

# Milwaukee Connector Study

## Locally Preferred Alternative for Streetcar Summary Report

May 3, 2010

### Executive Summary

A 2-mile starter Streetcar system is being recommended to connect the heart of the Central Business District with the Milwaukee Intermodal Station and high density residential areas just north of downtown. The Streetcar would provide many benefits including increased mobility, enhanced multimodal connections, and economic development.

The initial system would have five vehicles powered by an overhead electric contact system. The vehicles would operate in mixed traffic with 10 minute headways throughout most of the day and 15 minute headways during early morning and late evening hours. The vehicles would be modern low-floor Streetcars similar to those operating in the City of Portland. The initial route would have 12 station pairs that are strategically located within walking distance to numerous parking structures to facilitate Milwaukee's "Park Once" concept.

Two route extensions that would add 1.55 miles and seven stations to the initial route are also recommended. The 4<sup>th</sup> Street extension would connect the Intermodal Station and several large entertainment venues with the Park East and Brewery redevelopment areas. The Prospect/Farwell extension would provide Lower East Side residents and the Brady Street commercial district with a direct connection to downtown. Service characteristics would be identical to the initial system; however, the additional route length would require one more Streetcar vehicle to maintain the planned headways. Funding under the Exempt Discretionary Program Grants (Section 5309) for Urban Circulator Systems is being requested to implement the extensions. If funding is approved, the goal would be to implement the extensions concurrently with the initial route.

One year after Streetcar operations begin, the initial route is anticipated to generate 1,800 rides per day and 665,000 rides per year. The route extensions are expected to increase ridership to 3,800 daily and 1.39 million annual riders. By 2030, ridership is expected to increase by 19%.

Once it is operating, the initial route and the proposed extensions would immediately be within ¼ mile of:

- 100% of all downtown hotel rooms
- 91% of all downtown first floor commercial/retail space.
- 90% of all downtown office space
- 77% of all downtown housing units
- 77% of downtown public parking facilities and lots

Recognizing that fixed guideway transit along with favorable development policies and market conditions can be a catalyst for transit-oriented development, future economic development potential within ¼ mile of the initial route and the extensions over the next 20 years could generate:

- 9,100 new housing units (63% increase)
- 13,650 new residents (55% increase)
- 1,000,000 SF of new occupied retail space (31% increase)
- 4,060,000 SF of new occupied office space (28% increase)
- 20,500 new jobs (23% increase)
- \$3.35 billion in new tax base

The capital costs for the initial Streetcar system are estimated to be \$64.3 million. The route extensions would add \$31.5 million for a total combined cost of \$95.8 million. The estimated annual cost for operating and maintaining the initial Streetcar system is \$2.62 million. The route extensions would add \$1.23 million for a total annual operating and maintenance cost of \$3.85 million.

During an alternatives analysis process, feasible funding sources are identified for the local match to build the system and annual costs to operate the system. Although it is important to identify feasible funding sources, the funding commitments and detailed financial planning is completed in the Preliminary Engineering phase.

Local Match Capital Cost Finance – As identified in the capital cost section, approximately \$16.2 million in local match will be required for the \$79.9 million in federal construction funds for the initial route and route extensions. The City will be utilizing Tax Increment Finance (TIF) funding for the local capital cost match. There is capacity within TIF districts along the route to fund the local share. In addition, there are several opportunities along the route to create new TIF districts to help fund a portion of the local share.

Annual Operating Funding – The estimated annual operations cost for the initial route is \$2.62 million and \$3.85 million for the initial route and route extensions. The annual operating costs are intended to be financed through the City’s parking fund, farebox revenue and state and federal transit aid; however, if a new dedicated revenue source for a Regional Transit Authority (RTA) is approved by the State Legislature, the operating costs for the Streetcar should be financed by that source.

A local transit provider under the direction of a Regional Transit Authority is the preferred owner/operator for the Streetcar. The Wisconsin Legislature is currently considering various frameworks and funding mechanisms for an RTA in southeastern Wisconsin. Such an authority may be available to operate the proposed streetcar prior to project completion. However, until the RTA option is feasible, the City of Milwaukee will be the owner and operator of the Streetcar. It is anticipated that the City would contract for system operation and maintenance.

The next step to advance the Streetcar project is to obtain approval of the Locally Preferred Alternative. If approved, the city would initiate the preliminary engineering and environmental documentation phase of the project. Commitments to financing and governance would also be required. Then, final design, construction, and ultimately service would follow. On-going coordination with stakeholders, the public and FTA would be necessary throughout all stages of the project.

# 1 INTRODUCTION

The recommended Streetcar project is a component of the Milwaukee Connector Study. This section provides important background information for the Milwaukee Connector Study and the Alternatives Analysis that led to a recommended Locally Preferred Alternative for the Streetcar component of the project.

## 1.1 Report Purpose

The purpose of the Locally Preferred Alternative report is to summarize the process and outcome of the Alternative Analysis that was completed for a Streetcar system in downtown Milwaukee. The selection and approval of the Locally Preferred Alternative sets forth a plan to make a major transit investment in Milwaukee and allows future project phases to move forward.

## 1.2 Project Background

The Milwaukee Connector Study began evaluating transit improvements in and around downtown Milwaukee in 2000 to carry out recommendations from previous transportation planning efforts that took place during the 1990's. A partnership between the Wisconsin Center District, the Metropolitan Milwaukee Association of Commerce, the City of Milwaukee and Milwaukee County was formed to lead the study. The group, acting as the project's Steering Committee, applied for and received federal funding to study alternatives and recommend a plan for improving public transit in downtown Milwaukee.

Following early meetings with the public, it became clear that there was a growing need to connect people to places, not only in downtown, but to surrounding neighborhoods. As a result, the study area was expanded to include potential routes north to Highland Avenue west of I-43, along Fond du Lac Avenue, 44th Street and Miller Park, and Canal Street in the Menomonee Valley. Multiple alignments were also studied to connect Brady Street, Canal Street, the Historic Third Ward, 30th Street and Fond du Lac Avenue. Exhibit 1 shows a map of all alignments that have been considered as part of the Milwaukee Connector study.

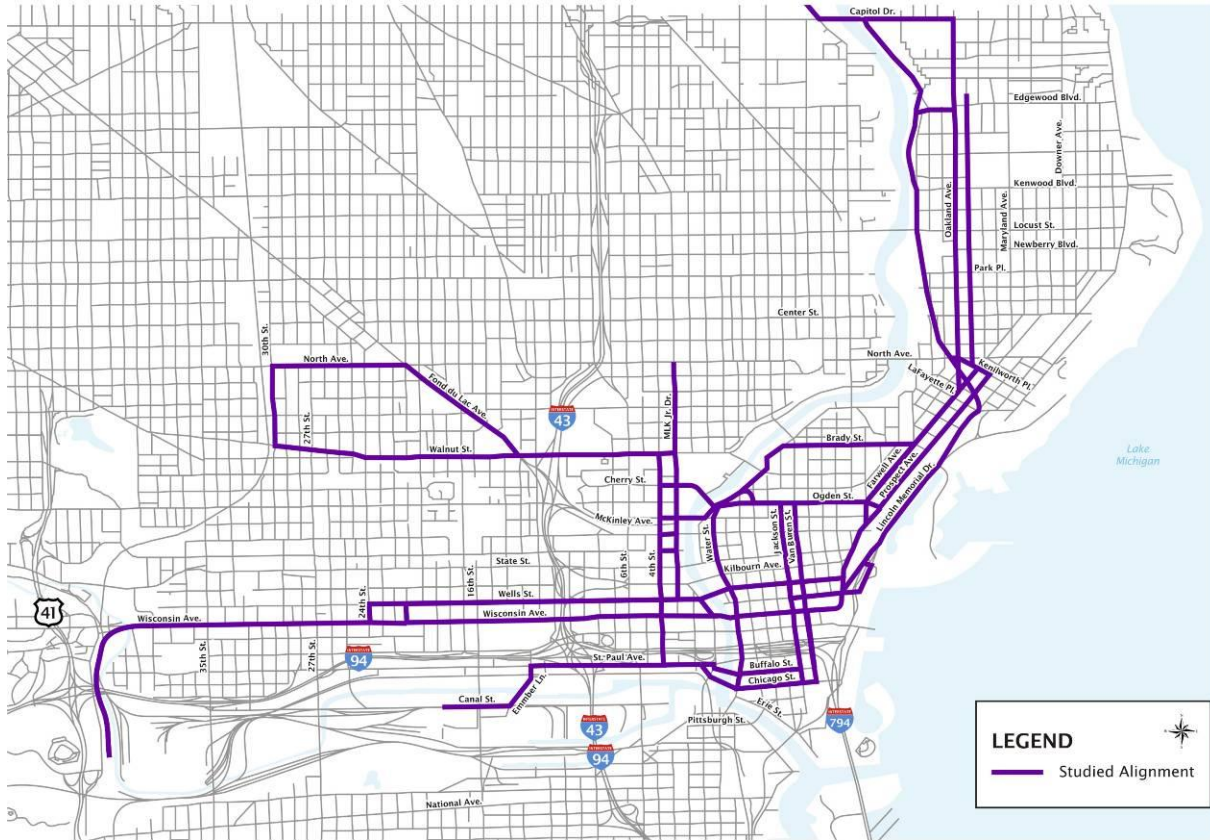
In January of 2004, after reviewing many different alignments and transit technologies, the Steering Committee approved a two-route system that would utilize guided street tram technology. An east-west line extended from Miller Park to downtown and continued northeast to the University of Wisconsin-Milwaukee. The other route ran southeast along Fond du Lac Avenue from Burleigh Street into downtown and the Third Ward. Resolutions supporting this system were approved by the Milwaukee Common Council and the Milwaukee County Board. However, the respective resolutions were vetoed due to concerns about cost.

In the spring of 2007, the Milwaukee Connector Steering Committee initiated a new phase of the study. The City of Milwaukee refocused its efforts to connect downtown with adjacent neighborhoods using Streetcar technology. Milwaukee County refocused its efforts on a bus rapid transit project that would connect the Milwaukee County Grounds to the west with the University of Wisconsin-Milwaukee to the east.

In February of 2009, scoping meetings were held to introduce the public to the new project phase. Then, in March of 2009, the Federal Omnibus Appropriations Act of 2009 split the \$91.5 million in Interstate Construction Estimate (ICE) funding reserved for the results of the Milwaukee Connector Study. The legislation directed 60% of the money to the City of Milwaukee for a downtown rail line and 40% of the money to Milwaukee County for buses. Since this time the City of Milwaukee has moved forward with

evaluating Streetcar route alternatives and Milwaukee County continues to evaluate its options for express bus service.

### Exhibit 1: Previously Studied Route Alignments



### 1.3 Streetcar Goals and Objectives

The Milwaukee Connector Study has identified a series of transit improvement needs for Milwaukee County and downtown Milwaukee which have formed the basis for the proposed transit improvements to be studied. The Streetcar would improve mobility by providing a new type of transit service that currently does not exist within downtown. Providing transit service that is easy to understand and predictable would increase transit ridership. Linking residential areas with concentrations of employment would help connect people to jobs and promoting compact land development patterns that support transit would encourage planned economic development along the Streetcar route. Current transit routes provide trips to and from the downtown but do not provide circulation within the downtown; therefore the Streetcar is intended to provide improved connectivity within downtown Milwaukee and eventually expand to provide trips to and from downtown Milwaukee.

## Exhibit 2: Streetcar Photo Rendering at Wells and Van Buren Streets



Based on the needs outlined above, goals for the Streetcar include the following:

1. Improving transit mobility to and between key residential, employment and activity centers.
2. Developing a connector system that is economical and efficient.
3. Increasing transit utilization.
4. Supporting and enhancing economic development.
5. Improving transit service to help attract conventions, tourists and residents.
6. Preserving and protecting the environment.

Within the framework of the general goals, specific objectives of the Streetcar include, among others:

1. Improving transit access to key origins and destinations.
2. Providing a downtown core system that can be expanded in the future to provide a larger, more effective transit network.
3. Maximizing transit accessibility and choices for residents, employees and visitors.
4. Providing transit service between residential areas and job centers.
5. Providing transit options for those people that depend on transit.
6. Promoting public/private partnerships.
7. Promoting transit-oriented developments.
8. Providing “branding” of the transit vehicles.
9. Providing intermodal connections.
10. Integrating way-finding to enhance the pedestrian environment.
11. Serving existing development and planned developments.
12. Contributing to job creation.
13. Promoting the “Park Once” concept for downtown visitors.
14. Reducing energy consumption and vehicle emissions through increased transit use.

## **2 PUBLIC INVOLVEMENT PROGRAM**

Since the Milwaukee Connector Study began, over 350 public meetings, stakeholder briefings, environmental justice and other outreach meetings have been held. It has always been a priority for the study to provide opportunities for the public to give feedback on the numerous routes and various vehicle technologies that have been evaluated over the years.

This most recent phase of the Milwaukee Connector Study has continued to keep the public and stakeholders informed. The following sections describe the outreach efforts that were conducted as part of the Streetcar component of the Milwaukee Connector Study.

### **2.1 Public Open House**

A public information meeting was held on October 8, 2009 to present the Streetcar alternatives to the public and to obtain feedback. Approximately 200 people attended the meeting, which was held from 3 p.m. to 7 p.m. at the Zeidler Municipal Building in downtown Milwaukee.

At the meeting, attendees were able to view project information including route alternatives, ridership generation information, Streetcar technologies, conceptual engineering and preliminary operations plans. A presentation at 3:30 p.m. and 6:00 p.m. was given to summarize project information. Participants were able to speak with project staff and written comment forms were provided.

The project's Web site was updated with all of the meeting displays and the presentation to allow visitors to the site to attend a virtual public information meeting. Comment forms were also available online.

During the public comment period 125 comments were received, which includes written comments obtained at the October 8, 2009 meeting and comments placed on the project Web site between September 22 and October 22, 2009. The majority of written and verbal comments were supportive of the Streetcar project. Of those that gave a route preference, Alternative 1 was mentioned most frequently. Support was also expressed for route Alternative 2, but few participants expressed support for Alternative 3. See Section 3 for details about route alternatives.

### **2.2 Key Stakeholder Briefings**

Several briefings have occurred during this project phase to obtain feedback on the proposed Streetcar from key stakeholders, elected officials and agencies. The groups briefed included:

- Elected officials (Milwaukee Aldermen, Mayor Tom Barrett, Milwaukee County Supervisors, Congresswoman Gwen Moore's office)
- Business Improvement Districts (Brady Street, Historic Third Ward, East Town, Westtown, and Downtown)
- Wisconsin Center District
- Visit Milwaukee
- Public Policy Forum
- Metropolitan Milwaukee Association of Commerce
- WE Energies
- Wisconsin Department of Transportation
- Southeastern Wisconsin Regional Planning Commission
- Business and Property Owners along the preferred route

Meetings with these stakeholders resulted in many expressing support for the Streetcar; with some expressing interest and awaiting further study results.

### **2.3 Environmental Justice Briefings**

The Streetcar phase of the Milwaukee Connector Study included environmental justice outreach. Specifically, the project team notified all organizations on the project's mailing database that represent environmental justice populations about the October 8, 2009 public information meeting. In addition, briefings were held with the following organizations:

- American Civil Liberties Union
- Urban Economic Development Association
- The Milwaukee Urban League
- Independence First
- Esperanza Unida
- 9 to 5
- Citizen Action/Good Jobs and Livable Neighborhoods
- SEIU Local 1
- NAACP
- MICAH
- Disability Rights Wisconsin
- Milwaukee Environmental Forum (including the Alliance for the Great Lakes, Bicycle Federation of Wisconsin, Center for Resilient Cities, Groundwork Milwaukee, Midwest Renewable Energy Association, Milwaukee Riverkeeper, Milwaukee River Work Group, The Park People of Milwaukee County, River Revitalization Foundation, WI League of Conservation Voters)

Meetings with organizations that represent environmental justice populations have generally produced expressions of support for the proposed Streetcar. In general, representatives indicated they understand the need to start small and start downtown. Many groups expressed interest in future expansions to provide service to additional low income and minority populations. Other topics of importance expressed by many of these organizations included: local hiring requirements; construction job opportunities; the cost to ride the Streetcar; incentives and support for local business development; and accessibility for people with disabilities.

### **2.4 Other Outreach**

In the winter of 2009 the Milwaukee Connector was evaluating BRT and Streetcar Alternatives in Milwaukee County prior to congressional action to split Milwaukee's ICE transit funding. The public feedback gained during this time was important to the Alternatives Analysis process that was completed for the Streetcar and is described in this section.

A series of six public information meetings were conducted to obtain comments on the project's purpose, goals, study area, initial routing corridors and project technology. The scoping meetings were conducted in an open house format with staff available at five stations to provide information and answer questions. As shown in Table 1, the meetings were held over a two week period from February 3 through February 12, 2009. A total of 345 people signed in at the public meetings.



**Table 1: Scoping Meetings**

<b>Meeting</b>	<b>Date</b>	<b>Signed In</b>
Wisconsin Room - UW-Milwaukee	February 3, 2009	98
Fritsche Middle School	February 4, 2009	43
Black Historical Society	February 5, 2009	14
Northwestern Mutual Franklin Campus	February 10, 2009	50
Milwaukee County Research Park	February 11, 2009	53
Milwaukee Downtown Transit Center	February 12, 2009	87
<b>All locations</b>	<b>Total</b>	<b>345</b>

A total of 211 comments were received during the comment period between February 3 and February 28, 2009. The public could submit comments at the meetings, through the project Web site or by mail. Comments included:

- Overall support for improving and investing in Milwaukee transit.
- Support for a combined BRT and Streetcar system to enhance transit in Milwaukee.
- Support for a linear Streetcar system instead of a downtown Streetcar loop.

Before the public meetings, individual briefings were held with representatives from the suburban communities located within the study area including Franklin, Glendale, Greenfield, Oak Creek, Shorewood, St. Francis, and Wauwatosa. The briefings were conducted to introduce the communities to the project and to gain their initial feedback.

### **3 ALTERNATIVES CONSIDERED**

The City of Milwaukee developed three Streetcar route alternatives that focused on improving the transit connection between the major business and entertainment areas of downtown Milwaukee with nearby neighborhoods that contain high density residential housing. Each alternative has an initial system that is anticipated to be paid for with the existing ICE funds. In addition, each route alternative considered potential route extensions that would only be constructed if additional funding could be secured. The initial routes and extensions are described below.

#### **3.1 Streetcar Route Alternative 1**

Alternative 1, as shown on Exhibit 3, would originate at the recently renovated Milwaukee Intermodal Station. As the route proceeds east along St. Paul Avenue, it would cross the Milwaukee River and enter the Historic Third Ward neighborhood. Then, the route would head north along Van Buren Street and east along Ogden Street. As the route proceeds back, it would travel west along Ogden and then turn south along Jackson Street. Once the route intersects with St. Paul Avenue it would travel west and terminate at the Milwaukee Intermodal Station.

Potential route extensions for this alternative included a segment along 4<sup>th</sup> Street between St. Paul Avenue and Wells Street and a segment along Prospect Avenue and Farwell Avenue between Ogden Street and Brady Street.

One sub-option for Alternative 1 was considered. As the route proceeds east along St. Paul Avenue from the Intermodal Station, it would turn south along Water Street instead of continuing along St. Paul Avenue. Then, the route would turn east along Chicago Street before it connects with the Jackson-Van Buren pair.



Alternative 1 is 2.73 miles long and the sub-option is 3.11 miles long. Mileage includes the potential route extensions.

### Exhibit 3: Streetcar Route Alternative 1 and Sub-Option 1



### 3.2 Streetcar Route Alternative 2

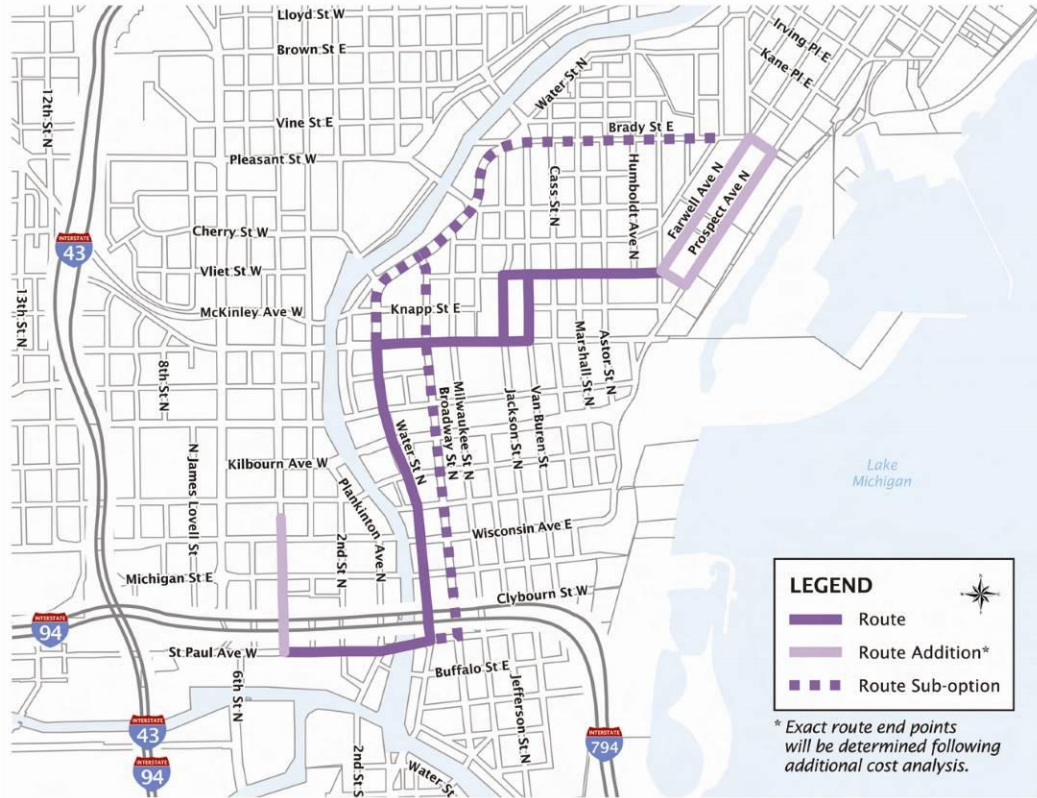
Alternative 2, as shown on Exhibit 4, would originate at the Milwaukee Intermodal Station and proceed east along St. Paul Avenue. After the route crosses the Milwaukee River, it would enter the Historic Third Ward neighborhood and proceeds north along Water Street. Then, the route would turn east along Juneau Street, north along Van Buren Street and east along Ogden Street. On the way back, the route would proceed west along Ogden Street and then south along Jackson Street for a few blocks before doubling back on Juneau Street and Water Street. At St. Paul Avenue the route would proceed west and terminate at the Milwaukee Intermodal Station.

Like Alternative 1, Alternative 2 also considered route extensions along 4<sup>th</sup> Street between St. Paul Avenue and Wells Street and along Prospect Avenue and Farwell Avenue between Ogden Street and Brady Street.

Alternative 2 considered one sub-option. Instead of going north along Water Street, the route would travel north along Broadway, continue northeast along Water Street and head east along Brady Street. Then, the route would turn back along Brady Street, continue south along Water Street and head back to its destination on St. Paul Avenue.

Alternative 2 is 2.83 miles long and the sub-option is 2.66 miles long. Mileage includes the potential route extensions.

## Exhibit 4: Streetcar Route Alternative 2 and Sub-Option 2



### 3.3 Streetcar Route Alternative 3

Alternative 3, as shown on Exhibit 5, would begin at the Milwaukee Intermodal Station. Then, the route would proceed north along 4<sup>th</sup> Street and east along Juneau Avenue. Once the route passes Water Street on the east side of the Milwaukee River it mirrors Alternative 2.

Alternative 3 considered a route extension along Prospect Avenue and Farwell Avenue between Ogden Street and Brady Street.

Alternative 3 considered one sub-option. From Juneau Avenue the route would head north along Water Street and continue along Brady Street. The sub-option would double back along Brady Street and continue along Water Street until it reached Juneau Avenue. At this point, the sub option would go west along Juneau Avenue and south along 4<sup>th</sup> Street to its destination.

Alternative 3 is 2.36 miles long and the sub-option is 2.19 miles long. Mileage includes the potential route extension.

## Exhibit 5: Streetcar Route Alternative 3 and Sub-Option 3



Following the public outreach process, additional route sub-options were developed for further evaluation. Section 4 below describes the additional route options.

## 4 EVALUATION OF ALTERNATIVES

This section describes how the Streetcar route alternatives were evaluated and the outcome of that process that led to a decision on the recommended Locally Preferred Alternative.

### 4.1 Evaluation Process

Following the development of the Streetcar route alternatives, data was gathered for each alignment and sub-option to assist with evaluating and refining project alternatives. Table 2 lists the eight criteria and evaluation factors that were used during the evaluation process. The criteria were chosen and developed based upon their ability to support a successful transit system.

**Table 2: Evaluation Criteria**

Criteria*	Evaluation Factors
<b>Public Interest</b>	<ul style="list-style-type: none"> <li>• Written and verbal comments</li> <li>• Stakeholder comments</li> </ul>
<b>Ridership</b>	<ul style="list-style-type: none"> <li>• Trip generation potential</li> <li>• Housing units</li> <li>• Retail square feet</li> <li>• Office square feet</li> <li>• Hotel rooms</li> <li>• Parking spaces</li> <li>• Tourists</li> <li>• Pedestrian activity</li> <li>• Existing transit ridership</li> </ul>
<b>Engineering</b>	<ul style="list-style-type: none"> <li>• Utilities</li> <li>• Pavement conditions</li> <li>• Intersection conflicts</li> <li>• Overhead clearance</li> <li>• Steep grade</li> <li>• Bridge replacement or repairs</li> <li>• Pavement width</li> </ul>
<b>Capital Cost</b>	<ul style="list-style-type: none"> <li>• Guideway facilities</li> <li>• Utilities and environmental</li> <li>• Systems</li> <li>• Stations</li> <li>• Yard and shop</li> <li>• Miscellaneous cost</li> </ul>
<b>Operations and Impacts</b>	<ul style="list-style-type: none"> <li>• Level of service</li> <li>• Traffic volumes</li> <li>• Number of turns</li> <li>• Traffic signals</li> </ul>
<b>Environmental Justice</b>	<ul style="list-style-type: none"> <li>• Non white population</li> <li>• Household income below \$32,000</li> <li>• Seniors</li> <li>• Rental occupied housing</li> <li>• Commuting</li> <li>• Vehicle ownership</li> <li>• Persons with disabilities</li> <li>• Jobs</li> <li>• Elderly and senior housing locations</li> </ul>
<b>Future Land Use &amp; Economic Development Potential</b>	<ul style="list-style-type: none"> <li>• Total developable acres</li> <li>• New housing units</li> <li>• New residents</li> <li>• New retail space</li> <li>• New office space</li> <li>• New total building space</li> <li>• New tax base</li> <li>• New employees</li> <li>• New parking spaces</li> </ul>
<b>Long Range City Goals</b>	<ul style="list-style-type: none"> <li>• Connects to the Intermodal Station</li> <li>• Implement the Downtown Plan</li> <li>• Connects to high density residential</li> <li>• Connects to employment centers</li> <li>• Local decision makers</li> </ul>

\* Operating Cost and Expandability were taken into consideration; since these factors are similar for all route options they were not included as criteria in the evaluation matrix.

A ranking process was used to identify distinguishing characteristics between the route alternatives and to guide the decision making process. Each factor was assigned a value based on how it compared to the

other alternatives. Then, a total value was calculated for each criteria and each alternative to assign a rank. Criteria that had a higher level of importance for the City of Milwaukee, including public interest, ridership and economic development potential, were weighted higher. Table 3 shows how the alternatives ranked by individual criteria and overall.

**Table 3: Alternative Ranking Process Outcome**

Criteria	1	1 sub option	2	2 sub option	3	3 sub option
Public Interest (weighted 2x)	1 <sup>st</sup>	1 <sup>st</sup>	3 <sup>rd</sup>	3 <sup>rd</sup>	6 <sup>th</sup>	6 <sup>th</sup>
Ridership (weighted 2x)	2 <sup>nd</sup>	1 <sup>st</sup>	4 <sup>th</sup>	3 <sup>rd</sup>	5 <sup>th</sup>	6 <sup>th</sup>
Engineering	4 <sup>th</sup>	4 <sup>th</sup>	3 <sup>rd</sup>	4 <sup>th</sup>	2 <sup>nd</sup>	1 <sup>st</sup>
Capital Cost	2 <sup>nd</sup>	2 <sup>nd</sup>	2 <sup>nd</sup>	2 <sup>nd</sup>	1 <sup>st</sup>	1 <sup>st</sup>
Operations and impacts	3 <sup>rd</sup>	3 <sup>rd</sup>	5 <sup>th</sup>	4 <sup>th</sup>	2 <sup>nd</sup>	1 <sup>st</sup>
Environmental Justice	4 <sup>th</sup>	2 <sup>nd</sup>	2 <sup>nd</sup>	1 <sup>st</sup>	3 <sup>rd</sup>	2 <sup>nd</sup>
Economic Development Potential (weighted 2x)	3 <sup>rd</sup>	1 <sup>st</sup>	5 <sup>th</sup>	2 <sup>nd</sup>	5 <sup>th</sup>	4 <sup>th</sup>
Long Range Goals	1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>	4 <sup>th</sup>	5 <sup>th</sup>	6 <sup>th</sup>
<b>Overall Rank</b>	<b>2<sup>nd</sup></b>	<b>1<sup>st</sup></b>	<b>4<sup>th</sup></b>	<b>3<sup>rd</sup></b>	<b>5<sup>th</sup></b>	<b>6<sup>th</sup></b>

### Route Alternatives Eliminated from Further Study

This section describes the rationale for route alternatives and sub-options that were eliminated from further study.

#### ➤ Alternative 1 Sub-Option

Although the sub option for Alternative 1 was the highest ranking alternative, it was eliminated from further study. The evaluation process determined the sub option:

- Adds several turns to the alignment and there is not sufficient right of way to accommodate some of the turns through the Third Ward neighborhood,
- Includes right of way constraints at Chicago and Water streets that could affect Streetcar and traffic operations, auto traffic integration and vehicle schedule timing,
- Is the most expensive because it is the longest route, and
- The additional cost of this alternative does not outweigh the potential ridership trip generation and economic development benefits afforded by the alternative.

#### ➤ Alternative 2 and Alternative 2 Sub-Option

Alternative 2 and its sub option were eliminated based on the following reasons:

- The alternatives do not serve the east side of downtown as well as Alternative 1, including the major office district in the southeast corner of downtown and the high density residential area along Jackson and Van Buren streets,
- The alternatives do not serve the future economic development potential of the northeast portion of the Third Ward neighborhood where several surface parking lots are currently located,
- The Water Street alignment for Alternative 2 was too close to the 4<sup>th</sup> Street alignment and service could be duplicated,
- Potential utility concerns and conflicts along Water Street,

- For Alternative 2 sub-option, Brady Street’s narrow right of way with only two travel lanes and lack of alleys for loading and unloading goods could create operational concerns for the Streetcar, and
- For Alternative 2 sub-option, Streetcar service may need to be temporarily suspended several times during the year to accommodate Brady Street festivals that close the road.

➤ Alternative 3 and Alternative 3 Sub-Option

Alternative 3 and its sub option ranked the lowest overall in comparison to the other alternatives. Elements that contributed to the low rank include:

- Scored low with the public interest, ridership generation and economic development factors, which were considered the three most critical elements to create a successful Streetcar system,
- For Alternative 3 sub option, Brady Street’s narrow right of way with only two travel lanes and lack of alleys for loading and unloading goods could create operational concerns for the Streetcar. The narrow right of way could also create parking and traffic operation concerns, and
- Streetcar service may need to be temporarily suspended several times during the year to accommodate Brady Street festivals that close the road.

## 4.2 Route Alternatives and Variations Selected for Additional Study

After the benefits and challenges of each alternative and sub option were evaluated, some route alternatives were eliminated from further evaluation and other route alternatives were selected for further study. The rationale for the eliminations and selections are discussed in the sections below.

Alternative 1 was selected for more detailed analysis. The evaluation process found Alternative 1:

- Best serves and links the main office district of downtown with the high density residential areas along Jackson and Van Buren streets,
- Serves the potential redevelopment areas in the northeast section of the Third Ward neighborhood and provides the best proximity to the lakefront,
- Received the most public interest and has good ridership trip generation potential,
- Has strong economic development potential, and
- Best meets the city’s long range goals.

It was determined two new sub options to Alternative 1 (Alternative 1-2A and 1-2B) would also be evaluated. The sub alternatives are similar to Alternative 1 except they combine some favored elements of Alternative 2. Specifically, the sub option (1-2A) would run along Broadway between St. Paul Avenue and Wells Street and then connect with the Jackson and Van Buren pair via Wells Street. The other sub-option (1-2B) was developed due to potential traffic operation concerns with two-way transit along Broadway. This option is similar to Alternative 1-2A, except it considers a one-way pair option along Milwaukee Street and Broadway between St. Paul Avenue and Wells Street. The sub options are shown in Exhibits 6 and 7.

The Alternative 1-2 sub options were created because they:

- Avoid the I-794 bridges and ramps over Van Buren Street that has just over 14 feet of overhead clearance,



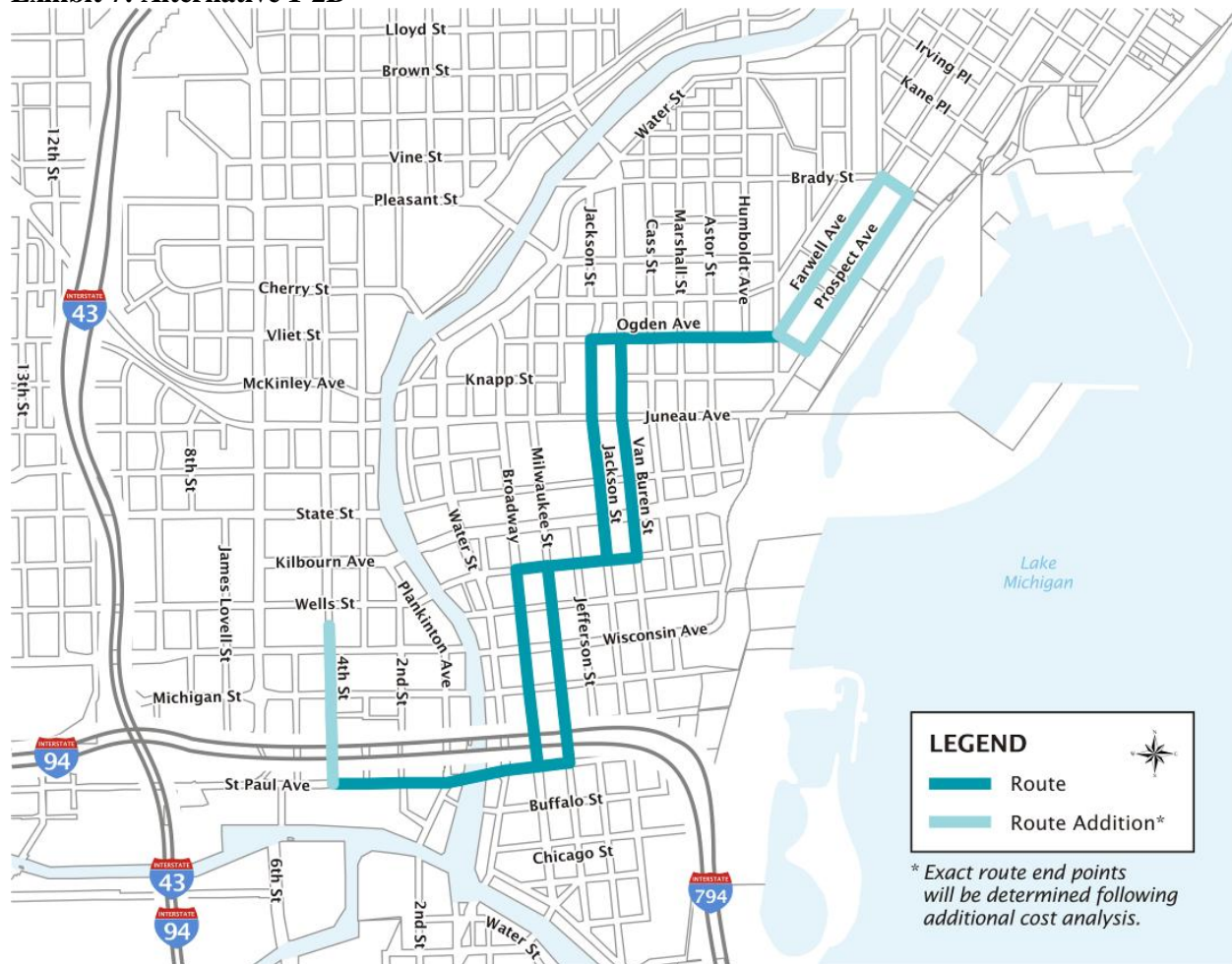
- Avoid the I-794 ramp that exits northbound onto Van Buren Street, creating traffic conflicts during peak travel periods,
- Make a strong connection to the western portion of East Town, while maintaining a connection to the high density residential and downtown office areas,
- Have strong redevelopment potential for the surface parking and underutilized buildings on the southern portion of Broadway,
- Link strong pedestrian activity along both Broadway and Milwaukee Street and serves the entertainment district along Milwaukee Street.

**Exhibit 6: Alternative 1-2A**





## Exhibit 7: Alternative 1-2B



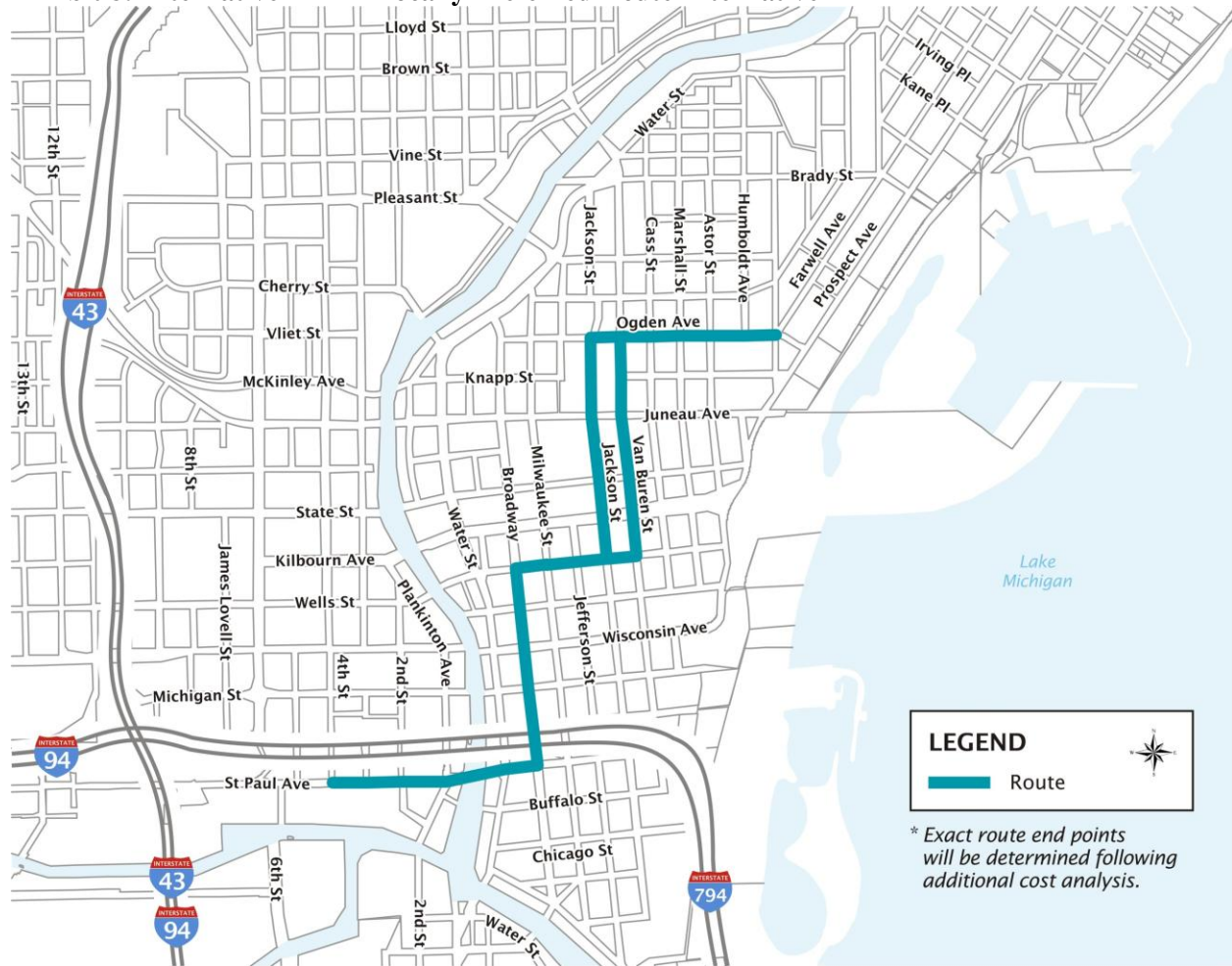
### 4.3 Locally Preferred Route Alternative Selection

Additional analysis was completed to determine if Alternative 1, Alternative 1-2A or Alternative 1-2B would be recommended as the Locally Preferred Alternative and to determine the length of route that could be built with the available funding.

#### Alternative 1-2A – Locally Preferred Alternative

Alternative 1-2A that operates with two-way transit on Broadway between St. Paul Avenue and Wells Street is recommended for the preferred route alternative. The portion that can be built with available ICE Funding includes the initial route between the Intermodal Station at 4<sup>th</sup> Street and St. Paul Avenue and Ogden Avenue and Farwell Avenue (at Burns Commons Park), as shown in Exhibit 8.

**Exhibit 8: Alternative 1-2A – Locally Preferred Route Alternative**



**Route Variations Eliminated from Study**

➤ **Alternative 1**

The Alternative 1 variation that utilizes Jackson and Van Buren Streets from Ogden Avenue to St. Paul Avenue was eliminated from further study due to the following factors:

- Overhead clearance concerns with the I-794 bridges and ramps over Van Buren Street,
- Peak period traffic conflict concerns with the I-794 ramp that exits northbound onto Van Buren Street,
- Does not make the strongest connection to the western portion of East Town,
- The route segment adjacent to I-794 along St. Paul is not ideal for economic development, pedestrian activity and neighborhood connectivity, and
- Lower potential pedestrian activity during off-peak periods, especially along the southern portion of Jackson and Van Buren streets.

➤ **Alternative 1-2B**

The Alternative 1-2B variation utilizes a one-way pair option along Milwaukee Street and Broadway between St. Paul Avenue and Wells Street, and then connects to Jackson and Van Buren pair to Ogden

Avenue. This route variation was introduced due to some potential traffic operation concerns with two-way transit on Broadway. These concerns have been alleviated; therefore this variation was eliminated from further study. In addition, the following factors were also considered:

- Fewer redevelopment opportunities as compared to Alternative 1-2A (Broadway only option), and
- Alternative 1-2A provides better direct connection between the Third Ward and East Town, including City Hall and municipal buildings.

### Route Extensions – Locally Preferred Alternative

During the evaluation process, the US Department of Transportation announced a Livability Initiative that creates new federal grant funding for Urban Circulators and Streetcar initiatives. The City of Milwaukee has applied for an additional \$25 million in capital funding through this program. The additional federal funding would allow the construction of the project extensions along 4<sup>th</sup> Street and Prospect and Farwell Avenues. This option is shown in Exhibit 9.

If the city is awarded the Urban Circulator grant funds, the route extensions along with the initial route are recommended as the Locally Preferred Alternative.

### Exhibit 9: Locally Preferred Route Alternative with Urban Circulator Grant Extensions



## 5 DESCRIPTION OF PREFERRED ALTERNATIVE

This section describes the Locally Preferred Alternative that is recommended for the Streetcar project. The section includes a description of the initial system that would be implemented with the existing ICE funds dedicated to the Streetcar project. It also describes the route extensions that would be implemented if funding under the Exempt Discretionary Program Grants (Section 5309) for Urban Circulator Systems becomes available. Additional details about financing are provided in Section 6.

### 5.1 Route Description

The initial system for the preferred Streetcar route is 2.05 miles long as shown on Table 4. The route is designed to serve high-density residential areas just north of the Milwaukee Central Business District (CBD), the employment centers and attractions within the CBD, the Historic Third Ward neighborhood and the Milwaukee Intermodal Station located along the southwestern edge of the CBD.

**Table 4: Route Length**

<b>Route</b>	<b>Miles</b>
Initial route	2.05
Route extensions	1.55
<b>Total</b>	<b>3.6</b>

The route, as depicted on Exhibit 8, originates at the Milwaukee Intermodal Station and proceeds east along St. Paul Avenue, across the Milwaukee River and into the Historic Third Ward neighborhood. Then, the route heads north along Broadway, east along Wells Street and north along Van Buren Street. At Ogden Street, the route extends east to Farwell Avenue (Burns Commons Park) where it terminates. The return trip doubles back along Ogden Street, turns south at Jackson Street, west at Wells Street and south at Broadway. At St. Paul Avenue, the route travels west and finishes its cycle near the Milwaukee Intermodal Station.

The route extensions would add approximately 1.55 miles to the initial route for a total of 3.6 miles, as depicted on Exhibit 9. The 4th Street extension would continue the route north along 4<sup>th</sup> Street between St. Paul Avenue and Juneau Avenue. Then, it would turn west along Juneau Avenue for approximately three blocks. The extension would serve many destinations including Zeidler Square, the Shops at Grand Avenue, the Midwest Airlines Convention Center, the Bradley Center, the Park East redevelopment area and The Brewery redevelopment area.

The Prospect/Farwell extension would continue the route north from Ogden Street along Prospect Avenue, turn east along Royal Place for one block and proceed south along Farwell Avenue before doubling back along Ogden Street. This extension would serve additional existing high density residential areas on the Lower East Side and the Brady Street mixed-use commercial district and neighborhood.



## Exhibit 10: Photo Rendering at St. Paul and 4th Streets



### 5.2 Streetcar Vehicle

The modern Streetcar vehicle proposed for the project is a fixed guideway transit vehicle consisting of a single car with articulated sections. The vehicles would be similar to those produced by United Streetcar/Skoda for the City of Portland, operating on fixed rails embedded into the street and utilizing overhead electric to power the vehicles. Examples of Streetcar vehicles are shown in Exhibit 11. Five vehicles would be required for the initial system and one additional vehicle would be required for the route extensions. The vehicles would provide many benefits including:

- Low-floor and level boarding
- More capacity than a bus
- Electric power operations
- Bicycle access
- Multiple doors for fast boarding
- Clean and quiet ride
- Easy access for wheelchairs and strollers
- Operate in mixed traffic, preserving majority of on-street parking

## Exhibit 11: Examples of Streetcar Vehicles



Tacoma, WA



Bombardier Flexity



Portland, OR

### 5.3 Ridership

This section summarizes the ridership estimates for the Streetcar system and the methodology used to determine the estimates. More detailed information is provided in the Ridership Technical Memorandum.

#### Ridership Methodology

The methodology for estimating Streetcar ridership consisted of first developing a model that projected shifts in transportation for the following modes:

- Walk to Streetcar
- Automobile to Streetcar
- Bus to Streetcar

After the model was set up, several inputs were applied to determine the estimates for each mode shift. Inputs included: existing MCTS bus stop boarding and alighting data; commercial space data; downtown cordon count data; pedestrian count data; special event attendance data; hotel room data; parking locations; and housing units.

The next step was to calibrate the model based on a review of ridership in existing Streetcar systems that are similar to the Streetcar system proposed for Milwaukee. This was used to confirm and modify the range of ridership estimates developed in the previous steps.

The final step was to incorporate future land use projections into the model to estimate future ridership.

#### Ridership Estimates

For the year 2015, the initial route is anticipated to generate 1,800 rides per day and 665,000 rides per year. The route extensions would add approximately 2,000 additional daily riders and an additional 725,000 annual riders for a total of 3,800 and 1.39 million respectively.

By 2030, rides per day are expected to increase to 2,200 rides per day and 800,000 rides per year for the initial route. The route extensions would add approximately 2,300 additional daily riders and an additional 860,000 annual riders for a total of 4,500 and 1.66 million respectively.

Ridership estimates are summarized in Table 5 and assume a \$1 fare operating scenario for the initial system and the route extensions.

**Table 5: Ridership Estimates**

Year	Rides per day			
	Fare	Initial route	Route extensions	Total
2015	\$1	1,800	2,000	3,800
2030	\$1	2,200	2,300	4,500
Year	Rides per year			
2015	\$1	665,000	725,000	1,390,000
2030	\$1	800,000	860,000	1,660,000

**5.4 Streetcar Operations**

This section describes the operations for the Streetcar.

**Service Frequency and Hours of Operation**

The Streetcar would operate seven days per week with more frequent service during most of the day and somewhat less frequent service during early mornings, late night hours and on weekends. The Streetcar would have 10 minute headways during the weekday daytime and 15 minute headways on weekends, late night, and early morning. It would operate Monday through Friday between 5 a.m. and midnight, 7 a.m. to midnight on Saturday and 7 a.m. to 10 p.m. on Sundays. The headways and hours of operation are listed in Table 6. The end-to-end travel time is about 15 minutes for the initial system.

**Table 6: Streetcar Operations**

Operating Hours*	Headways (minutes)
<b>Monday through Friday</b>	
5 a.m. to 7 a.m.	15
7 a.m. to 10 p.m.	10
10 p.m. to 12 a.m.	15
<b>Saturday</b>	
7 a.m. to 12 a.m.	15
<b>Sunday</b>	
7 a.m. to 10 p.m.	15

\*Late-hour weekend service could be added as funding sources allow.



## Service Integration

### ➤ Intermodal Connections

An important focus of the Streetcar project has been to enhance existing and proposed transit in Milwaukee. Connecting to the Intermodal Station on St. Paul has been an important component of this focus. The Intermodal Station currently serves approximately 1.4 million existing annual users with service provided by AMTRAK, proposed Kenosha-Racine-Milwaukee commuter rail service, regional bus service, with service provided by Amtrak, Greyhound, Milwaukee County Transit, as well as local bus service. The addition of High Speed Rail service between Milwaukee and Madison in 2013 would further increase activity at the Intermodal Facility, adding more than 870,000 additional annual riders. The enhanced Milwaukee to Chicago rail service and proposed new High Speed Rail service between Milwaukee and Madison (Operational in 2013) will further increase activity at the Intermodal Station. The proposed Kenosha-Racine-Milwaukee commuter rail service will introduce additional users as well. The Intermodal Station's current capacity could more than triple over the next decade to over 3 million annual users due to the increased transit services currently being proposed. The preferred Streetcar route will connect these additional transit users to downtown and nearby destinations, hotels, jobs, attractions, homes and businesses. Exhibit 12 illustrates the integration and connectivity of the Streetcar study area with the High Speed Rail and Kenosha-Racine-Milwaukee commuter rail routes.

**Exhibit 12: Transit Integration**



### ➤ Pedestrian and Bicycle Connections

The Streetcar would help make long walks manageable and encourage walking, with the use of the Streetcar for a portion of a trip, over driving for short trips. Given Milwaukee's sometimes harsh winter climate, the Streetcar is important to encourage walking. The City of Milwaukee has a network of more than 45 miles of bike lanes, 50 miles of bike paths and 100 miles of designated on-street bike

routes. The bike-friendly Streetcar technology and vehicles would make switching between modes convenient.

➤ Local Bus Service Integration

Milwaukee County Transit System operates a total of 52 routes during the school year. Of those, 28 are local, ten are freeway flyers, three are UBUS service for UWM, and 9 operate with limited morning and afternoon service, serving either schools or industrial parks. Special services are provided for Summerfest, ethnic festivals and Brewer's games. In addition, MCTS operates the Ozaukee County Express under contract to Ozaukee County.

There are 16 bus routes that travel through downtown Milwaukee on Wisconsin Avenue which include 6 regular bus routes (10, 12, 14, 23, 30, 31), 11 express routes (39, 40, 43, 44, 45, 46, 47, 48, 49, 79, 143), and 1 special route (137). In 2009, there were over 1,100 daily runs on Wisconsin Avenue. Additionally, 6 bus routes (11, 15, 18, 19, 57, 80) cross through downtown incrementally. Of the top ten MCTS routes by ridership, six cross the proposed Streetcar alignment options (10, 12, 15, 18, 19, 30) and one travels within 2 blocks (80).

**Exhibit 13: Streetcar Photo Rendering at Broadway and Wisconsin Avenue**



An important role of the proposed Streetcar service is to provide connections between Milwaukee County Transit System and ultimate origins and destinations. Although the current MCTS service includes coverage in downtown Milwaukee, some downtown Milwaukee destinations are not directly connected to each other with a single transit trip. For example, traveling from the Intermodal station to the Midwest Airlines Center presently requires a transfer, whereas the Streetcar route extension on 4<sup>th</sup> Street provides a direct link between these two destinations.

## **5.5 Engineering Assessment**

An engineering assessment of the preferred route alignment was completed to analyze the viability of the route to support Streetcar operations. This assessment was not intended to be a detailed engineering study, but rather to identify engineering issues that could prevent the alternative from being implemented. No major issues were discovered. However, a few engineering concerns may need to be addressed with special design considerations during subsequent engineering phases of the project. Additional information is included in the Preliminary Engineering Assessment Technical Memorandum.

For the route extensions, no engineering concerns were identified for the Prospect Avenue and Farwell Avenue extension. Further investigations for the 4<sup>th</sup> Street extension north of the Convention Center would be completed during the subsequent engineering phases.

A summary of the engineering assessment for the preferred alignment is provided below.

### **Bridge Rehabilitation**

The St. Paul Avenue Bridge would need to be rehabilitated as part of the project to accommodate the Streetcar loads and rails.

### **Intersections**

Intersections along the preferred route alignment were evaluated to determine if they could accommodate Streetcar turning movements. The analysis determined only one intersection would require minor modifications to the curb to accommodate Streetcar turning movements. However, all modifications would remain within the existing right of way.

### **Overhead Structure Clearance**

All overhead structures along the preferred alignment are above the 14 feet minimum clearance requirement for the Streetcar vehicle. However, special design considerations may be required to erect the power system where the overhead clearance is less than 20 feet. This situation occurs where the I-794 Bridge passes over Broadway and where the Historic Third Ward overhead sign passes over St. Paul Avenue.

### **Utilities**

Preliminary coordination with private utilities was initiated to identify any major conflicts along the preferred alignment. Some utility relocations are expected, but no major conflicts have been identified at this time. Additional coordination and analysis would need to occur during subsequent engineering phases.

### **Pavement Width and Condition**

All roadway segments meet the minimum pavement width requirement of 40 feet to operate a Streetcar vehicle. Furthermore, a preliminary scan of the pavement conditions along the route alignment shows most pavement sections to be in relatively good condition. Pavement would be replaced within the 8-foot track zone. No full street reconstruction expected.

## Steep Grades

There are no preferred alignment segments that exceed the grade requirements for the Streetcar vehicle.

## Traffic Operations

Overall, the Streetcar is expected to improve mobility and provide a new and convenient transportation choice for residents, workers and visitors to downtown Milwaukee and the surrounding neighborhoods. However, some modifications to the existing streets would need to take place to make sure the Streetcar operates efficiently and safely. Modifications may include:

- Incorporating a Streetcar only turn lane at some intersections
- Making modifications to traffic signal timing
- Removing or modifying parking next to stations
- Providing signage and pavement markings to alert pedestrians and bicyclists

## **5.6 Economic Development**

The Streetcar is a critical element in Milwaukee's efforts to promote economic development downtown and along the route and one of the primary goals established at the onset of the project. Once it is operating, the initial route and the proposed extensions would immediately be within ¼ mile of:

- 100% of all downtown hotel rooms
- 91% of all downtown first floor commercial retail space.
- 90% of all downtown office space
- 77% of all downtown housing units
- 77% of downtown public parking facilities and lots

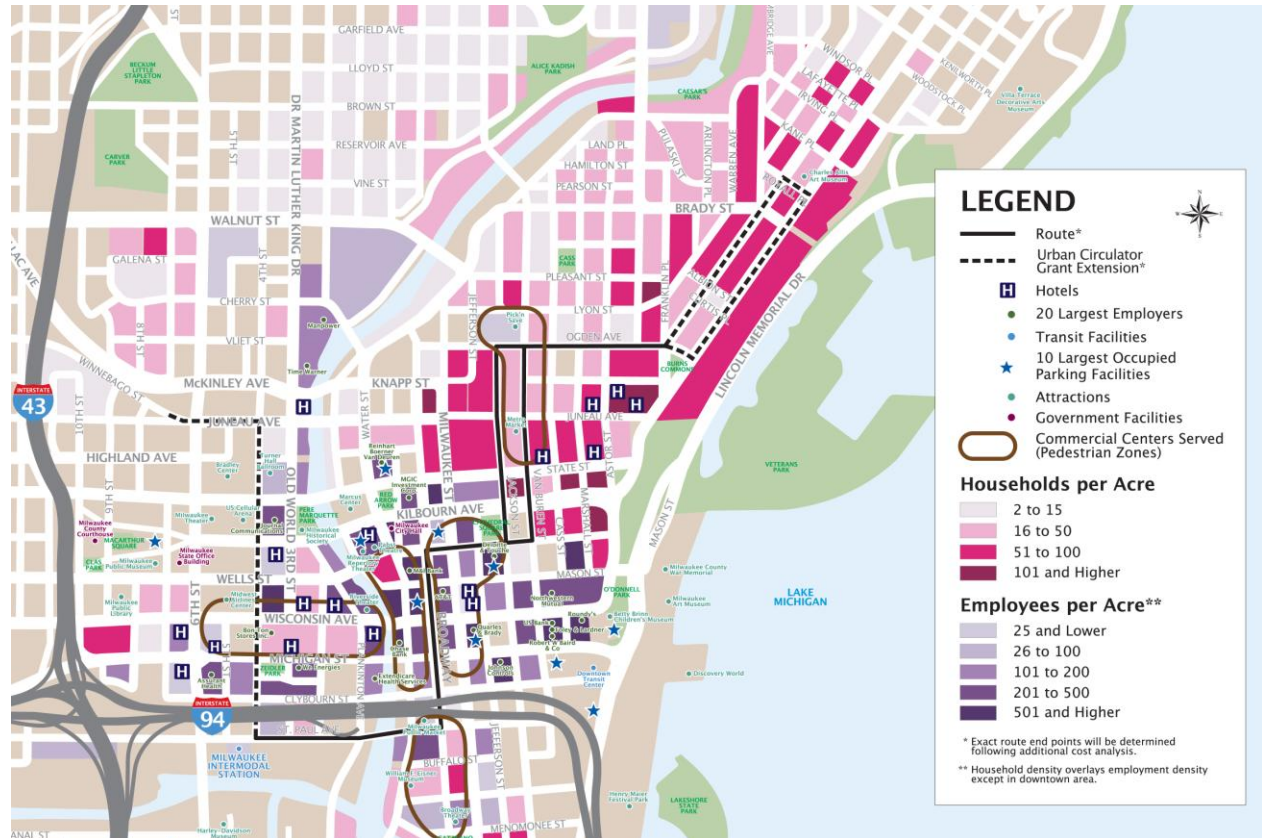
### **Exhibit 14: Streetcar Photo Rendering at St. Paul Avenue and Broadway**





Exhibit 15 highlights these statistics by displaying the major activity generators in close proximity to Streetcar route.

### Exhibit 15: Activity Generators Map

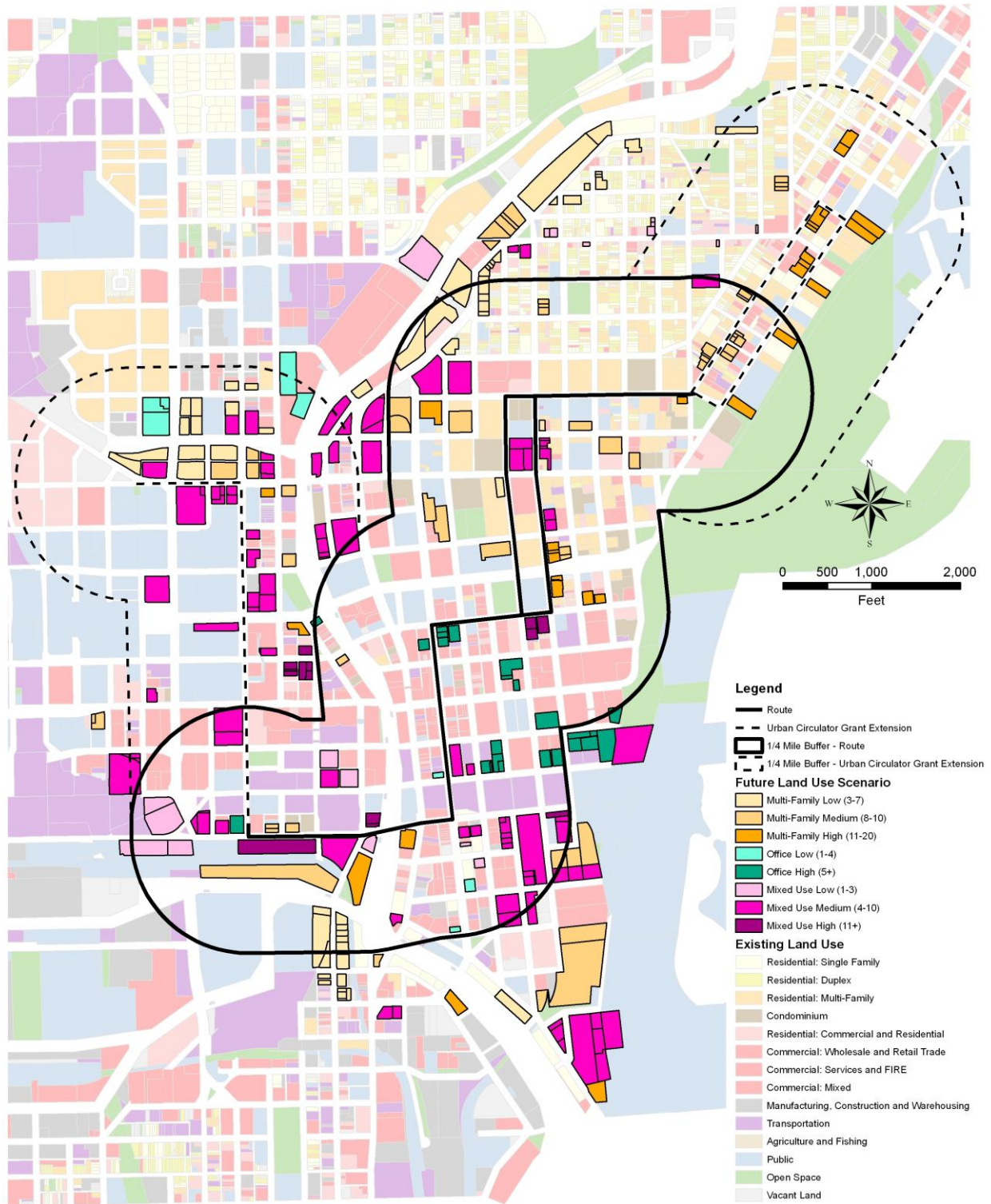


Recognizing that fixed guideway transit would promote transit-oriented development, future development assumptions were developed. The economic development potential within ¼ mile buffer of the initial route and the extensions over the next 20 years could generate:

- 9,100 new housing units (63% increase)
- 13,500 new residents (55% increase)
- 1,000,000 SF of new occupied retail space (31% increase)
- 4,060,000 SF of new occupied office space (28% increase)
- 20,500 new jobs (23% increase)
- \$3.35 billion in new tax base

For the initial route, future development is most likely to occur along St. Paul Avenue, the east side of the Third Ward, along Broadway and along Van Buren Street. The route extensions would serve additional high density residential areas along Prospect and Farwell and connect to large redevelopment areas of the Park East and The Brewery. Exhibit 16 shows where development is most likely to occur over the next 20 years.

**Exhibit 16: Future Land Use and Economic Development Potential**



## 5.7 Station Locations and Design

This section summarizes the location of Streetcar stations and the design of the stations.

### Station Locations

Since the purpose of the Streetcar is to serve shorter trips within and around the downtown area, it was determined stations would be spaced every one to three blocks. The following criteria were used to determine the best locations for stations:

- High volumes of pedestrian activity
- High boarding and alighting locations for existing MCTS bus stops
- Close proximity to housing units and employment centers, and
- Close proximity to downtown destinations

As shown on Table 7, the initial Streetcar route has 12 station pairs and 21 stops. The Streetcar extensions would add seven station pairs and 14 stops for a combined total of 19 station pairs and 35 stops. Exhibit 17 shows the location of the stations along the preferred route alignment.

**Table 7: Number of Station Pairs and Stops**

<b>Route</b>	<b>Station pairs</b>	<b>Stops</b>
Initial route	12	21
Route extensions	7	14
<b>Total</b>	<b>19</b>	<b>35</b>





➤ **Enhanced Station**

The enhanced station would have all the amenities of the basic design plus the following additional amenities:

- Unique or Enhanced Station Shelters

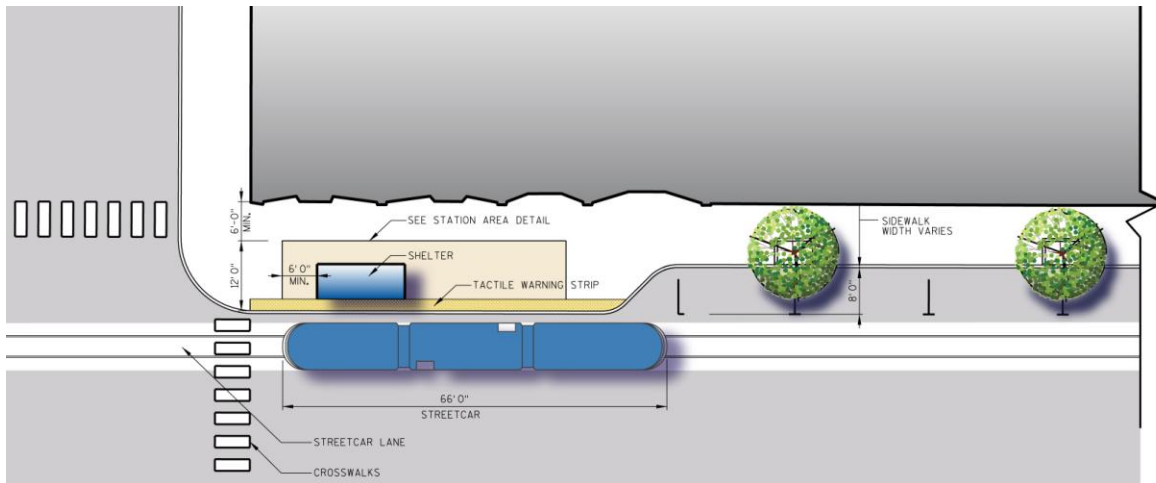
Exhibits 18 and 19 show conceptual designs of the enhanced stations.

➤ **Major Station**

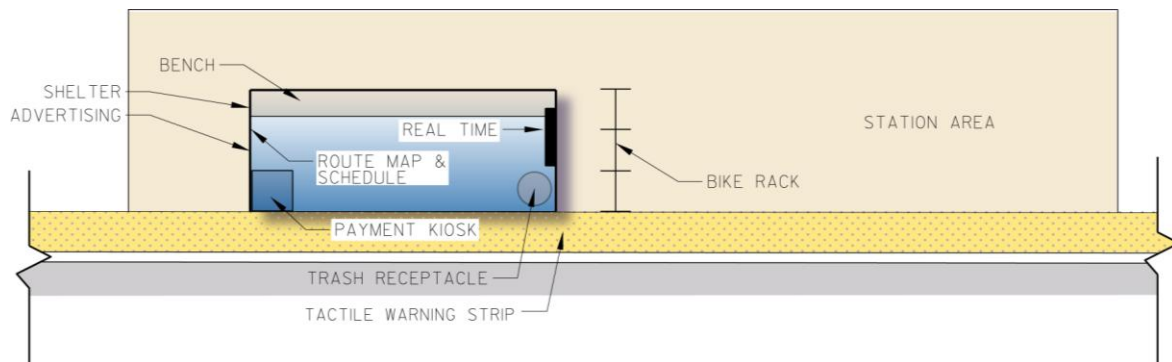
The major station would only be used in a few locations that are expected to have the highest boarding and alighting rates. Major stations would have all the amenities of an enhanced station plus the following:

- Multiple vehicle capability
- Larger or multiple shelters and fare collection facilities
- Upgrade street and pedestrian lighting
- Vehicle marshalling areas at end of line locations

**Exhibit 18: Enhanced Station Prototype – Conceptual Design**



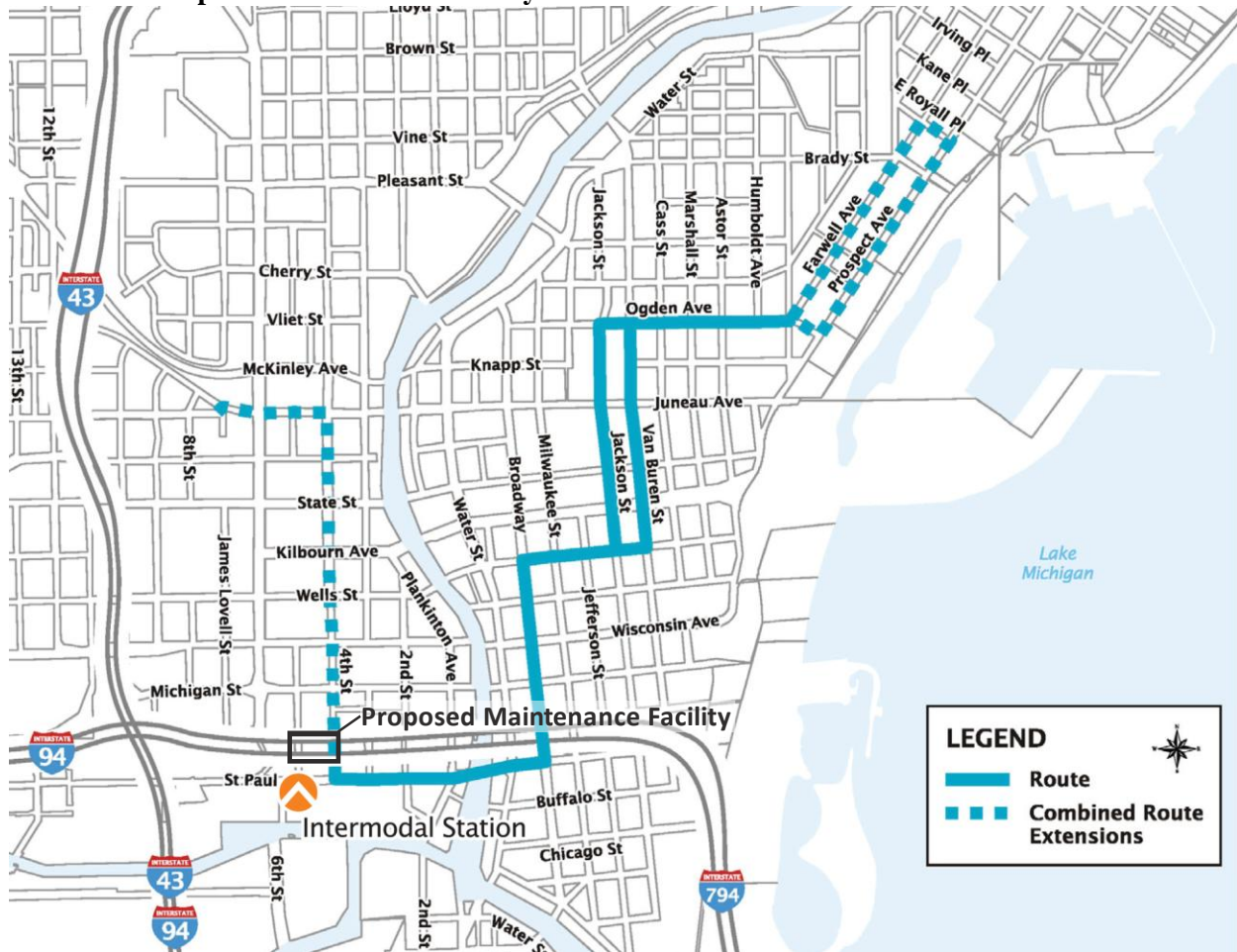
**Exhibit 19: Enhanced Station Area Detail Prototype – Conceptual Design**



## 5.8 Maintenance Facility

The proposed maintenance facility for the Streetcar is located on an approximately 1.5 acre site at the southwest corner of Clybourn Street and 4<sup>th</sup> Street as shown on Exhibits 20 and 21. The property directly to the east, across 4<sup>th</sup> Street is very close in size and is considered an alternative site. The sites are controlled by WisDOT and designated for transportation uses.

**Exhibit 20: Proposed Maintenance Facility Location**



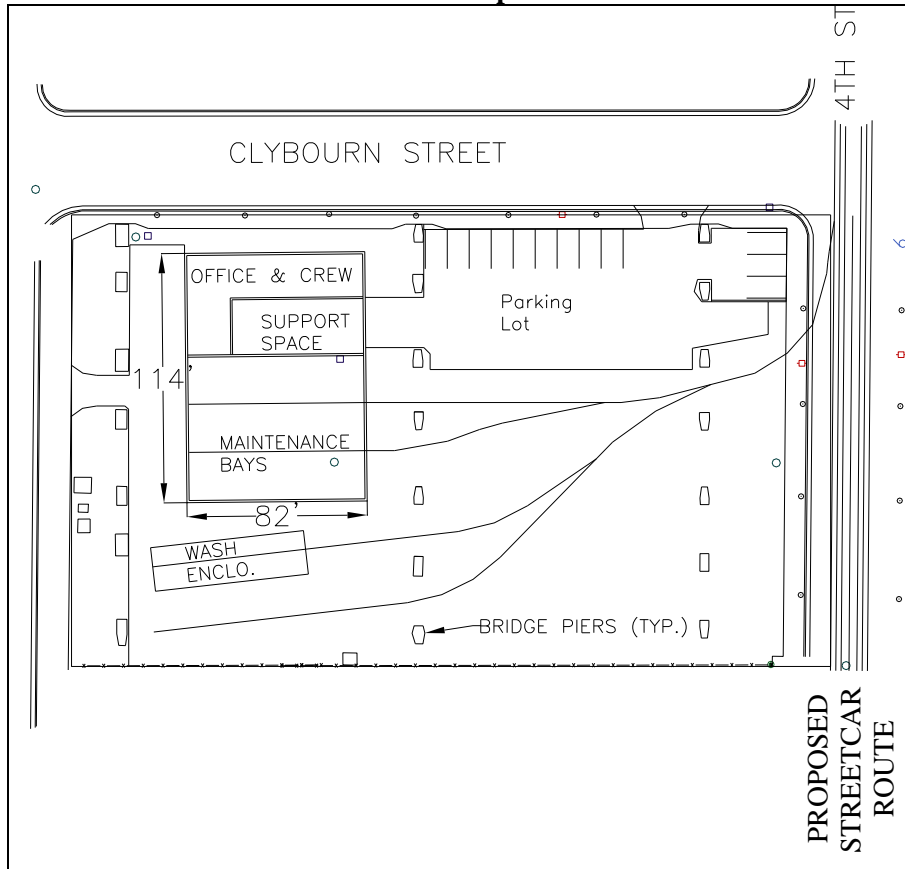
The maintenance facility would accommodate administration offices, two maintenance bays, a shop with storage areas, wash enclosure, locker rooms, support areas and common space. A control room where a supervisor that can maintain radio contact with the Streetcar operators would also be located here.

The Streetcars would be stored overnight at this location, which has room to store a maximum of eight vehicles. Two Streetcars would be parked in the maintenance bays and one Streetcar would be stored in the wash enclosure. The remaining Streetcars would be parked outdoors. The I-794 overhead bridges would provide some shelter from precipitation for the outdoor vehicles.

The Maintenance Center would serve the initial Streetcar system and the extensions, but it would be inadequate for the maintenance and storage of a larger fleet should the system be expanded. The upper

range of vehicles that could be maintained at the proposed maintenance center is 12 to 14, assuming that the number of vehicles over seven can be stored somewhere else on the system.

### Exhibit 21: Maintenance Center Concept



## 5.9 Environmental Effects

The Streetcar is expected to result in relatively few natural impacts given the highly urbanized nature of the study area. Impacts to the built environment are also expected to be minimal since the Streetcar would be constructed within the existing right of way and no property acquisitions are required. Some minor impacts to traffic, parking, pedestrians and bicyclists could occur. However, solutions would be implemented as part of the project design to make sure the Streetcar runs safely and efficiently.

Overall, the proposed Streetcar route is expected to provide several benefits. Potential benefits, among others, include:

- Land use benefits through transit oriented development along the route.
- Transportation benefits through improved mobility.
- Mobility improvements for pedestrians, elderly and disabled.
- Social benefits through improvements in accessibility and neighborhood connectivity.
- Environmental justice benefits by serving significant minority and low income populations.

Additional information about the project's potential impacts and benefits is provided in the Environmental Scoping Summary performed in conjunction with the Alternatives Analysis. Additional documentation of the project's environmental, social, cultural, and economic effects would be detailed in

an environmental document once a Locally Preferred Alternative is approved and the next phase of the project moves forward.

## 5.10 Project Costs

This section summarizes capital costs and costs to operate and maintain the Streetcar system for the preferred alternative.

### Capital Costs

The capital costs for the initial Streetcar system are estimated to be \$64.3 million. The route extensions would add \$31.5 million for a total combined cost of \$95.8 million. All costs would be refined during subsequent engineering phases. Table 8 shows the breakdown of capital costs for the initial system and the extensions.

**Table 8: Capital Cost Summary**

Item	Description	Cost for initial route	Cost for Urban Circulator extensions	Total Cost
Guideway facilities	Standard embedded track	\$12,453,600	\$9,539,200	\$21,992,800
Utilities	Utility relocations	\$4,847,512	\$3,633,864	\$ 8,481,376
Systems	Overhead electric system, substations, traffic signals, communications, central control equipment	\$7,278,622	\$5,162,410	\$12,441,032
Stations	Platforms	\$424,200	\$282,800	\$707,000
Maintenance facility	Site work, building, equipment, yard track	\$4,925,200	\$0	\$4,925,200
Miscellaneous	Environmental mitigation, traffic mitigation during construction, St. Paul bridge reconstruction	\$4,282,816	\$1,094,352	\$5,377,168
Contractor contingency	15% contingency	\$5,131,793	\$2,956,893	\$ 8,088,686
Vehicle procurement	Streetcar vehicles, spare parts	\$15,787,500	\$3,157,500	\$18,945,000
Owner costs	Planning and engineering studies, project management, construction management, insurance, property acquisitions	\$5,919,149	\$4,533,903	\$10,453,052
Owner contingency	15% contingency	\$3,255,997	\$1,153,711	\$ 4,409,708
Total	All capital costs	\$64,306,388	\$31,514,633	\$95,821,021

### Operating and Maintenance Costs

The estimated cost for operating and maintaining the initial Streetcar system is \$2.62 million. This figure is based on the preferred operations scenario presented in Section 5.4. The route extensions would add \$1.23 million for a total operating and maintenance cost of \$3.85 million. Table 9 shows the estimated operating and maintenance costs.

**Table 9: Estimated Operating and Maintenance Costs**

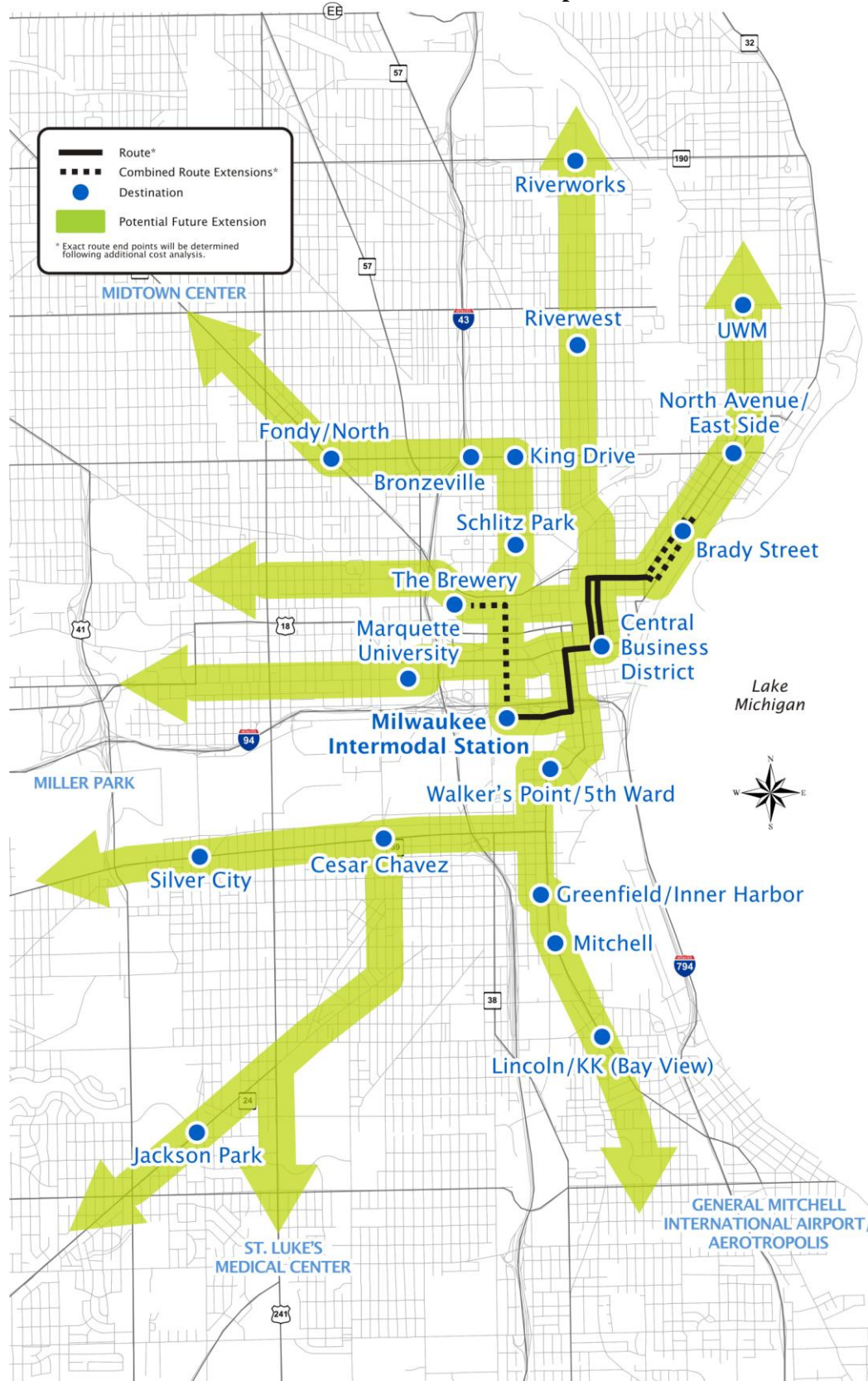
<b>Route</b>	<b>Cost</b>
Initial route	\$2.62 million
Route extensions	\$1.23 million
<b>Total</b>	<b>\$3.85 million</b>

### **5.11 Expandability**

The development of a successful Streetcar starter system is the foundation for future route additions and expansions. The locally preferred route alternative can be easily expanded to nearby neighborhoods and destinations. Exhibit 22 shows concepts for potential future extensions that build upon the proposed starter system. Any route extensions will require an independent alternative analysis to determine the street locations and destinations.



## Exhibit 22: Potential Future Streetcar Extensions Map





## **6 FINANCING PLAN**

During an alternatives analysis process, feasible funding sources are identified for the local match to build the system and annual costs to operate the system. Although it is important to identify feasible funding sources, the funding commitments and detailed financial planning is completed in the Preliminary Engineering phase.

**Local Match Capital Cost Finance** – As identified in the capital cost section, approximately \$16.2 million in local match will be required for the \$79.9 million in federal construction funds for the initial route and route extensions. The City will be utilizing Tax Increment Finance (TIF) funding for the local capital cost match. There is capacity within TIF districts along the route to fund the local share. In addition, there are several opportunities along the route to create new TIF districts to help fund a portion of the local share.

**Annual Operating Funding** – The estimated annual operations cost for the initial route is \$2.62 million and \$3.85 million for the initial route and route extensions. The annual operating costs are intended to be financed through the City’s parking fund, farebox revenue and state and federal transit aid; however, if a new dedicated revenue source for a Regional Transit Authority (RTA) is approved by the State Legislature, the operating costs for the Streetcar should be financed by that source.

## **7 GOVERNANCE**

This section outlines proposed organizational structures for governance of Streetcar operations. The governance of the proposed Streetcar depends on yet to be made policy decisions and legislative actions. It would continue to be further refined and documented in future phases of project development, and incorporated into a comprehensive project management plan.

### **7.1 Proposed Governance Structure**

Elements to consider when selecting a governing agency include the ability to levy and collect fees for construction and operations, transit expertise and willingness to take on service responsibilities. It is recommended that a Regional Transit Authority (RTA) be the owner and operator of the Streetcar and contract for system operation and maintenance. This may include contracting with an operator for short-term operations/transfer or long term system operations.

### **7.2 Proposed Project Delivery Method**

The preferred and likely project delivery method is design-bid-build. Through an analysis of the various delivery methods that was completed in March of 2010, it was determined that the design-build delivery method would provide fewer benefits than the traditional design-bid-build method. Additionally, there were more negative attributes identified for the design-build method.

### **7.3 Proposed Operations**

A local transit provider under the direction of a Regional Transit Authority is the preferred owner/operator for the Streetcar. The Wisconsin Legislature is currently considering various frameworks and funding mechanisms for an RTA in southeastern Wisconsin. Such an authority may be available to operate the proposed streetcar prior to project completion. However, until the RTA option is feasible, the City of Milwaukee will be the owner and operator of the Streetcar. It is anticipated that the City would contract for system operation and maintenance.

## **7.4 Regional Transit Authority**

The most viable alternative to the City of Milwaukee would be a Regional Transit Authority with the ability to own, finance and operate transit. The Wisconsin State Legislature and Governor have discussed options for this funding and operating structure, as has the Milwaukee County Board.

The Southeastern Regional Transit Authority (SERTA) was created by the Wisconsin State Legislature and Governor in July 2009. The SERTA legislation is set forth in Section 59.58(7) of State Statutes. The primary function of SERTA under State law is to oversee the development of commuter rail service in Kenosha, Racine, and Milwaukee Counties. This permanent SERTA follows the interim RTA, known as the Southeastern Wisconsin Regional Transit Authority (RTA) that was created in 2005 by the Wisconsin State Legislature and Governor to serve the counties of Kenosha, Milwaukee, and Racine. The RTA primarily was created to establish a permanent dedicated funding source for the local share of capital and operating costs for commuter rail and public transit. The committee was charged with presenting a recommendation to the State Legislature and Governor. Existing functions of the RTA are currently funded through car rental fees. Legislative changes may be required to allow the existing RTA to take on additional functions, including the ownership and operations of the Streetcar.

## **8 NEXT STEPS**

The next step to advance the Streetcar project is to obtain approval of the Locally Preferred Alternative. If approved, the City of Milwaukee would initiate the preliminary engineering and environmental documentation phase of the project. Commitments to financing and governance would also be required. Then, final design, construction, and ultimately service would follow. On-going coordination with stakeholders, the public and FTA would be necessary throughout all stages of the project.