THE UNIVERSITY OF IOWA
IOWA INITIATIVE
FOR SUSTAINABLE COMMUNITIES

FINAL DELIVERABLE

Title	Clinton Riverview Park Master Plan
Completed By	Riley Cranston, Jessie McElwain, Kristine Eischeid, and Rod Knutson
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UI Department	Department of Civil & Environmental Engineering
Course Name	CEE: 4850:0001 Project Design & Management
Instructor	Paul Hanley & Richard Fosse
Community Partners	City of Clinton

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Iowa Initiative for Sustainable Communities
The University of Iowa
347 Jessup Hall
Iowa City, IA, 52241
Email: iisc@uiowa.edu
Website: http://iisc.uiowa.edu/

Riverview Park Master Plan Clinton, Iowa

Prepared For: The City of Clinton

December 9th, 2022

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CIVIL & ENVIRONMENTAL
ENGINEERING

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I. Executive Summary

The City of Clinton has a rich history as a lumber and river town. Nestled on the Mississippi River and near downtown (between Riverview Drive and 4th Avenue North), Riverview Park is a centerpiece of the community. The City is partnering with the Illinois festival consulting firm Tailgate 'N Tallboys to produce a large-scale music festival for June 2023. Outlined in this report are a variety of improvements to prepare for an event of this size while enhancing and preserving the park's main attractions. This report has been prepared by a team of Civil Engineering students from the University of Iowa: Riley Cranston, Jessie McElwain, Kristine Eischeid, and Rod Knutson. All team members have had internships or full-time jobs within the civil engineering field.

Figure 1: Riverview Park via Google Maps

Riverview Park, as shown above, is home to the LumberKings baseball field, a municipal swimming pool, Riverview Bandshell, and Lubbers Fountain. The site currently hosts a wide variety of events in its inviting open spaces. Improvements to the site must support its current functionality. The project was split into subtasks consisting of bandshell enhancements, Lubbers Fountain improvements, a trail system, art exhibits, a permanent restroom that doubles as a storm shelter, and a temporary movie stage.

The park has an existing bandshell that includes a semi-circle hardscape, made up of concrete pavers. Expanding this area to create a larger space for the audience during festival activities would allow for the addition of picnic tables and temporary shading during events. The space surrounding the bandshell is a wonderful setting, which is why capitalizing on this by implementing select improvements will enhance its use and

create space that can be rented for private events, including weddings. In addition to expanding the use of the park, this also creates potential revenue. The selected improvements include a new hardscape with shade structures and a restroom facility that can double as a storm shelter.

For ease of convenience to these selected improvements, a 10-foot-wide trail would be integrated around the east side of the park. The trail would improve access to the site by being ADA compliant and stroller friendly. It would serve as a half a mile loop for fitness walkers and be designed thick enough to permit service vehicles to use it for event setup or emergency vehicle access. An art walk was proposed along the eastern side of this trail that would include 5'x 5' pads constructed with 5" thick concrete pavement to serve as foundations for 3-D art pieces—either temporary pieces that switch out annually or more permanent pieces. Another addition to the trail would be to remove 4th Avenue North and build a 10-foot-wide trail with extended 10-foot bump-outs to allow for vendors and porta-potties. A road located on the far west side of the park would connect LumberKings baseball field, the proposed parking lot, and the Riverview Swimming Pool parking lot. Figure 3 gives a clear image of this proposed road.

Riverview Parks' Lubbers Fountain, located north of the bandshell, is part of an ongoing improvement project. The City has been working with Bay Architects to improve the fountain and sought additional creative suggestions to enhance the visual aesthetics of the area. The inner ring of the fountain is comprised of small rocks, which have created issues with children collecting and throwing the rocks into the fountain. A change to the materials of the inner ring is intended to discourage this and other disruptive activities within the fountain. The fountain also suffers from sedimentation buildup, which we hope to address by adding a felt liner and large riprap.

An empty field and industrial lot on the west side of the park could be landscaped to allow for outdoor movies. The Clinton Parks and Recreation Department owns a blow-up movie screen to use for temporary outdoor movie screenings events. A berm could provide an elevated stage for the blow-up screen large and double as a special seating area for music events. Located to the south of this temporary movie space, as shown in Figure 3, would be a parking lot of up to 143 spaces, five of which would be ADA compliant. This addition reduces the need to use the open field as overflow parking and could generate revenue in the form of paid event parking.

The main challenge of this project was updating an area that could serve both the upcoming festival of an estimated 15,000 to 18,000 attendees while preserving the park's character and its ability to serve smaller, local events. In response to this, the trail, bandshell enhancements, and parking lot would be the most effective improvements to the park to prepare for all types of events. Other constraints and

challenges for this project included the levee that borders the park, as shown in the picture below. This caused the existing Lubbers Fountain to sit below ground elevation, which is not typical. This fountain has issues with sedimentation polluting its waters during heavy rainstorms. The next constraint was that the City of Clinton does not own the large field to the west of 4th Ave Nor, nor the small industrial lot south of that field. There is a potential for the city to take ownership of the land in the future. These areas place constraints on the master plan. First, short-term improvements need to be limited to land currently owned by the city. Second, the industrial lot is classified as a brownfield which must be considered in the design of any improvements in that area.

Figure 2: The levee from ground view

The total project cost for design, administration, and construction was estimated to be $2,271,000.

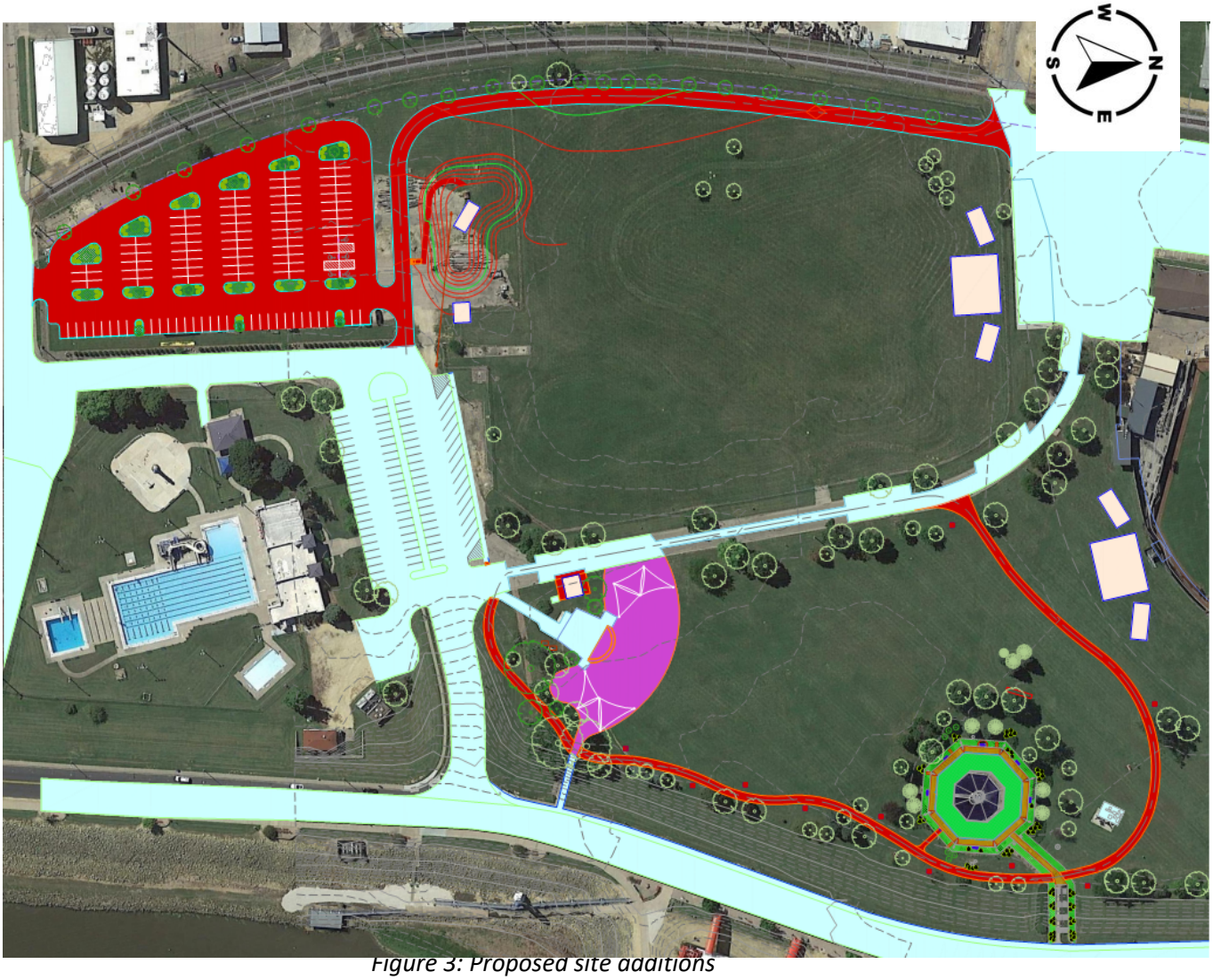


Figure 3: Proposed site additions

II. Organization, Qualifications, and Experience

Our team consisted of four senior Civil Engineering students currently completing our senior design capstone project at the University of Iowa: Riley Cranston, Kristine Eischeid, Rod Knutson, and Jessie McElwain. The project manager for this project was Riley Cranston. More information can be found below about each team member.

Riley Cranston focused on the design of the trail and the art installations. Her past experience included working for the construction management company Bulley & Andrews as a construction management intern where she learned how to efficiently run a project. Currently, she works for the City of Cedar Rapids where she performs sidewalk/trail inspections and was able to use that experience to design this project's trail.

Kristine Eischeid focused on design aspects of the Riverview Bandshell, the temporary staging locations, the redesign of the existing parking lot, and the proposed road to the east of the railroad. Her most recent work experience includes serving as an office manager where she performs a variety of civil site designs, such as street and parking lot designs. This experience, along with her AutoCAD knowledge, has aided in all her designs.

Rod Knutson focused on the design and specifications of the restroom/storm shelter, the berm/outdoor movie theater, and the cost estimate. Currently, he works for Harbor Freight Tools, where he researches and locates the best tools for any project. This experience helped him with all aspects of his designs because he had to research different restroom/storm shelter requirements. He also researched the required area and sight distance for the movie theater projector. While completing the cost estimate, he found the costs relevant to all the materials for this project.

Jessie McElwain focused on the design of Lubbers Fountain and the proposed parking lot. Currently, she works for a civil engineering firm, Bohannan Huston, as an engineer intern and is responsible for reviewing drainage reports and plan sheets. This experience aided her in the design of Lubbers Fountain. She also had previous parking lot drafting experience that helped her to design the proposed parking lot.

III. Design Services

Project Scope

Clinton's Parks and Recreation Department has big plans for Riverview Park to be able to host both local and large-scale festivals such as Tailgate N' Tallboys, so a variety of improvements have been designed to better prepare for such largescale events, while enhancing and preserving the park's main attractions. The desire to update the existing space is to provide greater appeal for the public and to better accommodate future high-volume events. The Riverview Park Master Plan includes seven elements that the City can construct in any order.

Elements Considered and Variances:

The City has been working with Bay Architects to improve Lubbers Fountain and sought additional creative suggestions to enhance the visual aesthetics of the area. Plans include a complete restoration of the surrounding landscape, improvements to control erosion in fountain's inner ring, and the use of riprap and greenery to discourage the public from entering the enclosed fountain area.

Two options were made for temporary stage locations: 1) south of the baseball field, 2) in the empty field on the northwest side of the park. These locations were carefully selected to maximize the music venue experience while preserving the park's character.

The third element was an outdoor movie theater, located in the open field on the west side of 4th Avenue North, consisting of a constructed berm north of the industrial lot to allow space for an elevated inflatable movie screen and a designated seating area. The added berm was a variance from the proposal but offered more uses than the original drive-in movie theater set up.

The fourth element consisted of a 10-foot-wide trail that encompassed the east side of the park. The 4th Avenue North Road would also be removed and converted into a 10-foot-wide trail with 10-foot bump-outs to provide areas for vendors and porta-potties. With the converted road into trail, the park has a complete half-mile loop that

served as a more enticing area for vendors and pedestrians; this idea was not originally sought.

A new road is proposed to connect the southwest corner of LumberKings baseball field parking lot, running parallel along the train tracks and cutting through the field on the south side to connect to the Riverview Swimming Pool parking lot and proposed new parking lot. This road varied from the original proposal because of 4th Avenue North removal. This proposal allowed for emergency access and a continued connection between LumberKings baseball field and the Riverview Swimming Pool.

The industrial lot would be removed and reconstructed into a parking lot providing new parking space for festivals and other large events. This proposed parking lot was a variance from the proposal but offered a large, paved area for vehicles while freeing up the open field previously used as overflow parking. The city can also generate revenue from this parking lot in the form of paid event parking.

The fifth element would involve art installations. There were ten potential art foundations located along the east side of the trail that allowed for some unique art to be added to the park.

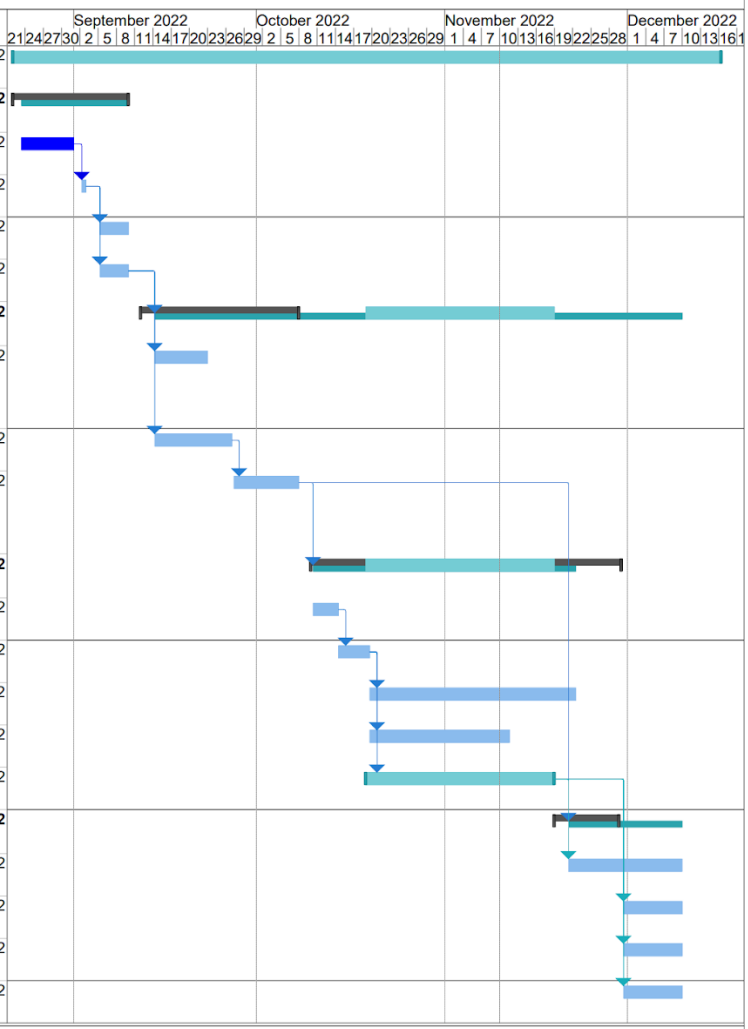
The Riverview Bandshell area, located on the southeast side of 4th Avenue North, was updated with added shade sails and expanded hardscape surface improvements to the ground space directly north of the existing bandshell to allow for more seating and potential use for dancing. The final element included a permanent restroom located on the west side of the bandshell, which would also function as a storm shelter. The storm shelter aspect was a variance from the proposal, but it served as a source of funding for this project, along with the provided safe space for pedestrians in case of extreme weather events.

Work Plan

The team created a Gantt chart, shown in Figure 4, which includes phases, start and end dates, and durations of important components of the project. The Gantt chart was used to help ensure that everyone stayed on track. Everyone contributed to most of the design tasks; however, some of them were only completed by the project manager.

Clinton, IA- Festival Grounds Project **CMEK**

ID	Task Name	Start	Finish
1	Project Duration	Mon 8/22/22	Fri 12/16/22
2	**Phase I**	**Mon 8/22/22**	**Fri 9/9/22**
3	Initial email and client phone call	Tue 8/23/22	Wed 8/31/22
4	Initial Site visit	Fri 9/2/22	Fri 9/2/22
5	Project Proposal	Mon 9/5/22	Fri 9/9/22
6	Presentation	Mon 9/5/22	Fri 9/9/22
7	**Phase II**	**Mon 9/12/22**	**Fri 10/7/22**
8	Initial email and Teams meeting with architect	Wed 9/14/22	Thu 9/22/22
9	Draft concepts	Wed 9/14/22	Mon 9/26/22
10	Email/schedule and Teams meeting with client, finalize concepts	Tue 9/27/22	Fri 10/7/22
11	**Phase III**	**Mon 10/10/22**	**Tue 11/29/22**
12	Engineering Research	Mon 10/10/22	Fri 10/14/22
13	Final list of entities/agencies used	Fri 10/14/22	Wed 10/19/22
14	Design sheets/Details	Wed 10/19/22	Tue 11/22/22
15	Final Cost Estimate	Wed 10/19/22	Fri 11/11/22
16	Design Report 90% Finished	Wed 10/19/22	Fri 11/18/22
17	**Phase IV**	**Sat 11/19/22**	**Tue 11/29/22**
18	Final design report	Mon 11/21/22	Fri 12/9/22
19	Final design drawings	Wed 11/30/22	Fri 12/9/22
20	Final presentation	Wed 11/30/22	Fri 12/9/22
21	Final Poster	Wed 11/30/22	Fri 12/9/22



Page 1

Figure 4: outlined schedule

IV. Constraints, Challenges, and Impacts

Constraints

Lubbers Fountain and the Blue Fence

Riverview Park is bordered along its eastern edge by a levee that was constructed in 1981. This levee caused the existing Lubbers Fountain to sit below ground elevation. As a result, it has had issues with sedimentation polluting its waters during heavy rainstorms.

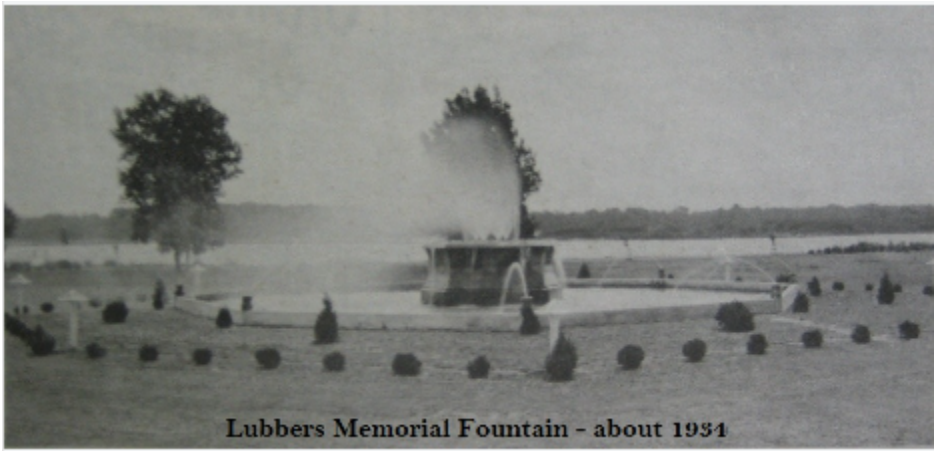


Figure 5: Lubbers Fountain, 1934, before the levee

Figure 6: Lubbers Fountain, 2011, after the levee

Existing Brownfield

The City of Clinton does not own the large field to the west of 4th Ave N, nor the small industrial lot south of that field. There is potential for the city to take ownership of these lots in the future, so these spaces were included in the planning process. These areas place two constraints on the master plan: 1), near term improvements must be limited to land currently owned by the city, and 2) the industrial site is a brownfield, which must be considered in the design of any improvements in that area.

Figure 7: The industrial lot, south of the empty field

Short Turnaround Time

Time was another constraint because the festival is set to take place in June 2023. This project will not be able to be fully completed by then. Therefore, it has been split into multiple phases.

Lack of Precise Surveying Data

The GIS Clinton County, 2-foot and 5-foot contours were used as a general guidance for this project proposal. It is recommended that a full LiDAR survey be conducted on Riverview Park for a more accurate representation of the property.

Challenges

The main challenge of this project was updating an area that could serve both the upcoming festival while preserving the park's character and its ability to serve smaller and more local events. The next challenge was the small fence that creates a perimeter around the fountain. Its age and unique decorative features contribute to the character of the fountain and the client desires that it be protected and preserved. Another challenge was the potential addition of plants on or near the riprap that surrounded the fountain. Plants must be low-lying, able to survive off very little dirt, be in direct sun, and require as little maintenance as possible because this area would be difficult to walk on by landscapers.

Societal Impact

Our project is a part of a growing effort to bring tourism and revenue into the City of Clinton. It also contributes to an effort to improve a space that has already been developed and enjoyed as a park. The festival that will take place at Riverview Park is estimated to bring up to $4 million dollars of revenue. The City has already paid $1.5 million to the festival promoters, as stated by *Quad Cities Regional Business Journal*.

Figure 8: Lubbers Fountain with blue fencing surrounding it

V. Alternative Solutions That Were Considered

Overall Concept

As there were multiple moving parts to this site design, the overall concept for Riverview Park had many options. Outlined below are the alternatives considered for the major design elements.

1. Lubbers Fountain
    a. Fountain Enclosed Area Landscaping: There were three alternative designs provided to the client for the inner fountain ring. The first one showed the entire area consisting of low-lying plants. The next design was a combination of riprap and plants placed at particular spots. The last design was all riprap with a felt liner below and the option for plants on top of the riprap.
        - The team went with the area comprised completely of riprap with the option of low-lying plantings on top. This will provide more sedimentation and erosion control while also serving as a deterrent to people entering the area.
    b. Fountain Landscaping: The area extending past the sidewalk of the fountain had two design alternatives. The first involved removing existing shrubs and overgrown plants and adding new trees and bushes. The next design consisted of leaving the existing plants and pruning them and adding a few new plants to the area.
        - It was decided to remove an eight-foot perimeter around the sidewalk of any existing plants and to propagate Karl Forester grass and Juniper trees. This was for the purpose of establishing a low maintenance area that would bring new greenery into the park.
2. Trail: Currently, there is no ADA accessible route from the sidewalk along Riverview Drive to Riverview Park warranting further planning and design.
    a. ADA access: The team considered creating a connection from the sidewalk along Riverview Drive to the bottom of the northern staircase as an ADA-accessible entrance to the proposed park trail. The levee made this a less appealing option. A walkway would also take up a portion of green space used in a number of summertime events, as pointed out by our client during a concept meeting.
    b. Connections to Existing Stairwells and to Fountain: In some early concepts of the trail, it connected to both of the staircases located along the levee and the Lubbers Fountain area. The trail was scaled down from encompassing the whole park to just the east side around the bandshell and Lubbers Fountain and being ADA compliant and serviceable to emergency service vehicles.

c. East and West side: An alternative trail design the team strongly considered was one encompassing the whole park—both the east green space and the west. This trail would have been just over half a mile long. Later in the design process, it was decided to scale back this trail to only encompass the eastside of the park.
    - It was decided to go with a loop that encompassed the east side of the park because this was where the main attractions were and it still provided pedestrians with a half-mile, ten-foot-wide walking trail along with service from emergency service vehicles.

3. Drive-In Set-Up
    a. Stage: Construction of a temporary stage on the northwest side of the park was discussed throughout the concept design as an opportunity to host drive-in movies at Riverview Park.
    b. The Berm: Located on the southwest side of the park a six-foot berm would be constructed and used as a stage for the temporary movie screen. This berm also served as a space for elevated seating and standing for future festivals
        - The berm was chosen as the final option because it provided a low-maintenance multi-use space for the park.
4. Permanent Restroom/Storm Structure
    a. Alternative Locations: We considered a number of locations for the restroom, with many plans focusing on the west side of the park and the southeast corner near the parking lot. Unclear property lines and easements on the westside led us to believe the best option would be behind the bandshell and adjacent to the trail.
        - The team went with the last alternative to place the restroom between the bandshell and proposed trail because it provided an easily accessible location while also being out of the way of existing pipelines.
    b. Alternative Design Options: Our team looked at creating a combined restroom and storm shelter for the site, but. For this exercise we could not design our own structure, so we looked into multiple prefabricated options.
        - The team went with a prefabricated 21 feet by 25 feet restroom structure, with 8-foot-wide sidewalks extended to the sides of the building. This structure was equipped with 6 stalls, including 4 ADA compliant and 2 family units. Having the restroom serve as a storm shelter also provided safety to pedestrians in case of a severe weather event, and it would allow for government funding.

c. Shelter Attachment/Picnic Area: Our team looked at creating an attached outdoor shelter that would serve to protect from general weather events. It could have also been used as a covered picnic area for the park.
   - ➢ It was decided not to go with this idea because there were already other opportunities for temporary shaded structures that would not permanently limit individuals from being able to see the whole park.

5. Bandshell Hardscape

The hardscape layout went through various sizes and shapes. The most notable design was one that would have mimicked the city's famous wave logo, but the concept did not fit the park's layout or theme.

- ➢ The team designed a half-circle that would allow for large temporary shading structures, seating, and a potential dance area for private events. There was also another small circular paved area near the bandshell that would allow for more private events. The purpose of expanding the paved bandshell area was to allow for a variety of events and a more user-friendly space. Figure 9: shows what the hardscape would look like.

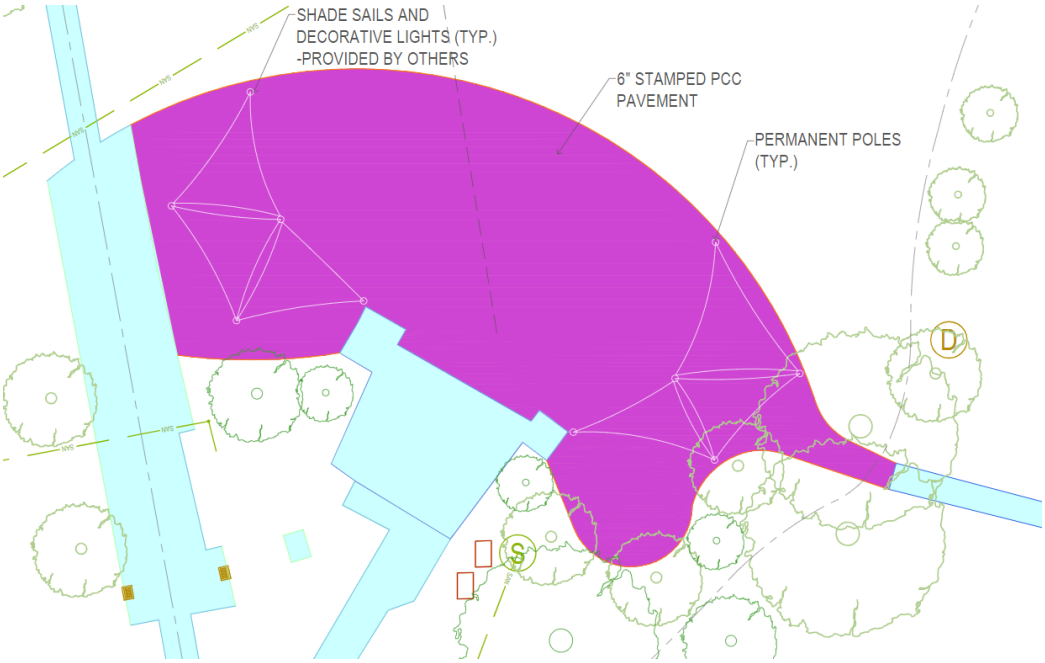


Figure 9: The bandshell hardscape and shade structures

6. Shade Structures
   a. Varying elevations: At the beginning of the design process, our team looked at having the shade structures all the same height, which would have been about 20 feet.

- It was decided to go with varying heights for the structures to prevent visual obstruction.

b. Varying Locations: Our team suggested groups of three to four shade structures located throughout the east side of the park.
   - Our team decided to go with six temporary shade structures that could be rearranged to allow for more or less shade, which would provide the city or private events for more unique and personal designs.

7. Art Installations

For the discussed art walk, one of our original designs had 15 potential art installations along the entire trail loop which would have encompassed both the east and westside. Our team changed this design because it took up too much green space and since it is a new element for the park, it is the costs, management, and popularity are unknown. Another option was to have ten art foundations located along the east side of the trail.

- It was decided to go with ten art foundations located along the east side of the trail. This gave the city the opportunity to decide which locations they liked and how many pads they want constructed.

VI. Final Design Details

With nine different components to the final site design, this project had a multitude of moving parts.

1. Lubbers Fountain: The design objectives for this project included redesigning the fenced-in area of the fountain and clearing an 8’ perimeter surrounding the sidewalk. The purpose of these redesigns was to reduce the amount of sedimentation entering the fountain, improve the visual aesthetics, and replacing the existing groundcover with something other rocks. The purpose of clearing some of the existing plants was to update the Lubbers Fountain area and make it more inviting.
    a. Riprap and Sedimentation Control: The first major design component for the fountain included removing the existing landscaping and adding one layer of riprap to the inner ring. The layer would consist of riprap ranging from 8” to 18” in size and 2’ in depth. The new landscaping would consist of a geotextile fabric and a layer of varying sizes of riprap to help reduce sedimentation from accumulating in the fountain.
    b. During the construction of the inner ring, one segment of the fence can be removed to reduce any potential damage that could be done to the fencing. There is also existing stamped concrete surrounding the fountain and perimeter of the fence. If this concrete cracks or breaks during construction, it is something that the contractor will need to replace.
    c. Eight-foot Clearance: An 8’ perimeter surrounding the edge of the stamped sidewalk would be cleared of existing plants and replaced with grass to keep the area low maintenance and improve the aesthetics.
    d. Proposed Greenery: Juniper trees and Karl Foerster grass would be planted around the fountain to add to the mature existing trees.
2. Trail: To make Riverview Park more appealing to the public, an ADA accessible trail that encompassed the park’s main attractions of Riverview Bandshell and Lubbers Fountain was added to the design.
    a. ½ Mile Trail: The client expressed interest in having a trail with exact distance for those who wish to use it for recreational.
    b. Connections to existing stairwells and Lubbers Fountain: We thought it was best to connect the trail to the existing staircase that connects the sidewalk along Riverview Drive to the Lubbers Fountain area. We included this connection to

encourage pedestrians to come into the park by having a clear and walkable path that was visible to those on the street. From the fountain, the trail travels parallel with the levee to the south and then turns back east to connect to the southern staircase before wrapping behind the bandshell and ending at the parking lot.

3. Trail with Bump-Outs: The loop on the northeast side of the park connects to what is known as 4th Avenue N, splitting the park and connecting the south parking lot to the Lumber Kings Ball Field parking lot. In our final design, we turned the road into a 10' trail with 10’ bump-outs for vendors.
4. Drive-In Set-Up: With upgrades to the park, the client had in mind events that can be held at the park to boost interest in the area. The Clinton Parks and Recreation Department currently owns a blow-up movie screen to use for future outdoor movie theater events.
    a. Movie Screen: The final placement of the movie screen is in the southwest corner of the west side of the park. The screen will also be placed on top of a newly constructed berm.
    b. The Berm: During the concept meeting with our client the idea of an elevated space was discussed. Our team decided to design a berm for the southwest corner of the west side of the park. The berm will have a 4:1 slope and be 6’ high. We also designed a service ramp from the proposed road to the top of the berm for ease of assembly. Lastly, there would be three 20 AMP electrical boxes placed at the top of the berm.
    c. Temporary Children's Play Area: A temporary children’s play area that would include items such as a bouncy house is proposed to be located right next to the proposed trail, currently known as 4th Avenue North.
5. Permanent Restroom/Storm Shelter: To better serve daily park users and to reduce event reliance on portable restrooms, a permanent restroom was seen as a necessity.

    With the expansion of the bandshell hardscape and its potential to be used as a wedding venue, we decided to place the restroom behind the bandshell and adjacent to the trail. The restroom structure has a total of six stalls, four of which are ADA compliant, and one is family style. The doors to each individual stall will be perpendicular to the neighboring trail, so there will be sidewalk bordering the two sides of the structure. The building’s dimensions are 25’ by 21’. Also, as shown in appendix D: Iowa Flood Maps, the levee has mitigated the flood risk imposed on the multipurpose restroom.
6. Bandshell Hardscape: With the incoming festival, the client expressed interest in an upgraded and expanded hardscape to offer a larger dance area.

As we looked at different ways to expand the bandshell hardscape our client proposed having part of the hardscape serve as a possible wedding venue. With this suggestion, our final design ended up being a hardscape that mimicked the arc of the current surface in front of the bandshell. The new hardscape expands to reach the edge of the trail to the west and flows to the east to connect to the existing southern staircase. Then to the east of the bandshell, the surface curves to create a secluded semi-circular area to serve as the wedding venue. The hardscape would be constructed with a stamped 6” concrete pavement with a 4” granular base.

7. Shade Structures:

   To elevate the park experience during an event we decided to add tall shade structures as the area does not have many shaded spaces. The purpose of this was to add more depth to the view of the park from Riverview Drive. These shade structures can be removed, and they create lighting opportunities for special events. Our final design stages the height of multiple triangular shades above the bandshell hardscape.

8. Art Installations:

   To upgrade the park experience, an art walk portion of the trail was proposed along the eastern side of the walk. These 5’ by 5’ pads would be made with 5” concrete pavement and are proposed to act as permanent art foundations for temporary or permanent work created by local artists.

9. Temporary Stage Locations:

   In our final design we have two recommendations for temporary staging for the Tailgate N’ Tallboys festival. The first option allows the festival to be held solely on the east side of the park near the neighboring baseball field. The second option is on the northwest side of the park and offers a spacious area away from the existing bandshell. The second design could increase overall event capacity.

10. Parking Lot:

    A parking lot would be constructed on the current industrial lot. It would consist of 143, 10-foot-wide parking spaces, including five that are ADA compliant. It would be constructed with a 7” paved concrete and 5” subbase. This parking lot would reduce the need to use the west side field as overflow parking and provide more event space. When the parking lot would not be in use it could still serve as a multipurpose space as well.

VII. Engineers Cost Estimate

Groundwork				
ITEM	QUANTITY	UNIT	UNIT PRICE	TOTAL
TOPSOIL, FURNISH AND SPREAD	577	CY	$ 29.00	$ 16,700.00
COMPACTING BACKFILL ADJACENT TO STRUCTURES	42	CY	$ 17.50	$ 735.00
TOTAL				$ 17,435.00
20% CONTINGENCY				$ 3,487.00
9% ENGINEERING DESIGN AND ADMIN				$ 1,569.15
TOTAL ELEMENT COST				$ 22,500.00

Bandshell Improvement				
ITEM	QUANTITY	UNIT	UNIT PRICE	TOTAL
STAMPED P.C. CONCRETE, 6 IN.	2015	SY	$ 78.00	$ 157,000.00
SHADE SAIL	6	EACH	$ 550.00	$ 3,300.00
SHADE SAIL POLE	10	EACH	$ 1,750.00	$ 17,500.00
TOTAL				$ 177,800.00
20% CONTINGENCY				$ 35,560.00
9% ENGINEERING AND ADMIN				$ 16,002.00
TOTAL ELEMENT COST				$ 229,500.00

Restroom/Storm Shelter				
ITEM	QUANTITY	UNIT	UNIT PRICE	TOTAL
GRANULAR SUBBASE, 4 IN.	58	SY	$ 9.75	$ 570.00
SIDEWALK. P.C. CONCRETE, 7 IN.	97	SY	$ 81.00	$ 7,900.00
RESTROOM INSTALLATION	1	N/A	$ 66,600.00	$ 66,600.00
UTILITY INSTALLATION	1	N/A	$ 11,500.00	$ 11,500.00
TOTAL				$ 86,570.00
20% CONTINGENCY				$ 17,314.00
9% ENGINEERING AND ADMIN				$ 7,791.30
TOTAL ELEMENT COST				$ 111,500.00

West Drive				
ITEM	QUANTITY	UNIT	UNIT PRICE	TOTAL
STANDARD FORM PORTLAND CEMENT CONCRETE, 7 IN.	2246	SY	$ 77.00	$ 173,000.00
GRANULAR SUBBASE, 4 IN.	2246	SY	$ 9.75	$ 21,900.00
CURB AND GUTTER, P.C. CONCRETE, 6.0 FT.	1500	LF	$ 86.00	$ 129,000.00
TOTAL				$ 323,900.00
20% CONTINGENCY				$ 64,780.00
9% ENGINEERING AND ADMIN				$ 29,151.00
TOTAL ELEMENT COST				$ 418,000.00

Lubbers Fountain				
ITEM	QUANTITY	UNIT	UNIT PRICE	TOTAL
TAYLOR JUNIPER TREE	50	EACH	$ 75.00	$ 3,750.00
KARL FOERSTER GRASS	20	GAL	$ 23.00	$ 460.00
GEOTEXTILES	595	SY	$ 2.00	$ 1,200.00
RIPRAP	331	TON	$ 40.00	$ 13,200.00
TOTAL				$ 18,610.00
20% CONTINGENCY				$ 3,722.00
9% ENGINEERING AND ADMIN				$ 1,674.90
TOTAL ELEMENT COST				$ 23,800.00

Walking Trail				
ITEM	QUANTITY	UNIT	UNIT PRICE	TOTAL
RECREATIONAL TRAIL, PORTLAND CEMENT CONCRETE, 6 IN.	1650	SY	$ 65.00	$ 107,000.00
SIDEWALK, P.C. CONCRETE, 5 IN.	28	SY	$ 52.00	$ 1,450.00
REMOVAL OF CURB	7	STA	$ 890.00	$ 6,175.00
ASPHALT REMOVAL	16101	SF	$ 2.00	$ 32,200.00
3 IN. HOT MIX ASPHALT MIXTURE	1789	SY	$ 16.00	$ 28,600.00
TOTAL				$ 175,500.00
20% CONTINGENCY				$ 35,100.00
9% ENGINEERING AND ADMIN				$ 15,795.00
TOTAL ELEMENT COST				$ 226,500.00

Berm Construction				
ITEM	QUANTITY	UNIT	UNIT PRICE	TOTAL
SOIL TESTING	1	N/A	$ 3,100.00	$ 3,100.00
SIDEWALK, P.C. CONCRETE, 4 IN.	79	SY	$ 55.00	$ 4,375.00
BERM FILL	2115	CY	$ 14.00	$ 29,600.00
GRADING	1	N/A	$ 7,500.00	$ 7,500.00
TOTAL				$ 44,600.00
20% CONTINGENCY				$ 8,920.00
9% ENGINEERING AND ADMIN				$ 4,014.00
TOTAL ELEMENT COST				$ 57,500.00

Parking Lot				
ITEM	QUANTITY	UNIT	UNIT PRICE	TOTAL
STANDARD FORM PORTLAND CEMENT CONCRETE, 7 IN.	7806	SY	$ 77.00	$ 601,000.00
GRANULAR SUBBASE, 4 IN.	7806	SY	$ 9.75	$ 76,000.00
CURB AND GUTTER, P.C. CONCRETE, 6.0 FT.	1323	LF	$ 86.00	$ 114,000.00
3 IN. HOT MIX ASPHALT MIXTURE	7806	SY	$ 16.00	$ 125,000.00
TOTAL				$ 916,000.00
20% CONTINGENCY				$ 183,200.00
9% ENGINEERING AND ADMIN				$ 82,440.00
TOTAL ELEMENT COST				$ 1,181,500.00

TOTAL PROJECT COST	$ 2,270,800.00

*Estimation for the cost of land acquisition could not be calculated due to lack of information on agreements that may already be in place. Along with the value of a property potentially compromised by a brownfield is difficult to do without more specific environmental information.

Appendix A: Bibliography

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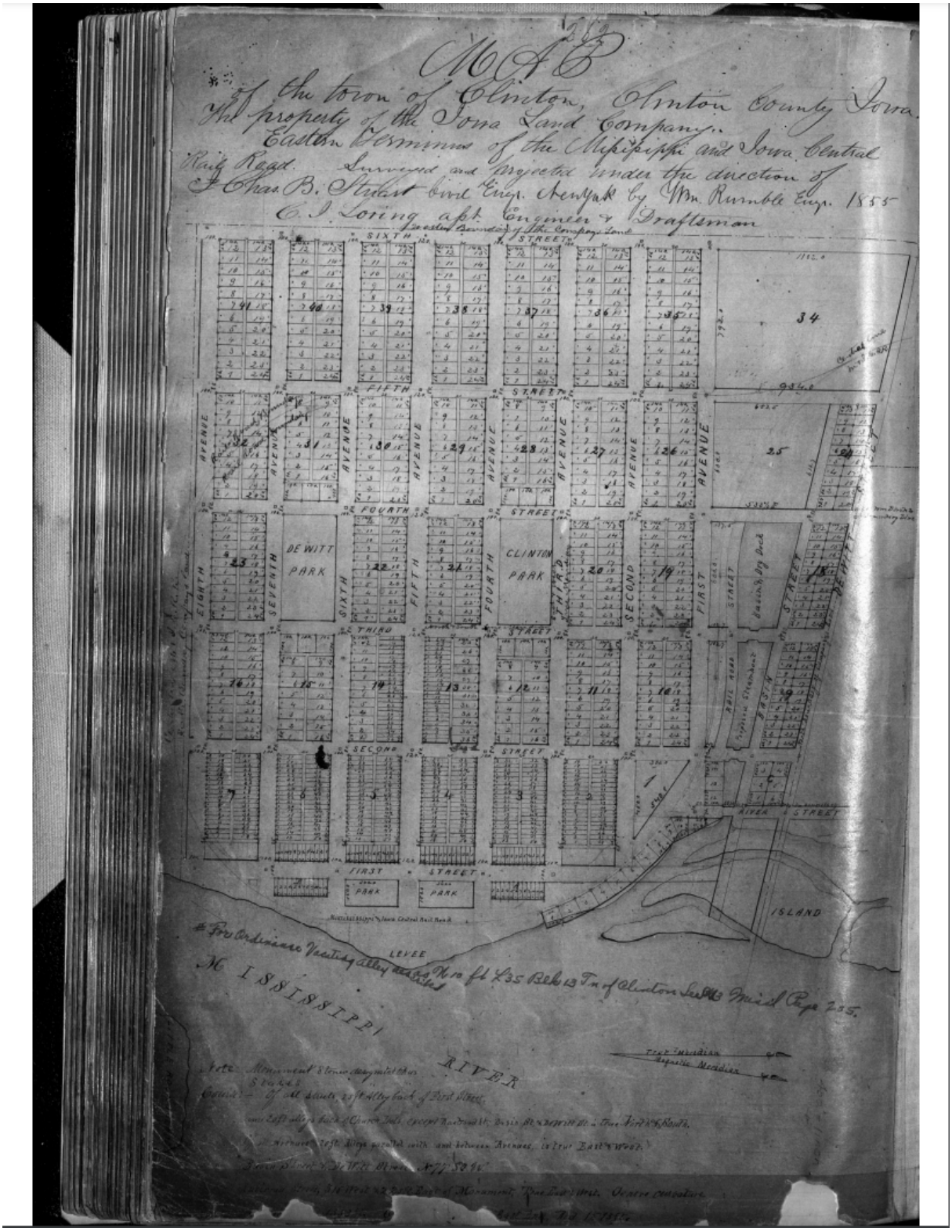
Appendix B: Maps

UTILITY MAP

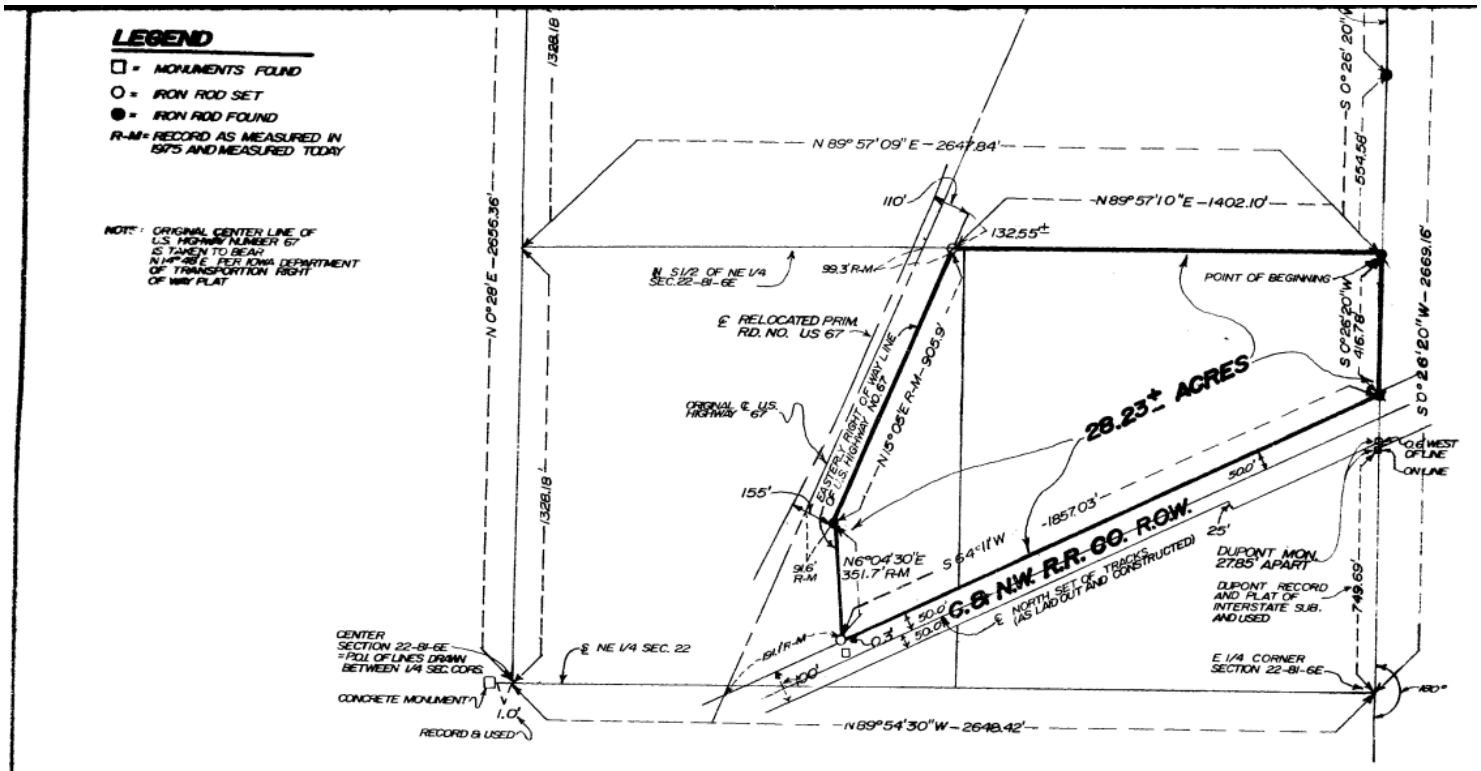

RIVERVIEW DR.
Sanitary/Combined System
Lift Station
Abandoned Overflow
Collector
Interceptor
Storm System
Detention Basin
Manhole
Storm Sewer
Manhole
Node
Active Overflow
Force Main
Overflow
Catch Basin
Gate Well
Pump Station

Appendix C: Property Boundaries

RAILROAD PROPERTY BOUNDARIES



THE RAILROAD PLAT OF SURVEY



PLAT OF SURVEY
FOR INTERSTATE POWER COMPANY

A tract of land situated in the South one-half of the Northeast Quarter of Section 22, Township 81 North, Range 6 East of the 5th P.M. and within the City of Clinton, Clinton County, Iowa; described as commencing as a point of reference at a one inch iron rod stake over an iron beam monument marking the Northeast corner of said Section 22; thence South 00°26'20" West, along the East line of said Section 22, a distance of 1334.58 feet to an iron rod stake at the Northeast corner of said South one-half of the Northeast Quarter of Section 22, being located 1334.58 feet North 00°26'20" East from the East Quarter corner of said Section 22, and marking the point of beginning of the land herein intended to be described; thence continuing South 00°26'20" West, along the said East line of Section 22, a distance of 416.78 feet to an iron rod stake on the Northerly right of way line of the Chicago and Northwestern Railroad Company; thence South 64°11' West, along the said Northerly right of way line of the Chicago and Northwestern Railroad Company, being a line 50.0 feet normally distant Northerly from the center line of the most Northerly existing railroad track as laid out and constructed, a distance of 1857.03 feet to an iron rod stake on the Easterly right of way line of U.S. Highway Number 67; thence North 06°04'30" East, along said Easterly right of way line of U.S. Highway Number 67, a distance of 351.7 feet to an iron rod stake; thence North 15°05' East, along said Easterly right of way line of U.S. Highway Number 67, a distance of 905.9 feet to an iron rod stake on the North line of said South one-half of the Northeast Quarter of Section 22; thence North 89°57'10" East, along the said North line of the South one-half of the Northeast Quarter of Section 22, a distance of 1402.1 feet to the point of beginning. Containing 28.23 Acres of land, more of less. The Original center line of U.S. Highway Number 67 is taken to bear North 14°48' East per Iowa Department of Transportation right of way plat.

7450-C

CLINTON COUNTY, IOWA
OFFICE OF RECORDER
1990 DEC 18 PM 2:06
FEE

Appendix D: Standards and Requirements

SOIL PROPERTIES

Engineering Properties

This table gives the engineering classifications and the range of engineering properties for the layers of each soil in the survey area.

Hydrologic soil group is a group of soils having similar runoff potential under similar storm and cover conditions. The criteria for determining Hydrologic soil group is found in the National Engineering Handbook, Chapter 7 issued May 2007(http://directives.sc.egov.usda.gov/OpenNonWebContent.aspx?content=17757.wba). Listing HSGs by soil map unit component and not by soil series is a new concept for the engineers. Past engineering references contained lists of HSGs by soil series. Soil series are continually being defined and redefined, and the list of soil series names changes so frequently as to make the task of maintaining a single national list virtually impossible. Therefore, the criteria is now used to calculate the HSG using the component soil properties and no such national series lists will be maintained. All such references are obsolete and their use should be discontinued. Soil properties that influence runoff potential are those that influence the minimum rate of infiltration for a bare soil after prolonged wetting and when not frozen. These properties are depth to a seasonal high water table, saturated hydraulic conductivity after prolonged wetting, and depth to a layer with a very slow water transmission rate. Changes in soil properties caused by land management or climate changes also cause the hydrologic soil group to change. The influence of ground cover is treated independently. There are four hydrologic soil groups, A, B, C, and D, and three dual groups, A/D, B/D, and C/D. In the dual groups, the first letter is for drained areas and the second letter is for undrained areas.

The four hydrologic soil groups are described in the following paragraphs:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

Depth to the upper and lower boundaries of each layer is indicated.

Texture is given in the standard terms used by the U.S. Department of Agriculture. These terms are defined according to percentages of sand, silt, and clay in the fraction of the soil that is less than 2 millimeters in diameter. "Loam," for example, is soil that is 7 to 27 percent clay, 28 to 50 percent silt, and less than 52 percent sand. If the content of particles coarser than sand is 15 percent or more, an appropriate modifier is added, for example, "gravelly."

Classification of the soils is determined according to the Unified soil classification system (ASTM, 2005) and the system adopted by the American Association of State Highway and Transportation Officials (AASHTO, 2004).

The Unified system classifies soils according to properties that affect their use as construction material. Soils are classified according to particle-size distribution of the fraction less than 3 inches in diameter and according to plasticity index, liquid limit, and organic matter content. Sandy and gravelly soils are identified as GW, GP, GM, GC, SW, SP, SM, and SC; silty and clayey soils as ML, CL, OL, MH, CH, and OH; and highly organic soils as PT. Soils exhibiting engineering properties of two groups can have a dual classification, for example, CL-ML.

The AASHTO system classifies soils according to those properties that affect roadway construction and maintenance. In this system, the fraction of a mineral soil that is less than 3 inches in diameter is classified in one of seven groups from A-1 through A-7 on the basis of particle-size distribution, liquid limit, and plasticity index. Soils in group A-1 are coarse grained and low in content of fines (silt and clay). At the other extreme, soils in group A-7 are fine grained. Highly organic soils are classified in group A-8 on the basis of visual inspection.

If laboratory data are available, the A-1, A-2, and A-7 groups are further classified as A-1-a, A-1-b, A-2-4, A-2-5, A-2-6, A-2-7, A-7-5, or A-7-6. As an additional refinement, the suitability of a soil as subgrade material can be indicated by a group index number. Group index numbers range from 0 for the best subgrade material to 20 or higher for the poorest.

Percentage of rock fragments larger than 10 inches in diameter and 3 to 10 inches in diameter are indicated as a percentage of the total soil on a dry-weight basis. The percentages are estimates determined mainly by converting volume percentage in the field to weight percentage. Three values are provided to identify the expected Low (L), Representative Value (R), and High (H).

Percentage (of soil particles) passing designated sieves is the percentage of the soil fraction less than 3 inches in diameter based on an ovendry weight. The sieves, numbers 4, 10, 40, and 200 (USA Standard Series), have openings of 4.76, 2.00, 0.420, and 0.074 millimeters, respectively. Estimates are based on laboratory tests of soils sampled in the survey area and in nearby areas and on estimates made in the field. Three values are provided to identify the expected Low (L), Representative Value (R), and High (H).

Liquid limit and *plasticity index* (Atterberg limits) indicate the plasticity characteristics of a soil. The estimates are based on test data from the survey area or from nearby areas and on field examination. Three values are provided to identify the expected Low (L), Representative Value (R), and High (H).

References:

American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.

American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.

Report—Engineering Properties

Absence of an entry indicates that the data were not estimated. The asterisk '*' denotes the representative texture; other possible textures follow the dash. The criteria for determining the hydrologic soil group for individual soil components is found in the National Engineering Handbook, Chapter 7 issued May 2007(http://directives.sc.egov.usda.gov/OpenNonWebContent.aspx?content=17757.wba). Three values are provided to identify the expected Low (L), Representative Value (R), and High (H).

Engineering Properties–Clinton County, Iowa

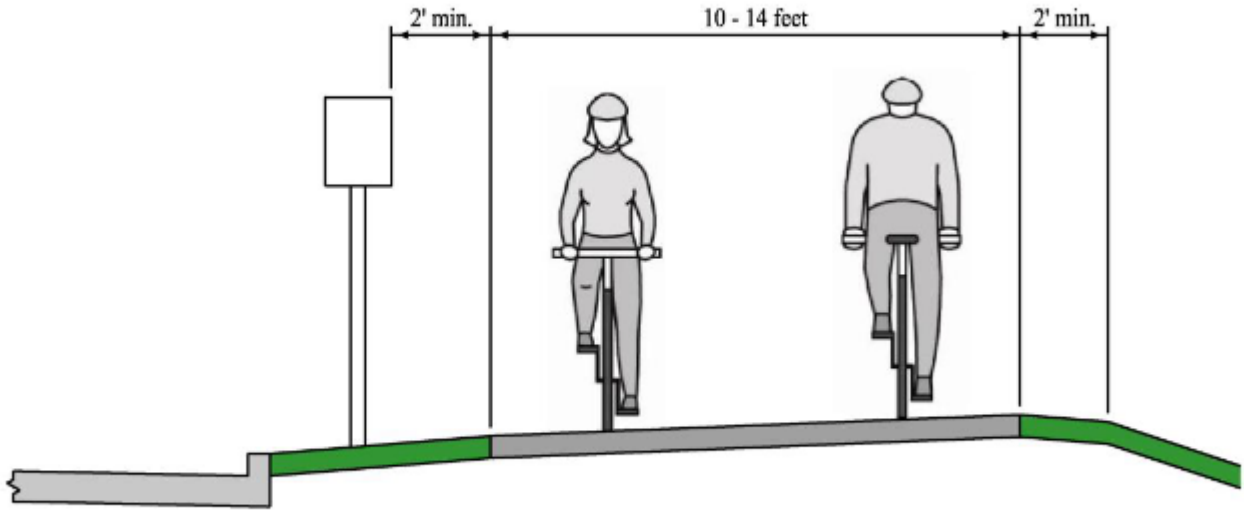
Map unit symbol and soil name	Pct. of map unit	Hydrologic group	Depth	USDA texture	Classification		Pct Fragments		Percentage passing sieve number—				Liquid limit	Plasticity index
					Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
			In				*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*
159—Finchford loamy sand, 0 to 2 percent slopes														
Finchford, rarely flooded	100	A	0-31	Loamy sand	SM	A-3, A-2	0- 0- 0	0- 0- 0	85-90-95	70-80-90	50-55-60	5-10- 15	0-7 -14	NP
			31-60	Sand, gravelly sand, loamy sand	SC-SM	A-1	0- 0- 0	0- 0- 0	80-85-90	50-63-75	25-33-40	5- 8- 10	0-7 -14	NP

Data Source Information

Soil Survey Area: Clinton County, Iowa
Survey Area Data: Version 28, Sep 2, 2022

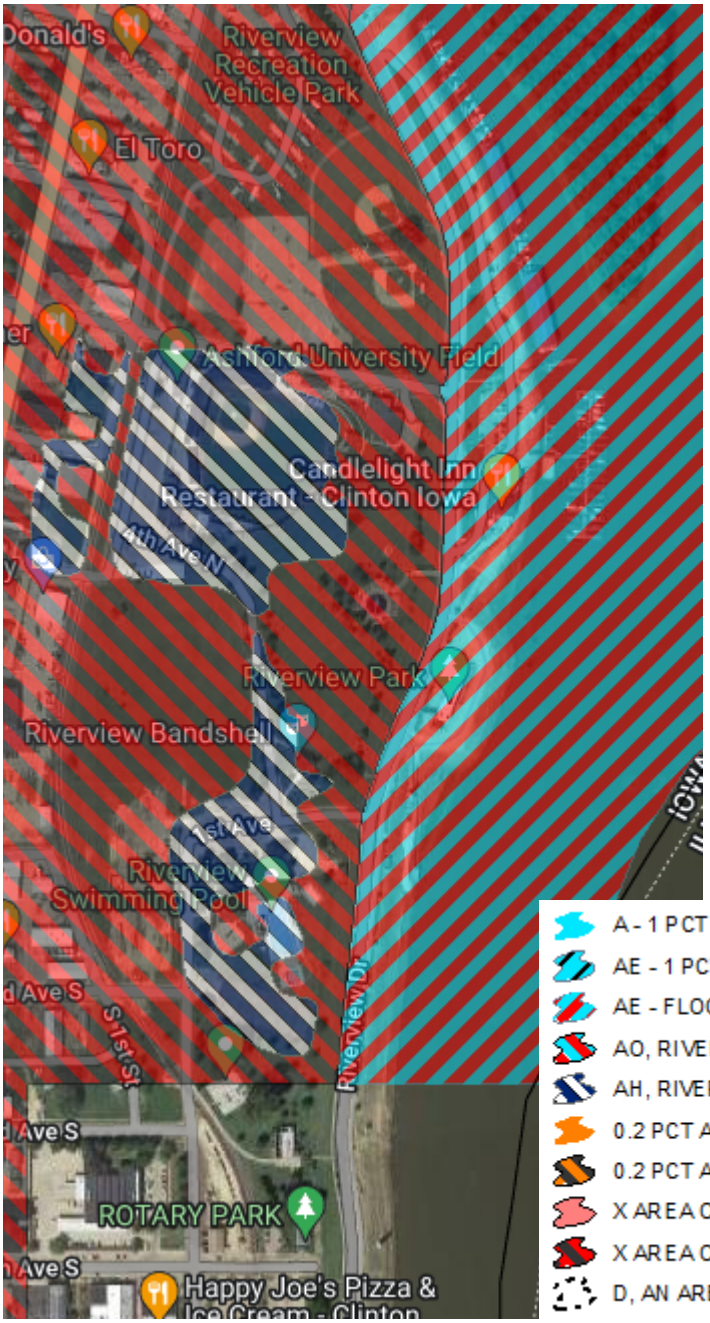
SUDAS: SHARED PATH STANDARDS

Figure 12B-2.01: Typical Cross-Section of Two-Way Shared Use Path on Independent Right-of-Way

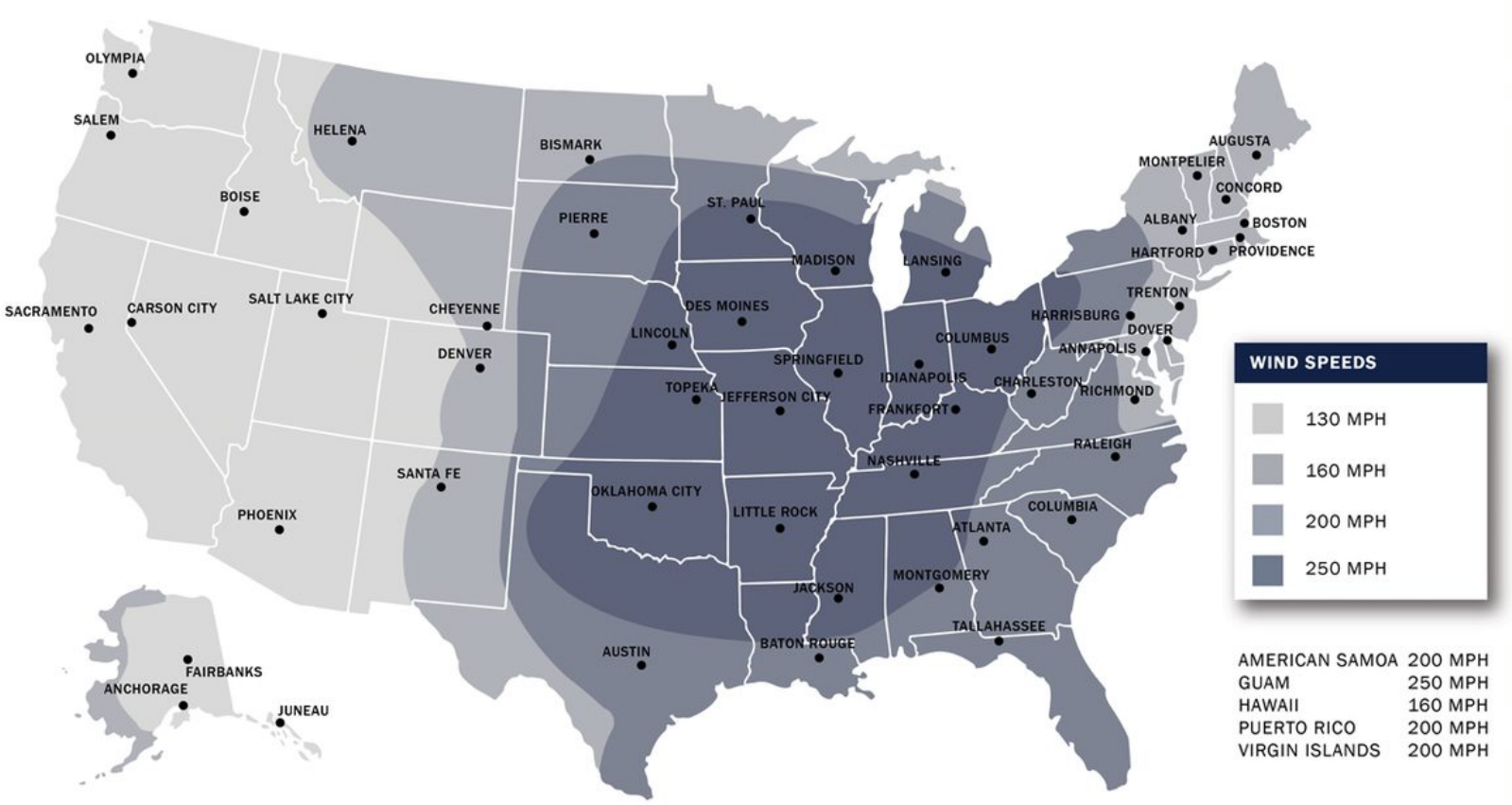


Source: Adapted from *AASHTO Bike Guide* Exhibit 5.1

IOWA FLOOD MAPS



US DESIGN WIND SPEEDS MAP: Designed for 250 MPH



Porta Potty vs. Event Capacity

The ratio found is 1 porta potty for every 50 people for an event upwards of 4 hours long and one handicap accessible stall for every 20 porta potties.

How many port-a-potties do you need?

Number of attendees \ Event length, in hours	1	2	3	4	5	6	7	8	9	10
50	1	1	1	1	2	2	2	2	2	2
100	2	2	2	2	3	3	3	3	3	4
250	2	2	3	3	3	4	4	6	6	8
500	3	4	5	5	5	6	6	7	7	8
1,000	5	7	8	8	9	9	10	10	12	12
2,000	8	13	15	17	18	19	19	19	20	20
3,000	12	19	23	25	28	28	28	30	30	30
4,000	16	24	30	34	36	38	38	38	38	38
5,000	19	32	38	42	44	46	46	48	48	48
6,000	23	38	46	50	54	57	57	60	60	60
7,000	28	42	54	60	63	66	66	66	66	66
8,000	32	48	60	66	72	72	75	78	78	78
10,000	38	60	75	84	88	92	96	96	96	100