FINAL REPORT

INTRODUCTION

CITY OF MADISON, WI

SOUTH CAPITOL TRANSIT ORIENTED DEVELOPMENT (TOD)

DISTRICT PLANNING STUDY

August 2014

Prepared for:

CITY OF MADISON, WI

Prepared by:

Kimley-Horn and Associates, Inc.

Acknowledgments

To best serve the City of Madison, Kimley-Horn assembled a master planning consulting team that is committed to delivering exceptional service and innovative solutions for the South Capitol Transit Oriented Development District Planning Study. Kimley-Horn greatly appreciates the collaborative effort of the entire team in the preparation of this document. Team partners and their areas of master planning responsibility are as follows:

Kimley-Horn and Associates, Inc. – Lead master planning consultant, project management, public involvement, structural engineering

Potter Lawson, Inc. – Project architecture, land use master planning, 3-D modeling

Urban Assets – Lead public involvement, master planning, project management team

Ken Saiki Design, Inc. – Public improvements and streetscape, landscape architecture

Kimley-Horn also appreciates the contributions and partnership of the many City of Madison staff members who contributed to the content and quality of this document. The City of Madison established a Project Management Team that included key City staff representing the following agencies and divisions:

- Planning and Community and Economic Development
- Traffic Engineering
- Parking Utility
- Office of the Mayor
- City Engineering
- Facility Management (Division of Engineering)
- Parks Division
- Metro Transit
- City Attorney's Office
- Monona Terrace Community and Convention Center

Introduction

The City of Madison underwent a planning process in 2008 to establish a vision for its Downtown area. Completed in 2012, The City of Madison Downtown Plan establishes nine keys for achieving the vision. Included in these keys are recommendations to "Celebrate the Lakes" through changes to the Lake Monona/ John Nolen Drive corridor, "Ensure a Quality Urban Environment" with enhancements to downtown streets and public areas, and "Increase Transportation Choices" through improvements to the downtown transportation network and enhanced connectivity. The South Capitol Transit Oriented Development (TOD) District Planning Study was identified as a subsequent planning effort to the Judge Doyle Square Master Plan, which was completed in April 2012, and an appropriate "next step" for downtown planning. Consistent with the 2012 Downtown Plan, the purpose of the South Capitol TOD District Planning Study is to improve multimodal connectivity through the district and identify a location for an Intermodal Transit Center.

The City of Madison commenced the South Capitol TOD District Planning Study in the spring of 2013. A consultant team made up of Kimley-Horn and Associates, Inc., Urban Assets, Potter Lawson, and Ken Saiki Design was engaged to support the process. The study was directed by a Project Management Team (PMT) of City Staff from planning, traffic engineering, city engineering, parks, economic development, and Metro Transit. The PMT identified critical issues to be addressed within the District. A South Capitol District Planning Committee comprised of key community leaders and elected officials was established to guide the process, and focus groups for Wilson Street, park users, and the East Gateway intersection were convened. Full documentation of public engagement is provided in the Summary of Public Involvement. This summary was completed as a standalone document, along with two other intermediate reports—the Transportation Analysis Report and Intermodal Transit Center Site Evaluation Report.

This final report provides documentation of the South Capitol TOD District Planning Study process. Along with the Summary of Public Involvement, Transportation Analysis Report, and Intermodal Transit Center Site Evaluation Report, it provides final documentation for the South Capitol TOD District Planning Study. Throughout the study process, 11 scope items evolved into five different focus areas. This report is organized into an introduction and summary of each of the five focus areas.

- Intermodal Transit Center
- Wilson Street Context Plan
- Gateway Intersections
- Connections
- Paths and Parks

Figure 1. South Capitol TOD Planning District Study Area

Committee Members

South Capitol TOD District Planning Committee

- Michael E. Verveer, Common Council Member
- Marsha A. Rummel, Common Council Member
- Joseph R. Clausius, Common Council Member
- Ricardo A. Gonzalez, Monona Terrace Community and Convention Center Board
- Madelyn D. Leopold, Board of Park Commissioners
- Melissa M. Berger, Plan Commission
- Aaron S.P. Crandall, Pedestrian/Bicycle/Motor Vehicle Commission
- Ronald B. Steinhofer, Pedestrian/Bicycle/Motor Vehicle Commission
- Ann E. Kovich, Judge Doyle Square Committee and Transit and Parking Commission
- Douglas M. Poland, Chair of Transportation, Parking Committee for Downtown Madison, Inc.
- Davy Mayer, Bassett District Chair's Designee, Downtown Coordinating Committee
- Jim Skrentny, First Settlement District Chair
- Charles W. Strawser, Marquette Neighborhood President's Designee

City Staff Team

- Anne Monks, Mayor's Office
- Steven Cover, Director, Department of Planning & Community & Economic Development
- Katherine Cornwell, Director, Planning Division
- Bill Fruhling, Planning Division
- Michael Waidelich, Planning Division
- David Trowbridge, Project Manager, Planning Division
- David Dryer, City Traffic Engineer
- Tim Sobota, Transit Planner
- Drew Beck, Transit Planning Manager
- Rob Phillips, City Engineer
- Chris Petykowski, City Engineering
- Kay Rutledge, Parks Planning and Development Manager

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CHAPTER 1. INTERMODAL TRANSIT CENTER

CITY OF MADISON, WI

SOUTH CAPITOL TRANSIT ORIENTED DEVELOPMENT (TOD)

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Background

The 2012 Downtown Plan recommended continued planning and site evaluation for an Intermodal Transit Center (ITC) in Madison's Downtown core, as shown in Figure 1. The plan identified needs to accommodate existing intercity bus and future high speed passenger rail at the site.

Improved Intercity Bus Connections

Intercity bus service operated on Langdon Street near the UW-Madison student union out of the Badger Bus Depot until the university began renovations on Memorial Union. This resulted in the intercity bus pickup being moved to the East Campus Mall at University Avenue near the Chazen Museum of Art. Limited amenities at this site—covered waiting areas, seating, and trash receptacles—have created an undesirable atmosphere for waiting passengers, nearby patrons, and bicyclists circulating through some waiting areas. Buses in the dedicated bus lane waiting to load passengers and luggage have created traffic conflicts on University Avenue and a public safety concern. A new ITC is needed to re-concentrate intercity bus pickup at a unified location where connections to other modes of transit may easily be made.

Plans for High Speed Rail

The 2012 Downtown Plan acknowledges delays to intercity passenger rail plans and recommends continued planning for a future high speed passenger rail station, including the evaluation of potential Downtown sites. A new ITC is needed as a next step toward preparing for future intercity passenger rail between Madison and Milwaukee, Chicago, Minneapolis, and beyond.

Using the basis established in the Downtown Plan, the South Capitol TOD District Planning Study conducted planning and evaluation through a public process to:

- Select an ITC site
- Develop an ITC concept plan

The study engaged members of the South Capitol District Planning Committee, City Staff, as well as members from the general public to evaluate three sites proposed by the City of Madison. The sites are shown in Figure 2. These three sites underwent a detailed analysis as documented in the August 2013 ITC Site Evaluation Report which provided a Consultant Team recommendation that the City of Madison consider the site at West Washington Avenue

Figure 1. Downtown Madison

and South Bedford Street as the preferred ITC location.

The rest of this chapter includes an overview of the following:

- Process by which the Bedford site was selected as the preferred ITC site
- Issues and opportunities at the Bedford site
- ITC Recommendations

Site Selection

The candidate ITC locations identified by the City of Madison and the Downtown Plan are described as follows and shown in Figure 2.

- **West Washington Avenue and South Bedford Street** includes property owned by the University of Wisconsin, a manufacturing facility, a U-Haul facility, and a gas station with convenience store
- **Brayton Lot** is located on the south side of East Washington Avenue, north of East Main Street between South Butler Street and South Hancock Street, and is owned by the City of Madison and is used currently as a surface parking lot
- **East Wilson Street and South Pinckney Street**, currently the State's Department of Administration Building, which was the site identified as part of preliminary High Speed Rail studies

Site Selection Criteria

Sites were evaluated using selection criteria developed by the Planning Committee and the consultant team with input from the public. Site selection criteria included:

- Location of the site
- Accessibility
- Size and configuration

Figure 2. ITC Candidate Site Locations

- Context and urban design considerations
- Cost of development (including Public Private Partnership potential)
- Potential for economic development

Evaluation factors were developed for each criterion, and sites were evaluated on a good, fair, and poor performance scale. Full documentation of this analysis is provided in the ITC Site Evaluation Report, and a discussion of the key evaluation outcomes for each site is provided below.

West Washington Avenue and South Bedford Street

The West Washington Avenue and South Bedford Street site scored highest of all the sites with a total of 15 points. Its favorable location near the UW-Madison campus is close to student intercity bus riders which increased its potential to attract ridership and be used by intercity bus operators. For this reason, as well as a privately-owned parcel on the site that is the subject of redevelopment plans that could include an intermodal facility, the West Washington Avenue and South Bedford Street site was recommended by the Consultant Team as the preferred ITC location. This is consistent with the Downtown Plan.

Brayton Lot

The Brayton Lot received a total score of 13 points. The site performance is strengthened by its location along the planned Madison BRT line. Its overall performance was very comparable to the West Washington Avenue and South Bedford Street site; however, the two sites differed on ability to serve intercity bus operations. Because of the Brayton Lot's location farther away from the UW-Madison campus and student bus riders, conversations with operators suggested a low potential for the site to be used by intercity bus service. Because the primary near-term site user is intercity bus, the Brayton Lot was not recommended by the Consultant Team as the preferred ITC location.

East Wilson Street and South Pinckney Street

The East Wilson Street and South Pinckney Street site received the lowest score of all sites (-2 points). This site was originally proposed as a prime connection for intercity passenger rail in the Downtown Plan; however, the site presents significant access issues for other modes of transportation. Design constraints and

Public Preferences

At the September 2013 public workshop, attendees provided feedback on the Bedford site design, amenities, issues, and opportunities.

Preferred Design Elements:

- "Most sustainable building in Madison"
- Mixed-use retail/housing
- Comfortable, safe interior
- Car/taxi pull through
- Buses pull through back of structure
- Covered bus terminal
- Consider future rail

Preferred Amenities:

- Food/convenience/drug store
- Retail/commercial
- Visitor/Information Center
- Covered bike parking
- Computerized scheduling/ticketing
- Serviced by Metro Transit
- Should be local destination, not just a station

Issues and Opportunities:

- Proximity to Kohl Center
- Bedford Street as a collector and local street
- Connection to future rail
- Accessibility
- Students
- Metro Transit

Public Process

At the beginning of South Capitol TOD District Planning Study, members of the public weighed in on the preferred location for an intermodal transit center. The public asked that the South Capitol District Planning Committee consider buy-in from intercity bus companies, connectivity to other points of interest, and the potential for connectivity to future commuter rail when endorsing a site. As made evident in the community survey, the majority of the public expressed a preference for the West Washington Avenue and Bedford Street site. Members of the public indicated the site would be convenient to a variety of potential intercity bus users, including students, state employees, and University employees. Additionally, it was indicated that the site would be easily accessible by Metro Transit, due to its location near West Washington Avenue, as well as bicyclists, due to its location near the Southwest Commuter Path and Capital City Trail.

Members of the public expressed preferences for the intermodal transit center design and amenities. There was preference for a mixed-use building with commercial space on the first floor and dwelling units on upper floors, indoor and outdoor seating, modern amenities such as WiFi and electronic ticketing, and a covered bus terminal with at least five to six loading stalls. Additionally, it was requested to include multimodal accommodations, such as covered bike parking and a vehicle pull through lane for drop-offs/pick-ups of intercity bus riders.

Members of the public requested to plan for placemaking design elements that would enhance the area surrounding the transit center. There was a preference for developing an urban design theme that would not only conform to the character of the neighborhood, but also create a distinct district, establishing the area as the gateway to Madison for intercity bus riders.

Figure 6.July Committee Meeting

Figure 7.Public Meeting #2

congestion concerns with buses, taxis, and drop-off queuing along Wilson Street at the site limit its ability to satisfy evaluation criteria. As such, the East Wilson Street and South Pinckney Street site was not recommended by the Consultant Team.

Planning District Committee Decision

At the October 10, 2013, Planning District Committee Meeting, the committee voted to advance the West Washington Avenue and South Bedford Street site for the following reasons:

- Proximity to riders
- Willingness of bus services to use ITC site/facility
- Functionality of bus access, arrival, loading, and departure
- Functionality of passenger arrival, drop-off, and pick-up
- Amenities for passengers

The Bedford Site

The preferred West Washington Avenue and South Bedford Street site is located across the street from the previous Badger Bus Depot. The site is made up of several publicly- and privately-held parcels. Generally, the parcels, shown in Figure 3, are defined as follows:

Parcel A – The corner parcel is the U-Haul parcel and is the site of their truck and trailer rental facility. It is privately owned and considered a financially successful business.

Parcel B – The parcel at the corner of Bedford and Mifflin Streets is a privately-owned container manufacturing facility. The current owner has proposed redevelopment plans for the site that include an intermodal facility.

Parcel C – The parcel behind the school board building and east of the Kohl Center is publicly owned, one portion by the University of Wisconsin and the other by the school board. The University has considered redevelopment of their portion for additional art-related buildings and structured parking.

Parcel D – The remaining parcel on West Washington is adjacent to the railroad and includes a gas station, convenience store and historic railroad station building.

Figure 3. West Washington Avenue and South Bedford Street Site Parcels and Previous Location of Badger Bus Depot

Parcel B referred to as the Bedford Site and shown in Figure 4, emerged as the preferred site for the ITC due to its potential for a public private partnership, which would aid in advancing the ITC development process. The site is owned by a private developer, the Boldt Company. This played a key role in the decision to advance the West Washington Avenue and South Bedford Street site, as the technical score was close to that of the Brayton Lot. The Public Private Partnership was a driving factor. The site also received support from the neighborhood.

Figure 4. The Bedford Site

Site Improvements and Challenges:

- Accessibility to Metro Bus routes
- Impacts to neighborhood
- Connections to adjacent sites/destinations
- Placemaking opportunities
- Future connections to rail corridor
- Accessibility and functionality (to facilities like the Kohl Center)

Recommendations

Concept planning for the ITC included recommendations on design, functionality, essential components, and programming. These recommendations are based on key assumptions used in the evaluation of candidate ITC sites, such as the proposed Public Private Partnership at the Bedford site.

Design

In order to meet the intended goals of the ITC site, four design concepts were presented to the Planning Committee for the ITC. The committee voted to advance two design concepts including a four bay bus terminal and a five bay bus terminal with sawtooth parking. The five bus bay terminal was ultimately recommended by the Consultant Team because of its extra bus capacity and improved pedestrian flow within the terminal. This concept is shown in Figure 8.

Concept planning for the Bedford Site ITC took into consideration feedback from the public regarding design elements and preferred amenities. This included seeking public feedback on precedent imagery of transit centers in other cities. Figure 9 shows the bus depot recently completed in La Crosse, WI, which was preferred by the public and served as design inspiration for the concept design along Bedford Street shown in Figure 10.

Public Private Partnership

A public private partnership is formed when a government agency enters into an agreement with a private business. In the case of the Bedford Site, the Boldt Company is a private owner of a parcel of land which they are looking to develop. In mid-2013, the Boldt Company wrote a report on the Bedford Street Mixed-Use Development, in which they indicated a desire to develop the parcel into a mixed-use project that consists of an intercity transit center, multi-family housing, retail, and above ground parking.

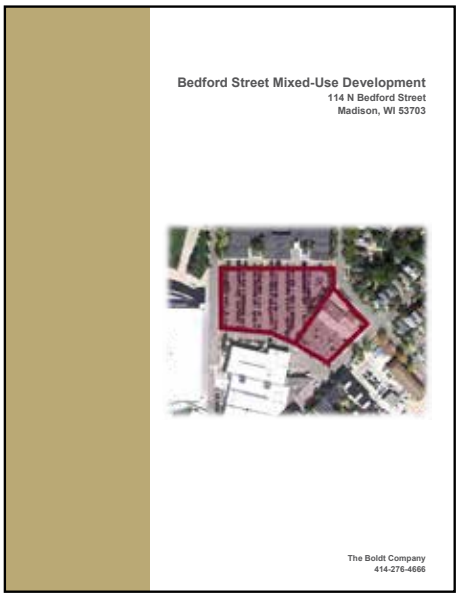

Figure 5. The Boldt Company's Bedford Street Mixed-Use Development Report

Functionality

The following are Consultant Team recommendations to enhance ITC functionality at the Bedford site:

- Locate ITC at corner of Bedford and Mifflin Streets as part of the Boldt property
- Utilize saw-tooth configuration for bus staging
- Bus circulation to incorporate entry from Mifflin Street and exit onto Bedford Street
- Orient bus doors to face the passengers and provide safe, short travel path from waiting area to bus
- Provide enhanced pedestrian connections to West Washington Avenue, the bike path, and the adjacent neighborhood

As a part of improving the functionality of the ITC, a connectivity plan was developed. This plan, with streetscape enhancements, is shown in Figure 11.

Figure 8. Recommended ITC Design Concept

Essential Components

The following are recommended essential components for the ITC, as submitted by the Consultant Team:

- Temperature controlled waiting area
- On-site ticketing
- Accessible restrooms
- Enclosed ventilated bus staging/loading area
- Ground level mixed-use development space
- Accommodate parking
- Bicycle parking
- Drop-off/pick-up/taxi services

Figure 9. LaCrosse, WI, Bus Depot

Figure 10. ITC Design Concept Looking South on Bedford Street (ITC on the right)

Programming

The following programming elements are recommended by the Consultant Team for the ITC:

- On-site staff
- Waiting area/food services
- Wi-Fi
- Visitor information
- Active and passive security
- Architectural statement

Figure 11. ITC Connectivity Plan Streetscape Enhancements

FINAL REPORT

CHAPTER 2. WILSON STREET CONTEXT PLAN

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Background

The 2012 Downtown Plan set forth a vision that Wilson Street should be enhanced as a cohesive and engaging commercial spine. A number of issues along Wilson Street—bicycling conflicts, garage access, parking, wayfinding, and streetscaping—have prompted a desire to explore its role and function, including the feasibility of a conversion to two-way. Today, the one-way designation and lack of bicycle facilities on Wilson Street result in bicyclists riding in the opposite direction of traffic on the street or in the sidewalk. This creates bicycle-vehicle and bicycle-pedestrian conflicts. In addition, residents and visitors face garage access and parking challenges, and a lack of streetscaping makes the corridor less inviting than envisioned. The corridor is absent wayfinding signage, which results in confusion amongst all modes. Redevelopment opportunities along Wilson Street have the potential to improve the vibrancy of the corridor.

The South Capitol TOD District Planning Study evaluated alternatives to improve the safety, function, and quality of the Wilson Street corridor. Through a public process that engaged members of the South Capitol District Planning Committee, City Staff, and members of the general public, one-way and two-way alternatives, redevelopment opportunities, and various bicycle, pedestrian, wayfinding, and streetscape improvement strategies were proposed and evaluated.

This chapter includes an overview of the following.

- Existing Conditions
- Guiding Principles
- One-Way vs. Two-Way Design
- Recommendations
- Redevelopment Potential

Existing Conditions

Wilson Street runs southwest through Madison's Downtown on the south side of the State Capitol as shown in Figure 1. From Blair Street to King Street Wilson Street is a two-way

Figure 1. Wilson Street Corridor

street through Madison's First Settlement neighborhood. In the Downtown Core, Wilson Street is one-way southwest bound. In the Bassett neighborhood between Hamilton Street and Broom Street, it is two-way. Beyond Broom, it is one-way northeast bound. The entire Wilson Street corridor is located in the nucleus of Downtown where a mix of business, government, residential, and other uses are densely concentrated.

Existing conditions along Wilson Street from King Street to Hamilton Street show potential for multimodal and placemaking improvements. As a one-way street with no existing bicycle facilities, Wilson Street is frequently used by bicyclists riding in the street in the direction opposite the one-way motor vehicles or on sidewalks to move in the northeast direction. This creates bicycle-motorized vehicle and bicycle-pedestrian conflicts. In addition, Wilson Street is located on a hill. The corridor runs uphill and downhill such that the elevation generally peaks at Martin Luther King Boulevard. This leads to safety concerns associated with the speed of bicyclists moving downhill and the difficulty of bicyclists moving uphill. Existing sidewalks in the corridor have minimal streetscaping and aesthetic improvements, and the Downtown Plan identifies parcels for redevelopment along Wilson Street.

Motorized vehicles experience access and parking challenges along Wilson Street. Many of the residential towers and office buildings have parking garages that access onto Wilson Street. Many of the commercial buildings, including the Hilton hotel, have no rear loading area so deliveries are made from Wilson Street.

Figure 2. West Wilson Street looking West from Carol

Figure 3. East Wilson Street looking West at King

Transportation

A two-way Wilson Street scenario was analyzed. In general, converting Wilson to a two-way configuration would add delay to a number of low-volume side-street approaches, but network-wide delays would not increase significantly. Under this scenario, some parking would need to be removed on several approaches in order to accommodate turn lanes, including the southbound approach on Carroll Street, the southbound approach on Pinckney Street, the eastbound approach at King Street, and the westbound approach at Hamilton Street.

Wilson Street Issues

The Wilson Street Corridor experiences the following existing issues:

- Bicycle/pedestrian sidewalk conflicts
- Residential parking garage access
- Street parking
- Lack of wayfinding
- Lack of streetscaping
- Loading

Furthermore, there is a desire for on-street parking for commercial patrons and visitors to the residential uses. Lack of signage for all modes within Wilson Street creates problems for wayfinding and proper use of designated facilities.

Guiding Principles

Prior to developing design concepts for Wilson Street, the following guiding principles were established for the corridor by the consultant team with input from the Project Management Team (PMT) and the Committee:

- Provide bicycle facilities in both directions
- Enhance streetscaping and urban design elements
- Maintain greenspace on curb terraces
- Improve wayfinding with directional signage
- Complement potential redevelopment opportunities

Options Evaluated

In order to determine whether a one-way or two-way configuration was right for Wilson Street between King Street and Hamilton Street, the consultant team conducted a thorough traffic analysis, engaged public input, and prepared conceptual designs for each alternative. Early in the project, traffic models confirmed that both one-way and two-way concepts are feasible along Wilson Street but the two-way option exhibited some additional delays created by left turn queues. At the September 2013 Workshop, attendees used foam models to develop feasible concepts for Wilson Street (Figure 4). Nearly a dozen ideas were generated, to which the consultant team applied the guiding principles to develop concepts for three segments of the corridor.

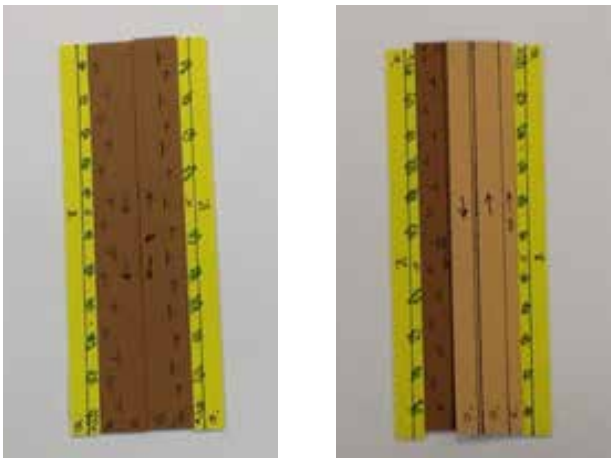


Figure 4. September 2013 Workshop Foam Models

Public Preferences

At the June 2013 Public Meeting, participants were asked to rank issues along Wilson Street by level of importance. Issues that rose to the top are shown below along with the percentage of survey participants who ranked the issues as "important" or "very important:"

- Pedestrian safety: 91%
- Bike safety: 90%
- Streetscape improvements: 73%
- Automobile traffic patterns: 60%
- Parking: 48%
- Loading to services: 39%

The consultant team proposed three one-way and three two-way concepts for the Wilson Street Context Plan that include bicycle and parking recommendations. Bicycle recommendations include cycle tracks, bicycle lanes, and sharrows. As shown in the concept drawings (Figures 5-8), cycle tracks are lanes that are physically separated from pedestrians and other motor vehicle traffic, bicycle lanes are striped facilities on the roadway, and sharrows are shared-lane markings on the roadway. Where referenced, "contraflow" means traveling in the direction opposite of traffic. The proposed alternatives are shown below with their respective pros and cons.

One-Way Concepts

Bike Lane, Cycle Track with No Parking

This Concept is shown in Figure 5.

- **Pros**: This concept separates bike travel from traffic, while preserving green space
- **Cons**: Parking is removed and no accommodations are provided for loading and buses

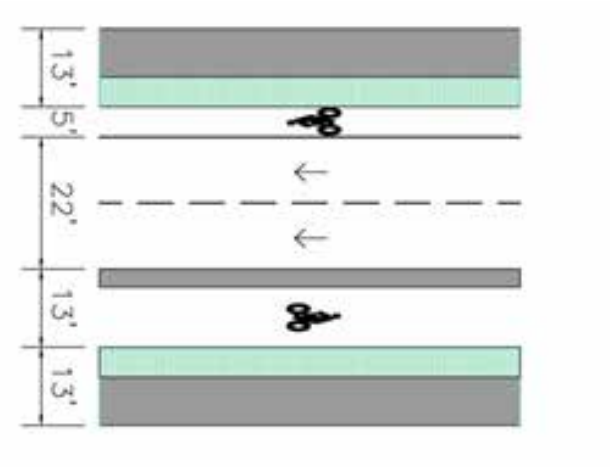


Figure 5. Bike Lane, Cycle Track with No Parking

Public Preferences

One-Way vs. Two-Way

Public opinion regarding converting Wilson Street to a two-way street was gauged at multiple stages of the study. Below are responses from different focus groups.

Public Survey

Are you in favor of considering converting Wilson Street into a two-way street even if it would result in a loss of parking?

- Yes – 41 percent
- No – 33 percent
- Undecided – 26 percent

Public Meeting #1

Do you support considering converting Wilson Street to two-way?

- Yes – 14
- No – 4

Focus Group

The majority of participants were against converting Wilson Street to two-way.

Two-Way Cycle Track with Parking on One Side

This concept is shown in Figure 6.

- **Pros**: This concept provides dedicated bike travel with green space preserved on one side and parking included on one side
- **Cons**: Some parking is lost, a transition is needed into and out of the cycle track at each end, loading accommodations are only provided on one side, the curb line on the north side would need to be reconstructed, and there are potential conflicts at intersections
- ***Note***: This option was also considered with the bike lane on the opposite side of the road, as shown in Figure 7

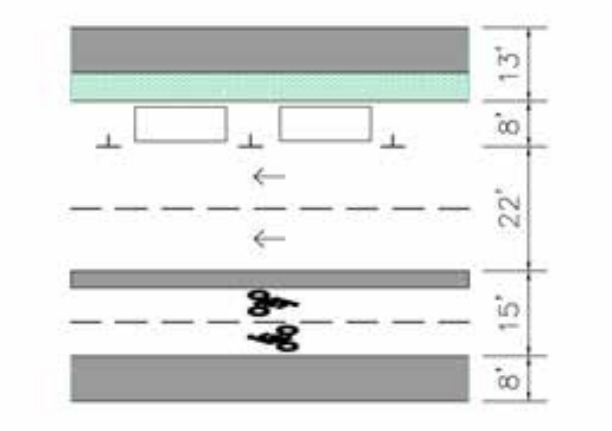


Figure 6. Two-Way Cycle Track with Parking on One Side

One-Way, Contra-Flow Cycle Track with Sharrow and Parking on One Side

This concept is shown in Figure 8.

- **Pros**: This concept provides defined bike travel in both directions and separated bike travel in one direction. Green space is preserved and parking is included on one side
- **Cons**: Some parking is lost and loading accommodations are made on one side only

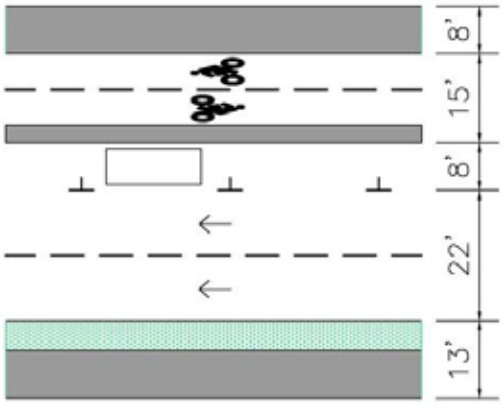


Figure 7. Two-Way Cycle Track with Parking on Opposite Side

Design Considerations

- Account for contraflow bicycle movements at intersections
- Appropriate location of loading zones with parking
- Separation type of cycle track
- Snow removal with separated cycle track

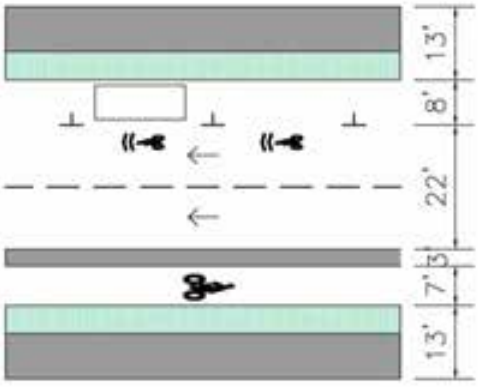


Figure 8. One-Way, Contra-Flow Cycle Track with Sharrow and Parking on One Side

Public Process

Public opinions regarding potentially converting Wilson Street into a two-way street were divided. The majority of survey and first public meeting participants favored a two-way conversion, while the majority of focus group participants favored maintaining the street as one-way. In November 2013, the South Capitol District Planning Committee endorsed the one-way Wilson Street concept.

Members of the public often expressed pedestrian safety and bicycle movement and safety as top priorities. Many members requested eastbound and westbound bicycle facilities and favored the contraflow bike lane concept; however, there was significant opposition to the contraflow bike lane, as it was indicated that it could potentially create a dangerous situation for move-ins/outs and other deliveries to Wilson Street businesses and residences.

With regard to vehicle accommodations, additional wayfinding to improve vehicle movement was a frequently requested. Additionally, there was significant desire to maintain the number of existing parking spaces, as the Marina Condos and the Madison Mark currently lack space for visitor parking.

The desire to improve streetscaping/aesthetics was often discussed. Many members of the public called for increased green space, improved landscaping, and seating as desirable urban design features.

Figure 9. Public Meeting #2

Two-Way Concepts

Bike Lanes on Both Sides and Parking on One Side

This concept is shown in Figure 10.

- **Pros**: This concept provides separated bike travel with green space preserved and parking on one side
- **Cons**: Some parking is lost and loading accommodations are made on one side only

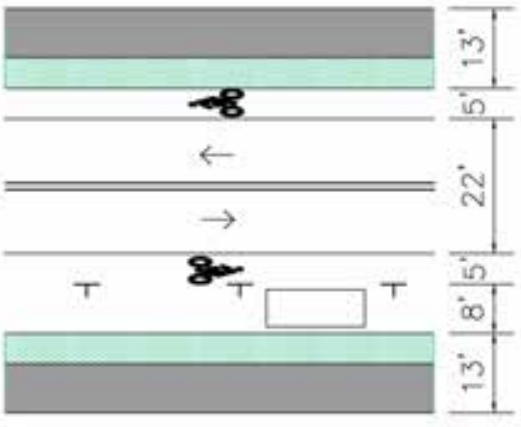


Figure 10. Bike Lanes on Both Sides and Parking on One Side

Bike Lanes with Parking on Both Sides and No Green Space

This concept is shown in Figure 11.

- **Pros**: This concept provides separated bike travel with parking on both sides of Wilson
- **Cons**: No green space is preserved and curb lines are moved

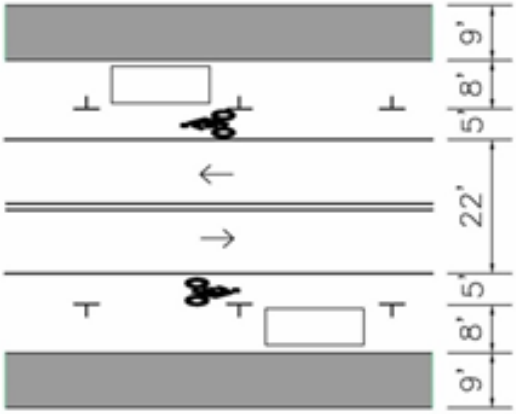


Figure 11. Bike Lanes with Parking on Both Sides and No Green Space

Sharrows

This concept is shown in Figure 12.

- **Pros**: This concept provides defined bike travel in both directions, preserving green space and parking on both sides
- **Cons**: Bikes travel in the lane with traffic without the benefit of separate lanes

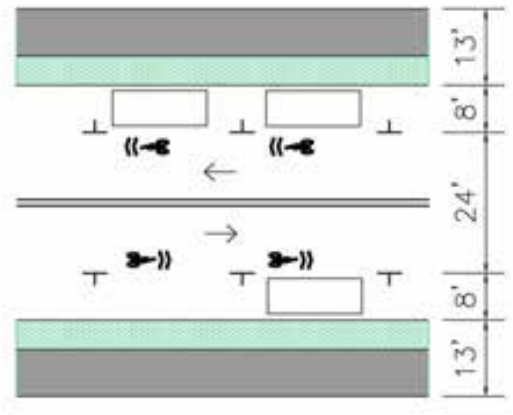


Figure 12. Sharrows

Preferred Concept

In October 2013, the Planning Committee advanced one one-way concept and one two-way concept for further development:

- **One-Way Concept:** One-way, contra-flow cycle track on one side with sharrows and parking on one side
- **Two-Way Concept**: Sharrows in both directions

In November 2013, the Planning Committee approved the further development of the one-way concept.

Recommendations

The one-way Wilson Street context plan includes an eastbound contraflow bike lane, westbound bike sharrows, and improved streetscaping. Parking remains on one side, but there is a loss of 32 parking spaces and five loading zones on the other side. A new detailed parking plan needs to be developed for the north side of the street to accommodate on-street parking and adequate loading zones. The developed concept was presented to the Planning Committee in February 2014.

It is further recommended by the Consultant Team that additional signage be installed along Wilson Street to improve wayfinding and etiquette. Signage that directs bicyclists, pedestrians, and motor vehicles on designated areas for each mode within the intersections would help create an environment in which users feel empowered to navigate the intersection safely themselves and help others do the same.

These recommendations have been made by the Consultant Team after careful consideration of stakeholder feedback, as well as weighing the tradeoffs of the proposed design concepts. These tradeoffs include:

- Bicycle facilities are provided in both directions
- Streetscaping and urban design elements are enhanced
- Greenspace is maintained on curb terraces
- Wayfinding will be improved with directional signage to guide bicyclists and pedestrians through the one-way concept

The plan will complement potential redevelopment opportunities

Redevelopment Potential

The consultant team looked at whether a one-way or two-way configuration could have an effect on redevelopment potential within the Wilson Street corridor. Usually it is believed that the full

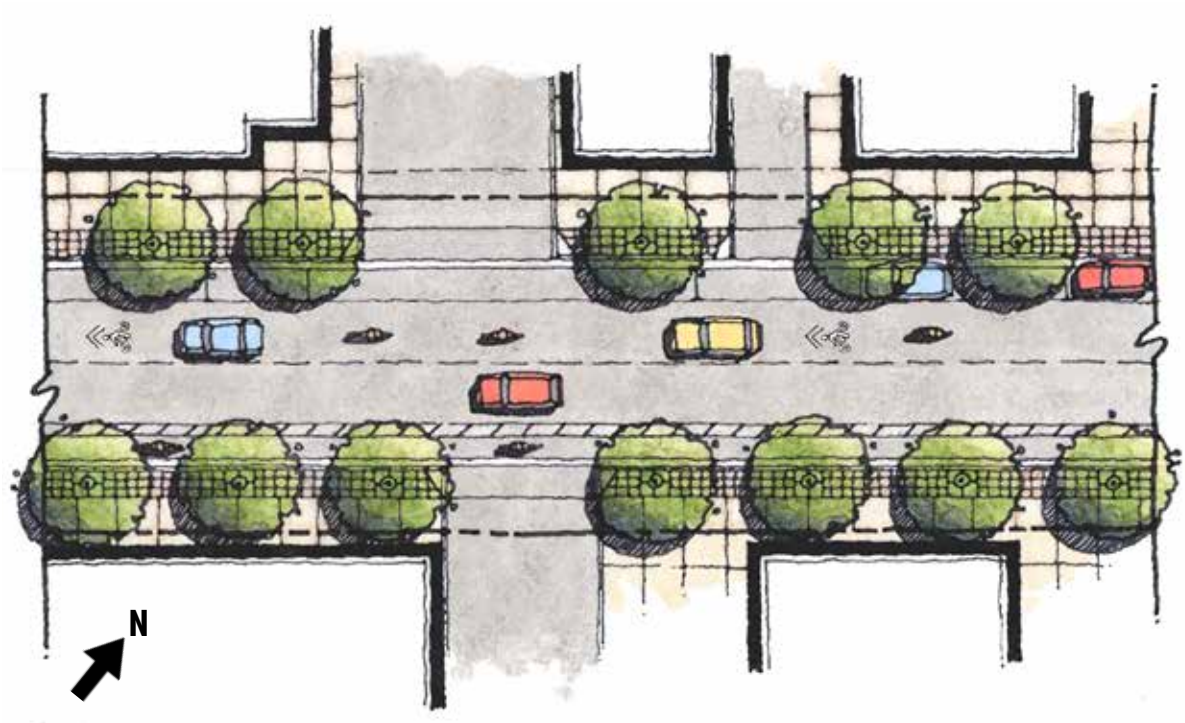


Figure 13. Wilson Street Concept with One-Way Vehicular Traffic Westbound, Westbound Sharrows, Eastbound Cycle Track, and Parking on Street's North Side

access and circulation of two-way operation has a more favorable effect than the sometimes circuitous circulation required by one-way operations; however, it was determined that on Wilson Street this advantage was not a significant one to redevelopment. This was taken into consideration by the Planning Committee when voting to endorse the one-way Wilson Street concept. Redevelopment concepts were developed in coordination with proposed bridge improvements. As discussed in Chapter 4, the consultant team explored a wide plaza bridge concept that would tie into new development on the south side of Wilson Street. This concept would create an inviting destination for travelers along Wilson Street to enjoy views of Lake Monona, while providing a connection between Downtown and the waterfront. The concept has not been endorsed by private property owners, and the location can vary.

Other redevelopment opportunities will be enhanced by a reconstructed Wilson Street.

Figure 14. Wilson Street Potential Redevelopment Site

Figure 15. Wilson Street Potential Redevelopment Site

Figure 16. Wilson Street Cross Section with Parking on Street's North Side, Westbound Sharrows, and Eastbound Cycle Track

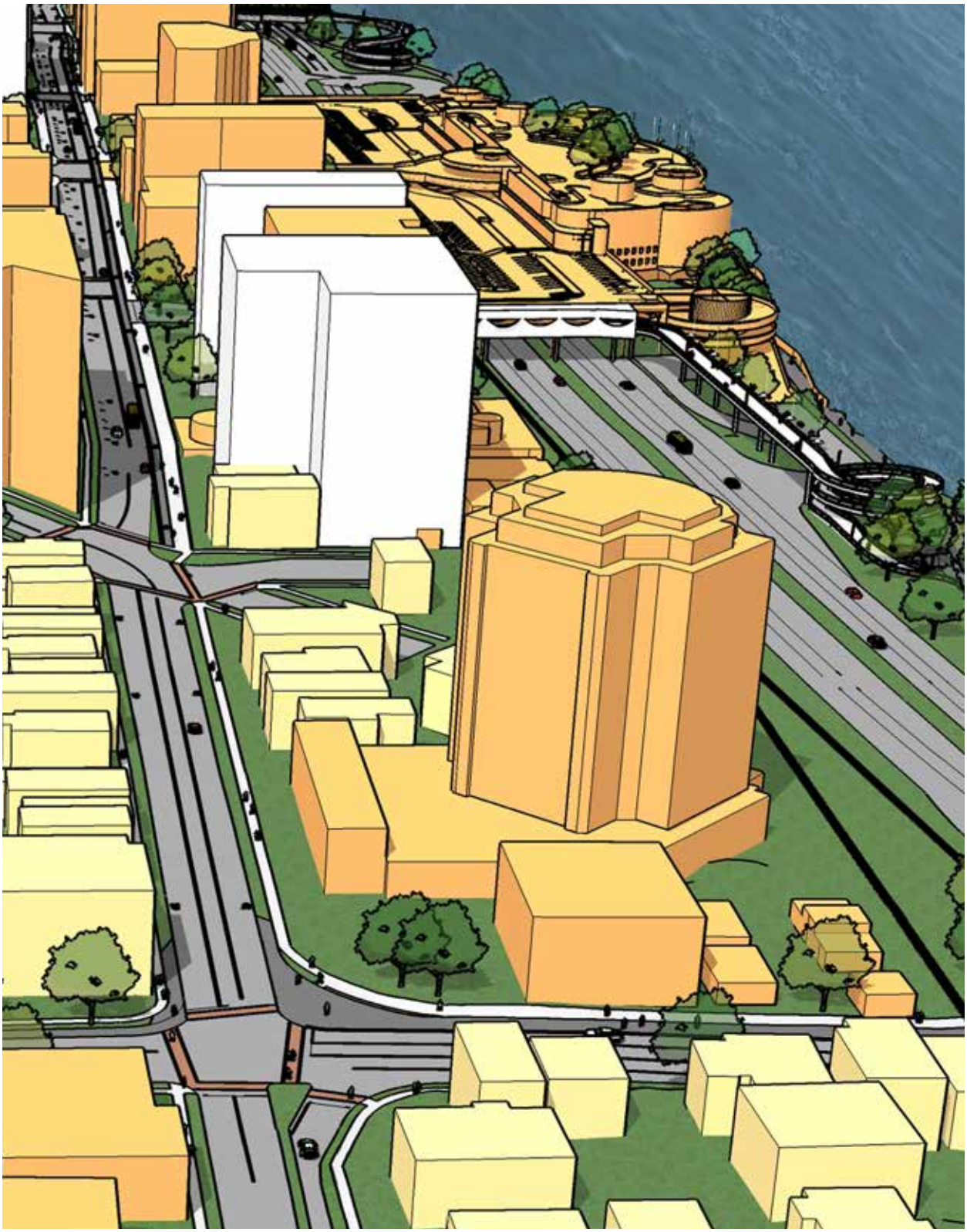


Figure 17. Wilson Street Context Plan Looking Northeast

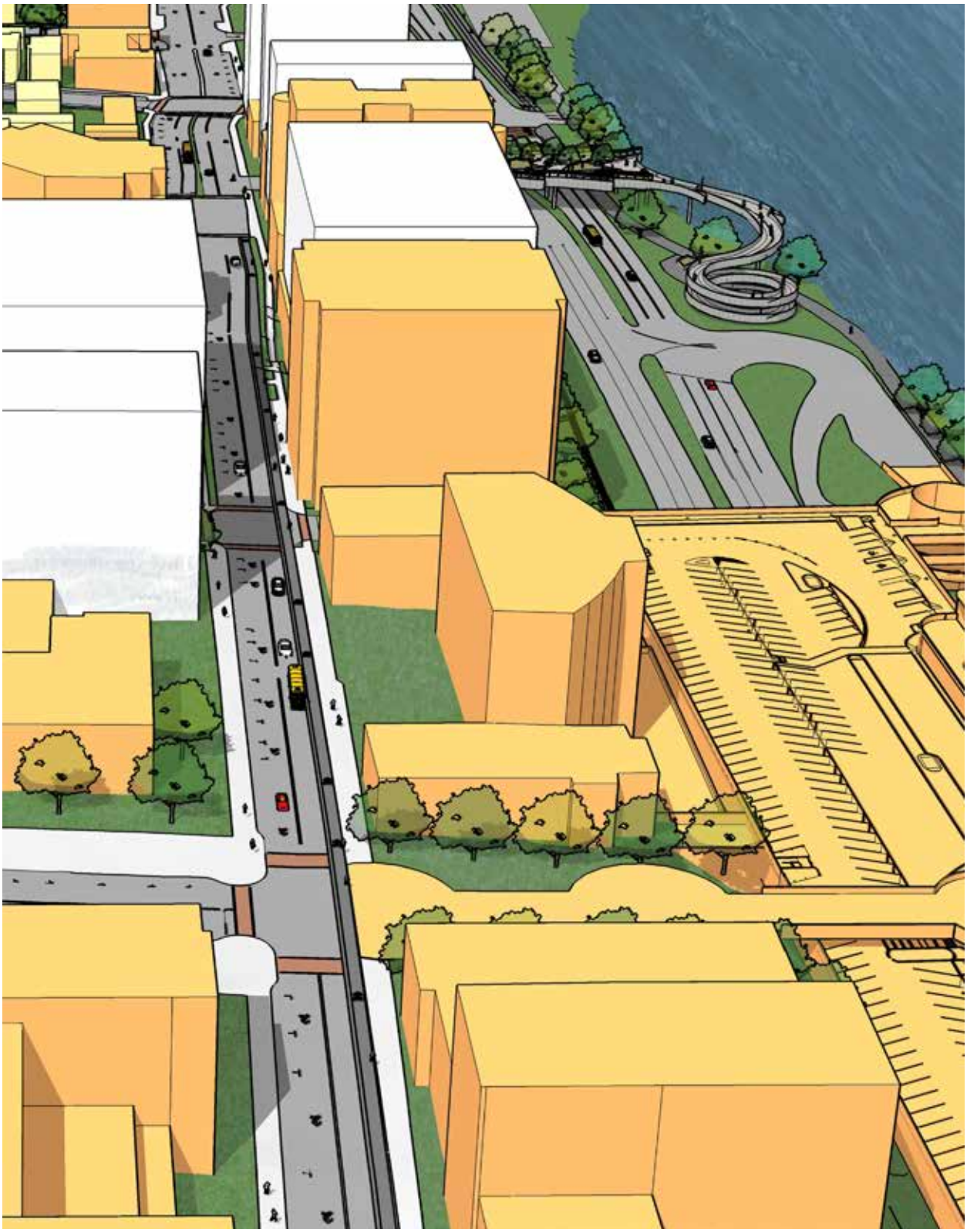


Figure 18. Wilson Street Context Plan from Broom Street Intersection

Figure 19. Wilson Street Potential Redevelopment Into Plaza Bridge Concept

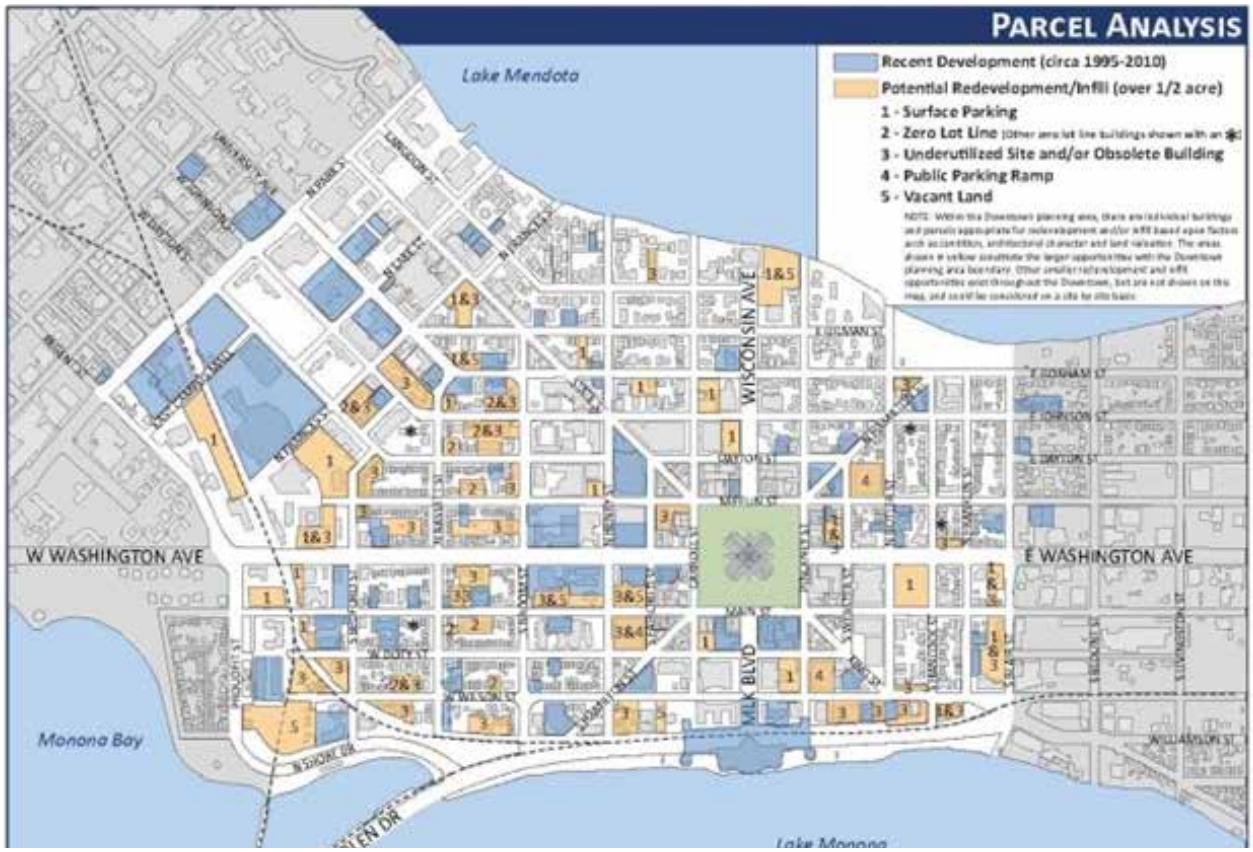


Figure 20. Parcel Analysis From the City of Madison Downtown Plan, Adopted July 2012

FINAL REPORT

CHAPTER 3. GATEWAY INTERSECTIONS

CITY OF MADISON, WI

SOUTH CAPITOL TRANSIT ORIENTED DEVELOPMENT (TOD)

DISTRICT PLANNING STUDY

August 2014

Prepared for:

CITY OF MADISON, WI

Prepared by:

Kimley-Horn and Associates, Inc.

Background

The 2012 Downtown Plan identifies a need to improve pedestrian and bicycle connections between Madison's Downtown Core and the Lake Monona waterfront. Today, pedestrians and bicyclists can access the lake from Downtown via the bike elevator at Monona Terrace or via at-grade crossings in two intersection areas referred to as Gateway intersections. Gateway Intersections West of Monona Terrace include North Shore Drive and John Nolen Drive, as well as Broom Street and John Nolen Drive. The Gateway Intersection wast of Monona Terrace includes Wilson Street/ Williamson Street and John Nolen Drive/Blair Street.

The West Gateway and East Gateway intersections serve as critical access points between Downtown and Lake Monona. As shown in Figure 1, existing configurations are complex and crowded by motor vehicle traffic along John Nolen Boulevard and bicycles and pedestrians interacting along the Capital City Trail. Better and safer connections across John Nolen Drive between the Lake Monona waterfront to the Downtown are necessary.

The South Capitol TOD District Planning Study looked at a number of alternatives to improve the safety and aesthetics of the gateway intersections for pedestrians and bicyclists, while continuing to facilitate traffic movement. Through a public process that engaged members of the South Capitol District Planning Committee, City Staff, and members of the general public, intersection improvements were proposed and evaluated.

Figure 1. Intersection at North Shore Drive and John Nolen Drive Looking East

Figure 2. Intersection of North Shore Drive and John Nolen Drive Looking South

This chapter includes an overview of the following:

- West Gateway Issues
- West Gateway Design Concepts
- West Gateway Recommendations
- East Gateway Issues
- East Gateway Design Concepts
- East Gateway Recommendations

Transportation

Based on a detailed traffic analysis, by 2035, the intersections along John Nolen Drive are projected to have the poorest level of service (LOS) and the highest delay in the study area. A number of alternatives were considered to mitigate the increased delay in 2035 due to traffic growth, and a select few were modeled and simulated. A series of recommendations for both North Shore Drive and Broom Street were developed, ranging from geometric improvements, including adding a third westbound through lane at North Shore, to phasing modifications and pedestrian crossing improvements. A sensitivity analysis also was performed for the John Nolen Drive/Blair Street/Wilson Street intersection, demonstrating that re-striping and phase modifications could improve future year conditions, and conversion to a T-intersection could reduce delay even more.

West Gateway Issues

The West Gateway intersections are located along John Nolen Drive at North Shore Drive and at Broom Street to the west of Monona Terrace. For bicyclists and pedestrians approaching Downtown Madison on the Capital City Trail from the west, the first at-grade crossing of John Nolen Drive is at North Shore Drive, followed shortly by a crossing that provides more direct access into Downtown at Broom Street. Both intersections experience high levels of motor vehicle traffic and lack wayfinding signage for bicyclists and pedestrians.

North Shore Drive and John Nolen Drive

At this crossing, limited storage for waiting bicyclists and pedestrians causes spillback into the path. This results in bicycle and pedestrian conflicts on the path. The existing crossing is a two-stage crossing with one small island on the northwest side of John Nolen Drive. This configuration results in pedestrian, bicycle and motor vehicle conflicts as the island is often overcrowded.

Broom Street and John Nolen Drive

At Broom Street and John Nolen Drive, the existing crossing is a three-stage crossing with two small islands. A small landing area to the south of John Nolen Drive causes bicycle and pedestrian spillback onto the Capital City Trail. This, along with limited storage on islands, creates conflicts between pedestrians and bicyclists as well as motor vehicles. The multiple-stage crossing also results in long crossing times for pedestrians and bicyclists.

Figure 3. Broom Street and John Nolen Drive Intersection Looking North from Capital City Trail

West Gateway Design Concepts

The consultant team held an internal design charrette to work through issues at the West Gateway and to develop early concepts. The early concepts included grade separations and at-grade concepts. The early concepts were developed further and discussed with the Project Management Team and Planning Committee. Included in these concepts was a proposed underpass by citizen member Ron Shutvet. The consultant team evaluated the John Nolen underpass and the Planning Committee ultimately decided that challenges associated with elevation and Lake Monona prohibited concept feasibility at this time, and a West Gateway underpass was not advanced. A decision was made in November 2013 to advance the most promising concept.

The initial West Gateway design concept was presented in November 2013 after taking into consideration public feedback at the June 2013 Public Meeting and the September 2013

Figure 4. Broom Street and John Nolen Drive Looking North from Law Park

Issues at the West Gateways

The West Gateway intersections feature the following existing issues.

- Pedestrian/bicycle safety
- Pedestrian/bicycle conflicts
- Pedestrian/bicycle/motor vehicle conflicts
- Lack of wayfinding
- Traffic congestion

Public Process

West Gateway

Members of the public provided input on pedestrian and bicycle movement and safety, vehicle movement, and design elements and amenities for the West Gateway. Pedestrian and bicycle movement and safety were most often expressed as top priorities, specifically bicyclist and pedestrian crossing abilities at the North Shore Drive/John Nolen Drive intersection and at the Broom Street/John Nolen Drive intersection. Members of the public addressed pedestrian and bicyclist safety and indicated the stretch of Broom Street from John Nolen Drive to Doty Street is dangerous for bicyclists. A significant number of individuals supported developing a northbound bike lane on Broom Street, but also requested that the issue of bicyclists on sidewalks also be addressed. Design concepts proposed by the public included developing an underpass for pedestrians and cyclists under John Nolen Drive as well as extending the sidewalk that discontinues at John Nolen Drive off Broom Street to North Shore Drive. Members of the public addressed issues associated with vehicle movement. On several occasions, the public asked to improve wayfinding at the Wilson Street/Broom Street intersection and to improve traffic control at the North Shore Drive/John Nolen Drive intersection. Additionally, members asked to improve Broom Street accessibility off of John Nolen Drive and to eliminate the channelized right off North Shore Drive onto John Nolen Drive.

Workshop. The consultant team ultimately proposed a concept that included adding fill to Lake Monona and extending lakeshore to accommodate improved bicycle/pedestrian storage and separated paths. The concept included super crossings which provide dedicated space for pedestrians and each direction of bicycle traffic, a cycle track on Broom Street, and shortening the southbound left turn lane on Broom Street. The concept would require adding 20-25 feet of lake fill, but would provide the opportunity for separate bike and pedestrian paths and eliminate the blocking of the Capital City Trail by pedestrians and bicycles waiting to cross John Nolen Drive. Upon presentation of the design concept, the Planning Committee reiterated its disapproval of adding lake fill.

In December 2013, the consultant team proposed a revised concept that maintains the existing lakeshore. In this concept, Broom Street is narrowed to improve bicyclist and pedestrian accommodations. The configuration allows for bicyclists and pedestrians to cross the entire width of John Nolen Drive in one movement. This safety improvement comes with a tradeoff for motorized vehicles. The Broom Street southbound left-turn lane could potentially cause spillback during peak hours, causing congestion for the southbound right turn onto John Nolen Drive. The Planning Committee approved the concept.

West Gateway Recommendations

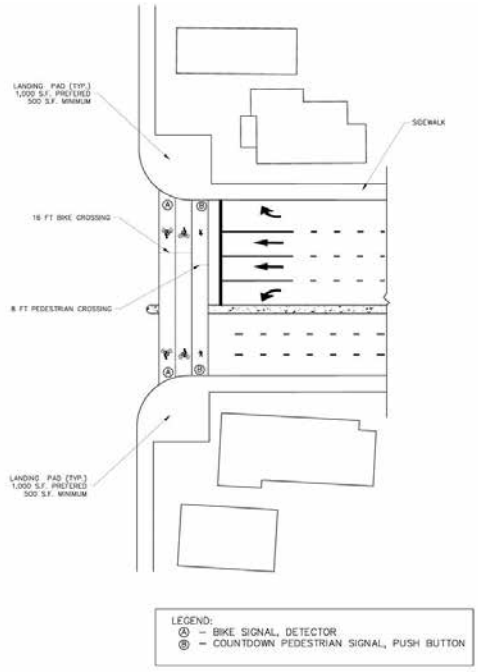
The West Gateway design concepts shown in Figure 5 and Figure 6 are recommended by the Consultant Team to advance for further study and implementation. These design concepts provide the following improvements.

- Pedestrian/bicycle super crossings with dedicated directional bicycle lanes and shared pedestrian lane across John Nolen Drive at North Shore Drive and at Broom Street
- Expanded pedestrian/bicycle queuing areas on both sides of John Nolen Drive
- Cycle track connection to Wilson Street from John Nolen Drive on east side of Broom Street
- Bicycle lane on the east side of Broom Street from Wilson Street to Doty Street
- Signage between Wilson Street and John Nolen Drive to direct bicyclists to travel on the east side of Broom Street

It is further recommended by the Consultant Team that additional signage be installed at the West Gateway intersections to improve wayfinding and etiquette. Signage that directs bicyclists, pedestrians, and motor vehicles on designated areas for each

What is a Super Crossing?

A super crossing provides designated space for bicycles in both directions and for pedestrians. Signals are provided for both bicycles and pedestrians, and a preferred 1,000-square-foot landing pad is provided on both sides of the crossing to allow sufficient space for queuing.



mode within the intersections would help create an environment in which users feel empowered to navigate the intersection safely themselves and help others do the same.

These Consultant Team recommendations have been made after careful consideration of stakeholder feedback, as well as weighing the tradeoffs of the proposed design concepts. These tradeoffs include:

- Shortening the Broom Street left-turn lane and narrowing other lanes
- Queuing issues associated with left turns from Broom Street onto John Nolen Drive
- Potential expensive relocation of utilities at North Shore Drive and John Nolen Drive
- Reducing the turn radius for northbound Broom Street onto Wilson Street
- Reduced capacity for southbound right turns from North Shore Drive to John Nolen Drive

Despite these tradeoffs, the Consultant Team recommends the proposed design concepts as the best solutions to advance for the West Gateway intersections.

Public Priorities

At the June 2013 Public Meeting, participants were asked to list issues and opportunities for the West Gateway intersections. Priority issues are shown below along with the percentage of survey participants who ranked the issues as "important" or "very important."

North Shore Drive/John Nolen Drive

- Safety: 93%
- Bike movement: 87%
- Pedestrian movement: 85%
- Vehicle movement: 61%
- Aesthetics: 44%

Broom Street/John Nolen Drive

- Safety: 86%
- Pedestrian movement: 83%
- Bike movement: 76%
- Vehicle movement: 61%
- Aesthetics: 44%

These priorities were used to establish design concepts for the West Gateway intersections.

Figure 5. North Shore Drive and John Nolen Drive Intersection and Broom Street and John Nolen Drive Intersection Looking North from Lake Monona

Figure 6. Broom Street and John Nolen Drive Intersection Looking North from Lake Monona

East Gateway Issues

The East Gateway intersection is a multi-legged intersection that acts as the convergence point for four roadways — John Nolen Drive, Wilson Street, Blair Street, and Williamson Street. The intersection is complicated by the railroad that runs through the intersection, the driveways that are within the functional area of the intersection, and the Capital City Trail that crosses the east side of the intersection. The East Gateway experiences high levels of motor vehicle, bicycle, and pedestrian traffic and lacks wayfinding signage for bicyclists and pedestrians.

Conflict points between the railroad, bicyclists, pedestrians, and motorized vehicles — traveling through the intersection and into driveways — create a variety of issues at the East Gateway intersection. Design concepts aim to address these issues by improving the following:

- **Railroad crossing geometry:** The existing approach for bicyclists and pedestrians crossing the railroad is diagonal to the tracks. The safest approach is perpendicular to the railroad
- **Machinery Row access:** The driveways located within the functional area of the intersection are access points to an area called Machinery Row. Addressing access to Machinery Row in a way that increases safety by removing driveways from the functional area of the intersection would benefit the operation of the intersection
- **Wilson Street function:** Wilson Street lacks parking, open space, and adequate bicycle and pedestrian connections at the East Gateway
- **Signal phasing:** The complex intersection requires signal phasing that results in delay for all modes and directions of travel. Simplified phasing would reduce lost time to signal phase changes and allow more time for all modes to pass through the intersection
- **Channelized right:** The geometry of the existing channelized right turn is not desired by the neighborhood or the bicycle and pedestrian community but it does carry a high volume of traffic
- **Pedestrian and bicycle crossing:** Safety improvements could be made to existing crossings for bicyclists and pedestrians

Issues at the East Gateway

The East Gateway intersection features the following existing issues:

- Pedestrian/bicycle safety
- Pedestrian/bicycle conflicts
- Pedestrian/bicycle/motor vehicle conflicts
- Lack of wayfinding
- Traffic congestion
- Access to Machinery Row
- Neighborhood traffic concerns

Figure 7. East Gateway View Looking North from Machinery Row

Public Process

East Gateway

With regard to East Gateway design and amenities, the majority of the public expressed preference for maintaining the existing shoreline and to simplify and beautify the Wilson Street/Broom Street intersection. Members of the public generally supported the proposed super crossing concepts, but requested adequate space for bicyclists and pedestrians at the landings. Members of the public weighed in on pedestrian and bicycle movement and safety, vehicle movement, and design elements and amenities. Pedestrian and bicycle movement and safety were most often expressed as top priorities. Frequent recommendations included changes to pedestrian and bicycle light timing and expanding the pedestrian island to accommodate large groups. Additionally, members of the public asked that the South Capitol District Planning Committee and consultant team consider issues associated with the existing access to Machinery Row with regard to visibility and pedestrian and bicycle safety. Several individuals requested additional greenspace and asked to maintain the existing number of parking spaces. On several occasions, individuals asked to simplify the intersection, to reduce the number of decision points, and to ensure turning movements are safe. Many individuals and groups, including residents of the adjacent neighborhoods, advocated for eliminating the channelized right turn onto Williamson Street and asked to reroute cars coming off of John Nolen Drive to East Washington Avenue. If the channelized right were to remain, several individuals suggested timing the light at the channelized right to be red when the light onto Blair Street is red. In October 2013, the South Capitol Planning Committee approved further development of the East Gateway concept that included a new intersection at Hancock Street and John Nolen Drive and a Wilson Street cul-de-sac. Members of the public asked that the committee and consultant team consider residents of the 100 South block of Hancock Street, pedestrian safety at the Hancock Street/John Nolen Drive intersection, potential loss of parking, and to maintain space for the boat launch. Members of the public expressed concern with regard to negotiating with the Railroad for the new Hancock Street intersection and questioned whether the slope of Hancock Street would be hazardous during winter months. With regard to the proposed Wilson Street cul-de-sac, members of the public asked to ensure there would be proper pedestrian and bike crossings/routes across Blair Street onto Wilson Street and suggested moving the bicycle path slightly north on Blair Street. A significant number of individuals questioned how the cul-de-sac could impact Wilson Street businesses and its potential to create new traffic congestion and wayfinding issues.

Figure 8. Williamson Street Looking East from John Nolen Drive with Machinery Row on the Right

Public Involvement

At the June 2013 Public Meeting, participants were asked to list issues and opportunities for the East Gateway intersection. Issues that rose to the top are shown below along with the percentage of survey participants who ranked the issues as "important" or "very important."

- Safety: 92%
- Pedestrian movement: 92%
- Bike movement: 89%
- Vehicle movement: 72%
- Aesthetics: 52%

These priorities were used to establish design concepts for the East Gateway intersections.

East Gateway Design Concepts

Due to the complexity of issues at the East Gateway, the consultant team proposed a series of design concepts for the intersection. Concepts were developed at an internal design charette that took into consideration feedback from City Staff and the Planning Committee, as well as public comments from the June Public Meeting. Four initial concepts were proposed to the Planning Committee and the public at the September Workshop.

John Nolen Tunnel

- **Pros**: The tunnel concept separates through movements and reduces conflicts
- **Cons**: The tunnel concept creates long ramps into and out of the tunnel which requires streets and pedestrian crossings to be closed resulting in a loss of urban fabric and connectivity. The tunnel would eliminate a westbound right, eastbound left, and southbound right and left. The cost of the tunnel concept is high at $30 million. Relocated access for utility building would require relocation of the community garden

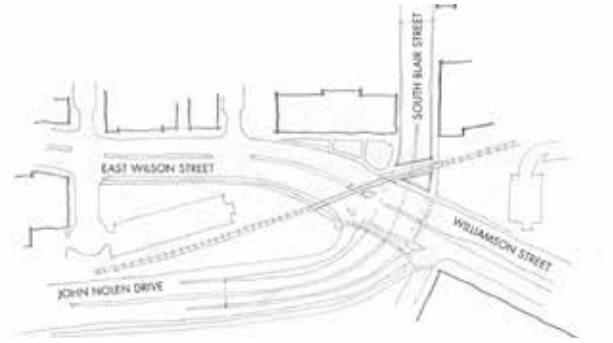


Figure 9. John Nolen Tunnel

Figure 10. Existing Conditions at the East Gateway

Roundabout

- **Pros**: The roundabout concept improves access to Machinery Row and provides an opportunity for a visual element
- **Cons**: The roundabout concept has a bigger footprint, and it creates an acute angle crossing with the railroad, for which rail traffic would disrupt the circulatory flow of the roundabout. Roundabouts also have a perception of difficult for pedestrians to negotiate. Relocated access for utility building would require relocation of the community garden

Figure 10. Roundabout

Elevated Hovenring

- **Pros**: The Hovenring concept would elevate pedestrian and bicycle crossings and serve as a dramatic piece of public art. It is very efficient for pedestrians and bicyclists in that all conflicts with vehicles are eliminated
- **Cons**: After further analysis of the Hovenring and production of concept visualizations, the concept was deemed too massive for the context at the East Gateway Intersection. Roadway and railroad clearance regulations along with the required structural depth would result in a structure almost 30 feet above grade. Relocated access for utility building would require relocation of the community garden

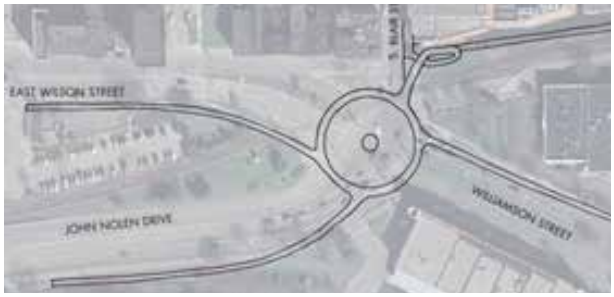


Figure 11. Elevated Hovenring

Figure 12. Elevated Hovenring Visualization

Hancock Intersection

- **Pros**: The Hancock concept provides more efficient signal operations, reduced conflicts, improved access to Machinery Row, streetscaped termination, improved bicycle and pedestrian facilities, and improved water access. It also creates additional green space north and south of railroad (near Blair) with a potential relocated garden
- **Cons**: The concept creates an additional rail crossing. The grade of Hancock Street between John Nolen Drive and East Wilson Street may cause problems for vehicles starting and stopping especially during inclement weather. The grade of Hancock Street approaching the railroad crossing may raise safety concerns with the rail crossing, especially during inclement weather. The railroad crossing requires the approval of the Office of the Commissioner of Railroads, and the City may not obtain that approval. Relocated access for utility building would require relocation of the community garden

Figure 13. Hancock Intersection

The Hancock Intersection Concept

The Hancock concept creates a new at-grade intersection at John Nolen Drive and Hancock Street and eliminates the Wilson Street connection to John Nolen Drive, Blair Street, or Williamson Street. The concept is estimated to cost $1.5 million and will require no property acquisitions. At the September Public Workshop, the public showed support for the Hancock intersection, identifying other alternatives as too costly or less effective, and in October 2013, the Planning Committee approved the further development of the Hancock Intersection concept. The Planning Committee requested concepts that do not require adding fill to the lake.

Four alternatives of the Hancock intersection that maintained the existing lakeshore were developed.

Alternative 1

- **Pros**: Alternative 1 cleans up Machinery Row entrance, simplifies the intersection and improves level of service (LOS), and creates a "calmed" Wilson frontage with room for parking enhancements
- **Cons**: Alternative 1 requires relocation of a Lake Monona boat ramp and eliminates a parking lot north of John Nolen Drive
- **Railroad modifications**: This alternative eliminates the Wilson crossing and relocates it to the new Hancock crossing

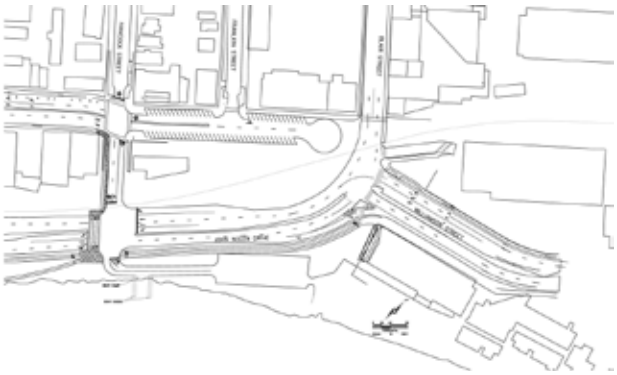


Figure 14. Hancock Intersection Alternative 1

Alternative 2

- **Pros**: Alternative 2 simplifies the intersection to improve LOS and creates a "calmed" Wilson frontage with room for parking enhancements
- **Cons**: Like Alternative 1, Alternative 2 requires relocation of the Lake Monona boat ramp and eliminates a parking lot north of John Nolen Drive. It further maintains the existing, tricky Machinery Row access

Figure 15. Hancock Intersection Alternative 2

Alternative 3

- **Pros**: Alternative 3 simplifies the intersection to improve LOS and maintains westbound through movements
- **Cons**: Maintains left-turn conflict from John Nolen Drive to westbound Wilson. The alternative maintains existing, tricky Machinery Row access
- **Railroad modifications**: This alternative maintains the Wilson crossing and requires an additional crossing at Hancock Street

Figure 16. Hancock Intersection Alternative 3

Alternative 4

- **Pros**: Alternative 4 simplifies the intersection to improve LOS
- **Cons**: Alternative 4 removes the channelized right turn from John Nolen Drive to Williamson, eliminating the two-stage pedestrian crossing but also reducing the efficiency of accommodations for high right-turn volumes. The alternative maintains a left-turn conflict from John Nolen Drive to Westbound Wilson. It further maintains the existing, tricky Machinery Row access
- **Railroad modifications**: This alternative maintains the Wilson crossing and requires an additional crossing at Hancock Street

Figure 17. Hancock Intersection Alternative 4

It was ultimately decided to advance Hancock Alternative 1 as the best option to address issues at the East Gateway intersection. Issues are addressed by this concept as follows.

- **Railroad Crossings**: Eliminating Wilson Street connection improves geometry so vehicles and bicycles crossing tracks will be generally perpendicular
- **Machinery Row Access**: Relocation of driveways improves access to more directions and improve safety by being outside functional area of intersection
- **Wilson Street Function**: The Wilson Street streetscaped termination calms street traffic, provides parking, provides more open space, and allows for improved bicycle and pedestrian connections
- **Signal Phasing**: Eliminating the Wilson Street connection simplifies intersection operations and reduces lost time to signal phase changes, resulting in reduced delay for all modes
- **Channelized Right**: The elimination of the Wilson Street connection allows an expanded channelizing island that provides more space for pedestrian and bicycle queuing
- **Pedestrian/Bike Crossing**: Eliminating Wilson Street motor vehicle connection allows for improved pedestrian rail crossings, improves safety, and creates the potential for bicycle and pedestrian crossing enhancements

Recommendations – East Gateway

The East Gateway design concept shown in Figure 18 is recommended by the Consultant Team to advance for further study and implementation. The concept incorporates design elements that will require multi-jurisdictional agency permits and railroad coordination. Design recommendations, in some cases, can be implemented independently as intermediate improvements. The design concept provides the following improvements:

- Includes new Hancock Street/John Nolen Drive intersection
- Provides pedestrian/bicycle super crossing with two-way bicycle lanes and shared pedestrian lane across John Nolen Drive
- Provides pedestrian/bicycle landing pads on both sides of John Nolen Drive
- Relocates access to Machinery Row across from Hancock Street
- Creates Wilson Street streetscaped termination with parallel street parking in addition to parking for loading/unloading in front of Wilson Street businesses
- Maintains channelized right turn onto Williamson Street off of John Nolen Drive, expands the adjacent pedestrian island, and provides a raised crosswalk between Machinery Row and the pedestrian island

It is further recommended by the Consultant Team that additional signage be installed at the East Gateway intersection to improve wayfinding and etiquette. Signage that directs bicyclists, pedestrians, and motor vehicles on designated areas for each mode within the intersections would help create an environment in which users feel empowered to navigate the intersection safely themselves and help others do the same.

These Consultant Team recommendations have been made after careful consideration of stakeholder feedback, as well as weighing the tradeoffs of the proposed design concepts. These tradeoffs include the following:

- Termination of Wilson Street disrupts current traffic patterns including transit routes which would need to reroute through new Hancock intersection. It also has the potential to create traffic diversions through area neighborhoods
- New Hancock intersection will require a steep grade between Wilson Street and John Nolen Drive, but it would meet current engineering standards
- New Hancock grade crossing will require railroad coordination and permitting
- Bus movements re-routed through intersection at Hancock
- Requires boat launch relocation

Despite these tradeoffs, the Consultant Team recommends the proposed design concept as the best solutions to advance for the East Gateway intersection.

Implementation

Implementation of these Gateway Concepts will require detailed design that may necessitate the modification or exclusion of some components. The design and construction also will require railroad coordination and obtaining the necessary permits from relevant agencies.

Figure 18. East Gateway Design Concept (Note: This concept incorporates design elements that will require agency permits and railroad coordination)

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

August 2014

Prepared for:

CITY OF MADISON, WI

Prepared by:

Kimley-Horn and Associates, Inc.

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

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)

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

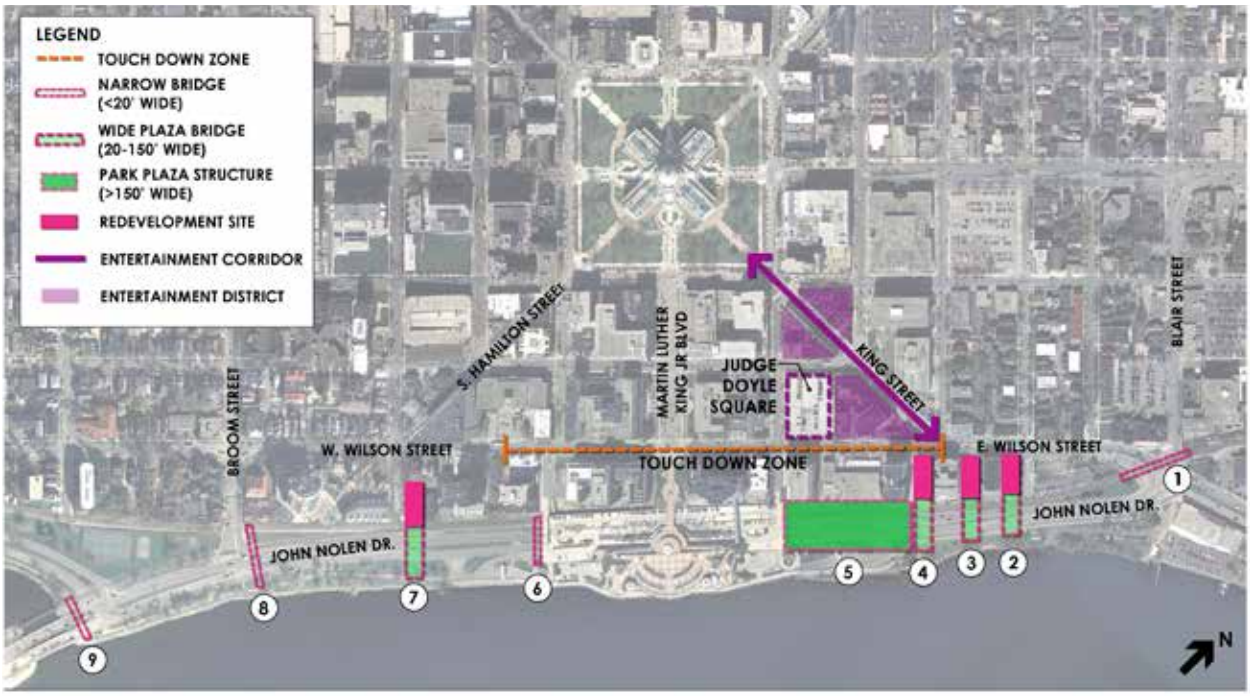


Figure 3. Design Concept Locations

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	▪ Reduces conflicts at grade within the gateway intersection ▪ Provides direct connections to DT and Capitol ▪ Provides connections for a well-traveled route	▪ 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	$$$
2/ 3	**Wilson and Hancock/ King Streets**	Wide Plaza	▪ Ties to development / Enhances ground floor space of development ▪ Opportunity for "signature" addition to Law Park ▪ Opportunity for café space, activated plaza	▪ Touch down requires multi-level ramps/ stairs at Wilson ▪ Not ideal for bikes (due to elevation of Wilson Street) ▪ Impacts view of Lake from westbound JND	Fill or structure required within lake for bridge touchdown	$$$
4	**Wilson and Butler Streets**	Wide Plaza	▪ 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	▪ 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	$$$
5	**Monona Terrace East Side**	Park Plaza	▪ Opportunity for "signature" destination ▪ Ideal connection location for bikes – based on elevation of Wilson Street ▪ Opportunity for connection to lake edge ▪ Opportunity for structured parking component	▪ Requires significant cost, long term vision/ planning ▪ Major impact to views of Lake from JND ▪ Creates "tunnel effect" on JND	Fill and added structure over lake improves concept	$$$$$

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	▪ 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	▪ Requires long run out ramp OR spiral ramp ▪ Not ideal for connectivity to Law Park	Fill improves concept and provides flexibility for bridge touchdown	$$
7	**Wilson and Henry Streets**	Wide Plaza	▪ Ties to development / Enhances ground floor space ▪ Opportunity for connection to Lake ▪ Opportunity for café space, activated plaza	▪ Touch down requires ramps/ stairs at Wilson ▪ Not ideal for bikes (not in touch down zone) ▪ Potential impacts to views of Capitol and DT	Fill improves concept and provides flexibility for bridge touchdown	$$$
8	**West Gateway at Broom Street**	Narrow Bridge	▪ Reduces conflicts at West Gateway ▪ Direct bike/ ped connection to DT from west ▪ Well-traveled route toward UW from west	▪ Very challenging touch down north or 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	$$$
9	**West Gateway at North Shore**	Narrow Bridge	▪ Eliminates wait to cross JND at North Shore ▪ Bike/ ped connection to DT from west ▪ Well-traveled route toward UW from west	▪ Clearance over RR creates long touchdown ramps ▪ Potential impacts to views of DT from JND ▪ Not ideal for bike connectivity to DT from east	Fill or structure required within lake for bridge touchdown	$
Underpass/ Tunnel Concepts			▪ Requires shorter ramps to reach grade (vs. bridge) ▪ Allows crossing of JND without wait at intersection ▪ No impacts to views of Capitol, DT or lake	▪ Underpass requires raising elevation of JND or tunnel ▪ Tunnel requires pumping (short/ long term costs) ▪ Security concerns ▪ Potential utility relocation / contaminated soils	Depends on location	$$$$

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

Table 3. Refined Alternatives

Loc.	Alt.	Description	Concept Drawing
3	1	▪ Creates unique opportunity for landmark structure ▪ Separates bicycle and pedestrian modes within plaza space ▪ Uses opposing ramps to create a dock-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	▪ 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	▪ Builds on existing spiral structure context from Monona Terrace ▪ Combines stairs and spiral structure to provide pedestrians option ▪ Formal promenade with intimate and larger gathering spaces ▪ Creates an overlook to the lake integral to the plaza	
4	2	▪ 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	▪ Responds to existing curvature 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	▪ 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 ▪ Choke point creates a natural caution area encouraging thought before proceeding through ▪ Elements can be designed to blend with Monona Terrace	

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.

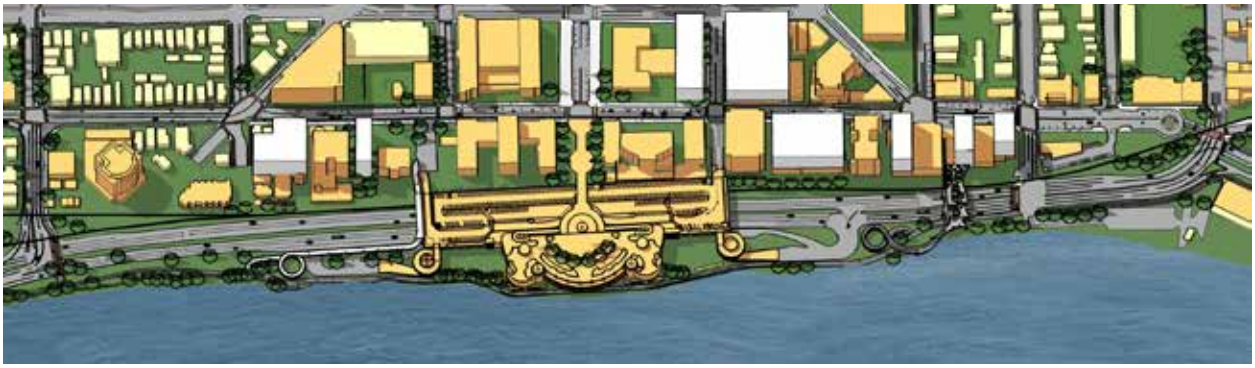


Figure 5. Simple Connection (West) and Plaza Bridge (East) Concepts

Figure 6. Mirror Bridge Concept

Figure 7. Plaza Bridge Concept

Figure 9. Plaza Bridge Concept

Figure 8. Plaza Bridge Concept

Figure 6. Mirror Bridge Concept (Continued)

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

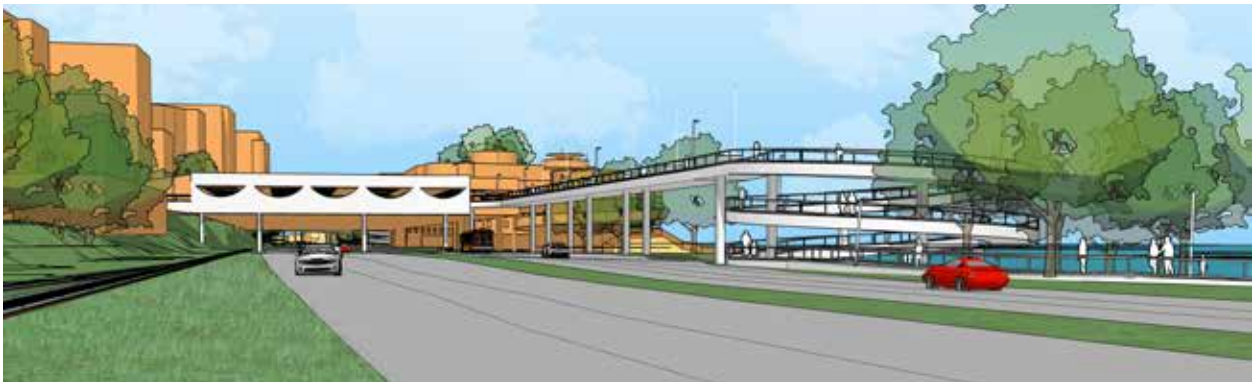


Figure 12. Simple Connection Bridge Concept

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