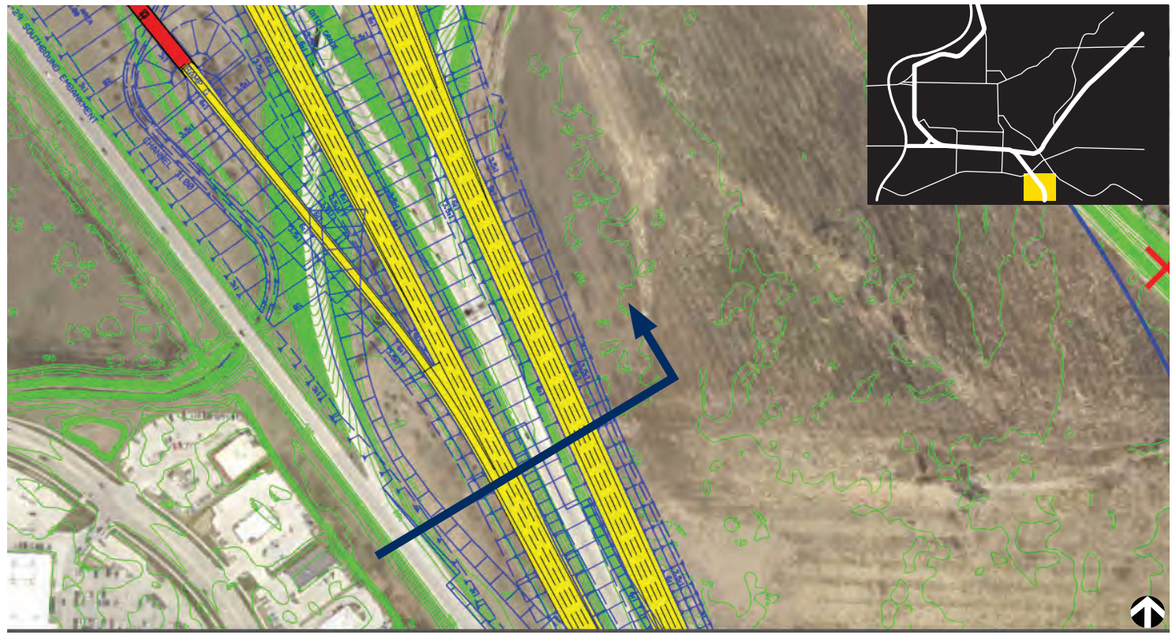


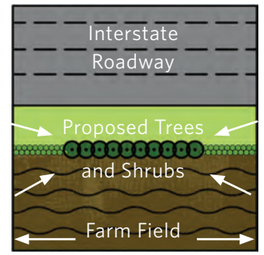
BLUFFS EDGE PLAN

The "Bluffs" Edge recommendations are for interstate edges that are abutted by forested land that extends onto interstate property. The intention of this design recommendation is to ensure that forest edges are not straight but rather have a "serrated" shape made by carefully placed trees of the same species as the native forest. This design may be implemented only in locations where there is adequate public Right of Way. The Right of Way location must be confirmed prior to developing design plans.

- Bluffs forest edge trees
- Provide an irregular edge.
- Trees@ 25' O.C.







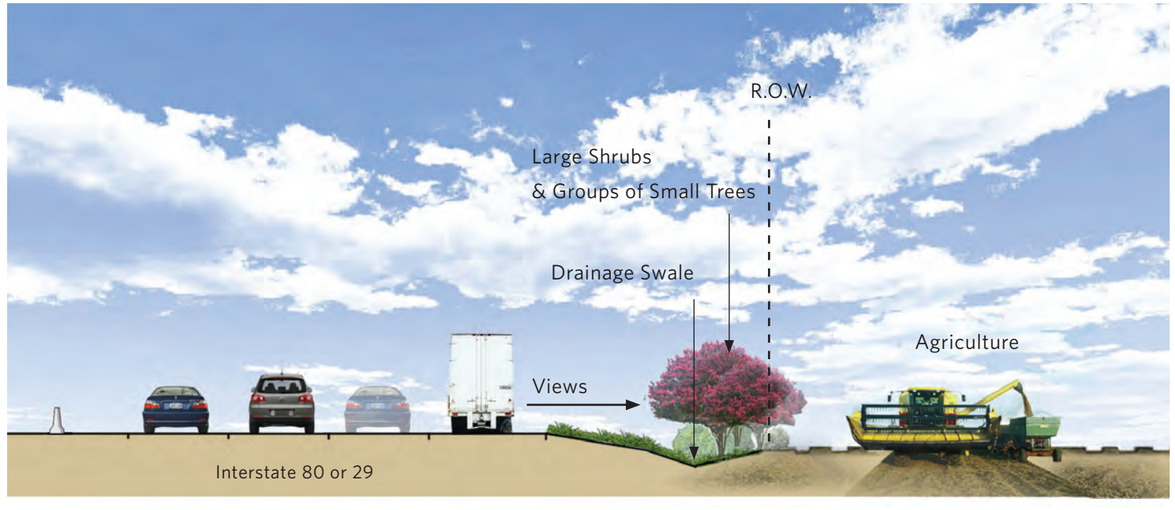
AGRICULTURAL EDGE PLAN

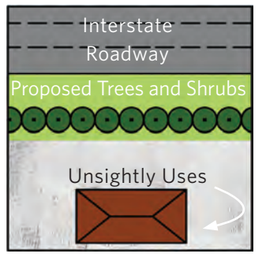
The "Agricultural" Edge recommendations are for interstate edges that are abutted by farm land. The intention of this design plan is to create a planted buffer paralleling the edge of farm fields with a relatively continuous double row of large shrubs and groupings of small flowering trees that will allow for views of the surrounding landscape from the highway. This design may be implemented only in locations where there is adequate public Right of Way. The Right of Way location must be confirmed prior to developing design plans.

- Native hedgerow trees ans shrubs.
- Small trees in groupings of 10 or more with a double row of shrubs.
- Trees @ 20' O.C., Shrubs @ 5' O.C.



I-29 AGRICULTURAL EDGE-PRE-CONSTRUCTION



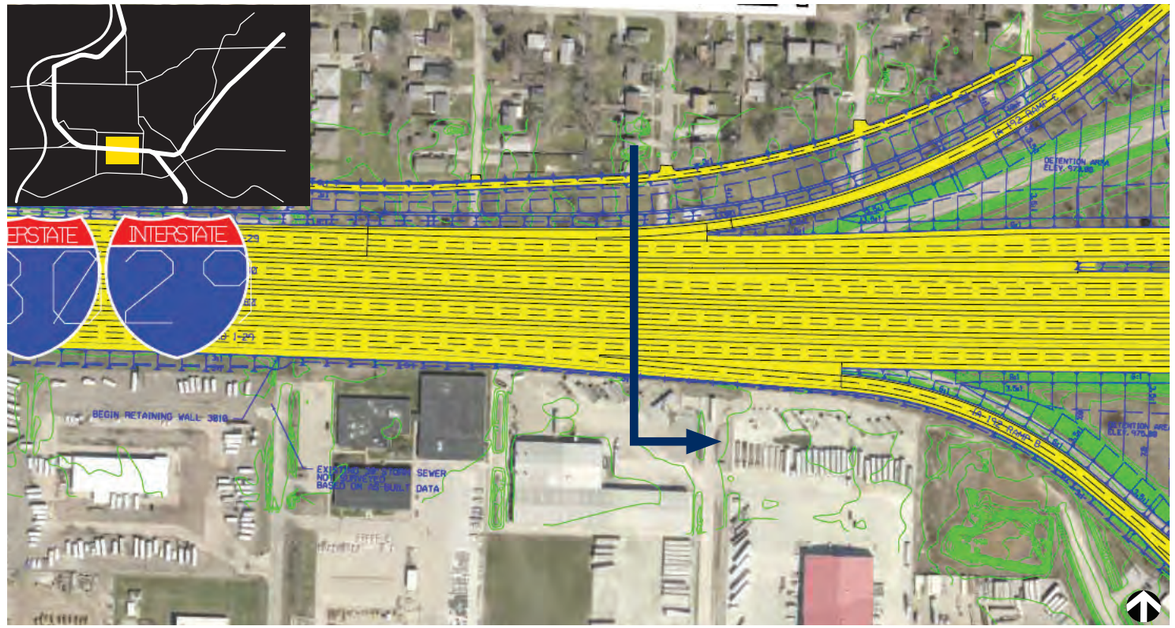


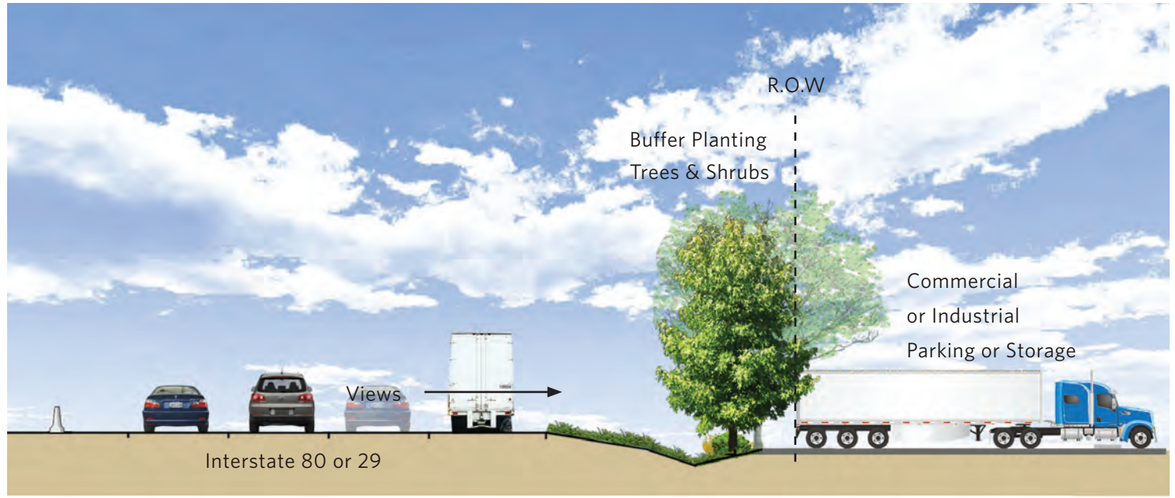
COMMERCIAL & INDUSTRIAL

EDGE PLAN

The "Commercial and Industrial" Edge recommendations are for interstate edges that are abutted by undesirable views of industrial and commercial properties including storage areas, loading docks, trash enclosures, parking lots and other unattractive or poorly maintained locations. The intention of the design plan is to create a visual buffer between the interstate roadway and the commercial properties with a row of large deciduous or evergreen trees and a double row of large deciduous or evergreen shrubs. This design may be implemented only in locations where there is adequate public Right of Way. The Right of Way location must be confirmed prior to developing design plans.

- Single row of large deciduous or evergreen trees with double row of large deciduous or evergreen shrubs below
- Trees @25' O.C., Shrubs @ 5' O.C.,

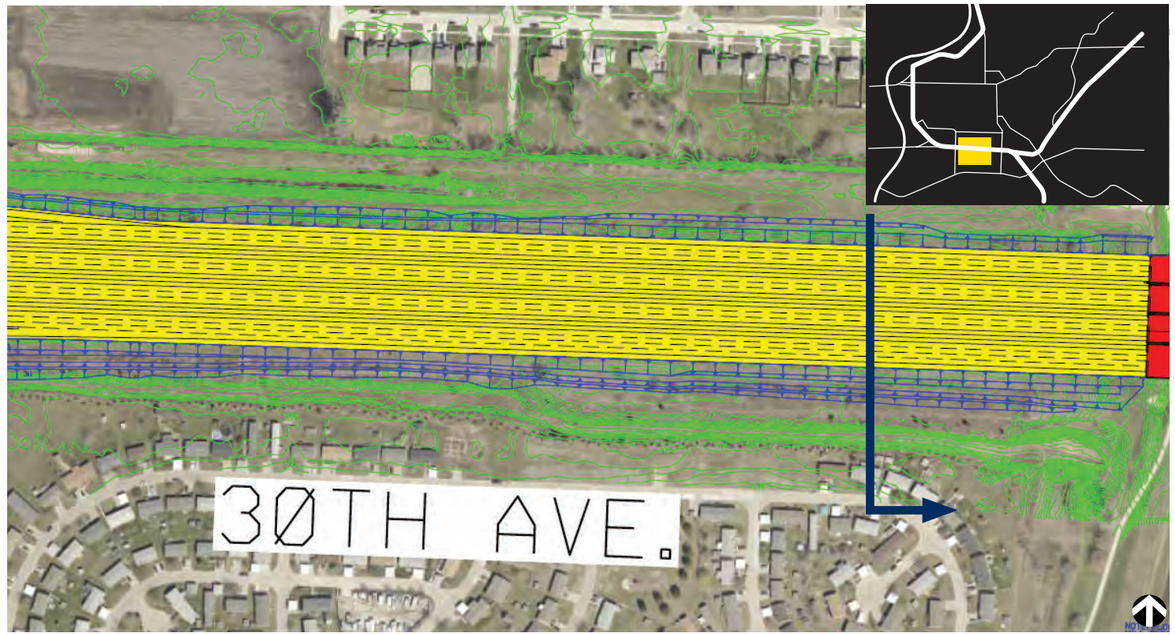


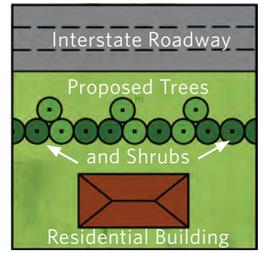


SECTION-COMMERCIAL OR INDUSTRIAL BUFFER PLANTING



I-80/29 COMMERCIAL EDGE-PRE-CONSTRUCTION





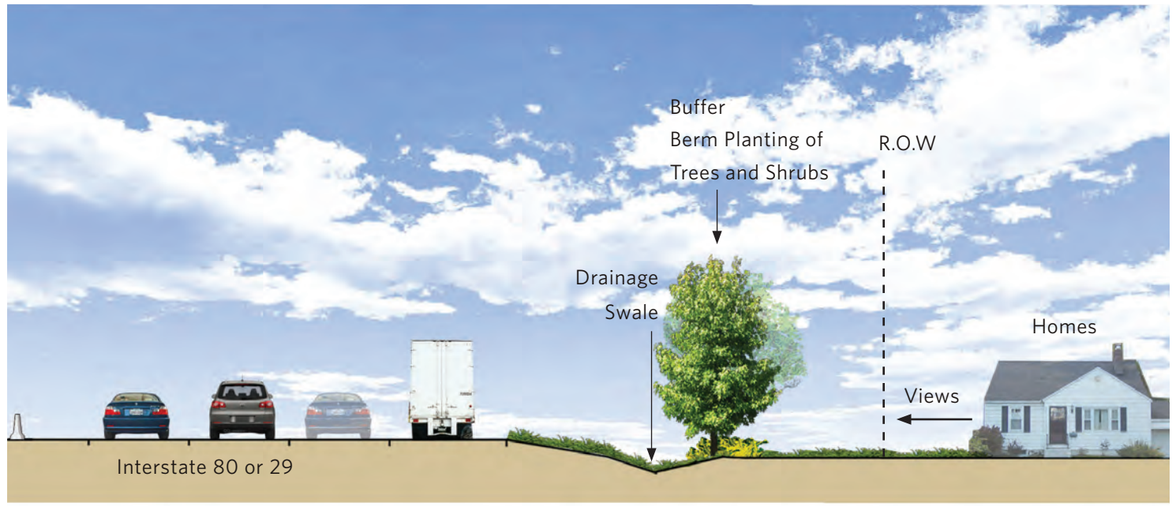
NEIGHBORHOOD EDGE PLAN

The “Neighborhood” Edge recommendations are for interstate edges that are abutted by established or developing residential neighborhoods. The intention of the design plan is to create a visual buffer between the homes in residential areas and the interstate roadway with a single, and sometimes double, row of large deciduous or evergreen trees with a double row of small shrubs beneath. This design may be implemented only in locations where there is adequate public Right of Way. The Right of Way location must be confirmed prior to developing design plans.

- Single and occasional double row of deciduous or evergreen trees with a double row of small deciduous or evergreen shrubs below.
- Trees at 25’ O.C., Shrubs @ 4’ or 3’ O.C.



I-80 EXAMPLE OF PLANTED BERM IN WINTER.



SECTION-RESIDENTIAL BUFFER PLANTINGS

PART 3:

PLANTING, SEEDING, PHASING, ESTIMATES,+ IMPLEMENTATION



PLANTING AND SEEDING GUIDELINES

Plant List: The Plant List shown is recommended for implementation of the landscape design recommendations for the CBIS landscapes including interchanges and corridor edges.

Seeding: Prior to seeding, existing grasses in proposed seeding and planting areas will be killed with herbicide and mown per specifications. Grass and wildflower seed will be installed in the root mat of the former grasses using the no till drill seed method.

Lowland Island Planting in Interchanges: Trees and shrubs will be planted at the small sizes and close spacing indicated with the intention of quickly establishing a branch and foliage canopy to shade out invasive plants and grasses. The layout of trees and shrubs at edges of plant grouping shapes will be smooth and continuous to establish the shapes shown on plans. Tree and shrub planting within the plant grouping shapes will be at the triangular spacing indicated. Trees and shrubs will not be planted in standing water.

PLANT LIST

CBIS Master Plan

TREES, SHRUBS, GRASSES, & WILDFLOWERS: SLOPES & UPLANDS

LARGE DECIDUOUS TREES : SLOPES & UPLANDS

Abbr.	No.	Genus	Species	Common Name	Size	Spacing
COC		Celtis	occidentalis	Hackberry	2 1/2" -3" Cal.	25' O.C.
GTS		Gleditsia	triacanthos inermis 'Shademaster'	Shademaster Honeylocust	2 1/2" -3" Cal.	25' O.C.
QMA		Quercus	macrocarpa	Bur Oak	2 1/2" -3" Cal.	25' O.C.
QMA		Quercus	alba	White Oak	2 1/2" -3" Cal.	25' O.C.
UAP		Ulmus	americana 'Princeton'	Princeton American Elm	2 1/2" -3" Cal.	25' O.C.

SMALL DECIDUOUS TREES : SLOPES & UPLANDS

AGF		Acer	ginnala 'Flame'	Flame Amur Maple	1 1/2" -2" Cal.	20' O.C.
AGA		Amelanchier	grandiflora "Autumn Brilliance"	Autumn Brilliance Serviceberry	1 1/2" -2" Cal.	20' O.C.
CCA		Cercis	canadensis	Eastern Redbud	1 1/2" -2" Cal.	20' O.C.
CCI		Crataegus	crus-galli 'inermis'	Thornless Cockspur Hawthorn	1 1/2" -2" Cal.	20' O.C.
MDW		Malus	Donald Wyman	Donald Wyman Crabapple	1 1/2" -2" Cal.	20' O.C.

DECIDUOUS SHRUBS : SLOPES & UPLANDS

CRA		Cornus	racemosa	Gray Dogwood	No. 5	5' O.C.
POM		Physocarpus	opulifolius 'Monlo'	Diablo Ninebark	No. 5	5' O.C.
RAG		Rhus	aromatica 'Gro Low'	Grow Low Sumac	No. 3	4' O.C.
SFR		Spirea	fritschiana	Fritschiana Spirea	No.3	3' O.C.
SXC		Symphoricarpos	x chenaultii	Chenault Coralberry	No. 5	5' O.C.
SME		Syringa	meyeri	Meyer Lilac	No. 3	4' O.C.
VLA		Viburnum	lantana	Nannyberry	No. 5	5' O.C.

EVERGREEN TREES : SLOPES & UPLANDS

PGD		Picea	glauca 'Densata'	Black Hills Spruce	8'-10'	20' O.C.

GRASSES & WILDFLOWERS : SLOPES & UPLANDS

Abbr.	No.	Genus	Species	Common Name	Size	Spacing
ASC		Andropogon	scoparius	Little Bluestem		
BCU		Bouteloua	curtipendula	Sideoats Gramma		
EPU		Echinacea	purpurea	Purple Coneflower		
LPY		Liatris	pycnostachya	Kansas Gayfeather		
MFI		Monarda	fistulosa	Eastern Beebalm		
PPI		Phlox	pilosa	Prairie Phlox		
SHE		Sporobolus	heterolepsis	Prairie Dropseed		
TOH		Tradescantia	ohiensis	Spiderwort		

TREES, SHRUBS, GRASSES, & WILDFLOWERS: LOWLANDS

TREES : LOWLANDS

Abbr.	No.	Genus	Species	Common Name	Size	Spacing
AFJ		Acer	x freemanii 'Jeffersred'	Autumn Blaze Maple	1 1/2" Cal.	10' O.C.
BNI		Betula	nigra	River Birch	1 1/2" Cal.	10'O.C.
COC		Celtis	occidentalis	Hackberry	1 1/2" Cal.	10' O.C.
QMA		Quercus	bicolor	Swamp White Oak	1 1/2" Cal.	10' O.C.
TDI		Taxodium	distichum	Bald Cypress	1 1/2" Cal.	10' O.C.
UAH		Ulmus	americana 'hybrid'	Princeton or other Am. Elm	1 1/2" Cal.	10' O.C.

SHRUBS : LOWLANDS

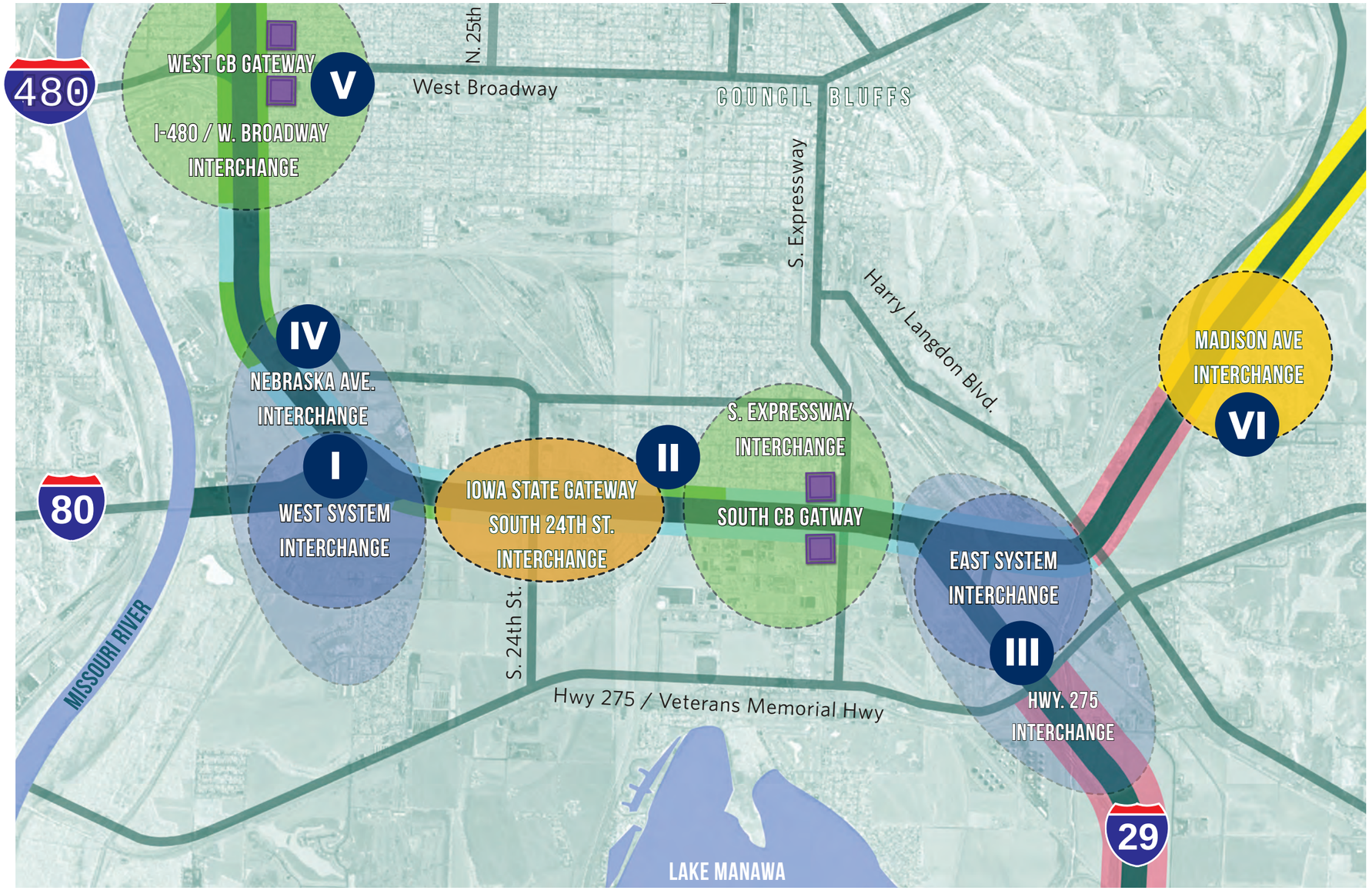
AMI		Aronia	melanocarpa 'Iroquois Beauty'	Iroquois Beauty Chokecherry	No. 3	3' O.C.
CSE		Cornus	sericea 'Cardinal'	Cardinal Redtwig Dogwood	No. 3	3' O.C.
POM		Physocarpus	opulifolius 'Monlo'	Diablo Ninebark	No. 3	3' O.C.
VLA		Viburnum	lantana	Nannyberry	No. 3	4' O.C.

GRASSES & WILDFLOWERS : LOWLAND

CTI		Coreopsis	tinctoria	Plains Coreopsis		
CVU		Carex	vulpinoidea	Fox Sedge		
EVI		Elymus	virginicus	Virginia Wildrye		
HHE		Heliopsis	helianthoides	Sweet Smooth Oxeye		
WWG		Pascopyrum	smithii	Western Wheatgrass		
ZAU		Zizia	aurea	Golden Alexander's		

Phasing Plan

The CBIS Landscape Phasing Plan indicates the proposed prioritized order for implementation of the plan through six phases of interchange and freeway construction. The phases are ordered based on IDOT's anticipated completion date for each area. The landscape in each interchange and on the freeway edges will be installed after the closeout of applicable roadway construction projects. The proposed landscape for all interchange landscapes is illustrated herein. The edge landscape for freeway sections however, is described as a particular landscape edge type and the length and design detail for those edge landscapes will be determined during the preparation of landscape construction documents for each phase. The estimated cost of those edge landscapes will be added to the applicable cost estimate at that time. Construction project limits within each phase will be determined during the construction document phase and will be limited to areas with an estimated construction cost of less than $500,000 to respond to anticipated state funding budgets and typical bonding limits for Iowa landscape contractors. The scheduled date for each landscape construction phase has not been determined but each project's construction will follow the completion of that location's "grade and pave" contract by not less than two growing seasons. Up to two phases may be constructed in any given year. It is anticipated that the entire CBIS landscape can be constructed within 12 to 15 years. The schedule, order, and size of project implementation phases may be revised in the future based on changes to IDOT planning, construction, and funding.



LEGEND

- Interstate Highways
- City Gateways

CORRIDOR EDGES

- Neighborhood Edge
  Riverfront Park
- Bluffs/Forest Edge
- Agriculture Edge
- Commercial Edge

Phase	Interchanges (13 projects)	Costs
I	West System Interchange, (3 projects)	$1,560,000
II	South 24th Street Interchange, (2 projects)	$ 335,000
	South Expressway Interchange	$ 480,000
III	East System Interchange, (2 projects)	$ 425,000
	Highway 275 Interchange	$ 345,000
IV	Nebraska Avenue Interchange	$ 300,000
V	I480 Interchange, (2 projects)	$1,015,000
VI	Madison Avenue Interchange	$ 150,000
	Edges (entire CBIS)	
A	Bluffs Edge	$110,000
B	Agricultural Edge	$267,000
C	Commercial & Industrial Edge	$189,000
D	Neighborhood Edge	$172,000
	Subtotal	$5,348,000
	25% Contingency	$1,337,000
	TOTAL	$6,685,000

Estimate of Probable Cost

The Estimate of Probable Cost includes the cost of each phase of work. It has been prepared using 2018 unit prices and a 25% contingency to cover future soft costs, inflation, and/or changes in the landscape materials and contracting market. Proposed phases are indicated, interstate edges are estimated separately because the length of edge landscape to be added to each interchange will be determined during preparation of the final design contract documents. Estimates do not include soil preparation since that item is covered under the "grade and pave" contracts. A nominal sum has been included for erosion control; the actual cost may vary based on field conditions.

Funding

The State of Iowa funds IDOT landscape projects through the IDOT's Office of Design and specific project funding from that source is determined, based on statewide landscape needs, on a yearly basis. The statewide yearly fund is relatively small, however it is possible that IDOT will fund up to two CBIS landscape construction projects, with values up to $500,000 each, in a given year. Other funding sources may include the IDOT Transportation Alternatives Program (TAP) under their "environmental mitigation activity" item specifically related to storm water management. This funding would need to be applied for by the local Metropolitan Planning Organization and would compete with trail projects for funding in any given year. IDOT's Living Roadway Trust Fund is another potential source of funding. Grant proposals are selected on a yearly basis and projects must demonstrate an Integrated Roadside Vegetation Management approach. Applications for the LRTF can be made by private organizations as well as city, county, or state agencies.

IMPLEMENTATION

Implementation Process

CBIS landscape construction projects will be scheduled by IDOT based upon the proposed phasing and within the context of on-going roadway construction schedules. Once the upcoming schedule is set for each phase, landscape construction documents will be prepared by IDOT or a private consultant. Bidding and construction for that phase of work will follow.

Public Outreach

The 2014 first edition of the CBIS Landscape Master Plan was approved by the Council Bluffs City Council in that year. The 2018 addendum adds the design for five interchanges to the plan. The design for the interchanges in the addendum follows the same project vision and design approach as the original. The addendum will be presented to the Council Bluffs City Council to request approval. IDOT has reviewed the 2018 revisions and provided no additional comments. The plan is intended to be posted on the IDOT CBIS website as public information and a follow up to the 2007 CBIS Aesthetics Master Plan. It is also recommended that the CBIS Landscape Master Plan be made available for public review at upcoming IDOT CBIS public meetings and that more detailed landscape plans, for applicable phases, may be discussed at that time.

Maintenance

Landscape maintenance to be provided by each project's contractor will require three mowings of the seeded areas and spot herbicide applications the first year after installation. Two mowings of those areas and spot herbicide applications will also be required under warranty the second year following installation. In addition, replacements of trees and shrubs under warranty will be made during the first year after installation. IDOT will provide their standard mowing of roadway edges at approximately the width of their mowing equipment and will perform "spot mowing" of problem areas after the contracted maintenance period has expired. Future discussions between IDOT and the City of Council Bluffs will determine whether "clean up" maintenance can be performed by IDOT on an as-needed basis.

