

FINAL REPORT

CHAPTER 4. CONNECTIONS BETWEEN THE CAPITOL SQUARE AND LAKE MONONA

CITY OF
MADISON, WI

SOUTH CAPITOL TRANSIT ORIENTED DEVELOPMENT (TOD) DISTRICT PLANNING STUDY

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Background

The 2012 Downtown Plan emphasizes the importance of connecting Downtown Madison with Law Park along the Lake Monona waterfront. Existing access points are limited to the East and West Gateway intersections, which are spaced over half a mile apart. These intersections are discussed in-depth in Chapter 3: Gateway Intersections. Bicyclists and pedestrians traveling along the Capital City Trail through Law Park currently do not have a direct route to enter Downtown Madison. Instead, they must travel east or west of Monona Terrace to make an at-grade crossing of high-traffic John Nolen Boulevard in order to weave into the Downtown core, or they can use an elevator at east side of Monona Terrace (providing access to the top level of the parking ramp and the ground level near the lake path). In addition to connectivity issues, Law Park is narrowed between John Nolen Drive and Lake Monona. The narrow area squeezes recreational space and presents bridge design constraints for determining a touchdown area south of John Nolen Drive.

While the Downtown Plan explored possible bridge concepts to address these issues, the Plan ultimately did not advance alternatives due to the potential impacts concepts had on the lake. Despite these design challenges, connections are needed to provide connectivity for cyclists traveling from the lakeside Capital City Trail to Downtown Madison and to create a connection

between the Lake Monona and the Downtown area in a way that currently does not exist.

The South Capitol TOD District Planning Study looked at a number of alternatives to better connect Downtown Madison with Lake Monona, Law Park, and the Capital City Trail. Through a public process that engaged members of the South Capitol District Planning Committee, City Staff, and members of the general public, connection alternatives were proposed and evaluated.

This chapter includes an overview of the following:

- Design Considerations
- Design Concepts
- Location and Design
- Alternatives Considered
- Refined Alternatives
- Recommendations

Design Considerations

Possible connections between Lake Monona and the Downtown Core are complicated by a number of design constraints unique to the area. The South Capitol TOD District is home to many natural and built features — Lake Monona, Monona Terrace, and the nearby State Capitol Building — that are celebrated by Madison



Figure 1. View from Monona Terrace



Figure 2. Capital City Trail

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residents and visitors alike. It is critical that connection concepts respect and enhance these features.

As such, the following design considerations and constraints were observed in the planning process.

- **Viewshed Preservation:** The State Capitol Building rests at a topographic high point between Madison's Lake Mendota and Lake Monona, creating hallmark views characteristic of the Capital city. It is important that bridge structures do not obstruct these viewsheds
- **Monona Terrace Aesthetics:** Monona Terrace Community and Convention Center is based on a design by renowned architect Frank Lloyd Wright (as originally designed in 1938). It is important that bridge concepts respect and preserve the curvilinear design of the building and ramp slopes complement the structure.
- **Narrow Touchdown Area:** The area between John Nolen Drive and Lake Monona is as narrow as 10 to 15 feet in some areas, making it difficult to design bridge touchdown areas
- **Vertical Clearance:** Bridge concepts need to meet vertical clearance standards of 17 feet 4 inches over roadways and 23 feet over railroads
- **Groundwater Elevation:** Law Park and John Nolen Drive are constructed on areas of fill material along Lake Monona. As such, groundwater resides at elevations relatively close to grade, making underground connection structures (tunnels and underpasses) more costly to construct

Public Priorities

Connection Goals

At the September 2013 Workshop, attendees provided the following feedback on goals for connection concepts.

- Protect views of Downtown/Capitol
- Increase interaction with water
- Increase public open space
- Ensure pedestrian safety on Williamson/Wilson/John Nolen/Blair intersection

Bridge Types

Members of the public were asked to provide input on bridge types. The following are their preferences in order of most to least preferred.

- Simple pedestrian/bike connection (defined as "Narrow Bridge" within this planning study report)
- Extension of Law Park with plaza-like features (defined as "Wide/Plaza Bridge" within this planning study report)
- Urban plaza similar to that of Monona Terrace (defines as "Park/Plaza Structure" within this planning study report)

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In addition to these overarching considerations, the consultant team looked at functional needs regarding snow removal, screens or enclosures, ADA accessibility, and lighting. It was important that concepts accommodate the spatial needs of bicyclists and pedestrians connecting into Downtown from the lakefront. Opportunities to improve lake elements with overlooks, seating, and cafes were considered, as well with plans to tie into Wilson Street redevelopment opportunities.

Design Concepts

In order to identify connection location and design alternatives, the consultant team conducted on-site analysis, an internal design charrette, and meetings with City Staff, Planning Committee, and the public. Early meetings with City Staff were held to understand concepts already evaluated in the 2012 Downtown Plan. The consultant team drove, bicycled, and photographed the corridor to understand the key viewsheds within the area and identify locations where a connection could exist. Members of the Planning Committee and the public were engaged for feedback, and ultimately, nine location alternatives were identified.

Table 1. Bridge Concepts

Bridge Concept	Width	Purpose	Other Features
Narrow Bridge	Less than 20 feet	Connectivity only	Elevated shared path for bicyclists and pedestrians
Wide/ Plaza Bridge	20-150 feet	Connectivity and public plaza space	Seating, café, other amenities, becomes part of a Madison park destination
Park/ Plaza Structure	Greater than 150 feet	Large space for park/ activities and connectivity	Is the destination



Figure 3. Design Concept Locations

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Location and Design

Various connection locations and designs were brought forth to the Planning Committee as shown in Figure 3. Three elevated structure design concepts — narrow bridge, wide plaza bridge,

and park plaza structure — were identified as potentially feasible alternatives. Design alternatives are summarized in Table 1. In addition to those bridge concepts included in the table, underpass and tunnel concepts were also considered. The consultant team determined that a tunnel would encounter significant geometric

Table 2. Location and Design Concepts

Location		Type	Pros	Cons	Lake Impact	Relative Cost
#	Description					
1	East Gateway over Blair Street	Hovering type Narrow Bridge	<ul style="list-style-type: none"> Reduces conflicts at grade within the gateway intersection Provides direct connections to DT and Capitol Provides connections for a well-traveled route 	<ul style="list-style-type: none"> Required vertical clearance over RR creates long ramps Potential visual and visibility issue for adjacent property owners Occupies or eliminates potential green space and gardens 	None	\$\$\$
2/ 3	Wilson and Hancock/ King Streets	Wide Plaza	<ul style="list-style-type: none"> Ties to development / Enhances ground floor space of development Opportunity for “signature” addition to Law Park Opportunity for café space, activated plaza 	<ul style="list-style-type: none"> Touch down requires multi-level ramps/ stairs at Wilson Not ideal for bikes (due to elevation of Wilson Street) Impacts view of Lake from westbound JND 	Fill or structure required within lake for bridge touchdown	\$\$\$
4	Wilson and Butler Streets	Wide Plaza	<ul style="list-style-type: none"> Ties to development / Enhances ground floor space of development Ideal connection location for bikes — based on elevation of Wilson Street Opportunity for café space, activated plaza Connects to Law Park on west side of active park space 	<ul style="list-style-type: none"> Not ideal for cyclist traveling to DT from west due to location Minor potential impact to views of Lake 	Fill improves concept and provides flexibility for bridge touchdown	\$\$\$
5	Monroe Terrace East Side	Park Plaza	<ul style="list-style-type: none"> Opportunity for “signature” destination Ideal connection location for bikes — based on elevation of Wilson Street Opportunity for connection to lake edge Opportunity for structured parking component 	<ul style="list-style-type: none"> Requires significant cost, long term vision/ planning Major impact to views of Lake from JND Creates “tunnel effect” on JND 	Fill and added structure over lake improves concept	\$\$\$\$\$

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and waterproofing challenges as well as potential security concerns. It would further require pumping, which would result in both short- and long-term costs. The consultant team determined that the underpass concept would require raising the elevation of

John Nolen Drive creating significant costs and impacts to vehicle traffic. Possible utility relocation and contaminated soils risk were also tied to both concepts. For these reasons, tunnels and underpasses were not advanced for further study.

Table 2. Location and Design Concepts (Continued)

Location		Type	Pros	Cons	Lake Impact	Relative Cost
#	Description					
6	Monona Terrace (West or East)	Narrow Bridge	<ul style="list-style-type: none"> ▪ Ideal connection location for bikes – based on elevation of Wilson Street ▪ Provides bike/ ped connection to DT/ Capitol ▪ West side concept reduces conflicts at West Gateway 	<ul style="list-style-type: none"> ▪ Requires long run out ramp OR spiral ramp ▪ Not ideal for connectivity to Law Park 	Fill improves concept and provides flexibility for bridge touchdown	\$\$
7	Wilson and Henry Streets	Wide Plaza	<ul style="list-style-type: none"> ▪ Ties to development / Enhances ground floor space ▪ Opportunity for connection to Lake ▪ Opportunity for café space, activated plaza 	<ul style="list-style-type: none"> ▪ Touch down requires ramps/ stairs at Wilson ▪ Not ideal for bikes (not in touch down zone) ▪ Potential impacts to views of Capitol and DT 	Fill improves concept and provides flexibility for bridge touchdown	\$\$\$
8	West Gateway at Broom Street	Narrow Bridge	<ul style="list-style-type: none"> ▪ Reduces conflicts at West Gateway ▪ Direct bike/ ped connection to DT from west ▪ Well-traveled route toward UW from west 	<ul style="list-style-type: none"> ▪ Very challenging touch down north of RR and JND ▪ Potential impacts to views of DT and Capitol ▪ Not ideal for bike connectivity to DT from east 	Fill or structure required within lake for bridge touchdown	\$\$\$
9	West Gateway at North Shore	Narrow Bridge	<ul style="list-style-type: none"> ▪ Eliminates wait to cross JND at North Shore ▪ Bike/ ped connection to DT from west ▪ Well-traveled route toward UW from west 	<ul style="list-style-type: none"> ▪ Clearance over RR creates long touchdown ramps ▪ Potential impacts to views of DT from JND ▪ Not ideal for bike connectivity to DT from east 	Fill or structure required within lake for bridge touchdown	\$
Underpass/ Tunnel Concepts			<ul style="list-style-type: none"> ▪ Requires shorter ramps to reach grade (vs. bridge) ▪ Allows crossing of JND without wait at intersection ▪ No impacts to views of Capitol, DT or lake 	<ul style="list-style-type: none"> ▪ Underpass requires raising elevation of JND or tunnel ▪ Tunnel requires pumping (short/ long term costs) ▪ Security concerns ▪ Potential utility relocation/ contaminated soils 	Depends on location	\$\$\$\$

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Public Process

Members of the public provided their input on the proposed bridge concept locations. Although there was approximately equal preference for a bridge located on the east and west sides of Monona Terrace, several individuals provided arguments against the east side and asked that the Planning Committee consider potential conflicts with the ski show, congestion at the Marina Condos, and impacts on the Capitol viewshed. Additionally, there was significant preference for a bridge adjacent (or connected) to Monona Terrace and on both the east and west sides.

Members of the public expressed their opinions and preferences regarding bridge type, design, and amenities. The Planning Committee and consultant team were asked to consider the bridge as an opportunity for placemaking, to develop bridge concepts that integrate symmetry, to ensure that views of the Downtown and Lake Monona be preserved, and to avoid the loss of park and greenspace. Additionally, there was significant support for developing a bridge concept that would increase interaction with the water and that would serve as an extension of Law Park. Many members of the public expressed a preference for a simple pedestrian/bike connection, while others supported the proposed plaza bridge concept. Almost all members indicated a preference for separating bicycle and pedestrian facilities and supported a concept that would be accessible by a variety of users of all ages and abilities.

Several members of the public indicated apprehension towards planning for a bridge and asked to improve at-grade bicycle and pedestrian crossings instead.

Alternatives Considered

Connection alternatives in nine locations were presented to the Planning Committee in November 2013. These are shown in Table 2 with pros, cons, lake impacts, and relative costs. In November 2013, the Planning Committee endorsed further evaluation of bridge concepts at Locations 3, 4, and 6.

Kenton Peters Concept

The Planning Committee decided not to further study the park plaza concept evaluated at Location 5 because a parallel analysis conducted by local architect and property owner Kenton Peters had already well-developed this concept. The consultant team and Committee determined that the concept was worth further consideration by the public, but the Peters analysis provided ample documentation to understand the implications of a park plaza concept.

Madison Design Professionals Concept

At the May 2014 Planning Committee meeting, Madison Design Professionals presented an alternative concept at the East Gateway. The concept includes a tunnel that allows for

the creation of six acres of parkland, while maintaining the intersection of Wilson and Williamson. The concept was well-received by the Planning Committee and should be considered in further stages of development; however, due to the time it was presented in this study process, the concept was not further evaluated as a part of the SCTOD District Planning Study.

Refined Alternatives







With direction from the Planning Committee to further develop bridge concepts at Locations 3, 4, and 6, the consultant team



Figure 4. Kenton Peters Park Plaza Concept

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Table 3. Refined Alternatives

Loc	Alt	Description	Concept Drawing
3	1	<ul style="list-style-type: none"> Creates unique opportunity for landmark structure Separates bicycle and pedestrian modes within plaza space Uses opposing ramps to create a clock-like overlook structure Formal plaza and sloped turf areas create opportunities for different user groups Creates unique tie into the existing path system 	
3	2	<ul style="list-style-type: none"> Creates an urban plaza deck with varying opportunities for gathering spaces Separates bicycle and pedestrian modes within the plaza space Combines formal lawns with boardwalk and plantings Overlook mimics bow of a ship Ties into the existing path system 	
4	1	<ul style="list-style-type: none"> Builds on existing spiral structure context from Monona Terrace Combines stairs and spiral structure to provide pedestrian option Formal promenade with intimate and larger gathering spaces Creates an overlook to the lake integral to the plaza 	
4	2	<ul style="list-style-type: none"> Creates a grand expression over the water Separates bicycle and pedestrian modes within the plaza Formal central green with water feature adjacent Creates an overlook to the lake and to the Downtown along the path and ties into the existing pathway 	
6	1	<ul style="list-style-type: none"> Responds to existing nature of waterfront and promenade Overlooks representative of ship's bow Encourages pedestrian and bicycle safety when merging at grade Gathering space at end of ramp creates a natural caution area encouraging thought before proceeding 	
6	2	<ul style="list-style-type: none"> Builds on existing spiral structure context from Monona Terrace Gathering spaces around the spiral structure and overlook Minimal or no encroachment into existing water edge Checkpoint creates a natural caution area encouraging thought before proceeding through Elements can be designed to blend with Monona Terrace 	

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developed two alternatives at each location. These concepts are shown in Table 3. Refined concepts were presented to the Planning Committee at the December 2013 meeting. The Planning Committee voted to advance development of the following concepts:

- Location 6, Alternative 2 on the west side of Monona Terrace with Location 4, Alternative 1
- Location 6, Alternative 2 on both the east and west sides of Monona Terrace
- Modified Location 4, Alternative 1 located at location 3

Recommendations

Following the Planning Committee's decision, the consultant team developed the three advanced concepts shown in Figures 5 – 9. These concept images provide a sense of what can be constructed in these specific locations to provide connectivity for pedestrians and bicyclists and, in the case of the plaza bridge concept, provide a space that can be activated while providing an extension of Law Park over John Nolen Drive.

The plaza bridge concept will further create additional green space on the elevated structure. The concept shown in Figures 9 and 10 could be wider and greener to maximize this benefit. While the simple connection concept provides a transportation benefit, there are aesthetic implications of its close proximity to Monona Terrace that should be considered in further stages of development.

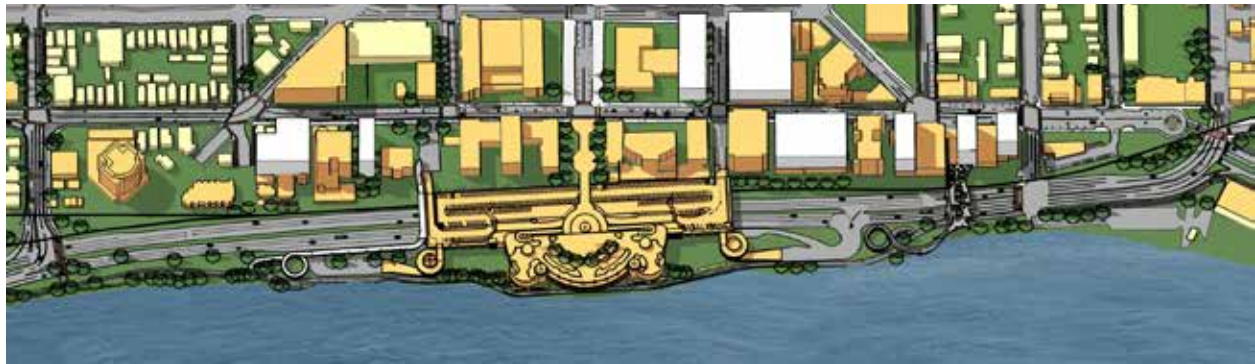


Figure 5. Simple Connection (West) and Plaza Bridge (East) Concepts

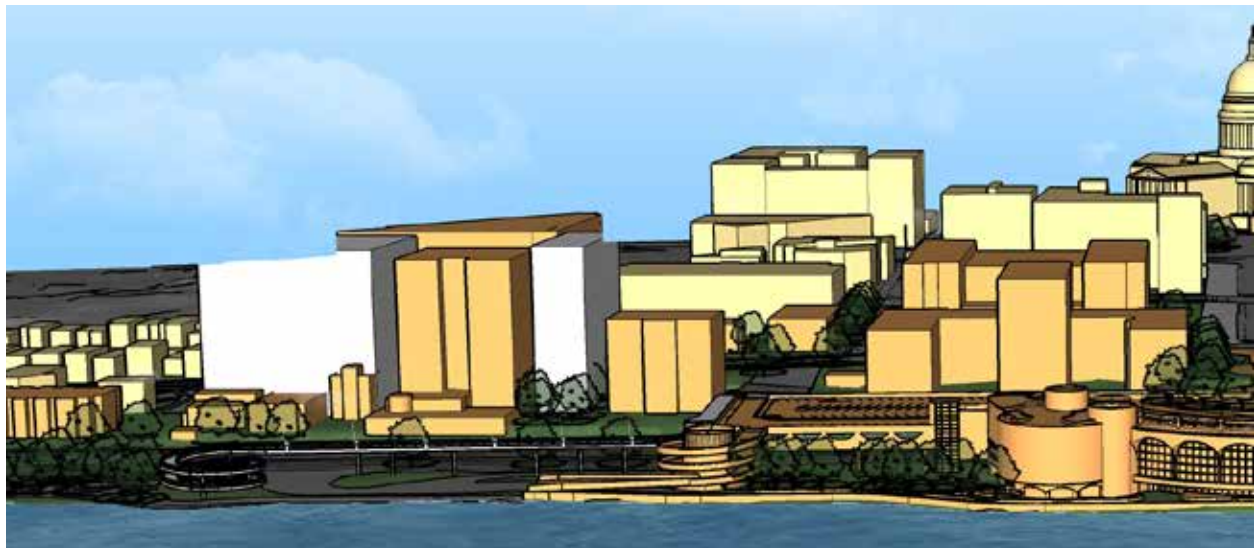


Figure 6. Mirror Bridge Concept

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Figure 7. Plaza Bridge Concept



Figure 9. Plaza Bridge Concept



Figure 8. Plaza Bridge Concept

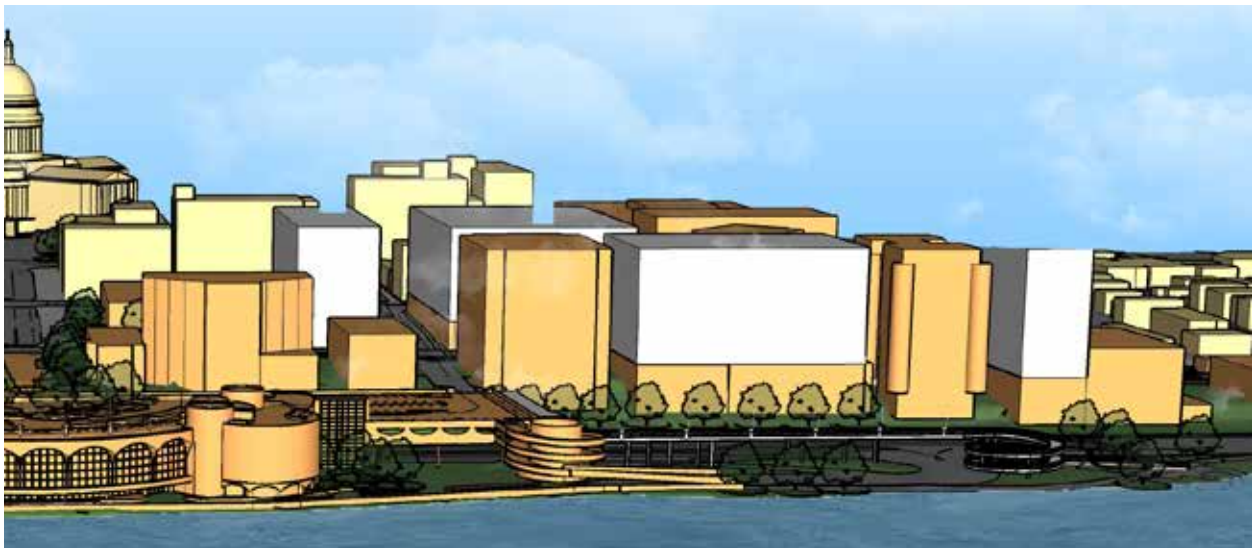


Figure 6. Mirror Bridge Concept (Continued)

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Figure 10. Plaza Bridge Concept

The consultant team developed many concepts for connective structures that either included extensions of elevated structure out over Lake Monona. In most locations, concept options were enhanced by potential relocation of the lake edge. The Consultant Team recognizes that fill efforts would require a significant and

potentially lengthy regulatory process, but recommends that lake edge modifications be considered to enhance the design concepts.

It is recommended by the Consultant Team that specially designed signage be installed at bridge improvements to improve wayfinding and encourage etiquette on the part of all users. Signage that directs bicyclists and pedestrians to designated areas for each mode within the bridges would help create an environment in which users feel empowered to navigate the intersection safely themselves and help others do the same.

Design Considerations

As expressed above, the concept images developed by the consultant team provide a sense of what can be designed and constructed to address existing connectivity challenges. There are



Figure 11. Simple Connection Bridge Concept



Figure 12. Simple Connection Bridge Concept

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many shape and functional elements of these concepts that are meant to encourage further creativity in future design phases. As the City moves forward, the following such design elements should be further evaluated and vetted with the public before final design concepts are adopted, designed, and constructed:

- Architectural facades and shapes (particularly related to Monona Terrace)
- Screens and railings over John Nolen Drive and the railroad
- Functional lighting elements
- Architectural lighting elements
- Inclusion of stairs in addition to spiral ramps for pedestrians
- Inclusion of enclosed stair tower or elevator for users
- Plaza features (café seating areas, seating walls, interactive elements, seasonal plantings, etc.)
- Inclusion of overlooks
- Snow removal storage locations
- Definition of travel routes for bicyclists and pedestrians to minimize conflicts

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