

# 2013

## Streetcar Coalition Summit





**This book was prepared in support of the  
Community Streetcar Coalition.**

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**The support and preparation of this book was funded by  
Portland Streetcar, Inc.**

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# Committed Streetcar Cities



**Extension or New Line**  
Under Construction &/or Fully Funded

**Extension or New Line**  
Partially Funded &/or In Planning Stage

**Modern Streetcar**

**Historic/Vintage Streetcar**

**Operating Systems**

**Future Systems**

# STREETCAR PROJECT OPENINGS

## Already Open



Portland, OR September 22, 2012



New Orleans, LA January 27, 2013

## Future Openings

### 2013

Tucson, AZ	October 2013
Salt Lake City, UT	December 2013
Washington, DC	2013

### 2014

Seattle, WA	Summer 2014
Dallas, TX	Fall 2014
Atlanta, GA	2014

### 2015

Kansas City, MO	Summer 2015
Detroit, MI	Fall 2015
Cincinnati, OH	Fall 2015

### 2016 – 2017

Tempe, AZ	2016
Los Angeles, CA	2016
Milwaukee, WI	2016
Oklahoma City, OK	2017





**Project Description**

Valley Metro will implement a 2.6-mile modern streetcar line in downtown Tempe, Arizona by 2016. Tempe Streetcar will enhance the existing regional transit network consisting of light rail, local and express bus and neighborhood circulators.

The project received local and regional approval in 2010 and has since initiated conceptual engineering and the environmental analysis. Tempe Streetcar will enter into Project Development under the Small Starts program in 2013.

With entrance into project development, Valley Metro will make slight modifications to the route to better fit the new MAP-21 criteria. The modified project will continue to include the one-mile downtown loop along Mill and Ash avenues. Further evaluation is being given to the route's second mile for the area that can provide the greatest opportunity for economic development and connection to existing high density land uses.

Tempe Streetcar will serve several neighborhoods, a thriving and eclectic business community in downtown Tempe, thousands of Arizona State University students, hundreds of special events and create opportunities for economic growth and revitalization in a regional urban center.

**Project Detail**

Route Length:	2.6 miles
Capital Cost:	\$129 million
Funding:	Regional sales tax: 32%* Congestion Mitigation and Air Quality: 25%* Federal grant funding: 43% <i>*Programmed funding</i>
Current Status:	Environmental Assessment
Opening Year:	2016

**Project Benefits**

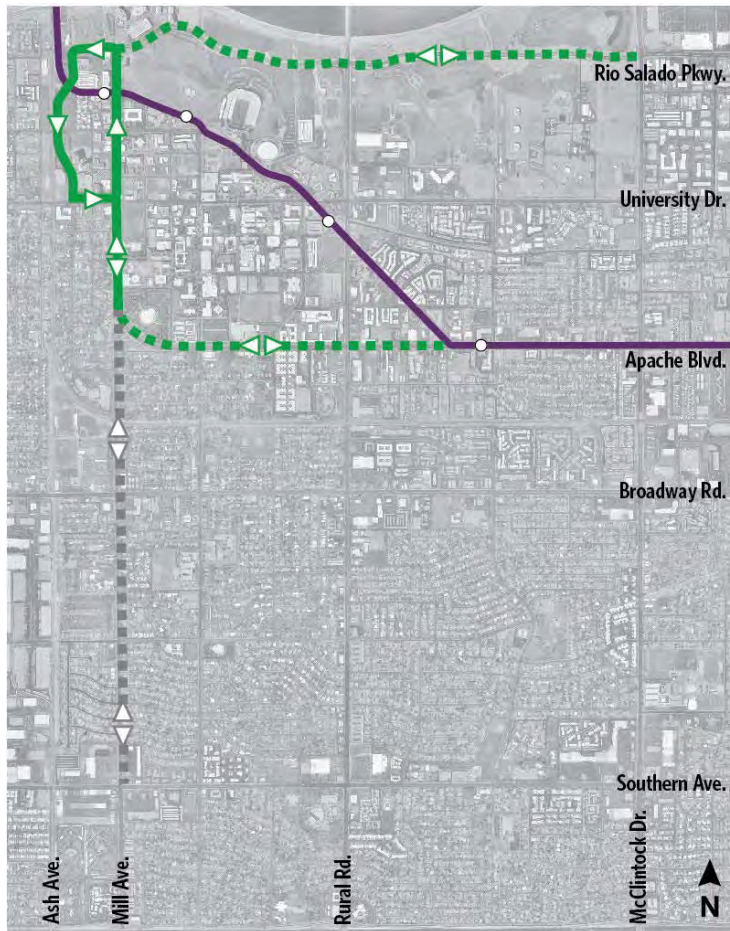
Streetcar is a good fit for the regional transit network and the downtown Tempe community as it has the ability to attract new riders, increase mobility in an urban core, strengthen existing neighborhoods and create sustainable development. The Mill-Ash Avenue loop will help to expand the borders of downtown Tempe and better serve special events associated with Arizona State University and the city of Tempe.

**About Valley Metro**

Valley Metro provides eco-friendly public transit options to residents of Maricopa County including the planning and operations of a regional bus system and the development and



operations of light rail. In 2012, total system ridership was 71 million passengers. The first 20-miles of light rail opened December 2008 and served 14 million riders in 2012 exceeding the prior year by six percent. Six light rail/high-capacity transit extensions are under way that will create a 57-mile system by 2032. Valley Metro also offers transit options including commuter vanpools, online carpool matching, trip mapping, bicycle safety and telework assistance. Two boards of 16 governments set the policy direction for the agency and work to improve the regional transit system.



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[valleymetro.org/tempestreetcar](http://valleymetro.org/tempestreetcar)

## **Tucson Modern Streetcar**

The City of Tucson is in the construction phase of the Sun Link modern streetcar line. This 3.9 mile line will connect the region's two largest activity centers (Downtown and the University of Arizona) to commercial districts and a redevelopment area, improve transit service in the corridor, support population and employment growth, and create economic development.

The USDOT signed a Grant Agreement with the City of Tucson December 28, 2010. The FTA followed up with a FONSI on January 25, 2011 allowing for the access to the TIGER funding. Construction for the streetcar project began in early 2012. The scheduled opening date for the system is planned for October 2013; however, the vehicle production schedule may result in a later opening date.

### **Project Details**

- Alignment length: 3.9 miles
- Number of stations: 17
- Fleet requirements: 8 modern streetcars, including 1 spare
- Opening day ridership estimate: 3,600 per weekday
- Capital cost: \$196 million
- Current Status: Construction
- Current Opening Day Schedule: October 2013

### **Funding**

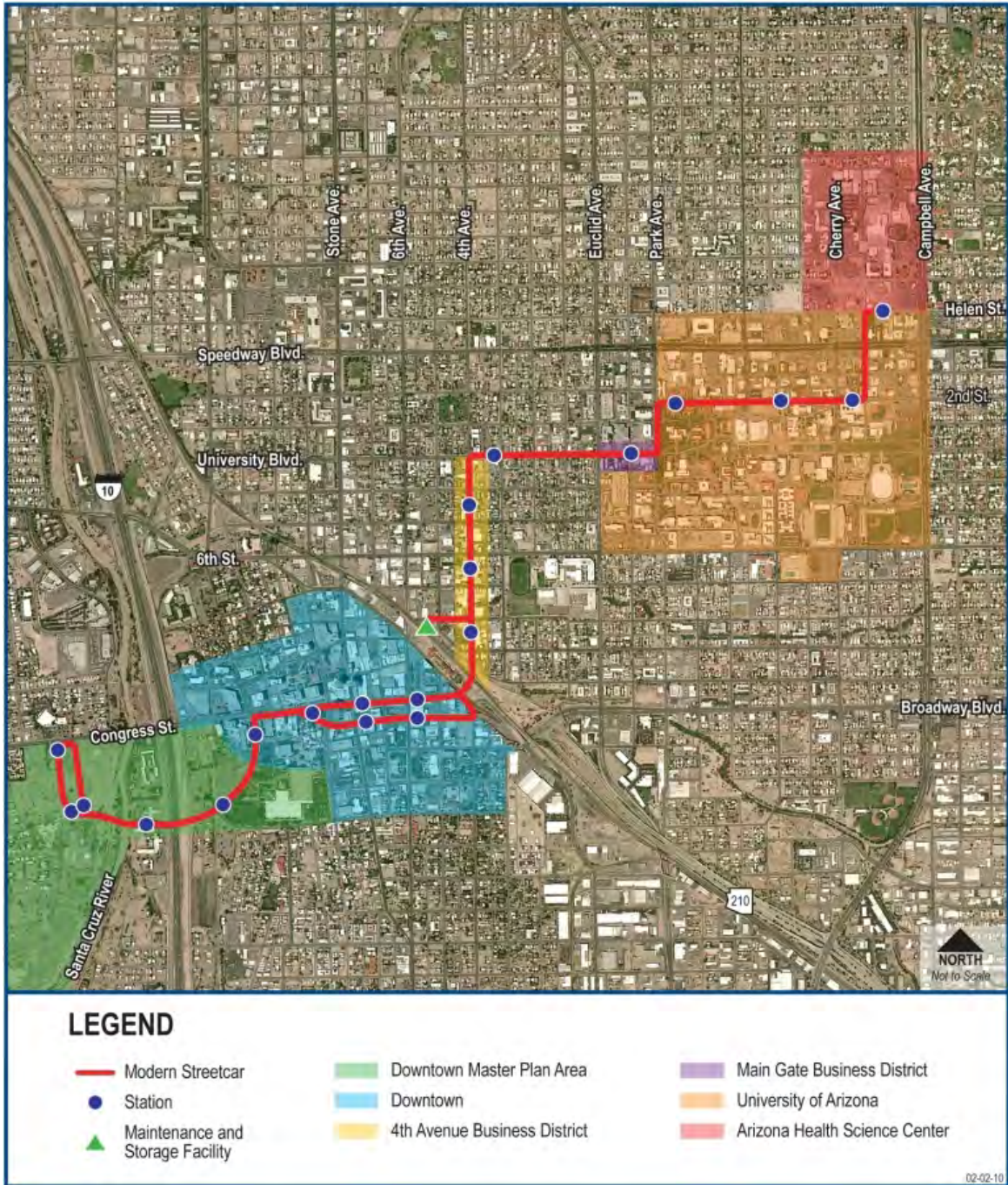
#### Local funding

- Regional Transportation Authority \$75 million

#### Federal funding

- Project is an "Exempt" project and received \$6 million of \$25 million in Federal funding to date
- Project received \$63 million in TIGER funds





### Principal Contacts

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For additional information on the Tucson Modern Streetcar, please refer to the project website at [www.tucsonstreetcar.com](http://www.tucsonstreetcar.com)

## LITTLE ROCK STREETCAR

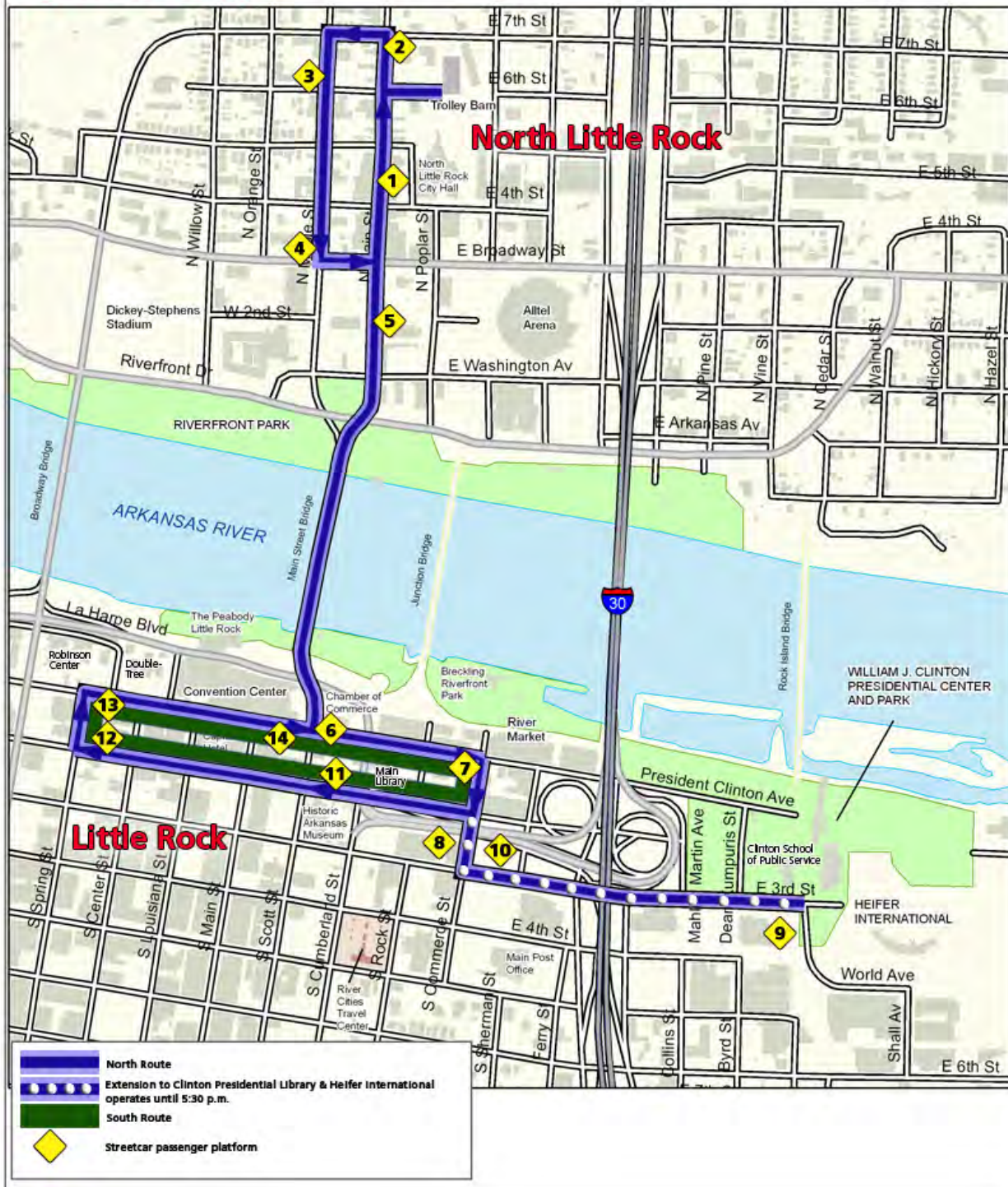
Phase I is complete and operating in Little Rock and North Little Rock. Phase 2 is complete with service to the Clinton Library and Heifer International and has added a mile of track operating in Little Rock.

The current streetcar system is a vintage (Birney replica) line that opened 1 November 2004. It has 3.5 miles of track and an overhead power supply. There are 14 stops and the streetcar uses the Main Street Bridge to connect the two cities. It has a fleet of 5 replica cars. Ridership is exceeding expectations with peak seasons being Spring and Summertime. Nothing for Phase 3 has been determined, although there is some speculation that this will include operations in Little Rock transporting passengers from the downtown area to the Little Rock Airport. Funding is 80 percent grants and the other 20% is split between 3 entities being the city of Little Rock, North Little Rock and Pulaski County. Motivating factors for our system include reaching the many venues of the twin cities of Little Rock and North Little Rock in the newly renovated and popular downtown areas. Its continued success, coupled with plans for future expansion, can serve as a model for other cities where, as Little Rock and North Little Rock has demonstrated, there is a real potential for the rebirth of the long vanished streetcar system.





# System Map



## Principal Contact:

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## Downtown Los Angeles Streetcar

The Downtown L.A. Streetcar is championed at the City level by Councilmember José Huizar with support from Mayor Antonio Villaraigosa, the Los Angeles City Council and City departments with technical assistance provided by L.A. METRO (Los Angeles County Metropolitan Transportation Authority.) The City of Los Angeles Department of Transportation (LADOT) is the lead agency and the planned operator for the streetcar project.

Feasibility studies and the Alternatives Analysis are completed. The Locally Preferred Alternative (route) has been selected. The environmental review process (CEQA/NEPA) is underway with formal scoping meetings held in January 2013. This process will be followed by conceptual and final engineering, design, and procurement of vehicles.

In December 2012, voters approved a \$62.5 million Community Facilities District special tax which will fund approximately 50% of the project’s \$125 million construction costs. The project will seek federal funding for the remainder of construction costs. A 30-year operating and funding plan is being developed by the Los Angeles City Council. It is anticipated the project will be under construction by the end of 2014 and operating by 2016. The project is planned to run 7 days a week up to 18 hours a day.

### Connecting Downtown

In the last decade, Downtown L.A. has experienced tremendous revitalization – from a quadrupled residential population and urban neighborhood growth, to major office and commercial developments, and the incredible success of entertainment and cultural destinations. The Downtown Los Angeles Streetcar will serve as an urban circulator, providing greater pedestrian access and public transit connection between numerous citywide and regional transit lines and many of Downtown's most sought after locales - including Civic Center, Broadway & the Historic Core, the Fashion District, South Park, the Convention Center & L.A. Live, the Financial District, Pershing Square and the Jewelry District.

### The Streetcar will create:



### Ridership

With the density and transit connections present in Downtown L.A., the streetcar is projected to generate 1,700 boardings per mile, which translates into more than 6,000 daily boardings.

### Project Details

#### Key Contact:

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213-814-8829

#### Partners:

Los Angeles Streetcar, Inc.  
City of Los Angeles  
Metro

#### Route Details:

Length: 4 miles  
Vehicle Type: Modern  
Opening Year: 2015

#### Cost / Funding (approx.):

Capital Cost: \$125m  
Local Funding: \$75m (\$62.5m CFD; \$12.5 Local Public)  
Federal Funding: \$50m- \$75m

## Locally Preferred Alternative



## City of Oakland Broadway Urban Circulator

Launched in July 2010 and now carrying over 2,600 passengers each weekday between Jack London Square and 27th Street, the City of Oakland Broadway Shuttle successfully addressed a major shortcoming in downtown's transportation network. **Prior to the shuttle, connections between Broadway's major transit stations and office buildings were problematic.** Now, downtown workers, residents and visitors can easily reach their destinations from several busy transit stations, including two BART stations, the Jack London Amtrak station, Alameda/San Francisco Ferry terminal, and the AC Transit hub.

Initially a pilot project with short-term funding commitments, the Broadway Shuttle now requires long-term funding from dedicated revenue sources. For this reason, the City initiated the **Broadway Urban Circulator Study** as the first step to preserving and improving this valuable downtown urban circulator. Planned improvements include a route extension to the Kaiser Hospital District and MacArthur BART station to further strengthen connections between transit stations and job centers. The study will also include analysis of a potential conversion of the bus service into an electric streetcar as a strategy for catalyzing economic growth and transit-oriented development along Broadway, the spine of downtown Oakland.

The **Broadway Urban Circulator** will link neighborhoods to transit stations and be a catalyzing factor in the realization of Mid-Broadway as a TOD corridor. By serving **downtown's central artery**, the route will unify all of the corridor's commercial districts, including Jack London Square and its one million square feet of office, retail and hotel; Chinatown; Old Oakland; the City Center & Lake Merritt Financial Districts with 18.2 million square feet of office and 60,000 daytime workers; the Uptown Arts & Entertainment District with the newly-renovated Fox Theater and thriving arts, restaurant and nightlife scenes; Mid-Broadway, **the geographic focus of the City's Specific Plan** effort to attract retail & mixed-use development; the Kaiser & Alta Bates hospitals with 9,000 employees after their expansions (6,800 currently); and the MacArthur BART TOD Project with 675 units of high-density housing and 34,000 square feet of neighborhood serving retail.

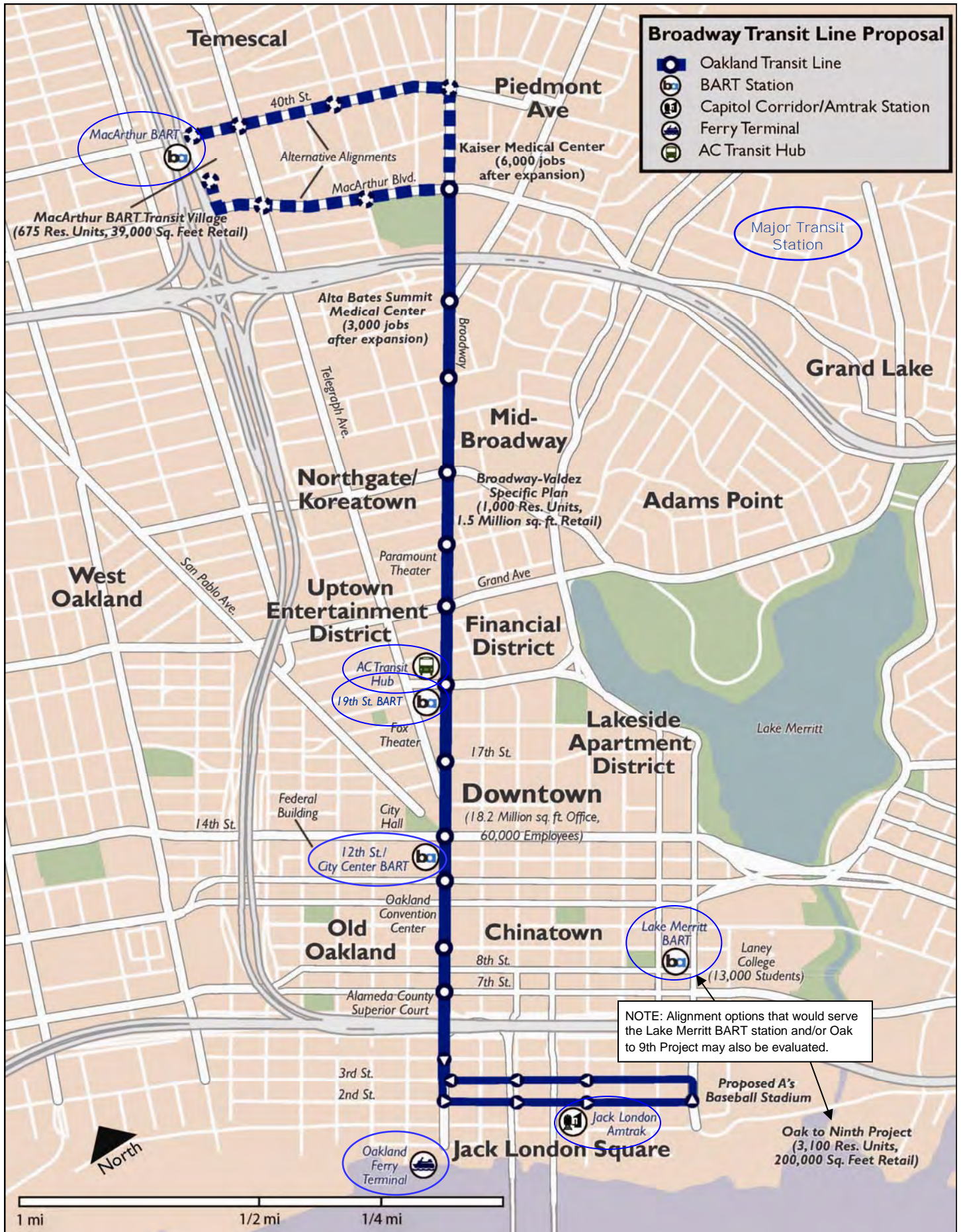


2004 BART/City of Oakland Jack London Transit Study

### The Broadway Urban Circulator will:

- Improve connections between existing heavily-used transit stations and final destinations.
- Promote job growth and transit-oriented development along **Broadway, downtown Oakland's** central corridor.
- Create synergy among **Oakland's vibrant yet** disconnected greater downtown districts.
- Improve accessibility and mobility for residents, workers and visitors.
- Reduce pollution and our impact on climate change.





# RIVERSIDE RECONNECTS

Riverside Streetcar Transit Corridor | Riverside, California



## Planning Stage

- 12-mile corridor with alternative alignments connecting City of Riverside downtown, neighborhoods, business districts, schools, hospitals, religious institutions, community centers, colleges and universities, shopping and employment centers, and commuter rail and bus nodes – serving more than 200,000 people (i.e., college students, residents, and employees) within a 10-minute walk to the transit corridor (see reverse side).
- In March 2013, City of Riverside submitted Urban Transit Planning Grant Application to Caltrans via Southern California Association of Governments to conduct Development-Oriented Transit (Streetcar) Feasibility Study and Implementation Plan.
- Coordination occurring between City of Riverside and Caltrans District 8, Riverside County Transportation Commission, Riverside Transit Agency, and many other organizations and agencies.
- City of Riverside joined Community Streetcar Coalition and participated in 2013 Summit.
- City of Riverside enjoyed 13.5 miles of streetcar lines from 1899 through mid-1950's via Pacific Electric Railway Red Car system.

**FOR MORE INFORMATION,  
PLEASE CONTACT:**

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Mayor

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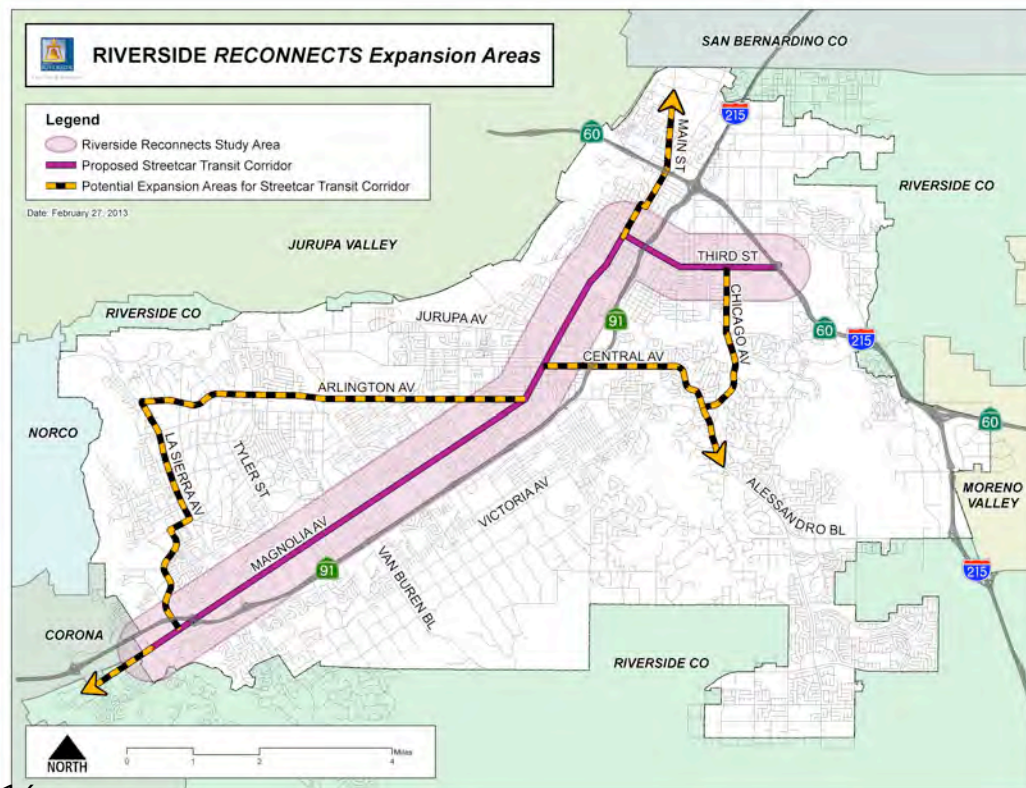
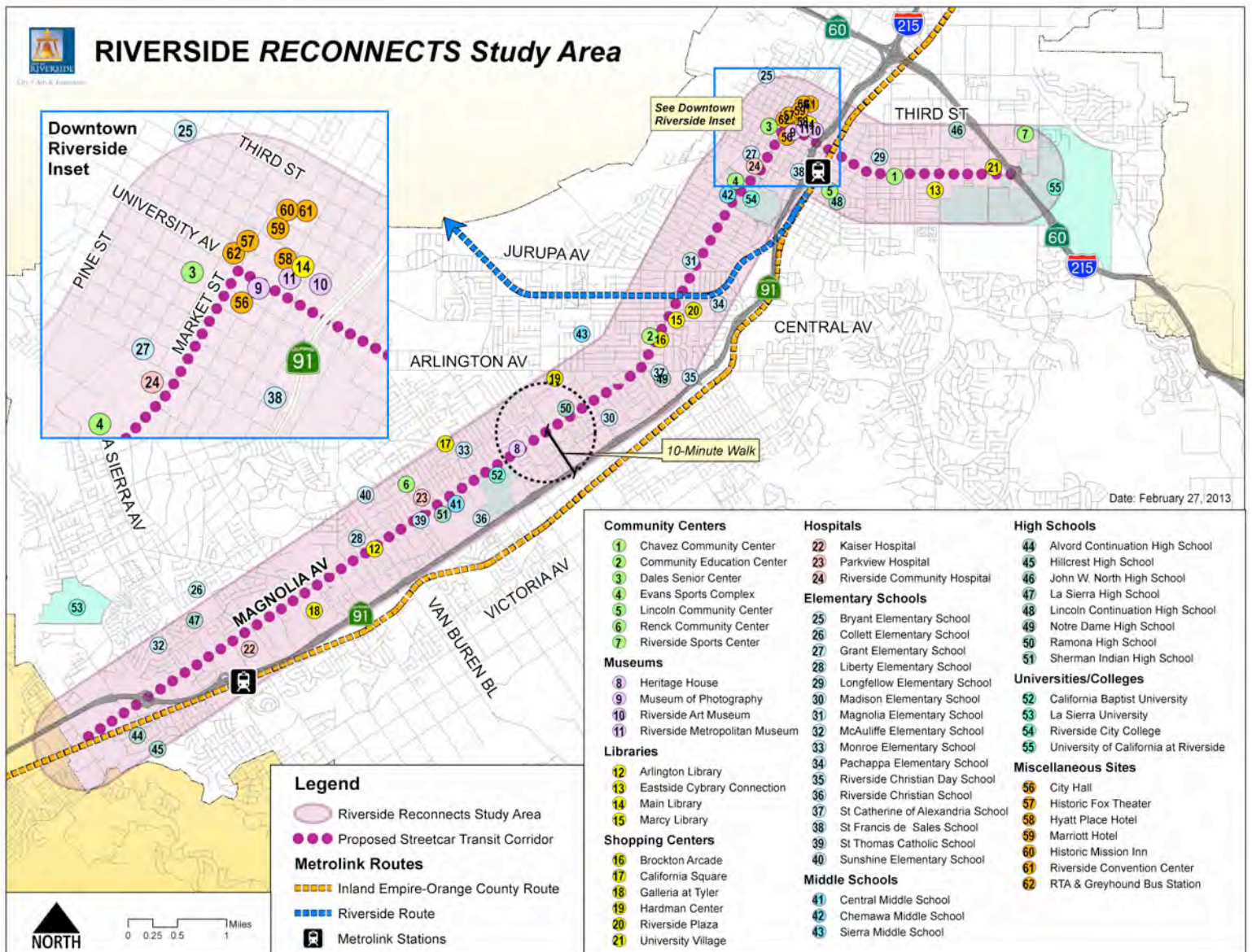
[azelinka@riversideca.gov](mailto:azelinka@riversideca.gov)



*City of Arts & Innovation*



# RIVERSIDE RECONNECTS Study Area



## ABOUT RIVERSIDE RECONNECTS

For purposes of determining a locally preferred alignment and undertaking a feasibility study, the Riverside Streetcar Transit Corridor area includes a potential backbone alignment (see above map) and potential expansion areas (see left map) that will be evaluated through a community-based planning process entitled RIVERSIDE RECONNECTS.

Version Date: March 1, 2013



# Downtown/Riverfront Streetcar Project

## West Sacramento & Sacramento, CA

The cities of Sacramento and West Sacramento have worked cooperatively with Sacramento Regional Transit and the Yolo County Transportation District since 2006 to complete the preliminary concept for a streetcar line linking the two cities across the Sacramento River. This streetcar project is being developed in conjunction with plans for substantial new office and commercial space as well as over 16,000 new residential units in the Bridge District and the Railyards Specific Plan area alone. Extensive outreach has been performed through an initial feasibility study and CEQA analysis completed in 2009. Further outreach to the business community and major property owners was conducted as part of the planning study completed in 2012 to define a complete streetcar network in Sacramento, identify an initial alignment and clarify the potential funding options to stakeholders.

The 3.3-mile initial line that was identified extends from the West Sacramento Civic Center to the Midtown entertainment and retail district in the City of Sacramento. Mixed-use neighborhoods in the Washington Neighborhood (designated as a Transit Priority Area), the Bridge District, and the Railyards Specific Plan Area have been planned around a future high-quality transit system intended to serve these new and emerging employment and residential districts. Several key destinations within these neighborhoods are connected by the initial line including: Raley Field, home of the Sacramento Rivercats AAA baseball team; the Sacramento Intermodal Transportation Facility in the Railyards Specific Plan area, the largest urban infill project in the country and the planned terminus of the California High-Speed Rail system; Downtown Plaza Mall; the historic Memorial Auditorium; the Sacramento Community Center Theater; the California State Capitol building; and the Sacramento Convention Center.

Work has begun in preparation for an application to the Federal Transit Administration (FTA) for Small Starts Grant funding with the help of the Sacramento Area Council of Governments as the Project Manager. Pending tasks include a recommendation for the most appropriate governance structure, preliminary engineering for the locally preferred alignment, environmental analysis and a financing strategy as the project seeks to enter the project development phase as defined by FTA. A letter to the Secretary of Transportation with the appropriate technical studies seeking authorization to enter project development is anticipated in 2013.

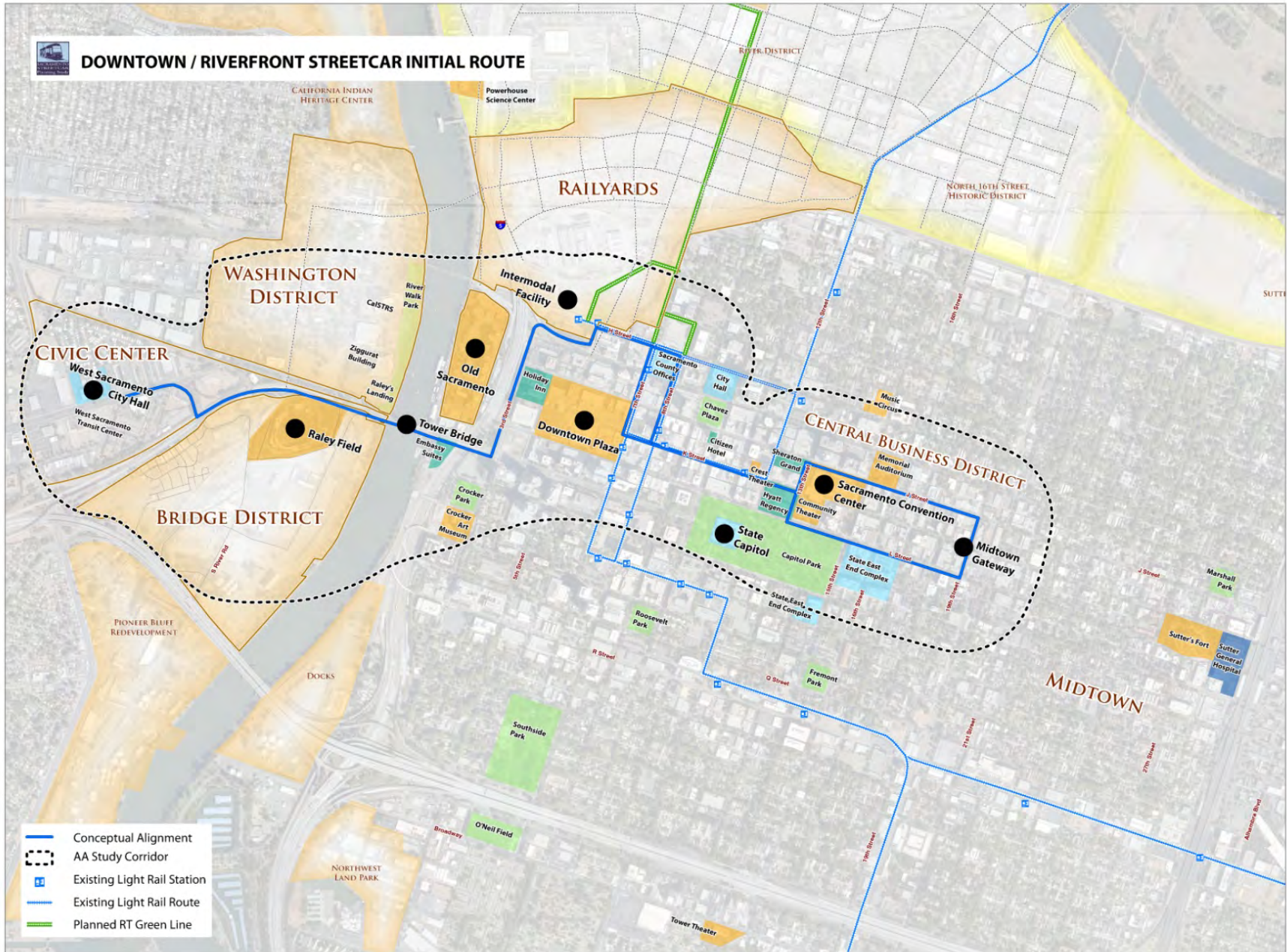
The preliminary feasibility study and environmental impact report that was certified in 2009 is available online at [www.riverfrontstreetcar.com/documentation.html](http://www.riverfrontstreetcar.com/documentation.html). The Sacramento Streetcar Planning Study that defined the network and an initial starter line is available online at [www.cityofsacramento.org/transportation/planning-policy/sacstreetcarplanstudy.html](http://www.cityofsacramento.org/transportation/planning-policy/sacstreetcarplanstudy.html).

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- Denise Malvetti, 916.808.7064, [dmalvetti@cityofsacramento.org](mailto:dmalvetti@cityofsacramento.org)

### Key Facts:

- 3.3 mile line
- Joint venture between Sacramento & West Sacramento, Regional Transit and Yolo County Transportation District
- EA process to begin 2013
- Small Starts to be pursued





# Santa Ana - Garden Grove Streetcar Project

## Project Overview

Located in the center of Orange County, California, Santa Ana is a thriving, energized city, and the fourth most densely populated city in the United States.

In cooperation with the Orange County Transportation Authority (OCTA) and the City of Garden Grove, Santa Ana is proposing to build a streetcar system between the bustling Santa Ana Regional Transportation Center and a new multimodal transportation center in Garden Grove.

The streetcar would serve Santa Ana's historic downtown which includes government offices, federal, State and local courthouses, unique restaurants and shops, an artists' village, several colleges, and a variety of community enrichment organizations. On the way to Garden Grove's busy International West tourist corridor, it would connect directly with 18 OCTA bus routes, including the seven busiest routes in the County.

The 4.1 mile system would provide "last mile" transportation for individuals traveling from the transportation centers to employment and activity centers in the heart of Orange County. It would also function as a circulator for visitors, employees and residents within the service area and support economic development and jobs creation.

## Project Timeline

Conceptual Engineering & Environmental Analysis	August 2009 - August 2012
Pre-PE Analysis	January 2011 - September 2012
Project Development (Preliminary Engineering, ROW, Final Design)	March 2013 - May 2015
Vehicle Acquisition	January 2014 - June 2016
Construction	May 2015 - May 2017
System Testing	June 2017 - August 2017
Operations Begin	September 2017

The project team is currently completing environmental studies and performing conceptual engineering. The draft environmental document will comply with federal (NEPA) & State (CEQA) requirements and is to be released in late spring 2012. A Locally Preferred Alternative will be selected shortly thereafter, and application submitted to the Federal Transit Administration to enter Project Development in mid-2012. According to the current schedule, the streetcar would be under construction by spring 2015 with system opening day in fall 2017.

While the project will be significantly funded through local sources, the project will also compete for Federal Small Starts funding.

- Length: 4.1 miles (8.1 track miles)
- Number of Stations: 23
- Fleet Size: 6-7 vehicles
- Peak/off-peak Headways: 10/15 minutes
- Capital Cost: \$252 million (YOE)
- Annual Operating Cost: \$4 million (opening day)



For More Information

Please contact us at:

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## DC Streetcar- 2013 Update

The DC Streetcar is a modern, environmentally-friendly transportation option designed to connect District neighborhoods. The streetcar will accommodate population and employment growth in the District, offer enhanced transportation options to new activity centers, and provide coverage and core capacity relief to the existing transit network. DDOT is advancing a 22-mile Priority System and intends to deliver the project via a public-private partnership (P3).

The scope of the Project includes a combination of the following activities to support transit service within the District:

- Design, construction, financing, and on-going operations and maintenance of a 22-mile minimum priority streetcar network;
- Operations and maintenance of the DC Circulator bus system and related services;
- Operations and maintenance of “non-regional” bus service within the District currently operated by the Washington Metropolitan Area Transit Authority (“WMATA”); and
- Purchase of vehicles as necessary to operate the above services.

DDOT conducted a Request for Information (RFI) process to gain input from industry and to gauge overall interest level in the project. Upon receiving constructive and positive feedback from a broad section of industry leaders, DDOT chose to move ahead with the project and is currently developing a two-stage RFQ/RFP procurement process.

DDOT is working with a task force created by Mayor Gray to advance the project. The task force is focused on providing input to the project's finance plan and on the creation of the project's governance structure.

DDOT has two initial segments of the system under construction and slated for completion in 2013. The Anacostia Initial Line Segment (AILS) will begin operation as a testing and commissioning segment this spring. Test runs of vehicles on H Street/Benning Road NE will begin this fall with revenue service to commence in early 2014.





### Proposed 22-Mile Priority System

- Georgetown Waterfront to Benning Road — One City Line
- Anacostia Initial Line — M Street — Buzzard Point
- North/South
- Proposed destinations
- Existing Metro lines & stops

Thicker lines indicate sections currently under construction.  
This map delineates possible routes/corridors. Specific street alignments will be determined upon further study.



# The Wave Streetcar

## Background

The **Wave Streetcar** is a 2.7 mile (5.4 miles double tracked) starter streetcar system planned for Downtown Fort Lauderdale, the largest urbanized area in Broward County with a population of just under 2 million people. The system will serve as the local circulator/distributor connecting major employment centers and regional activity generators.

The project received NEPA clearance in August 2012 and then received approval to enter into Project Development in February 2013. The LPA was approved back in 2008.

The current project schedule anticipates the system to be operational by late 2016. The Wave is estimated at approximately \$142 million (year of expenditure), including unique features such as bridge retrofitting, and the construction of a maintenance and storage facility.



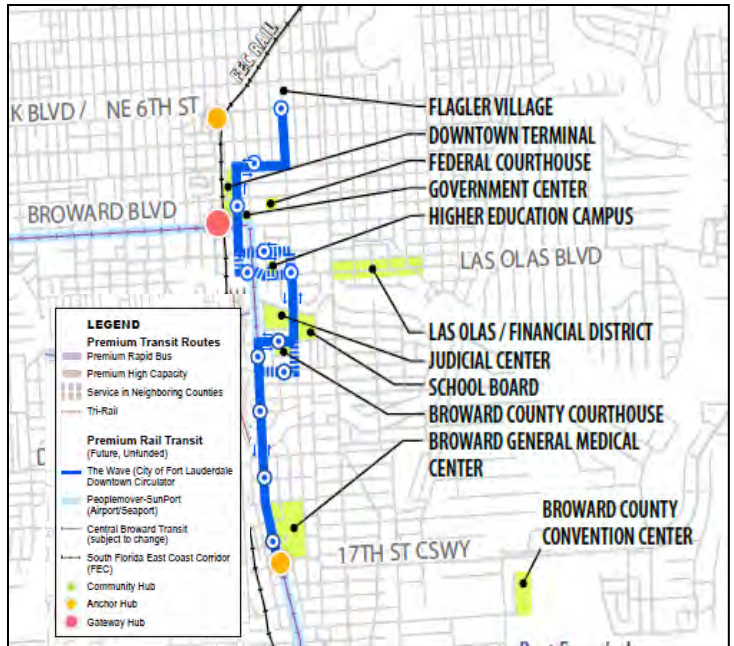
Approximately 58 percent of the daily streetcar ridership the opening year will be “new” riders, diverted from automobiles or other non-transit modes.

## For More Information, Please Contact:

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## Funding

### Sources

Small Starts Request	49.65
TIGER IV Award	18.00
State Funds	35.73
Special Assessment District	20.59
Broward MPO	8.14
City Cash/Land Contribution	10.50
<b>Total Project Funds</b>	<b>142.60</b>

## Operations

Broward County committed to be the owner and operator of the system, representing a significant commitment.

## Project Schedule

Key Project Activities	2013				2014				2015				2016			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Project Development																
Construction																
Testing and Startup																
Revenue Service																







## Atlanta Streetcar & Atlanta BeltLine

### Initial Project

The Atlanta Streetcar is a modern electric Streetcar system that will operate within existing streets on a 2.6-mile alignment. It will connect the Martin Luther King Jr. National Historic Site on the east side of Downtown Atlanta and the Centennial Olympic Park on the west side via Auburn and Edgewood Avenues. The Atlanta Streetcar project is a cooperative effort by the City of Atlanta, the Downtown Atlanta Community Improvement District, by and through Atlanta Downtown Improvement District, Inc. (ADID), and the Metropolitan Atlanta Rapid Transit Authority (MARTA). The project is funded through a TIGER II Discretionary Grant in the amount of \$47,667,777 and local sources. The project is currently under construction and will open for service in spring 2014.

### Phase 1 Expansion Priorities

Phase 1 expands the streetcar system to over 12 miles and establishes streetcar service on the east and west sides of the Atlanta BeltLine corridor. The expansion includes extensions of the TIGER II project and new projects along the Atlanta BeltLine that will create a circulation system connecting neighborhoods and redevelopment nodes surrounding the core of the City to and through the Downtown and Midtown business districts and MARTA heavy rail. The estimated capital cost for Phase 1 is approximately \$580M. Projects in this phase include the following:

- Atlanta BeltLine East Streetcar  
Connects to Piedmont Park, Carter Presidential Center, Ponce City Market Redevelopment site, and the Poncey Highlands, Old Fourth Ward and Inman Park neighborhoods
- Atlanta BeltLine West Streetcar  
Serves transit dependent neighborhoods including English Avenue and Vine City and key redevelopment nodes along the west side of Atlanta including the future site of Westside Reservoir Park, a 300 acre green space surrounding an former gravel quarry
- Downtown Streetcar East Extension  
Connects to Old Fourth Ward neighborhood and Atlanta BeltLine corridor
- Downtown Streetcar West Extension  
Connects directly to the Georgia World Congress Center and Georgia Institute of Technology
- Crosstown/Midtown Streetcar  
East-west connector running through Midtown business district

A Tier 1 EIS has been completed for the Atlanta BeltLine corridor. Tier 2 environmental documents for Phase 1 projects are being initiated this spring. Funding for the program is being provided through tax increment financing districts, other local sources and federal programs.

### The Atlanta BeltLine

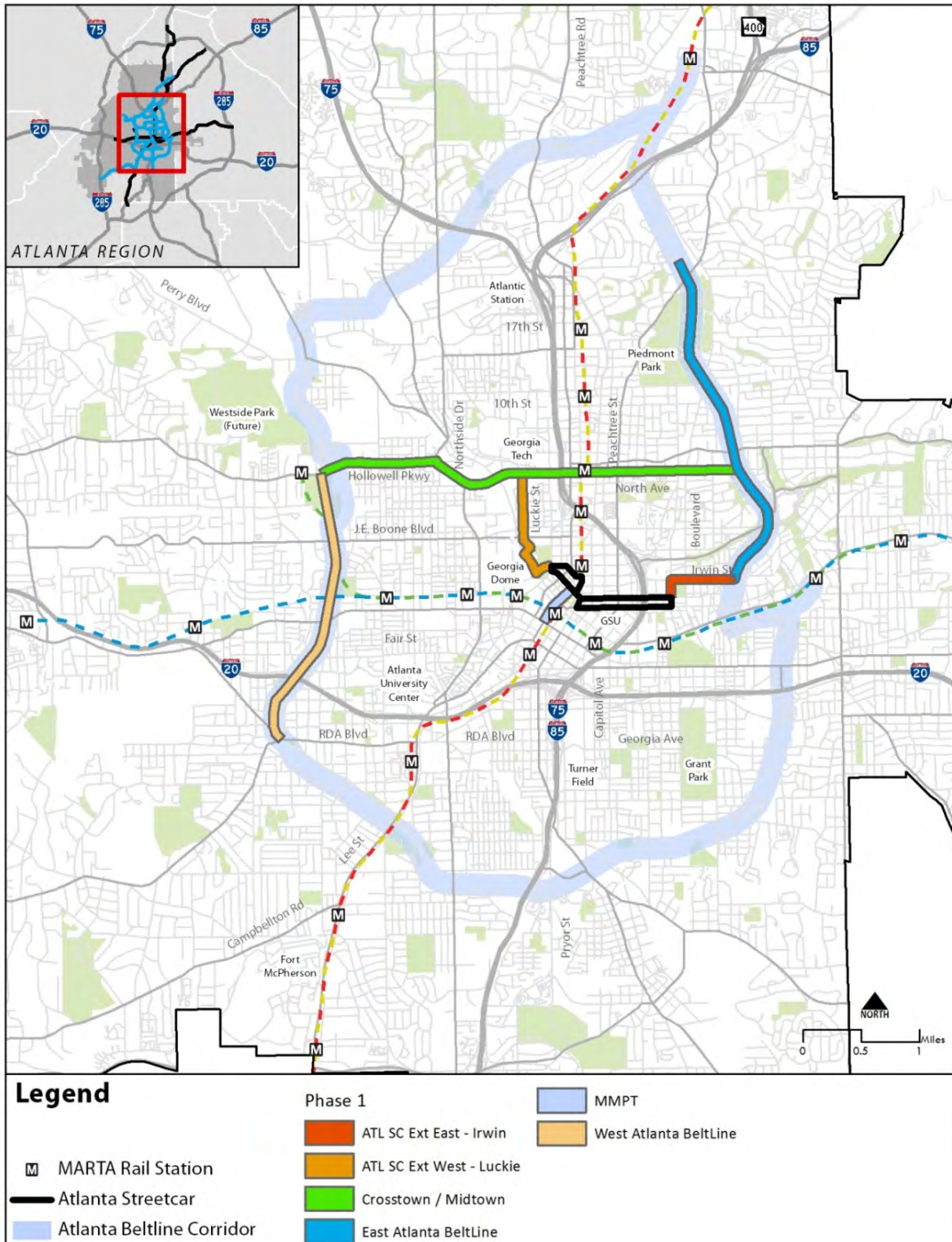
As noted above the streetcar system is planned to expand along the Atlanta BeltLine corridor. This transit service is but one component of the comprehensive Atlanta BeltLine vision, the most ambitious urban mobility and redevelopment effort ever undertaken by the City of Atlanta. It includes a network of streetcar/light rail transit, multi-use paths, greenspace, parks, affordable housing and public art centered on a 22-mile long historic railroad corridor. This corridor rings the Central Business District and passes through a series of historic streetcar neighborhoods and blighted industrial areas, while connecting a number of commercial nodes and recreational



ATLANTA STREETCAR



attractions. Implementation of the Atlanta BeltLine is underway with several parks and miles of multi-use paths open to the public along with annual art exhibitions. This has spurred significant development activity, particularly along the eastside of the Atlanta BeltLine, where thousands of housing units are being developed in proximity to the corridor.





## NEW ORLEANS CBD/FRENCH QUARTER STREETCAR PROGRAM

### FEDERAL PROJECTS AND APPLICATIONS

#### New Orleans Union Passenger Terminal (NOUPT) / Loyola Avenue Streetcar

- TIGER Grant funded project
- Final EA/FONSI: November 2010
- Final Design: January – April 2011:
- Construction: June 2012 – January 11, 2013
- Opening date: January 27, 2013

#### Rampart/St. Claude Streetcar

- 2.48 miles, to connect neighborhoods in Rampart/ St. Claude vicinity with the CBD, via the Union Passenger Terminal/Loyola Avenue Line
- EA/FONSI: May 2011
- Final Design: September 2011 – June 2013
- Construction: January 2014 – December 2016
- Funding source: local

#### Convention Center/Riverfront Streetcar Project

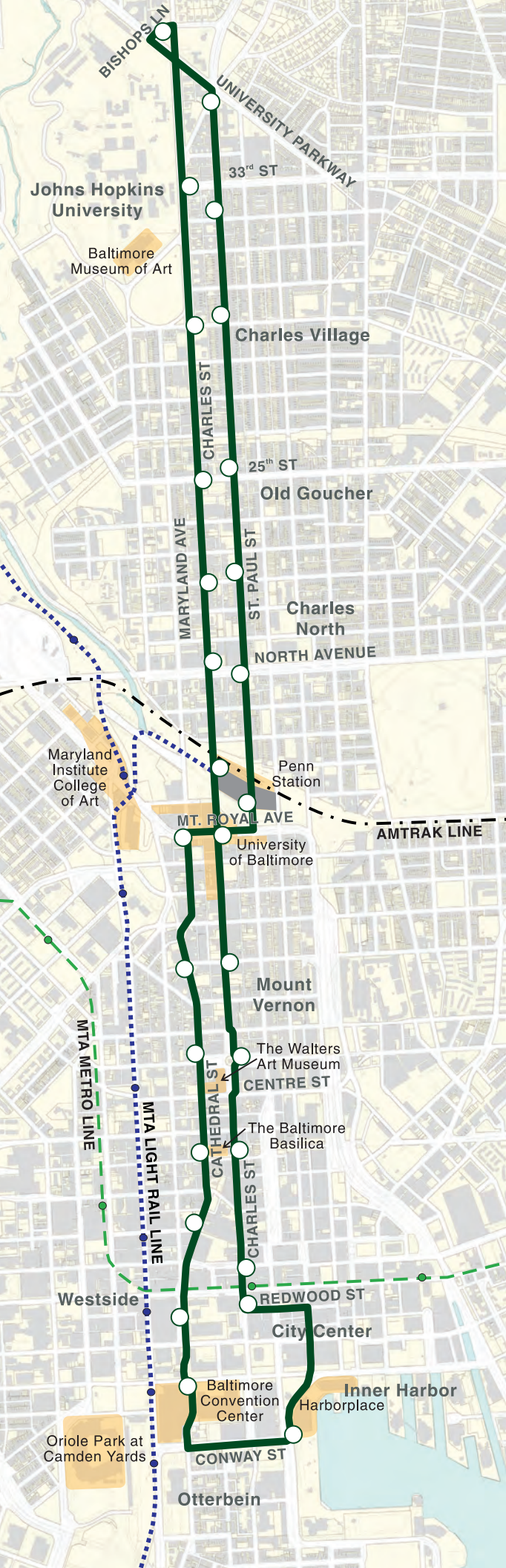
- 1.71 miles; connect with existing Riverfront and Canal Streetcar lines; provide direct access to the Convention Center, Port of New Orleans Cruise Ship Terminal, CBD employment district, and French Quarter attractions within one-half mile of the Mississippi Riverfront.
- EA/FONSI: June – July 2011
- Final Design: To be determined
- Funding Source: FTA New Starts



**PRINCIPAL CONTACTS:**

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## Baltimore Streetcar Campaign Baltimore, Maryland

The Baltimore Streetcar Campaign is a grass roots organization pushing to bring world class transit to Baltimore, making it a more livable, walkable 21st-century city.

The fixed-rail streetcar network that we are proposing, is wireless with state of the art technology and operates in the street with traffic.

We believe that the streetcar network will:

- Attract new residents and enhance livability in the communities it serves
- Encourage private investment and economic development in the heart of Baltimore
- Create jobs
- Expand the range of tourism, allowing more businesses to benefit from the 11 million visitors to the Inner Harbor annually
- Enhance the visibility of Baltimore’s educational, arts and cultural institutions
- Showcase the city’s architectural gems and history
- Make Baltimore a national model for innovative, environmentally friendly neighborhood development

The Charles Street route, a 7.5 mile streetcar line at a capital cost estimate of \$195 million will become the spine of a future streetcar network connecting the Inner Harbor with Johns Hopkins University.

Charles Street is the original main street of Baltimore and links historic neighborhoods, world-class cultural, religious and educational institutions, the convention center, M&T Bank Stadium and Oriole Park at Camden Yards. In addition, Charles Street has been designated a national scenic byway.

### Major Destinations Served include:

- |                               |   |
|-------------------------------|---|
| ▪ Baltimore Visitor Center    | ▪ Maryland Historical Society                 |
| ▪ Inner Harbor                | ▪ University of Baltimore                     |
| ▪ Convention Center           | ▪ Maryland Institute College of Art           |
| ▪ Oriole Park at Camden Yards | ▪ Penn Station                                |
| ▪ M&T Bank Stadium            | ▪ Station North Arts & Entertainment District |
| ▪ Baltimore Basilica          | ▪ Baltimore Museum of Art                     |
| ▪ The Walters Art Museum      | ▪ Johns Hopkins University                    |
| ▪ The Washington Monument     |   |
| ▪ Peabody Institute           |   |

Principal Contact:  
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# LOWELL TROLLEY EXPANSION PROJECT

The Lowell National Historical Park (LNHP) is proposing to expand its 1.5-mile visitor trolley line to create a heritage streetcar transit system in downtown Lowell, Massachusetts. The LNHP in cooperation with the Lowell Plan, the City of Lowell, Northern Middlesex Council of Governments, Lowell Regional Transit Authority, and Seashore Trolley Museum recently completed a Phase 1 Trolley Extension Alternatives Development Feasibility Study. The 5.5-mile Phase 1 extension will create a new linear transit corridor extending from Gallagher Transportation Terminal to the University of Massachusetts, South Campus. The project will involve the development of three new alignments at two ends of the existing park transit system: 1) Swamp Locks to Gallagher Terminal, 2) Father Morrisette to North Campus, and 3) North Campus to South Campus

## Project Status

This fall the Lowell Plan has contracted with AECOM to facilitate the FTA New Starts process for entry into Project Engineering. AECOM is also under contract with the Lowell Plan to design improvements to the Park's existing system including the development of a new boarding platform and passing siding along Dutton Street, the main spine of the system, Project Environmental Assessment is underway by the Volpe Transportation Systems Center and is expected to be completed in July 2013. The Park has received \$1.5M in Paul Sarbanes funding to construction these improvements. The City of Lowell received \$1.59M in Paul Sarbanes funding to design the Gallagher and Father Morrisette to North Campus alignments.

## Service

The system is designed to ensure that riders will never have to wait more than 10-minutes for a train. This level of service is important to enable UMass Lowell faculty, staff, and students to move efficiently among the university's campuses. The Lowell Trolley will operate year-round. As many as 20 stations stops will make it easy for riders to get on and off at convenient points. It will take about 25 minutes to travel the route from end to end.

## Trolley Vehicles

The Lowell Trolley will operate using a total of nine heritage trolleys, six newly built modern vehicles designed to look historic. This figure includes the LNHP's three existing vehicles (one enclosed and two open cars), which will be upgraded and refurbished for supplemental use on the expanded system. The six new vehicles would serve the daily operational needs of the system with the LNHP vehicles deployed to meet peak demand for special events and to serve as back-up during vehicle maintenance and repair.

## Construction Costs

Building the trolley system will cost an estimated \$65.7 million (2010 estimate). Projected construction costs break down as follows:

Track	\$37.4
Trolleys	\$1.4
Trolleys	\$7.4
Maintenance Facility	\$4.4
Subtotal	\$50.6
Plus Contingency (15%)	\$7.6
Plus Design and Project Management	\$7.5
<b>Total</b>	<b>\$65.7</b>

## Lowell Trolley Transit System Proposed Routes

The proposed system includes four corridors: 1) the existing NPS line, 2) Gallagher, 3) Father Morrisette, and 4) South Campus. Starting at the Gallagher Terminal, the trolley will run through the Hamilton Canal District to downtown and the Lowell National Historical Park. It will then split into two branches: short line serving Middlesex Community College and the UMass Lowell Inn & Conference Center, and a longer main line serving the Tsongas Arena, LeLacheur Baseball Park, and UMass Lowell's North, East, and South Campuses.



*Clockwise from upper left: the existing NPS line, Gallagher, Father Morrisette, to North Campus, and North Campus to South Campus*

# M-1 RAIL STREETCAR

## PROJECT DESCRIPTION

The 3.3-mile streetcar route will include 11 stations and provide links among key destinations along Woodward Avenue. The streetcar will serve curb-side stations for nearly the entire length of the route, transitioning to center-running at the north and south ends of the system. A one-way trip will take approximately 15 minutes, depending on the time of day.

Key features of the streetcar system include:

- Premium service with 7.5 -10 minute headways during peak periods and throughout most of the day, and 12-15 minutes early and late in the day and on weekends.
- Ridership estimated to grow to 3 million trips annually.
- A coordinated fare system with local buses, the People Mover and future RRT service to allow seamless transfers and coordinated operations.
- Ticket vending and “next train” technology at all stations.
- Designed to allow future extensions.



## REGIONAL TRANSIT SYSTEM INTEGRATION

In December 2011, a regional transportation strategy was unveiled to provide fast, frequent, comfortable transit service along four corridors within metro Detroit to generate higher transit use. The Southeast Michigan Regional Transit Authority concept would establish a regional authority to provide service to 22 communities in four counties along the Michigan Avenue, Woodward Avenue, Gratiot Avenue and M-59 corridors.

The M-1 RAIL Project will be a catalyst and serve an important role within this larger envisioned Southeast Michigan transit system. The M-1 RAIL Project and proposed regional Rolling Rapid Transit (RRT) system efforts can be pursued in parallel. First and foremost, the M-1 RAIL project provides an opportunity to more rapidly implement the region’s comprehensive transit vision.

Coordinating the M-1 RAIL streetcar with the RRT system will increase ridership for the RRT and result in more boardings and activity at the Rosa Parks Transit Center. In addition, strategically located stations and these improved transit services will help reduce operations costs and maximize transfer opportunities to support the use of both systems.

The Consolidated Appropriations Act of 2010 allows the private and philanthropic investments being secured by M-1 RAIL to be counted as part of the “Local Share” for a New Starts funded rail or RRT system. **Therefore, M-1 RAIL estimates the local match associated with the current project could provide over \$60 million in local matching funds for any RRT system New Starts applications.**

## VEHICLES

Modern streetcar vehicles will be used, similar to those operating in Seattle and Portland. Up to five vehicles will operate at a time along the route. Vehicle features will include:

- ADA-accessible level boarding.
- Multiple doors for fast boarding.
- Clean and quiet electric power operations.
- Mixed traffic, to preserve on-street parking.
- On-board wi-fi service.

## PEER CITIES

Portland, Seattle and Tacoma all have seen development occur near their streetcar systems. Since 1997, Portland has had over \$3.5 billion in new investment within two blocks of the streetcar route.



## PROJECT COSTS

The capital cost for the M-1 RAIL streetcar is estimated at \$140 million. A significant majority of funds will come from private sources. Construction will be closely coordinated with the planned MDOT reconstruction of Woodward Avenue in 2013.

THIS LEVEL OF PRIVATE FUNDING SUPPORT FOR PUBLIC TRANSIT IS UNPRECEDENTED, AND IT IS INDICATIVE OF THE STRONG COMMITMENT FROM LOCAL BUSINESS LEADERS AND FROM THE REGION'S PHILANTHROPIC COMMUNITY TO SECURE DETROIT'S FUTURE AS A VIBRANT AND DESIRABLE PLACE TO LIVE AND WORK.

The annual operating cost of the streetcar is projected to be \$5 million. This cost is anticipated to be covered by a combination of fare box revenue, private funding support, advertising revenues and public sector support. The project assumes a fixed fare policy of \$1.50 per ride with transit pass options for frequent riders.

ESTIMATED CAPITAL and OPERATING COSTS (in 2012 dollars)

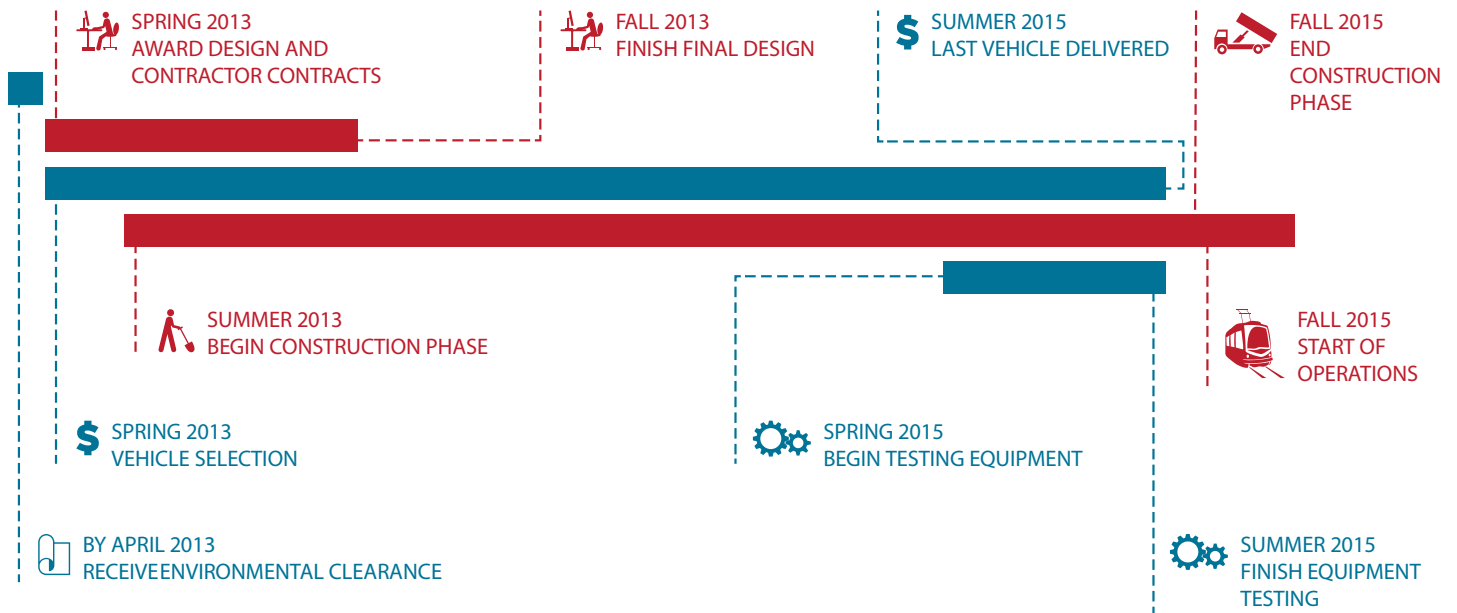
Total Capital Cost	\$140 million
Capital Reserve Fund	\$10 million
Annual Operating Cost	\$5 million



### FUNDING COMMITMENTS

Funding commitments from foundation, corporate, institutional and Detroit Development Authority (DDA) sources will be combined with a \$25 million federal discretionary grant and federal tax credits to implement the project.

## PROJECT TIMELINE



# GRAND RAPIDS STREETCAR PROJECT

From 2003 to 2007, the Interurban Transit Partnership (The Rapid) conducted an Alternatives Analysis which identified the potential of a downtown streetcar circulator which would focus redevelopment intensity in downtown Grand Rapids. The resulting streetcar feasibility study evaluated several options for the first leg of the proposed system. A single route was selected to be evaluated, which allows for multiple expansion options that connect to this “first ribbon” and provide a connection to Central Station. A combination of funding sources is proposed in order to fund operation of the system. Farebox revenues and state operating funds are projected to provide approximately 50% of the operating cost. The remaining funding sources will derive from the elimination of an existing fixed-route parking shuttle, and a public/private parking surcharge. Capital funding sources include private contributions, advertising rights, and revenues from a transportation improvement district. Sales tax capture is not allowed for transit systems in Michigan.

In May of 2008, the Task Force recommended the Feasibility Study to the Interurban Transit Partnership (ITP) Board. In June of 2008, the ITP Board recommended examination of funding sources and continued examination of the first alignment.

Primary steps toward future implementation include:

- The creation of an authority
- Pursuing capital funding
- Establish a private/public parking policy
- The formation of a Transportation Improvement District (TID)

This feasibility study will be revisited and revised in upcoming years.



## Principal Contact:

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**Project Overview**

The Nicollet-Central corridor is one of the busiest transit corridors in the Twin Cities, connecting downtown Minneapolis with mixed-use urban neighborhoods along Nicollet Mall, Nicollet Avenue S, and Central Avenue NE. It is currently served by local bus routes. It was prioritized by the City of Minneapolis as the best place to start implementation of a long-term, seven-corridor modern streetcar network identified through a 2007 feasibility study.

An alternatives analysis study is currently underway, comparing modern streetcar, enhanced bus and no build options. A locally preferred alternative is expected to be identified in summer 2013. It is anticipated that any modern streetcar option would need to be funded and built in phases, beginning with a downtown-based starter line. The City of Minneapolis is leading the study in coordination with Metro Transit and Metropolitan Council.

**Corridor Facts**

- **Length:** 9 miles.
- **People:** 90,000 residents and 125,000 jobs within one-half mile. Projected to grow by 25,000 residents and 50,000 jobs by 2030. 25% of households have no car. 24% of residents live in poverty.
- **Destinations:** 6,000 hotel rooms, the Minneapolis Convention Center, the Minneapolis Institute of Art, the Central Library, Orchestra Hall, Nicollet Mall, and several restaurant/shopping districts outside downtown.
- **Travel Demand:** The two primary corridor bus routes already carry over 20,000 rides every weekday. Over 10,000 of these rides board and alight entirely within the inner 5½ miles between Lowry Avenue and Lake Street.

**For More Information**

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Website: [www.minneapolismn.gov/nicollet-central](http://www.minneapolismn.gov/nicollet-central)





# Minneapolis Nicollet-Central Corridor





# Downtown Kansas City Streetcar



## Project Sponsor:

City of Kansas City, Missouri

## Project Limits:

River Market to Union Station/Crown Center

## Project Alignment:

Two-Mile route on Main Street Corridor

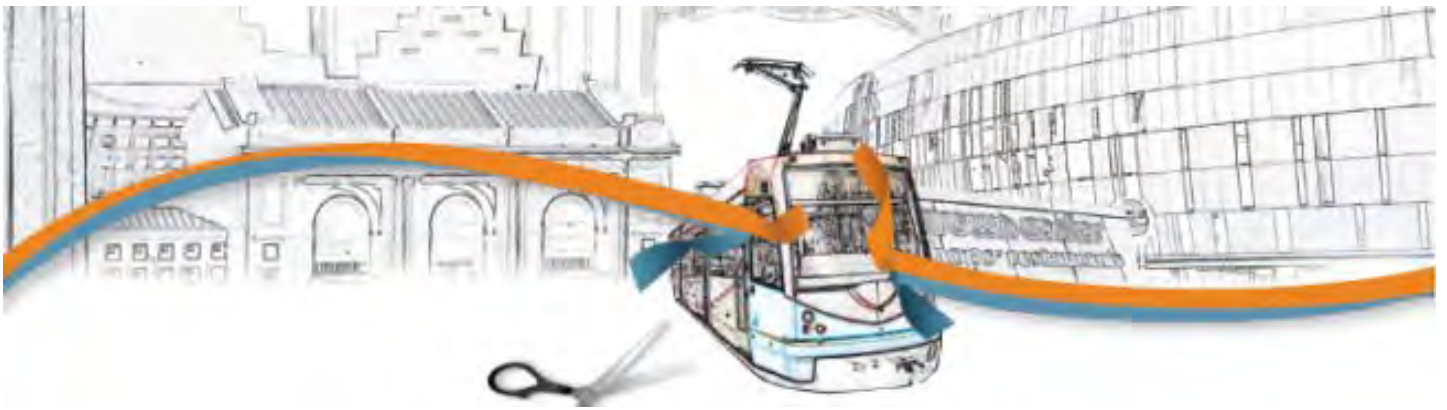
## Project Vehicle:

4 Modern Streetcars

## Project Purpose:

The purpose of the project is to provide an attractive transit option that will more conveniently connect people and places within the downtown corridor, and support regional and city efforts to develop downtown Kansas City and the corridor as a more attractive and successful urban center.





### **Anticipated Cost:**

The estimated capital cost is \$102 million dollars in FY 2014 and the estimate annual operations cost is approximately \$2.7 million in FY 2013 dollars.

### **Financial Strategy:**

More than 75 percent of the KC Streetcar's cost will be funded with local public and private funding. The primary funding source will be a Missouri Transportation Development District (TDD). A TDD is a special benefit district that operates as a separate entity and is a political subdivision of the State, governed by a Board of Directors. The formation of the TDD, and also the implementation of a TDD tax to help fund the KC Streetcar project, were approved by registered voters residing within the boundary of the TDD.

The TDD will generate revenue primarily from a new and dedicated one-cent sales tax charged only within the TDD, and special assessments on real property only within the TDD. This revenue will also cover 100 percent of the proposed project's net operating and maintenance (O&M) costs after passenger fare revenues, advertising and concessions. All of the TDD revenue will be applied to pay the capital costs and O&M costs of the KC Streetcar.

The project also includes \$17.7 Million in federal funding through the Surface Transportation Program and Congestion Mitigation/Air Quality Program. This money is programmed for 2013 and intended for purchasing vehicles.



### **Anticipated Timeline:**

- **OCTOBER 2012:**  
Project received a Finding of No Significant Impacts on the Environmental Assessment
- **January 2013:**  
Final design and vehicle procurement begin
- **Summer 2013:**  
Construction anticipated to begin
- **Summer 2015:**  
Anticipated Opening Day

### **Principal Contact:**

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816-513-2740

Learn more at [www.kcstreetcar.org](http://www.kcstreetcar.org)

# Loop Trolley Project Description

## St Louis, Missouri

### The Urban Circulator Grant

In July 2010 the project was selected for a \$24.9 million Urban Circulator Program grant from the Federal Transit Administration (FTA). Although the City of St. Louis initially applied for the grant, the Council and the TDD will be the recipients. The Council will submit an application for the project's design phase, and the TDD will submit for construction. The grant will be combined with other federal funds, New Market Tax Credit equity, TDD and tax increment finance district revenues, and private donations to finance the project's capital cost. Fares, TDD revenues, and other supplemental funds will finance the project's operating expenses.

The project will introduce a 2.1-mile fixed-rail trolley line along Delmar Boulevard and DeBaliviere Avenue, extending from the Delmar/Trinity Avenue intersection to the Missouri History Museum in Forest Park. Serving nine station areas (six single stations and three paired stations), the trolley will operate in both single- and double-track configurations, as well as in both mixed-traffic and exclusive rights-of-way. The currently proposed vehicle is a replica heritage trolley that will operate on a combination of battery and direct current power, eliminating the need for overhead wires along some portions of the route. The project will include rehabilitation of an historic building as a vehicle maintenance and storage facility and replacement of the DeBaliviere bridge, which spans the junction of two MetroLink rail routes.

### Proposed Loop Trolley Route



### Other Federal Funds

Four federal capital grants will help fund the four discrete projects that together constitute the Loop Trolley project:

- Urban Circulator grant: vehicles, rail and systems, maintenance facility
- CMAQ grant: Delmar/Trinity roundabout (Congestion Mitigation Air Quality program)
- STP-Enhancement grant: Great Rivers Greenway multi-use path and trolley track zone along DeBaliviere (Surface Transportation Program)
- STP grant: DeBaliviere bridge rehabilitation

Although these projects use different funding sources, they all will be part of a single design and construction program.

Preliminary engineering is complete for the trolley proper, but not for the maintenance facility and DeBaliviere bridge. That additional engineering work will be conducted during the project’s design phase.

The current capital cost estimate for the project is \$43 million. A breakdown of the cost estimate by project element, along with a list of potential funding sources, follow.

**Capital Cost Estimate**

Major Project Element	Estimated Costs (\$millions)
Guideway and Track	\$9.54
Stations	\$0.44
Support Facility	\$5.59
Sitework	\$13.44
Systems	\$3.47
ROW, Land, Improvements*	\$0.45
Vehicles	\$6.27
Professional Services	\$3.80
Total Estimated Capital Cost	\$43.00

**Sources of Capital Funding**

Revenue Source	Potential Revenue (\$millions)
Urban Circulator Grant (FTA)	\$24.9
Regional STP/CMAQ Funding	\$5.8
Local Match (Great Rivers Greenway)	\$0.2
TIF Monetization	\$3.5
New Markets Tax Credit Proceeds	\$3.5
Private Donations	\$5.0-\$8.0
Potential Revenues	\$42.9-\$45.9

\*While no right-of-way acquisition is anticipated, this line item accounts for the possibility that some nominal easements (temporary or permanent) may be required as a result of detailed design analyses.

On start-up, the trolley will run year-round, seven days a week, at 20-minute headways. It will initially operate from 11 am – 6 pm Sunday through Thursday, with Friday and Saturday hours extended to 1 am. This operating plan, which represents a minimum scenario, will cost approximately \$1.3 million a year. Anticipated sources of annual operating income include \$600,000 in fare revenue (based on a \$2 fare) and \$500,000 in TDD receipts, leaving a nearly \$200,000 shortfall. Possible financing strategies to meet that shortfall include advertising revenues, sponsorships, and annual institutional subsidies.

**Project Management Plan**

The project has been divided into two phases: Design (also called “final engineering”) and Construction. East-West Gateway Council of Governments is the recipient of \$2.88 million from the Urban Circulator grant to complete the design, and has selected Loop Trolley Company to oversee the project during this phase. Tim Borchers of City Rail Solutions LLC is under contract with LTC to carry out the work. LTC will also contract with four other individuals to support Tim with special expertise.

The Loop Trolley Transportation Development District plans to become the recipient for the balance of the Urban Circulator grant, or approximately \$22 million. The timing of the TDD’s receipt of the grant is dependent on TDD acquiring the technical and financial capacity needed to satisfy FTA. The current plan is for TDD to acquire a program manager for the technical expertise needed by early 2012 and apply for the grant soon thereafter.

# CHARLOTTE STREETCAR PROJECT

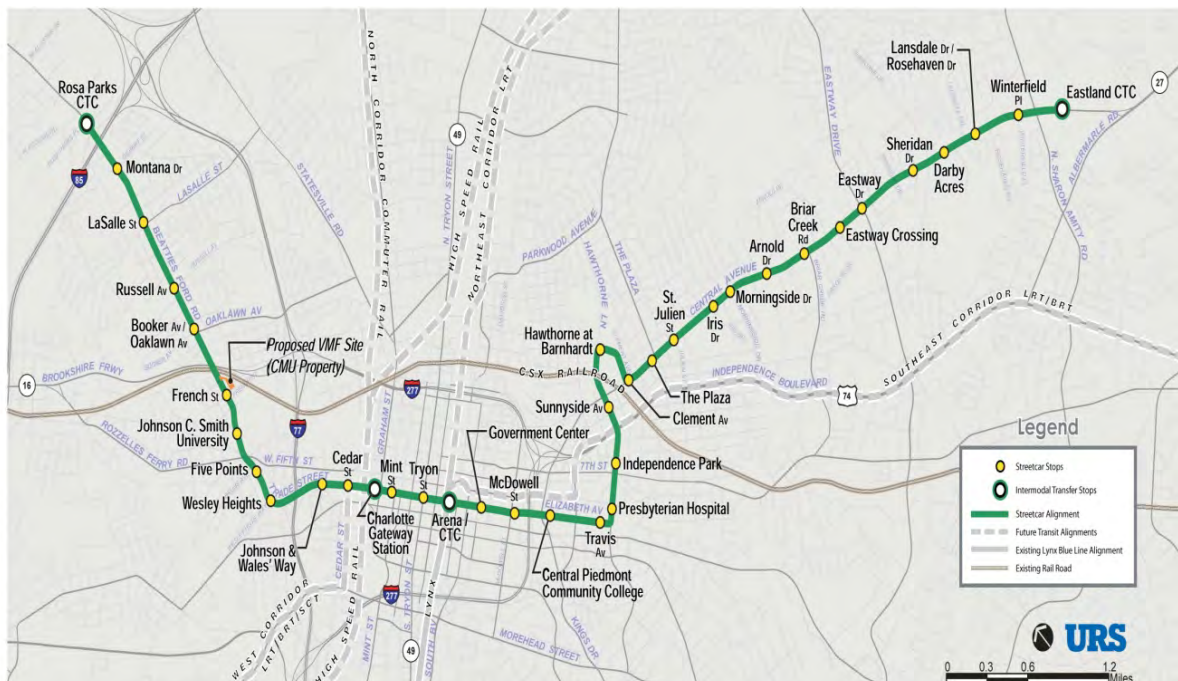


## CHARLOTTE STREETCAR

### City Project

#### Charlotte Streetcar Project – 2009 to 2011

- Unifies two of Charlotte's three highest ridership bus routes adding capacity for future ridership growth along the alignment
- Provides future connections to local, regional and national transit including Greyhound and Amtrak
- Supports and enhances Business Corridor Programs and redevelopment opportunities on Beatties Ford Road and Central Avenue
- Advanced preliminary engineering to 30% design level
- Designed as a modern streetcar system
- 10 mile corridor with 37 stops connecting residential, retail, employment, educational, medical and entertainment destinations in west, central and east Charlotte
- 2012 estimated total cost at \$450 million
- Completed Environmental Analysis (EA) and received Finding of No Significant Impacts (FONSI) in June 2011
- Charlotte looking into implementing in segments as approved by City Council

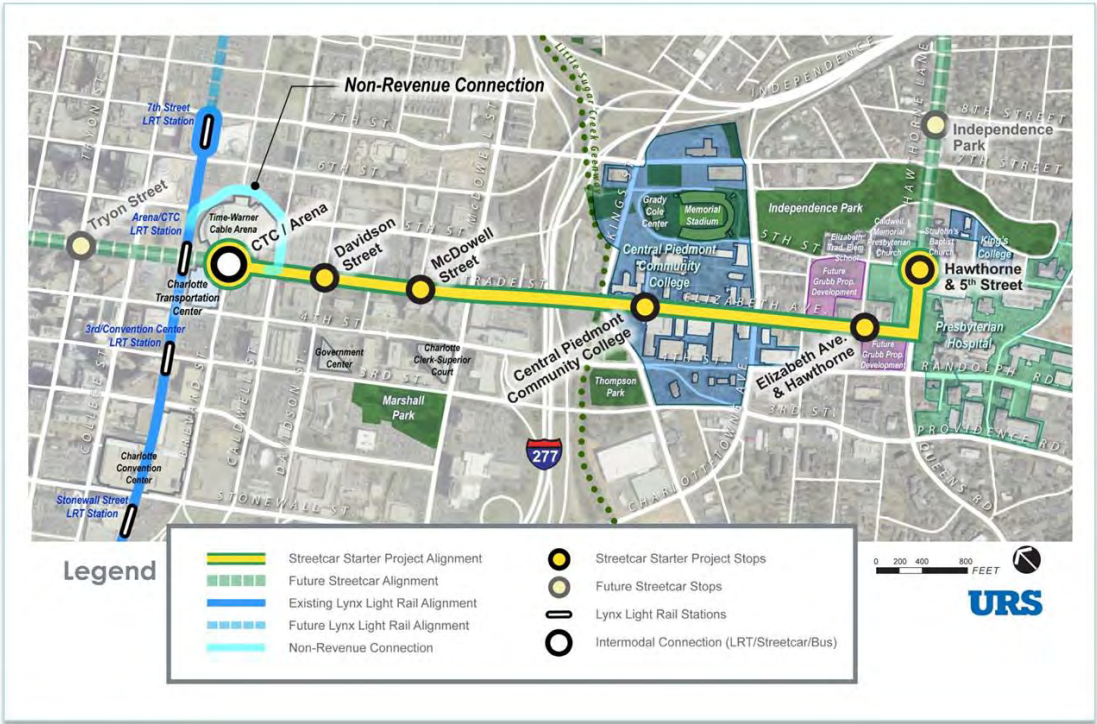




**Federal Application – Urban Circulator Grant**

**Streetcar Starter Project – 2010-2015**

- Completes 1.5 mile initial operating segment of Charlotte Streetcar Project
- Connects Center City and the Charlotte Transportation Center (LRT, Bus) with Elizabeth Avenue Business Corridor, Central Piedmont Community College and Presbyterian Hospital
- Uses existing ½ mile of track on Elizabeth Ave.
- Non-revenue track connects streetcar alignment with existing Blue Line and LRT maintenance facility
- Uses three existing Gomaco replica vehicles
- Project cost is \$36.99 million (\$24.99 million Federal, \$12 million local)
- Notification of award in July 2010
- FTA obligated funds in September 2011
- Entered Final Design in July 2011, entered construction in December 2012, start revenue service in March 2015



**Principal Contacts:**

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Visit [www.charlottefuture.com](http://www.charlottefuture.com) for more information.



**Project Overview**

The Cincinnati Streetcar Project will transform the City’s urban core by connecting the Cincinnati Riverfront and Central Business District to two redeveloping neighborhoods just north of Downtown: Over-the-Rhine (OTR), a low-income, minority community; and Uptown, the region’s second largest employment center and home to the University of Cincinnati.

The first segment consists of five modern streetcars operating along a Downtown/OTR circulator route consisting of approximately 4.0 miles of single track traveling in one direction along a route extending from 2<sup>nd</sup> Street on the south to Henry Street on the north. The first segment will include 18 stops serviced at 10-minute peak and 20-minute off peak headways roughly 16-18 hours per day, seven days per week, 365 days per year. Revenue service is anticipated to begin in 2014.

Future extensions will include a connection and circulator through Cincinnati’s Uptown area, the region’s second largest employment center and home to the University of Cincinnati, Cincinnati Children’s Hospital, and the Cincinnati Zoo.

The City is working in partnership with the Southwest Ohio Regional Transit Authority (SORTA), the region’s transit provider, through an Intergovernmental Agreement. The City will own the system and will manage design, construction, and other contractors for the project. SORTA will be responsible for grant management activities related to the federal grants and will operate the system once constructed.

**Funding**

The estimated total cost of the first segment is approximately \$110 million. Funding has been committed to the project from the following sources:

Identified Funds	Source	Local Funds	Non-Local Funds
City Bond Financing	City	64,000,000	
Private contributions	Private	6,500,000	
Urban Circulator Grant	FTA		24,990,000
OKI CMAQ Grant	MPO		4,000,000
TIGER3 Grant	USDOT		10,920,000
<b>Subtotal</b>		<b>70,500,000</b>	<b>39,910,000</b>
<b>Grand Total</b>			<b>110,410,000</b>

Annual operating costs are estimated at approximately \$2.5 million. Daily ridership is estimated at approximately 3,700 at a \$1.00 fare. Operations will be funded by farebox revenue, in addition to other City non-General Fund sources, such as casino tax revenue, parking revenue, and sponsorships.



# Streetcar Cities in Planning Stages



## Project Status - February 2013

Following the December 2011 award of \$10.9 million in TIGER 3 funding, the Cincinnati Streetcar revised its plans to lengthen the route southward from its former terminus at Fifth Street to Second Street, where it directly connects to Cincinnati's new 45-acre \$120 million Smale Central Riverfront Park, the \$600 million Banks multi-use development, the National Underground Railroad Freedom Center, Great American Ballpark, and Paul Brown Stadium.

The City also awarded a contract to CAF USA for 5 modern 100% low-floor streetcar vehicles, and has begun the relocation of water and telecommunication utilities with the alignment.



[facebook.com/cincystreetcar](https://facebook.com/cincystreetcar)



[twitter.com/cincystreetcar](https://twitter.com/cincystreetcar)



[Cincystreetcar.wordpress.com](https://Cincystreetcar.wordpress.com)



[youtube.com/cincinnatistreetcar](https://youtube.com/cincinnatistreetcar)

# COLUMBUS, OHIO

**Project Sponsor:** Columbus StreetRailway Company (CSC)  
55 East State Street, Columbus, OH 43215

**Project Purpose:** The project's purpose is to achieve, through a cooperative effort with all stakeholders, the rapid realization of a truly livable, walkable, sustainable, and mixed-use center city area for Columbus. This purpose strongly comports with Federal initiatives for sustainable communities. The center city area of Columbus possesses a remarkable combination of existing destinations and development opportunities that figuratively cry out for a modern streetcar circulator. Considerable time has been devoted to developing a streetcar-based TOD strategy that will (i) connect the CBD's commercial/government district (100,000 workers, 7,000,000 annual visitors) to seven nearby residential neighborhoods, to mixed-use/entertainment districts and to The Ohio State University, (ii) accelerate the renovation of over 800,000 square feet of empty/under-utilized building space, (iii) accelerate large-scale new construction (infill) projects including over 4,000 new housing units, and (iv) create thousands of new full-time jobs.

**Project History/Project Funding:** Initial evaluation, preliminary design, and project cost estimates were completed during 2006-2007 in conjunction with Mayor Coleman's Streetcar Working Group. Through private-sector initiatives, planning for project implementation, project financing, and development of a comprehensive streetcar-based TOD strategy have been ongoing since that time. During 2012 significant additional private financing was committed to project advancement. The principal focus during the first half of 2013 is on committing the local share of project funding through an innovative pilot program requiring approval by the Ohio legislature. A Small Starts grant, combined with a TIFIA loan, would finance the remainder of projects costs.

## **Proposed Streetcar Circulator Routes:**

1. **Center-City Circulator (Blue and Green Lines):** The proposed Center-City Circulator consists of two integrated loops totaling 7.7 miles of track. The north-south line (Blue Line) would connect the central government and business district with both German Village and the Brewery District (south to Frankfurt Street) and to the Arena, Short North, Victorian Village, and Italian Village Districts (north to Buttles Street). The east-west line (Green Line) would connect the Arena District (west to Neil Avenue) to the Discovery District (east to Washington Avenue) and would share double track and station stops on High Street with the north-south line, including the extension to O.S.U. Initial daily ridership for the combined lines is projected to be over 11,000 people.





2. **Ohio State Loop (Scarlet Line):** A 3.4 mile extension of the Center City Circulator to The Ohio State University's Wexner Medical Center and Main Campus, via Neil Ave. and High Street, is an integral part of project planning.

**Project Implementation/Project Costs:** A public/private partnership that includes the State of Ohio and the City of Columbus is anticipated. Construction and modern streetcar costs combined are estimated at \$210 million including the OSU line.

**Time Frame:** The Circulator could be operational by 2016-17.

<b><u>Contacts:</u></b>	Lawrence L. Fisher President & CEO Columbus StreetRailway Company <a href="mailto:llfisher@columbusstreetrailway.com">llfisher@columbusstreetrailway.com</a> 614-719-6074	OR	Franklin B. Conaway Lead Consultant, Project Coordinator Columbus StreetRailway Co. <a href="mailto:franklin@fbconaway.com">franklin@fbconaway.com</a> 740-773-9583
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# Columbus StreetRailway Company Proposed Streetcar Routes

-  Blue Line (Double Track)
-  Blue Line (Single Track)
-  Green Line
-  Scarlet Line (Proposed Ohio State Extension)



Blue and Scarlet Routes share track on Buttles Ave.

Scarlet Route continues south following path of Blue Route to Downtown, German Village and the Brewery District.

Blue, Green, and Scarlet Routes share track and stations between Nationwide Blvd. and State St.

**Track Lengths:**  
 Blue Route: 4.9 miles  
 Green Route: 2.8 miles of add'l track  
 Scarlet Route: 3.4 miles of add'l track

# Oklahoma City

## DESCRIPTION

MAPS 3 is a 10-year construction program designed to improve the quality of life in Oklahoma City. It is funded by a limited term, one-cent sales tax initiative that began in April 2010 and ends in December 2017. The eight projects span the entire city at an estimated cost of \$777 million. A Modern Streetcar/Transit project is included at an approved budget of \$128.8 million.

According to Oklahoma City's 2030 Fixed Guideway Study, which is the blueprint for the future of public transit in the city, streetcars provide certainty and high capacity transit, making it a viable choice for the greater downtown. The system is anticipated to connect several of the other elements of MAPS 3, and it is hoped to attract funding for other transit options in the future.

## SCOPE

A rail-based streetcar system will serve the downtown vicinity, and related transit infrastructure will connect other rail-based systems and/or a multi-modal transit hub. A maintenance facility will be constructed to service the streetcars. The number of miles of track constructed will be determined by available construction dollars and the 2011 LPA 7.6 mile route is being reconsidered and will be replaced by the refined route costing \$128.8 million. The MAPS 3 budget should provide for construction of five to six miles of track.

THE PROJECT WILL BE COMPLETED IN SEVERAL PHASES TO INCLUDE:

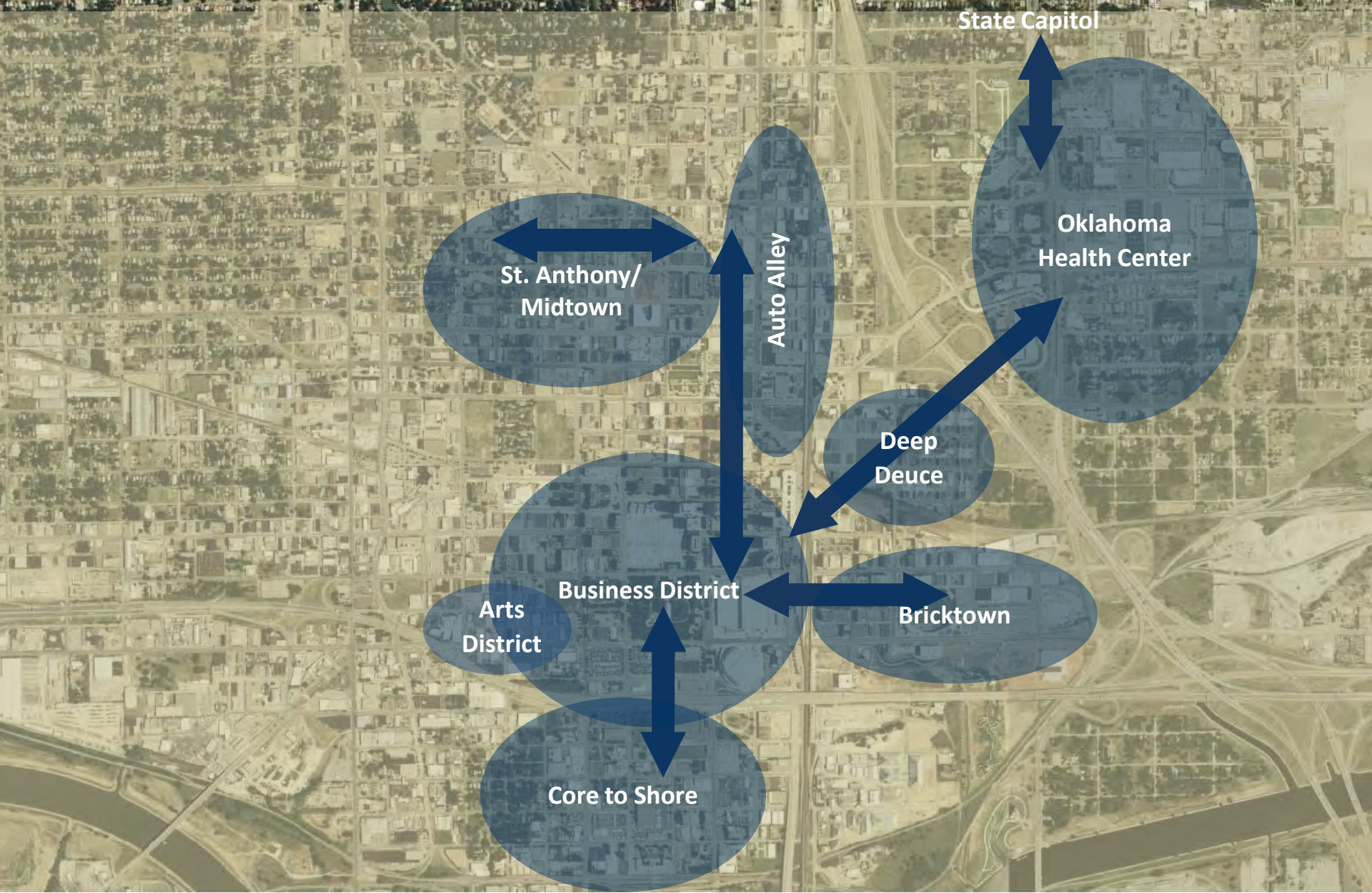
- Investigation and standards including coordination with other cities for possible group/consortium buying
- Route planning and route refinement (TIGER II funded)
- Land acquisition
- Architecture and engineering
- First phase of procurement/construction will complete a starter system, a maintenance facility and other transit infrastructure as appropriate, such as connections to other rail-based systems and/or a transit hub
- Second phase of construction will complete as many additional route miles as the remaining available construction dollars allow

## TIMING

Investigation and standards, planning, engineering, land acquisition and site preparation are currently underway. The first phase of procurement and construction is scheduled to begin near the midpoint of the program, 2013-2014. The second phase of construction is scheduled to begin near the end of the program in 2019

### **For further information contact:**

Lance Musgrave,  
Asst. Program Manager, MAPS Office  
City of Oklahoma City  
405-297-3466  
[lance.musgrave@okc.gov](mailto:lance.musgrave@okc.gov)  
Website: [www.okc.gov/maps3](http://www.okc.gov/maps3)



St. Anthony/  
Midtown

Auto Alley

State Capitol

Oklahoma  
Health Center

Deep  
Deuce

Business District

Arts  
District

Bricktown

Core to Shore



# Portland Streetcar

## Operating System:

- 14.7 miles in operation on 2 lines
- NS Line – 4 miles double track
  - Opened 2001, extended in '05,'06 & '07
  - Total cost \$103 Million
  - weekday ridership = 10,000
- CL Line – 4.5 miles double track (includes 1.2 miles double track shared with NS Line)
  - Opened September 22, 2012
  - Total cost \$148 Million
  - weekday ridership = 3,000



## Upcoming Project:

- “Close the Loop” Project – Opening 2015
  - \$4 million Federal project for east side bridge connections; \$2 million from FTA capital grants to be requested
  - Local funding available for west side connections and vehicle modifications
  - Create a full loop connecting the Central City of Portland

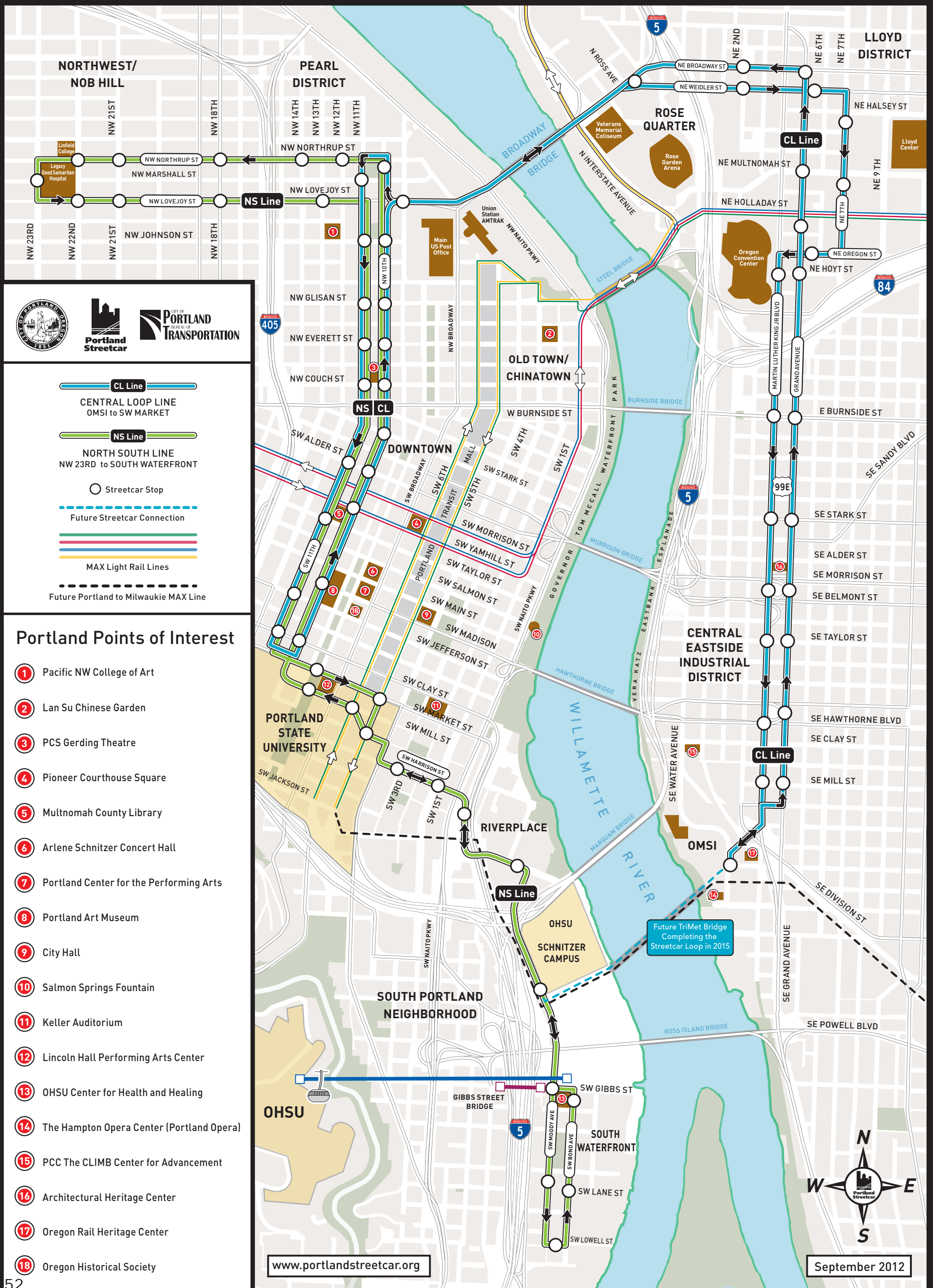


For More Information, Please Contact:

Vicky Diede, Project Manager  
City of Portland  
503-823-7137

[Vicky.Diede@portlandoregon.gov](mailto:Vicky.Diede@portlandoregon.gov)

Rick Gustafson, Executive Director  
Portland Streetcar, Inc.  
503-242-0084  
[rgustafson@sojpdx.com](mailto:rgustafson@sojpdx.com)



**CL Line**  
CENTRAL LOOP LINE  
OMSI to SW MARKET

**NS Line**  
NORTH SOUTH LINE  
NW 23RD to SOUTH WATERFRONT

○ Streetcar Stop

--- Future Streetcar Connection

--- MAX Light Rail Lines

--- Future Portland to Milwaukie MAX Line

### Portland Points of Interest

- ① Pacific NW College of Art
- ② Lan Su Chinese Garden
- ③ PCS Gerding Theatre
- ④ Pioneer Courthouse Square
- ⑤ Multnomah County Library
- ⑥ Arlene Schnitzer Concert Hall
- ⑦ Portland Center for the Performing Arts
- ⑧ Portland Art Museum
- ⑨ City Hall
- ⑩ Salmon Springs Fountain
- ⑪ Keller Auditorium
- ⑫ Lincoln Hall Performing Arts Center
- ⑬ OHSU Center for Health and Healing
- ⑭ The Hampton Opera Center (Portland Opera)
- ⑮ PCC The CLIMB Center for Advancement
- ⑯ Architectural Heritage Center
- ⑰ Oregon Rail Heritage Center
- ⑱ Oregon Historical Society





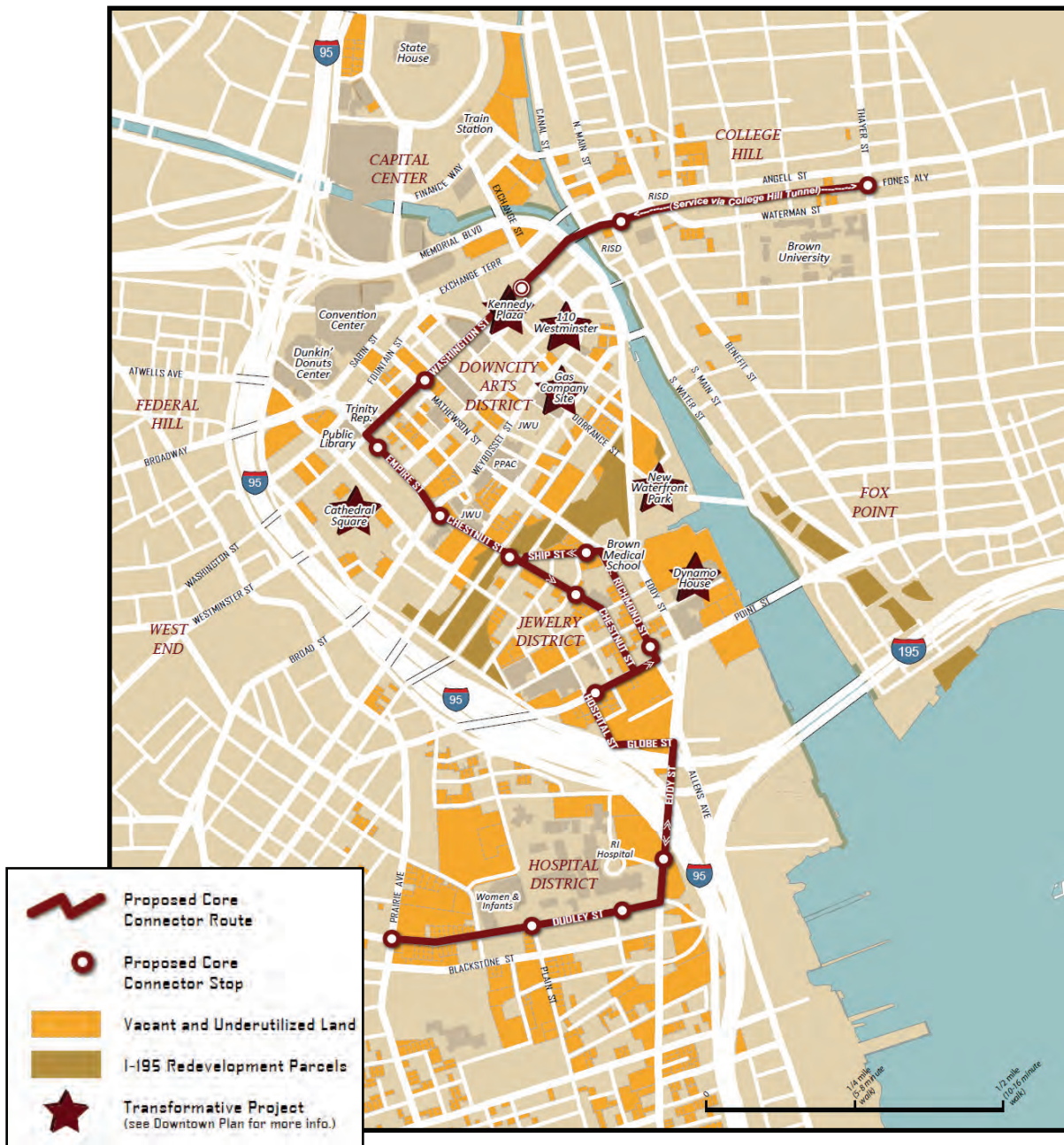
## Providence Streetcar

The City of Providence and RIPTA have proposed a 2.5-mile streetcar route would connect our major activity centers, improve transit and mobility, encourage development, and support future growth. The project is anticipated to spur 4 million square feet of new development and create 6,000 new jobs, enhancing the vitality and attractiveness of our Capital City.

- *Metropolitan Providence Transit Enhancement Study* (included Streetcar Feasibility Study) completed in 2009
- Alternatives Analysis and Environmental Assessment (*Providence Core Connector Study*) began in Summer 2010 (Federal 5309 funds through RIPTA provide 80%, local match combination of City and private funds) - anticipated completion in Winter 2012
- Supplemental AA/EA Study (FTA FY2010 Discretionary Livability Funding 80%, local match combination of private funds)- anticipated completion in Winter 2012
  - Extends analysis to include an evaluation of transportation needs of Brown University and Rhode Island Hospital (at the proposed terminus points of the streetcar line), including a review of travel patterns, and coordination of existing shuttle and parking management programs with the corridor study to leverage potential private investment. Also evaluates the potential for providing better connections and access to adjacent residential neighborhoods.
- Preliminary Engineering and Final Design anticipated to begin in Spring/Summer 2012



# Proposed Alignment - Providence Streetcar Starter Line



## Principal Contacts:

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 City of Providence  
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 email: mhaggerty@providenceri.com

Amy Pettine, Special Projects Manager  
 RIPTA  
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 email: apettine@ripta.com

Visit [www.ProvidenceCoreConnector.com](http://www.ProvidenceCoreConnector.com) for more information.

# DALLAS STREETCAR PROGRAM

## Federal Projects and Applications

### ➤ Dallas CBD to Oak Cliff Line Segment

- American Recovery and Reinvestment Act --TIGER Grant Application
- \$23 Million Grant Award
- Agency Roles
  - NCTCOG - FTA Grantee
  - City of Dallas - Project Owner
  - DART - Technical Lead
- Funding Plan - \$38.8 million
  - Regional Toll Revenue (RTR) Funds from SH 121 \$10.0 M
  - ARRA TIGER Grant Funds \$23.0 M
  - RTR Local Funds from SH 161 \$ 5.8 M
- Funding Distribution
  - Planning \$2.2 M
  - PE/EA \$1.6 M
  - Final Design \$1.0 M
  - Construction \$34.0 M

\$38.8 M
- Very challenging schedule
  - ✓ Commit Local Match – December 30, 2010
  - ✓ Complete Environmental Assessment (FONSI) and FTA Grant Agreement– June/July 2011
  - ✓ Begin revenue service - December 2013



### Principal Contacts:

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 214-670-4038  
[keith.manoy@dallascityhall.com](mailto:keith.manoy@dallascityhall.com)

Jay Kline, AICP  
 214-749-3539  
[jkline@dart.org](mailto:jkline@dart.org)



## VIA Streetcar – San Antonio, TX

### Modern Streetcar Project



#### ❖ North-South Route:

- 2.2-mile starter segment on Broadway and S. Alamo through downtown
- \$100 million estimated project cost
- Connects Southtown, HemisFair Park, Convention Center, Riverwalk, East-West Route, Alamo, San Antonio Museum of Art, Pearl Brewery, and Fort Sam Houston

#### ❖ East-West Route:

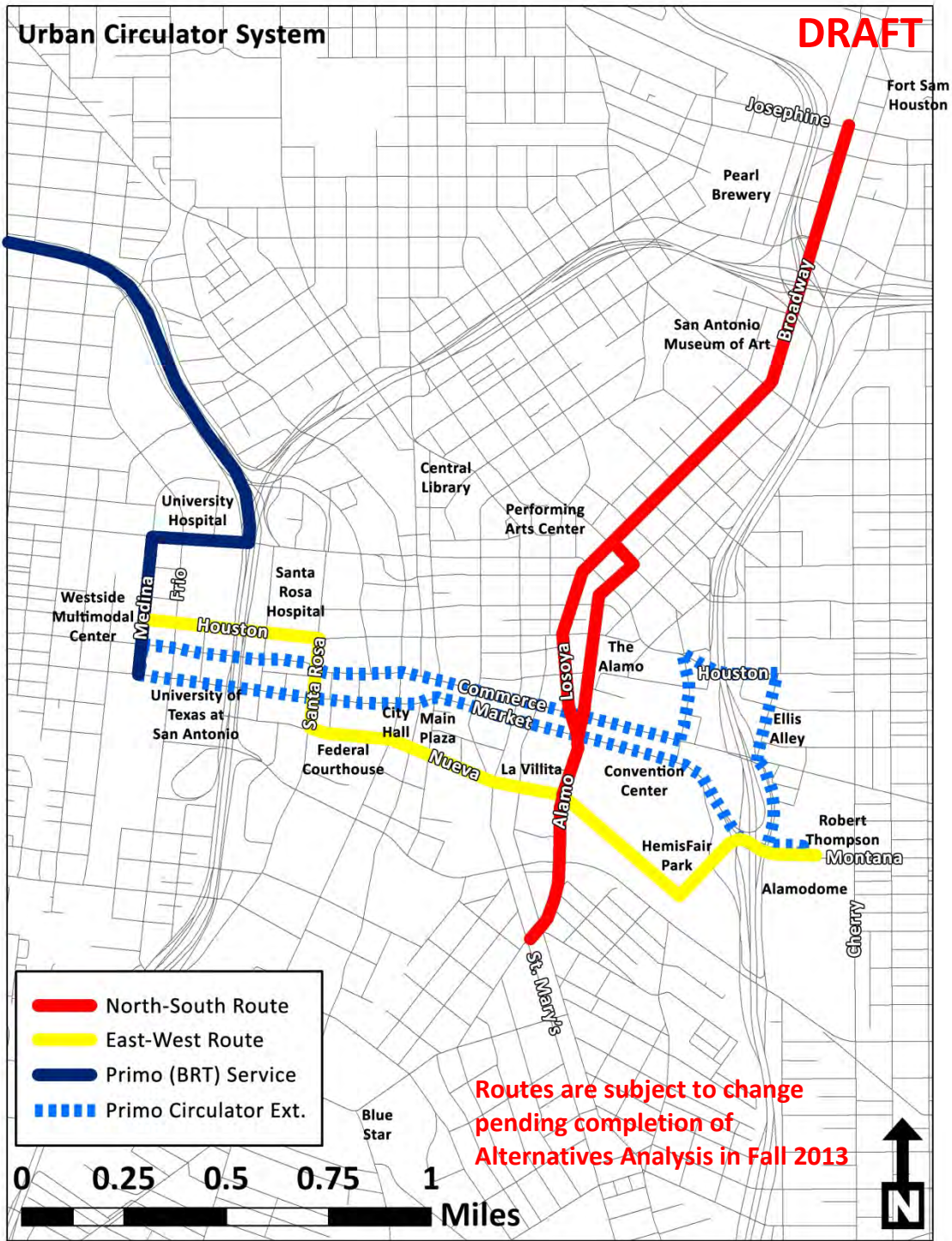
- 2.1-mile starter segment on Houston and Nueva through downtown
- \$95 million estimated project cost
- Connects Cattleman Square, UTSA Downtown campus, El Mercado, Federal Courthouse, County Courthouse, Riverwalk, North-South Route, Convention Center, HemisFair Park, Alamodome, St. Paul Square, Westside Multimodal Center, Robert Thompson Transit Center

#### ❖ Overall Program:

- \$195 million in local funding has been identified and committed from VIA Metropolitan Transit, Bexar County, TxDOT, and City of San Antonio
- Starter projects and extensions to follow Federal Project Development process to maintain eligibility to leverage Small Starts funds with committed local funds in order to build route extensions
- Streetcar local funding partners are investing an additional \$40 million in Downtown transit passenger facilities and amenities, including a \$15 million TIGER III Grant for construction of Westside Multimodal Center.



*Artist Rendering – Streetcar at Alamo Plaza*



**Principal Contacts:**

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VP Strategic Planning & Project Development  
VIA Metropolitan Transit  
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Jason Rodriguez  
Streetcar Project Manager  
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210.362.2099  
[jason.rodriguez@viainfo.net](mailto:jason.rodriguez@viainfo.net)

### Sugar House Streetcar and Greenway Salt Lake City, South Salt Lake City and UTA

This 2-mile segment will connect the light rail trunk line with Sugar House Business District. Construction is 50% complete, and the line will open in December 2013. The total cost of the project is \$55 million, and is being funded by a TIGER II grant of \$26 million, a local match of \$5-6 million each from Salt Lake City and South Salt Lake City and a \$6 million land contribution by the Utah Transit Authority. Approximately \$400 million in private investment is planned in developments around the streetcar, with an anticipated 560% return on investment considering all sources of funding.



### Sugar House Streetcar Phase 2 Extension Salt Lake City and UTA

An Alternatives Analysis was initiated in May 2011 by the Salt Lake City RDA in cooperation with UTA and Salt Lake City's Transportation and Planning Divisions. The goal of the extension is to connect the Phase 1 section to the heart of the Sugar House Business District, which includes additional trip generators and new economic development opportunities to maximize the benefits of the Phase I investment. The approximate cost of the extension is \$13 million, however interim termini may be considered at lesser funding, and on a faster timeline. This extension would include substantial improvements to a monument plaza that has been identified as a potential stop location. A preferred alternative has been recommended and is being reviewed by the City.





# Salt Lake City Streetcar Program February 2013



## Salt Lake City Downtown Streetcar

Salt Lake City and UTA

A Feasibility Study completed in 2010 recommended further study of a 1.8-mile streetcar route connecting the established East Central neighborhood, through the core of Downtown, and extending south to the Granary District. In late 2010, Salt Lake City was awarded a USDOT grant to assist with an Alternatives Analysis, which will begin in early 2013 with NEPA evaluation following. The Redevelopment Agency of Salt Lake City is contributing the local match and is concurrently planning for several sites within the study area. The total project cost of the conceptually identified route resulting from the Feasibility Study is estimated at \$76 million with funding mechanisms yet unknown. This project will include extensive land use scenarios testing in conjunction with the Housing and Urban Development Sustainable Communities Grant awarded to the Wasatch Choice 2040 Consortium.



## South Davis Streetcar

UTA, Salt Lake City, Wasatch Front Regional Council, Davis County, North Salt Lake City

The South Davis Streetcar is being studied to connect Downtown Salt Lake City to the communities of South Davis County. A previous study completed in 2008 identified a 12-mile streetcar route connecting the Salt Lake City Intermodal Hub in downtown Salt Lake City with North Salt Lake, Bountiful, and Centerville. Extensive public feedback has led to the re-evaluation of the initial Alternatives Analysis, and this study will begin in early 2013. The new study will provide a detailed analysis of routes and termini in Salt Lake City.

### Principal Contacts:

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Julianne Sabula, Transit Program Manager, Salt Lake City Transportation Division  
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# Columbia Pike Streetcar

## Arlington County & Fairfax County, Virginia

In 2009, Arlington County and Fairfax County initiated the next phase of the project development process for the streetcar project known as the Columbia Pike Transit Initiative. The project is approximately five-miles in length, and will have eighteen stations and a primary storage and maintenance facility for 14 vehicles.

With the assistance of the Washington Metropolitan Area Transit Authority (WMATA served as the technical manager for this effort), and under the guidance of the Federal Transit Administration (FTA) and the Virginia Department of Rail and Public Transportation (DRPT), the Counties completed a combined federal Alternatives Analysis and Environmental Assessment Study in 2012. In July 2012, the Arlington County Board and Fairfax County Board of Supervisors selected the Streetcar as the Locally Preferred Alternative (LPA). An application to enter the FTA New Starts/Small Starts Program was submitted in September 2012 and a decision from FTA is forthcoming. The Counties will be making decisions about institutional and project delivery mechanisms during the upcoming preliminary engineering phase.

### Project Detail:

<b>Partners:</b>	Arlington County, Fairfax County
<b>Vehicle Type:</b>	Modern Streetcar
<b>Route Length:</b>	4.9 miles
<b>Capital Cost:</b>	\$249 million
<b>Funding:</b>	30% Federal funding 14% State funding 56% Local funding
<b>Current Status:</b>	Application to Enter FTA New Starts/Small Starts Program Submitted in September 2012; additional Project Development work is underway
<b>Opening Year:</b>	2017
<b>Key Contacts:</b>	Stephen Del Giudice, Arlington County Transit Bureau Chief, 703-228-0090, <a href="mailto:sdelgiudice@arlingtonva.us">sdelgiudice@arlingtonva.us</a> Mary Shavalier, Arlington County Streetcar Program Manager, 703-228-3790, <a href="mailto:mshavalier@arlingtonva.us">mshavalier@arlingtonva.us</a>
<b>Website:</b>	<a href="http://www.piketranst.com">www.piketranst.com</a>

# PIKE TRANSIT INITIATIVE



Columbia Pike Transit Initiative, January 2012

With a planning grant awarded by the Federal Transit Administration, Seattle has started alternatives analysis for the **Center City Connector**, which will connect the South Lake Union and First Hill lines through the Seattle central business district.

## CENTER CITY CONNECTOR

## FIRST HILL STREETCAR



Construction of the 2.5-mile **First Hill Streetcar** line began in April 2012, funded by the voter-approved Sound Transit 2 expansion plan. Operations will begin mid-2014, and the \$135M project will feature the Broadway Bikeway, a two-way cycle track to safely integrate bicycle and streetcar modes in Seattle's Broadway corridor.

## BROADWAY EXTENSION

Planning is underway for the half-mile **Broadway Extension**, which would expand the reach of the First Hill line through the Broadway commercial district (\$25M).

**SEATTLESTREETCAR.COM**

find us on facebook <http://www.facebook.com/SeattleStreetcar>  
follow us on twitter @TheStreetCar  
email [seattle.streetcar@seattle.gov](mailto:seattle.streetcar@seattle.gov)

# SEATTLE STREETCAR

## SOUTH LAKE UNION

Celebrating 5 years of operation as of December 12, 2012, the initial streetcar segment provides local transit service, connects to the regional transit system, supports economic development, and contributes to neighborhood vitality. The \$53M, 1.3 mile line has exceeded initial ridership forecasts and has been successful as a catalyst for private investment in **South Lake Union** and the Denny Triangle. A fourth streetcar is coming by 2015 to support more frequent service throughout the day.

## BALLARD TO DOWNTOWN

Seattle is partnering with Sound Transit to study options for a seven-mile **Ballard to Downtown** line that could be served with light rail or streetcar. This line is projected to serve as many as many as 26,000 daily riders.

Recommended in the City's Transit Master Plan, see [www.seattle.gov/transportation/transitmasterplan.htm](http://www.seattle.gov/transportation/transitmasterplan.htm)





# Tacoma Link Expansion

FEB 2013



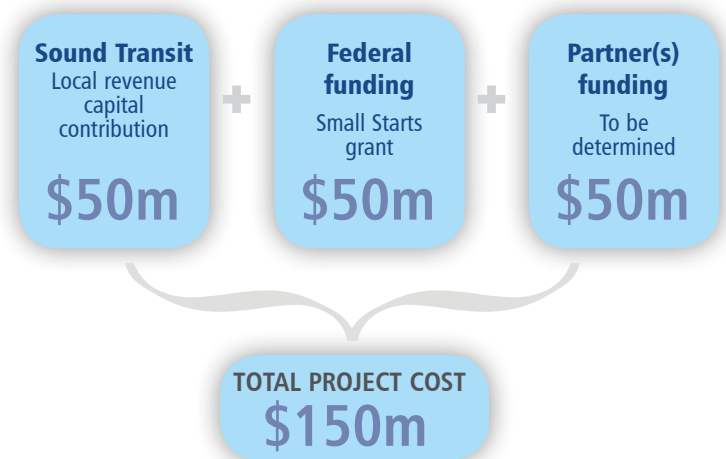
## Expanding Tacoma Link

The existing 1.6 mile Tacoma Link light rail line currently serves six stations from the Theater District to the Tacoma Dome Station. Trains run every 12 minutes during the day and served over a million riders in 2012. Voters in 2008 approved an expansion of Tacoma Link as part of the Sound Transit 2 ballot measure which includes funding for a partnership to expand Tacoma Link that would allow Sound Transit to seek federal funding and explore options for additional funding partners. Sound Transit's Tacoma Link Expansion Alternatives Analysis project will identify and study alternative travel corridors for expansion of the Tacoma Link light rail system.

Sound Transit, in cooperation with the City of Tacoma and Pierce Transit, is engaging the community to help identify a range of alternatives, study these alternatives, and determine a preferred alternative for expansion. The study will also produce a project financing plan that will identify committed and potential funding sources.

### Alternatives development

Building an expansion of Tacoma Link will require substantial federal funding. The Federal Transit Administration's (FTA) Small Starts program is the federal government's primary financial resource for supporting locally-planned, implemented, and operated transit projects, such as Tacoma Link. Sound Transit plans to apply and compete for Small Starts funds for the Tacoma Link expansion project.



To be eligible and competitive for these federal funds, Sound Transit is completing an alternatives analysis (AA) for the project. The goal of an AA is to provide the public, local officials, and potential funding partners with sufficient information for the decision-at-hand: that is, "What is the best transportation solution for addressing our problems? What are its benefits? How much is it going to cost? And how are we going to pay for it?"

An AA is the local forum for evaluating the costs, benefits, and impacts of a range of alternatives designed to address mobility problems and other locally-identified objectives in a defined transportation corridor, and for determining which particular investment strategy should be advanced for more focused study and development.

CURRENT AND FUTURE SOUND TRANSIT SERVICE

Expanding Sound Transit service

In 2008, the region's voters approved the Sound Transit 2, a major expansion of the regional transit system with substantial extensions of Link light rail throughout the region plus more Sounder train and ST Express bus services.

**MAP KEY**

**Link Light Rail**

- Central Link (SeaTac/Airport–Westlake/Seattle)
- Tacoma Link (Tacoma Dome–Theater District)
- Under Construction
- In Design
- In Planning/Planned

**Sounder Commuter Rail**

- Everett–Seattle Sounder
- Lakewood–Tacoma–Seattle Sounder

**ST Express Regional Bus**

- Express Bus Service
- Future Bus Rapid Transit (BRT)

**Supporting Investments**

- Park & Ride – Rail Station or Bus Facility
- Rail Station, Transit Center or Bus Stop Improvements
- First Hill Streetcar (Opens 2014)
- HOV/Transit Improvements
- HOV Direct Access Ramp, Freeway Station or Overpass

Ferry Terminal Amtrak  
Sea-Tac Airport



Queremos escucharle y brindarle toda la información que necesite. Por favor, llámenos al 1-800-823-9230.  
 귀하의 의견을 듣고 싶습니다. 그러므로 귀하가 필요한 모든 정보를 알려주십시오. 1-800-823-9230으로 연락하십시오.  
 Мы хотим узнать ваши соображения и предоставить всю информацию, которая вам нужна. Пожалуйста, позвоните по телефону 1-800-823-9230.  
 Chúng tôi muốn lắng nghe quý vị và cung cấp tất cả những thông tin quý vị cần. Xin gọi số 1-800-823-9230.

Nais naming makarinig mula sa inyo at magbigay ng lahat ng impormasyon na inyong kailangan. Pakitawagan ang 1-800-823-9230.  
 我們希望傾聽您的意見，並向您提供您需要的所有資訊。請致電 1-800-823-9230。  
 យើងចង់ឮពីលោកអ្នក និងផ្តល់គ្រប់ព័ត៌មានដែលអ្នកត្រូវការ។ សូមទូរស័ព្ទតាមលេខ 1-800-823-9230 ។



## THE MILWAUKEE STREETCAR

### Milwaukee, Wisconsin

Milwaukee has world-class corporations, cultural attractions, educational institutions and architecture. Soon, Milwaukee will have a world-class, user-friendly streetcar network for those who live, work and shop in the downtown area. The City of Milwaukee has evaluated various routes, technologies and operating scenarios to improve and enhance transit in and around downtown Milwaukee.

The Milwaukee Streetcar is scheduled to begin service in 2016. Using an innovative and comprehensive public involvement program, more than 300 community meetings were held to build public consensus on identifying, evaluating and selecting the appropriate station locations, station design concepts, and transit routing and technology. This led to the design of transit linkages to make the connection between stations and travel origins and destination more appealing.

New urban development, redevelopment and joint development oppor-

tunities have been identified that will be initiated in connection with the system to promote infill. Using modern streetcar vehicles, The Milwaukee Streetcar will begin as a two-mile starter system connecting the heart of the central business district with the Milwaukee Intermodal Station, Historic Third Ward and high-density residential areas just north of downtown. The initial system will have four vehicles powered by an electric overhead contact system with 10-minute headways throughout most of the day.

Two route extensions, which would add 1.55 miles and up to eight additional stops to the initial route, have been identified and approved for future implementation. An extension along 4th Street would connect to the Intermodal Station and several large activity generators, including the Delta Center, Bradley Center, hotels, offices, and the Park East and Brewery redevelopment areas. An extension along Prospect/Farwell 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 add three additional streetcar vehicles. All improvements are planned within the existing right of way with streetcars operating in mixed traffic with bump-outs at the stops.

The initial route and extensions will be within walking distance to 100% of downtown hotel rooms, 91% of occupied 1st floor retail/commercial space, 90% of occupied office space, 77% of downtown housing units and 77% of total downtown public parking facilities and lots.

#### Contact

Jeff Polenske, PE  
 City Engineer  
 City of Milwaukee  
 (414) 286-2400  
 Jeffrey.Polenske@milwaukee.gov

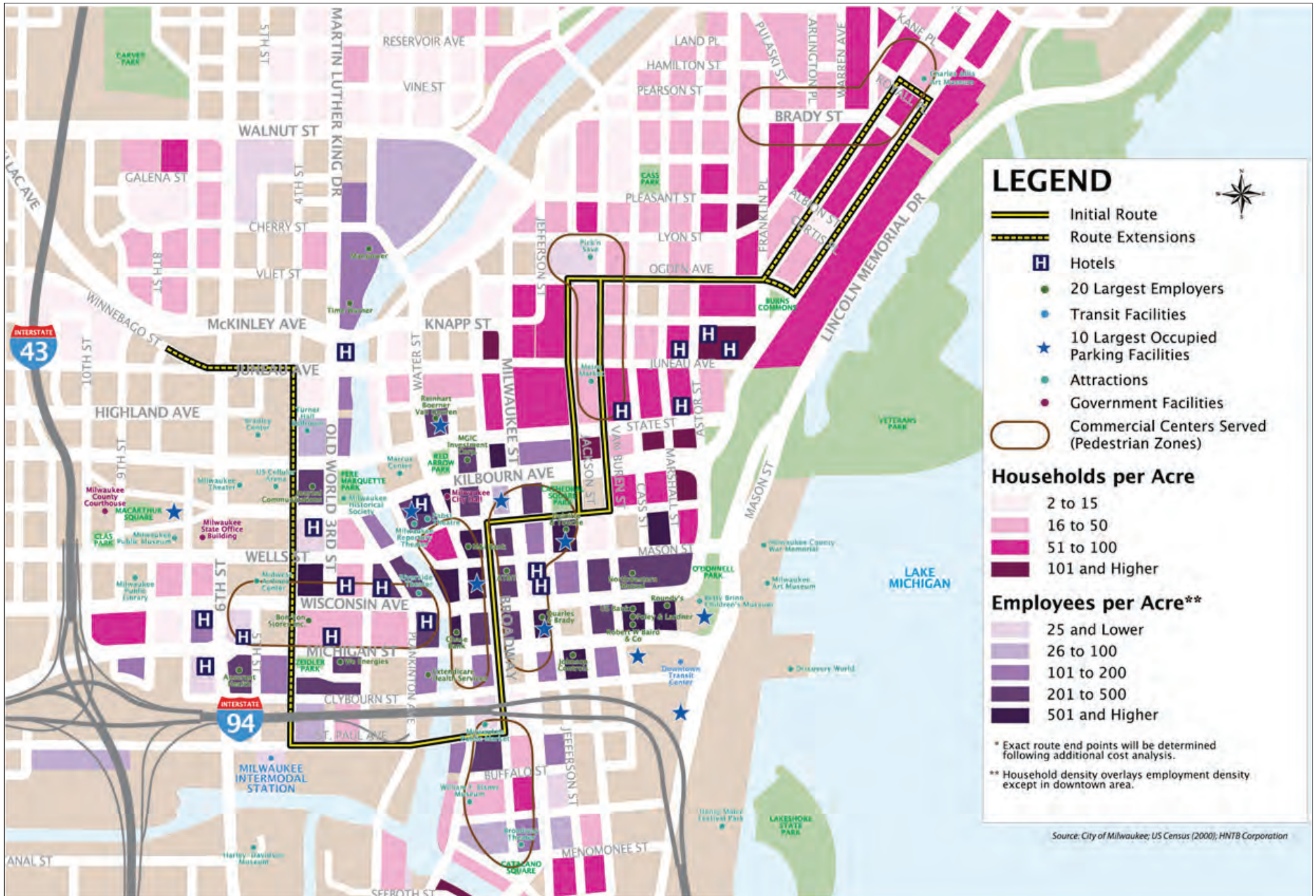
#### Website

[www.themilwaukeeestreetcar.com](http://www.themilwaukeeestreetcar.com)



# THE MILWAUKEE STREETCAR

## Route Map with Activity Generators





BROOKVILLE entered the streetcar market in 2002, contributing to the first truly "Made in USA" streetcars since the early 1950s. We currently have 68 streetcars in operation in the USA.

The Liberty Streetcar, BROOKVILLE's new light rail vehicle (LRV) platform, uses industry proven systems, sub-systems, and components. It was engineered after consulting operations and maintenance transit agencies to address streetcar industry needs. The car has been designed by an American workforce, using the best proven technology from around the world, and packaged for the North American market.

**A Unique, Cost-Effective Solution:** BROOKVILLE designs, constructs, and tests at a single location, permitting a convenient and cost-effective inspection schedule. Operations and maintenance training is included and conducted at your location by former transit agency professionals with hands-on experience. The Liberty Streetcar also takes FTA safety and security protocols seriously, and includes documents needed for inclusion in the Safety and Security Plan.

**Our Customers Include:**

- San Francisco Municipal Railway (SFMTA)
- New Orleans Regional Transit Authority (NORTA)
- Southeastern Pennsylvania Transportation Authority (SEPTA)



**Above:** Liberty Streetcar with three passenger compartments.



**Left:** Interior of Liberty Streetcar with customizable seating arrangements.



**Right:** Interior of Liberty Streetcar with just a single step to high-floor section.



**Left:** Exterior of Liberty Streetcar with sleek, modern design.



## LIBERTY

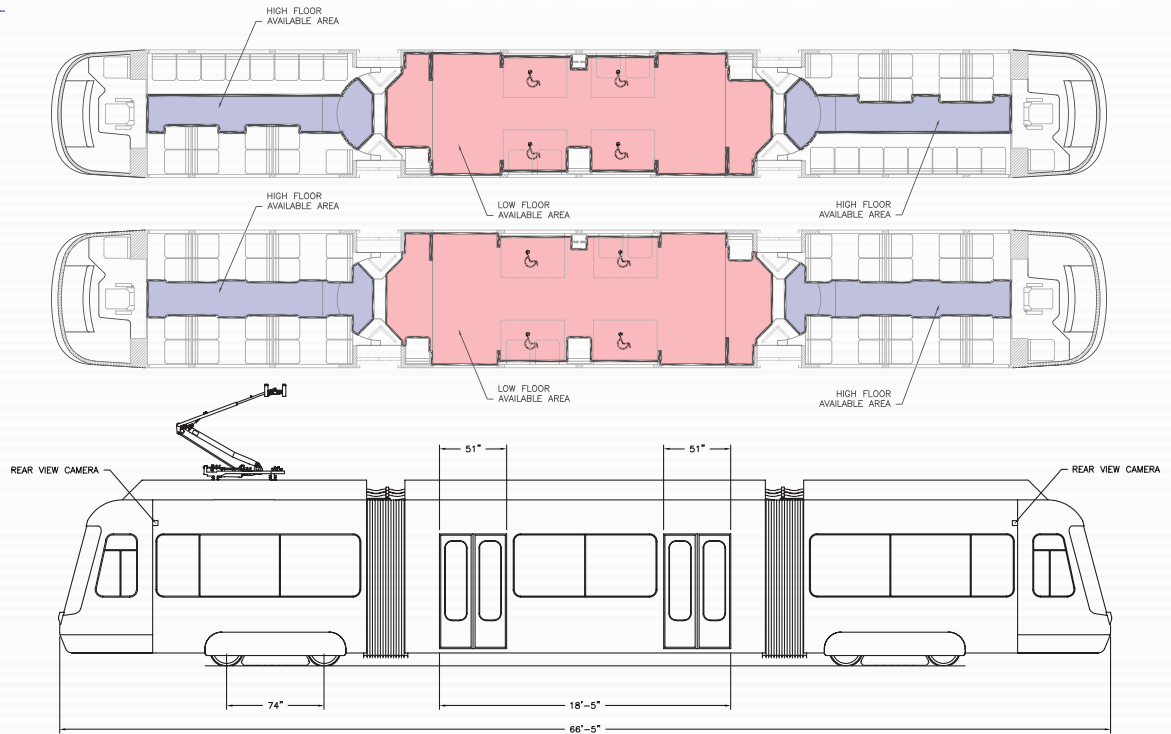
**Car Width  
8 Feet  
(2.45 meters)**

**Car Width  
8 Feet, 8 Inches  
(2.65 meters)**



Smartphone Users: Scan this QR Code for more information on our Modern Streetcars.

Proposed Floor Plans Below Are Customizable For Your Specific Needs



### Liberty Class Streetcar - Technical Specifications

Track Gauge	Standard 4 Feet, 8.5 Inches	
Boarding Height	13.75 Inches (350mm)	
Power Supply	750 V DC (Max. 925 V DC, Min. 525 V DC)	
Low-Voltage Power Supply	24 V DC	
Motors	4 x 65 kW or 4 x 99 kW	
Maximum Speed	44 mph (70 km/h)	
Minimum Turning Radius	59 Feet	
Vehicle Length	66 Feet, 5 Inches	
Max. Height (w/o Pantograph)	11 Feet	
Wheelbase	39 Feet	
Weight of Car Empty	63,960 lbs (without off-wire capability)	
Acceleration	3.0 mphps (1.3m/s <sup>2</sup> )	
Brake Deceleration	3.0 mphps	
Emergency Brake Deceleration	5.0 mphps	
Maximum Grade	9%	
Vehicle Width	8 Feet (2.46 m)	8 Feet, 8 Inches (2.65 m)
Percentage of Low-Floor Area	71%	73%
Total Seating Capacity	41 Passengers + 1 Operator	47 Passengers + 1 Operator
Maximum Capacity (AW3)	127 Standees + 41 Seated + 1 Operator = 169	135 Standees + 47 Seated + 1 Operator = 183
Maximum Capacity (AW4)	170 Standees + 41 Seated + 1 Operator = 212	181 Standees + 47 Seated + 1 Operator = 229

#### Features of the Car Include:

- Single step design between low floor and high floor sections
- Over 70% low floor
- BROOKVILLE soft-ride trucks proven under 49 streetcars in USA
- Meets Buy America requirements

#### Standard Options:

- Two body widths
- Different door configurations
- Various seating configurations
- Various body trim/paint schemes
- Multiple Unit operation (MU)
- Propulsion upgrades for higher speed
- Energy Storage System (ESS) for periods of off-wire operation



United Streetcar, a subsidiary of Oregon Iron Works Inc., was formed in 2005. United Streetcar’s mission is to provide modern, efficient, safe and reliable American-produced streetcars and to be a pioneering force in increasing urban transit options throughout the United States. We are pleased to provide a green urban transit option to cities across America. Our streetcar passed a “Buy America” audit, with over 70% U.S. content, with final assembly performed in Clackamas, Oregon. United Streetcar owns and operates the only streetcar test track in the United States, which means that we are able to offer you a car thoroughly tested, before shipment.

For more information please visit:  
[www.unitedstreetcar.com](http://www.unitedstreetcar.com)

Streetcar Models	
United 100	Designed for moderate climates
United 200	Designed for hot weather climates
United 300	Off-Wire Hybrid Car

Current Projects	
Portland, OR	6 cars - United 100
Tucson, AZ	8 cars - United 200
Oakland Airport	4 Cable Cars
Washington DC	3 cars—United 100



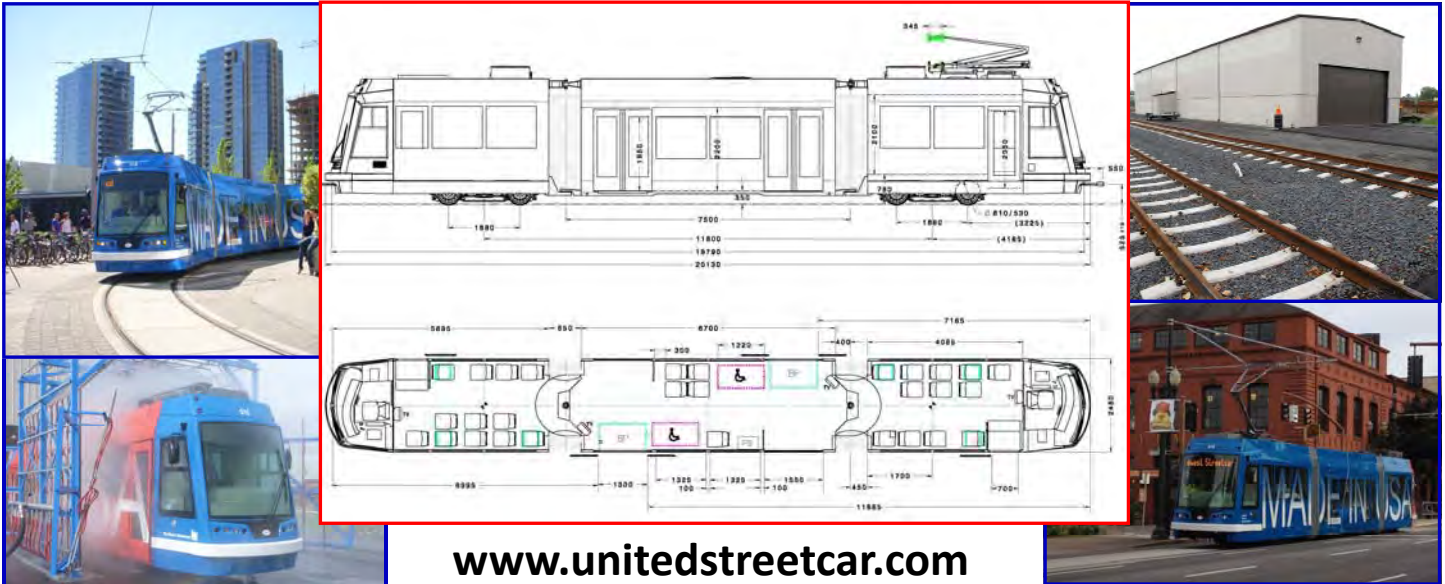
**Why United Streetcar Vehicles?**

- ◆ Innovative and experienced manufacturer, using advanced American manufacturing techniques and the latest technology to ensure a higher quality product every time
- ◆ High-quality vehicle that meets or exceeds safety and reliability standards
- ◆ Cost competitive
- ◆ Fully compliant with the Buy America Act – over 70% U.S. content
- ◆ Local vendor network with ease of maintenance service, repair, support and spare parts
- ◆ Domestic content reduces transportation costs, and lowers currency fluctuation risks
- ◆ A variety of propulsion system options available
- ◆ Partnership that embraces direct and open communication with customers before, during and after project construction
- ◆ A green choice that meets the demands of today’s urban transit



## United Streetcar, LLC

United Streetcar (USC) is the American manufacturer of modern streetcars and is contributing to the overall economic vitality of the United States of America. Living wage jobs are being created not only at USC and its parent company, but also in businesses across the country. USC's decision to begin manufacturing streetcars domestically has generated a new supply chain for streetcar manufacturing in the USA. Specialized businesses that have never had the opportunity to work in the streetcar industry now have new work in their shops. Developing a new supply chain for the Portland Prototype vehicle resulted in new work for approximately 200 vendors in 20 states across the USA. We customize our streetcars to fit the needs of any city or transit agency.



[www.unitedstreetcar.com](http://www.unitedstreetcar.com)

### United 100 Baseline Technical Specifications

Length of Vehicle	66 feet (20,130mm)
Height (without pantograph)	11.9 feet (3,365.5mm)
Width	8 feet (2,460mm)
Floor Height – Mid-train & Low Floor Entrance	1.15 feet above top of rail (350mm)
Percentage of low-floor area	70%
Height of Floor – End-train	2.56 feet above top of rail (780mm)
Track Gauge	4 feet 8 ½ inches (1,435mm)
Power Supply	750VDC (950VDC – Max & 500VDC Min)
Auxiliary network voltage	3 x 460V, 60Hz
Low voltage power supply	24VDC
Motors	4 x 90kW
Speed - Maximum	44mph (70km/h)
Seating/Standing	Total Seating – 29 passengers + driver Max Standing – AW3:127 & AW4:140 Total Seating & Standing – AW3:157 & AW4:170
Wheel base	38.7 feet (11,800mm)
Wheel diameter	24 inches (610mm) – New 20 7/8 inches (530mm) – Worn
Weight of empty car	63,800lbs +/-3% (29,000kg)
Max Weight	89,980lbs (40,900kg)
Maximum Grade	9%
Minimum Turning Radius in Yard	52.5 feet
Minimum Turning Radius in Service	59.1 feet
Minimum vehicle curve radius, crest	820 feet
Minimum vehicle curve radius, sag	820 feet



The Community Streetcar Coalition (CSC) is comprised of cities, local governmental entities, private sector companies, transit agencies and individuals committed to collective and coordinated advocacy for streetcars. The CSC was formed in 2004 in response to the federal streetcar program created by legislation sponsored by Congressman Earl Blumenauer (D-OR). Since then, we have been carrying messages to Capitol Hill and the Administration from cities and other project sponsors who seek to build streetcars.

Specifically, the CSC seeks to:

- **Expand** federal funding for streetcar projects
- **Shape** federal policy initiatives to recognize the important role of streetcars within the landscape of livable communities, specifically the streetcar's ability to bring economic development to urban areas
- **Promote** streetcars as a mode for reducing greenhouse gas emissions and curbing energy consumption, thereby improving the quality of life of all citizens
- **Create** an improved and favorable project approval framework for streetcars in the federal New Starts/Small Starts program

As a member of the CSC, you have the opportunity to participate in regular conference calls. We use this time constructively to discuss federal updates on the New Starts/Small Starts program and vet questions regarding legislative and regulatory matters.

In addition to conference calls, CSC Executive Director Jeff Boothe sends regular e-mails to members as federal developments occur that affect the CSC. The CSC also communicates with members through its website, [www.streetcarcoalition.org](http://www.streetcarcoalition.org), and through Twitter, [@StcarCoalition](https://twitter.com/StcarCoalition).

The CSC meets in person twice a year at the following conferences. These conferences provide great opportunities for professional development and networking within the industry.

- March: [Community Streetcar Summit](#), Washington, D.C.
- October: [Rail-Volution Conference](#), Seattle, WA in 2013

## Membership

The three categories for annual Coalition membership are as follows:

- \$3,000 - Communities and transit authorities with existing streetcar service; private sector companies
- \$1,250 - Communities, transit authorities or business development organizations in the planning stages of a streetcar project
- \$300 - Individuals

## Proud to be a Community Streetcar Coalition Sponsor



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IMPulse NC LLC, a Marmon Group / Berkshire Hathaway Company, is the leading U.S. manufacturer of overhead contact system (OCS / Catenary) hardware for all forms of electrified public transit (streetcar, light rail, commuter, heritage trolley & electric trolleybus) with products in service worldwide. Our name brand is "Ohio Brass" which dates back to 1888 and the first streetcar system in Richmond, VA. We design, manufacture and support the growing transit community with economical, time proven and the highest quality in overhead hardware, contributing to an eco-friendly transportation network. IMPulse NC is ISO 9001:2008 certified and an APTA Sustainability Commitment Bronze-level company.

Our products are made in America (100% Buy America), including the latest in cutting edge technology for light-weight, architectural design in multi-colored cantilever assemblies and other components. Our patent pending, service proven Catenary Safety Monitoring System can remotely and automatically monitor the health of any constant tension Overhead Contact System, thereby reducing maintenance cost and improving reliability. IMPulse NC is proud to be the preferred business partner for most streetcar systems throughout the U.S. and Canada.

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Communities worldwide are rediscovering the economic benefits of streetcars as well. Cities and towns are incorporating streetcars into their plans for making communities more attractive to residents and businesses. Streetcars offer not only convenient transportation but a powerful catalyst for sustainable economic development, together with our clients—including transit agencies, municipal governments and developers—we promote streetcar projects as an integral part of creating the more livable communities of tomorrow.

FOR MORE INFORMATION ABOUT OUR STREETCAR CAPABILITIES AND EXPERIENCE, PLEASE VISIT OUR WEBSITE AT [WWW.PBWORLD.COM](http://WWW.PBWORLD.COM).

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## **Join the Rail~Volution!**

Streetcar development is playing an important role in creating livable communities nationwide. Rail~Volution is excited to feature streetcars as a critical transportation option. With your help to create lively sessions for the 2013 conference, we can make the most of this opportunity to spread the word. Exhibit a streetcar project, discuss a new community involvement process, or share lessons learned with industry colleagues, peers and potential clients. Add your voice and expertise by submitting a proposal through the 2013 Rail~Volution Call for Speakers process or by joining us at the conference.



- ✓ **Call for Speakers deadline March 28, 2013**
- ✓ **Annual Community Streetcar Coalition meeting**
- ✓ **Streetcar activities and workshop sessions**

Rail~Volution is a conference of passionate people, like you, who want to engage in thoughtful discussion about building livable communities with transit. As citizen activists, developers, business leaders, planners, local elected officials, transit operators, government officials we come together each year, from more than 300 communities, towns and regions of all sizes and shapes, to share ideas and breakthroughs, frustrations and inspiration. Through more than 70 workshops, networking events, roundtables and toolbox sessions bring together some of the best minds on livability in the country and the world.

Join our learning lab and come away energized with new insights and a renewed passion for creating vibrant, sustainable, livable places.

**Be a part of the Rail~Volution 2013 – where  
change is always possible!**

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# APTA STREETCAR SUBCOMMITTEE

[www.modernstreetcar.org](http://www.modernstreetcar.org)

Formed in 2000, the APTA Streetcar Subcommittee is one of the many valuable resources within APTA that are available to those planning and implementing streetcar systems. The Subcommittee meets twice a year, once in June in conjunction with APTA’s annual Rail Transit Conference, and a winter meeting at a different host property each year. Meetings combine presentations on current industry topics, working group sessions, and tours of host properties. The next Subcommittee meeting will be held on Sunday, June 2 in Philadelphia, as part of the annual APTA Rail Transit Conference.

**Modern Streetcar Vehicle Guideline-** The Subcommittee’s newest work product is a comprehensive guideline document written to support specification and procurement of modern streetcar vehicles by identifying and describing important technical and operating principles relating to their application.

The Guideline includes an introduction and four chapters: Vehicle Configuration, Vehicle/Platform Interface, Vehicle/Track Interface and Power Supply. Recognizing that streetcar systems vary considerably in form and function, the document identifies and explains the underlying principles and interdependencies associated with each topic, and examines the trade-offs involved in various different design approaches. Throughout, emphasis is placed on the need to treat vehicles, infrastructure and operations as an integrated system.

The document provides guidance to planners, transit agencies, local governments and others interested in developing new streetcar systems or enhancing existing streetcar systems using low-floor modern streetcar vehicles. It is expected to be released to the industry in April, 2013. Additional information about the Guideline is available on the project website: [www.modernstreetcar.org](http://www.modernstreetcar.org).

