

BEFORE THE BOARD OF COUNTY COMMISSIONERS
FOR MULTNOMAH COUNTY, OREGON

RESOLUTION NO. 03-076

Supporting the Eastside Streetcar Alignment Study

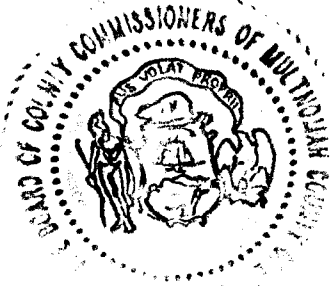
The Multnomah County Board of Commissioners Finds:

- a. In July 2001, the Lloyd District Development Strategy identified an interest in exploring the possibility of extending the Portland Streetcar into the Lloyd District to serve new high-density, mixed-used development in the core of the Lloyd District.
- b. On January 21, 2003 Portland City Commissioner Jim Francesconi appointed the Eastside Streetcar Steering Committee (Committee) with members representing Lloyd District and Central Eastside Industrial District interests and Metro, the City of Portland and Multnomah County, and asked it to prepare recommendations to the Portland City Council concerning expansion of the streetcar system to the eastside.
- c. From February through May 2003, the Committee held public meetings to gauge support for expansion; considered alignment and phasing options; and developed recommendations for a public process for implementation.
- d. The results of the Committee's process were finalized when it adopted the Eastside Streetcar Alignment Study on May 21st, 2003, attached as Exhibit A. The study includes a recommended alignment and phasing strategy for Eastside Streetcar.

The Multnomah County Board of Commissioners Resolves:

1. The Board supports the City of Portland's adoption of the recommendations of the Eastside Streetcar Alignment Study attached as Exhibit A.

ADOPTED this 5th day June of 2003.



BOARD OF COUNTY COMMISSIONERS
FOR MULTNOMAH COUNTY, OREGON

Diane M. Linn, Chair

REVIEWED:

AGNES SOWLE, ACTING COUNTY ATTORNEY
FOR MULTNOMAH COUNTY, OREGON

By
Matthew O. Ryan, Assistant County Attorney

EXHIBIT A

EASTSIDE STREETCAR ALIGNMENT STUDY

**Recommendation for
Eastside Streetcar Alignment
Steering Committee**

Adopted May 21, 2003

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Eastside Streetcar Steering Committee
(Appointments by Commissioner Jim Francesconi)

Hank Ashforth, Ashforth Pacific Development, *Chair*
Rick Parker, United Finance, *Vice Chair*
Jeff Blosser, Oregon Convention Center
Mike Bolliger, Central Eastside Industrial Council
Rex Burkholder, Metro Council
Dick Cooley, Northeast business leader
Donna Forsberg, Hosford-Abernethy Neighborhood Development
J.E. Isaac, Arena Corp.
Susan Lindsay, Buckman Neighborhood Association
Tom Markgraf, Congressman Blumenauer's Office
Rod McDowell, OMSI
Bill Medak, Kaiser Permanente
Brad Perkins, Perkins Development Realty
Michael Powell, Portland Streetcar, Inc.
Maria Rojo de Steffey, Multnomah County Commissioner
Dee Walsh, Central Eastside Industrial Council
Brant Williams, City of Portland, Office of Transportation

Eastside Streetcar Technical Committee Members

Richard Brandman, Metro
Kay Dannen, Shiels Oblatz Johnsen
Vicky Diede, City of Portland, Office of Transportation
Peter Finley Fry, Columbia Pacific Planning
Rick Gustafson, Shiels Oblatz Johnsen
Michael Harrison, Office of Commissioner Francesconi
Steve Iwata, City of Portland, Office of Transportation
Matt Larsen, Multnomah County
Alan Lehto, TriMet
Denyse McGriff, Portland Development Commission
Michael McElwee, Portland Development Commission
Neil McFarlane, TriMet
Owen Ronchelli, Transportation Management Association
Sloan Schang, Portland Development Commission
Roger Shiels, Shiels Oblatz Johnsen
Dave Unsworth, Metro
Rick Williams, Transportation Management Association

Eastside Streetcar Alignment Study Prepared by
City of Portland, Office of Transportation
Portland Streetcar, Inc.

Consultants

Shiels Oblatz Johnsen, Inc.
Peter Finley Fry

INTRODUCTION

Background

The Region's 2040 Growth Concept, adopted by Metro in 1995, is a plan for the future. It includes land-use and transportation policies that will allow the Portland metropolitan area cities and counties to manage growth, protect natural resources and make improvements to facilities and infrastructure while maintaining the region's quality of life. It is designed to accommodate approximately 720,000 additional residents and 350,000 additional jobs in the region. The Growth Concept calls for the central city to have the region's highest density housing and to be the employment and cultural hub.

The Portland Streetcar is a part of the City's growth management strategy. We believe that providing high density housing in close proximity to jobs and all the other amenities available in the central city is both a good idea and a good deal. City goals call for 15,000 new housing units and 75,000 new jobs in the central city alone.

The Westside Streetcar has been in operation for almost two years. Ridership has grown to 4,668 daily riders during the week, 4,545 on Saturdays and 2,562 on Sundays. As important as the ridership is and the level of support it shows, it is the development along the line that is most notable. A recent survey of new development within 2-3 blocks of the Streetcar shows a significant number projects were (or will be) completed since 1997, which is when the City committed to building the Streetcar project.

Total Investment:	\$1,046,300,000
Residential Units*:	3,628
Sq. Ft. of Commercial Space**	2,242,500

* Includes 800 units of affordable housing

** Includes office, commercial, ground floor retail, hotel and institutional space

Eastside Streetcar Alignment Study

The desire to investigate and evaluate an extension of Streetcar service comes out of the Lloyd District Development Strategy completed in July 2001. Its purpose is to refresh the vision and guide new public and private development in the Lloyd District for the next 10 to 20 years. One of the subareas in the District is the Central Core, the area between N.E. Halsey and Holladay Street and N.E. 6th and 9th Avenues. As the heart of the District, it has the potential for high-density, high-rise development, as well as opportunities to create a green attractor and a signature development project. The strategy envisions a mix of residential, retail and employment uses. It is here that the Streetcar could play a role as part of a transit hub with light rail and buses and as an important new means of connecting to other parts of the District and to the Westside Streetcar alignment and all it serves.

At the same time, there was a recognition that Streetcar also could play a role in bridging the gap between the Lloyd and Central Eastside Districts. The I-84 freeway separates the two, both physically and symbolically, and both of the Districts wanted to explore the Streetcar as a means of tying the two together. The Streetcar also could play a role in reinforcing the redevelopment potential along the Martin Luther King Jr. Boulevard and Grand Avenue spine. Consequently, the Eastside Streetcar Alignment Study encompasses both Lloyd District and the Central Eastside, as well as river crossings at both the north and south ends.

On January 21, 2003, Commissioner Jim Francesconi appointed the Eastside Streetcar Alignment Study Steering Committee with members representing Lloyd District and Central Eastside Industrial District interests and Metro, the City of Portland and Multnomah County.

Policy

The following summarizes the key transportation policy elements that support an Eastside Streetcar line.

Central City Plan (Adopted 1988)

Policy 4 – Transportation

- H. Develop new systems and better utilize the existing transportation system to promote tourism connecting the City's hotel, retailing, recreational, cultural and entertainment attractions.
- Action Chart T4: Plan and construct an inner city transit loop (Possibly on Grand Avenue).

Transportation System Plan (Adopted 2002)

Policy 6.24 – Public Transportation

- Objective H. Develop streetcar lines in Portland to connect new or redeveloping neighborhoods to employment opportunities and other destinations, including shopping, education and recreation.

CCTMP Policy 5.4 – Central City Transit Circulation

- Improve transit service to provide better circulation and distribution within and between districts of the Central City.
- Objective 5.4.5. Identify a strategy for developing the Central City streetcar system and integrating it with other transit services.

Chapter 4 – Refinement Plan and Studies

- This study currently is identified in the TSP as the “Eastside Streetcar Feasibility Study”.

Street Classification Maps

- The Maps for the Central City District can be found after the Illustrations at the back of this report.

CHARGE TO THE STEERING COMMITTEE

The Eastside Steering Committee is asked to prepare recommendations on the Eastside Streetcar alignment for consideration by the Portland City Council through a preliminary assessment including the following:

1. **Preferred Alignment:** Recommend preferred alignment for streetcar extension to the eastside connecting with existing or proposed streetcar alignments on both the north and south ends of the Central City.
2. **Public Support:** Assess the level of public support for providing streetcar extensions to the eastside.
3. **Public Process:** Recommend a public process for implementation of the recommendations including committees, citizen involvement and a development schedule.
4. **Federal Funding:** Recommend a process that would assure eligibility for federal funds for any proposed streetcar extension.
5. **Oversee Workshops:** Hold two workshops open to the general public to present information and seek input on the potential for a streetcar extension. Dates of workshops: February 26th and April 3rd.

RECOMMENDATIONS

The Eastside Streetcar Steering Committee has reviewed the development, zoning and transit needs of the area. The following are recommendations to be submitted to the appropriate public bodies:

General Findings

1. **Loop System:** The Steering Committee endorses the loop transit system as called for in the Central City Plan. Connecting the Lloyd District and Central Eastside to the Downtown and other Central City Districts strengthens the Central City Plan.
2. **Preferred Alignment:** The preferred alignment on the eastside is MLK and Grand with a diversion of the southbound streetcar to NE 7th in the Lloyd District to support the development strategy. The southern alignment is recommended to be held pending the commitment to the new river crossing.
3. **Future Changes:** The Steering Committee recognizes that the preferred alignment could change as more specific information is developed on the proposed alignment. Changes should be accommodated.

Alignment

Recommend alignment as shown in Figure 1 (attached) with service from NW 10th and Lovejoy, crossing the Broadway Bridge, Broadway/Weidler, southbound on NE 7th Avenue to Oregon Street, westbound on Oregon to MLK, southbound on MLK to Clay, northbound on Grand Avenue from SE Clay to NE Broadway, westbound on Clay with bridge crossing to be determined based upon South Corridor Light Rail Study, connecting to streetcar at either Riverplace or SW 1st and Harrison.

Phasing

Recommend establishment of three phases for the project: Phase 1 from NW Lovejoy to NE 7th Avenue to Oregon Street; Phase 2 from Oregon Street to Water Avenue; and Phase 3 crossing either the new Caruthers Bridge or the Hawthorne Bridge connecting to existing streetcar and completing the loop system.

Public Support

The Steering Committee has conducted public meetings regarding the options for streetcar extensions. Two public workshops were hosted to acquaint property owners, businesses and residents with the proposed streetcar extension options. There was considerable public discussion and strong expressions of support for the idea of extending streetcar to eastside. There are a variety of views regarding the specific alignment. Some comments were received concerning the compatibility of the streetcar with industrial zoning.

Implementation

The Steering Committee recommends that the alignment study continue to the next step by implementing the following actions:

1. **Steering Committee:** Retain Eastside Streetcar Steering Committee with broad-based membership representing business, institutional and residential interests in the area of the Lloyd District, Central Eastside and adjoining areas. This group would develop recommendations for consideration for the appropriate decision-making body.
2. **Citizen Process:** Support Streetcar Citizen Advisory Committee process already established by adding new members to participate in the recommendations for the streetcar.
3. **Environmental Assessment:** Commence the environmental assessment process in consultation with the Federal Transit Administration (FTA) for Phase 1 of the streetcar from NW Lovejoy to the Lloyd District. The environmental assessment process is a required step in the federal funding process.
4. **Alternatives Analysis:** The Eastside Streetcar is an extension of an existing system in Portland. It is recommended that the FTA be petitioned to concur with assessment and make a determination that an Alternatives Analysis will not be required.
5. **Conceptual Engineering:** Commence conceptual engineering of Phase 1 of eastside streetcar preparing street alignment, proposed stop locations and assessment of the Broadway Bridge requirements for rail installation.
6. **Finance Plan:** Phase 1 of streetcar is estimated to cost \$39.6 million (in 2003 dollars). It is recommended that federal funding in the amount of \$19.8 million be sought to support the construction of Phase 1. Local funding is needed in the amount of \$19.8 million which is proposed to be secured through a combination of local improvement district (LID) and other local funds. The Broadway Bridge costs may substantially change the estimate.
7. **Engineering Funds:** The continued work on the streetcar is anticipated to require \$1.25 million over the next 18 months. It is recommended that a \$1,000,000 appropriation from federal HUD funds be sought through the congressional delegation. Local funding in the amount of \$250,000 is being pursued from PDC and the Lloyd Business Improvement District. A proposed work scope is being developed.
8. **Amend Regional Transportation Plan:** It is recommended that the City's Transportation System Plan (TSP) and Metro's Regional Transportation Plan (RTP) be amended to include the proposed streetcar extension project. The City should forward a request to Metro and amend the RTP for the Eastside Streetcar Project during the next update.
9. **Development Proposal:** It is recommended that the phases of streetcar extension be accompanied with development commitments for property adjacent to the streetcar.

Insert Figure 1

TECHNICAL REPORT

The Eastside Streetcar Alignment Study is being conducted under the guidance of the Eastside Steering Committee. A Technical Committee was formed to conduct the analysis of the options and prepare recommendations to the Steering Committee. This document presents general conclusions based on discussion below. Additional detail and adjustments will be made with further engineering and public discussion.

Alignment

Recommendation

The recommended alignment is shown in Figure 1 with: NW Lovejoy and 10th, crossing the Broadway Bridge, NE Broadway/Weidler to NE Grand and 7th Avenues, southbound on 7th Avenue to Oregon, westbound on Oregon to MLK, southbound on MLK to SE Clay, Northbound on Grand from SE Clay to NE Broadway, westbound on SE Clay to Water, crossing either new Caruthers Bridge or Hawthorne, connecting to existing streetcar at Riverplace or SW 1st and Harrison depending upon crossing. Alignment options considered are included in Figure 2 (Figures 2-11 can be found in the Illustration section of the Report).

Lloyd District Options

Consideration was given to options in the Lloyd District including MLK, Grand, 7th and 9th Avenues. It is recommended that the streetcar operate on 7th Avenue traveling south from Weidler to Oregon Street, turn west on Oregon to Grand Avenue and turn north on Grand returning to Broadway. The development plan for Lloyd District includes the Lloyd Crossing and proposed 7th Avenue Bridge as key elements in creating the central node of the district at Lloyd Crossing. Considerable development opportunities exist. This location is a trade-off with effective access to the Oregon Convention Center located on MLK. Better service to the Convention Center would be provided with an MLK alignment. The development opportunities in the Lloyd Crossing area were judged as more beneficial calling for the routing on 7th Avenue. The proposed 7th Avenue Bridge is recommended to be implemented with or without streetcar crossing. The 7th Avenue Bridge would increase capacity and access for all modes between these two Central City districts. 9th Avenue was not recommended because it added length to the loop and did not intersect the transit hub.

Numerous streets in the Lloyd District were considered for location of the streetcar line ranging from MLK to as far east as 15th and 16th. The development strategy for the Lloyd District was primarily used by the Steering Committee in reviewing the options along with consideration of the loop system connecting the Central City. Proposals were made to consider 15th and 16th extending further east and service to the residential areas. One suggestion was to use the 12th Avenue Bridge connecting Benson High School and returning to SE 7th via Sandy Boulevard. These easterly options were judged to miss the heart of the Lloyd District and extend the loop to far east to serve as an effective Central City loop.

Central Eastside

Consideration was given to options for operation on MLK, Grand, 6th and 7th Avenues. The recommended option is MLK and Grand due primarily to the zoning and development potential in the corridor and the East Portland Grand Avenue Historic District. The MLK/Grand corridor offers both a rich existing fabric of historic multiple use buildings and a substantial number of redevelopment sites to strengthen the urban intensity of the corridor. Strong consideration was given to the option of operating on Grand and 6th Avenue as a couplet. This option would provide for superior transfer service from the SE bus service connecting to the Lloyd District. The zoning east of 6th Avenue is industrial sanctuary which limits the redevelopment potential of the area. The greater redevelopment opportunities, zoning, and existing fabric were influential in recommending the MLK/Grand corridor. The 7th Avenue operation was not supported because the zoning is primarily industrial sanctuary.

The Steering Committee had considerable discussion with regard to the option of operating southbound on 7th or 6th and not operating on MLK. The zoning and redevelopment potential on MLK is more suited to the streetcar. The physical area for MLK has proven to be a significant challenge with a difficult pedestrian environment requiring many improvements to create the dynamic pedestrian and transit environment desired. After weighing the options, a preference was expressed for MLK. It is recognized that 6th Avenue does border the EX zone and would not require a zone change to meet the streetcar interests on half of the street. It is recommended that the community be encouraged to closely evaluate the options for the streetcar in the next phase of study. The community has strongly supported finding a way to improve MLK/Grand so they can serve pedestrians and transit better than the current configuration.

Southeast Waterfront

The area south of the Hawthorne Bridge in the Central Eastside was recognized as a special development area with existing attractions, emerging employment and development plans. The area is physically difficult to serve with transit and would be greatly enhanced by the construction of the proposed Caruthers Bridge. Access could be provided from streetcar along Water Avenue connecting PCC and OMSI. It is recognized that a grade crossing of the Union Pacific Railroad would be necessary to provide access to streetcar. Sound Transit has successfully negotiated access across a railroad line for a streetcar in Tacoma, Washington. Obtaining approval for this crossing is a major issue that took 2+ years for Sound Transit to complete. A grade separated crossing feasibility needs to be assessed as an alternative to the at-grade railroad crossing. Other options for accessing the south are encouraged, including a connection as far south as Division and Lincoln with a bridge over the railroad lines.

River Crossing

Two options have been identified for completing the transit loop: a new bridge at Caruthers and crossing the Hawthorne Bridge. The Caruthers Bridge crossing is recommended to be the preferred option. The Hawthorne Bridge crossing is retained as a backup option pending the outcome of the South Corridor Study for light rail. There also remains an issue of the feasibility of assuring mixed operation of streetcar and light rail. Light rail and streetcar can share stations,

but light rail cannot operate where a streetcar stop exists since the streetcar is slightly narrower. Light rail and streetcar trains can share tracks with some safety accommodations.

Phasing

Phase 1

Phase 1 is recommended to extend the streetcar from NW Lovejoy and 10th to NE 7th Avenue connecting Northwest to Lloyd District. The streetcar would cross the Broadway Bridge and proceed eastbound on Weidler to 7th Avenue turning south to NE Oregon crossing light rail at Holladay, turning west on Oregon to Grand, proceeding north to Broadway and west to Broadway Bridge.

Phase 2

Phase 2 is recommended to extend streetcar from NE Oregon and Grand southbound on MLK to SE Clay Street and west on Water Avenue to OMSI. This section would provide excellent transfer service for buses connecting the two districts. The extension to OMSI would provide needed service to that area.

Phase 3

Phase 3 is recommended to connect Central Eastside with Southwest Portland completing the loop. The route is to be determined from the pending the status of the proposed Caruthers Bridge crossing anticipated as part of the South Corridor Project. The preferred alignment would be on Caruthers Bridge to Riverplace.

Capital Cost

Preliminary cost estimates are based upon an assumption of \$12.5 million per one-way track mile for the extensions which is based on previous construction cost for Streetcar. Figure 3 estimates distance in feet for each of the three phases of the proposed alignment.

- **Phase 1:** \$39.6 million for 3.17 miles of track including three new vehicles (8,371 feet double track).
- **Phase 2:** \$44.0 million for 3.60 miles of track including three new vehicles (7,838 feet of double track to Clay and an additional 1,500 feet to OMSI).
- **Phase 3:** No cost estimate is provided for this alignment since one option relies on a bridge in another project with considerably shorter distance. Two new vehicles would be included for this phase.

Operation

Figure 4 depicts the proposed alignment with the transit system. The operation of the streetcar to the eastside is proposed to combine with the Northwest to SW Gibbs line providing high frequency on 10th and 11th Avenues. The Lloyd streetcar is proposed to terminate at PSU. The following lines are recommended:

Rose: The rose line is proposed to operate from NW 23rd and Marshall to SE Gibbs connecting to the tram to OHSU. The extensions from PSU are in two phases with Riverplace in 2004 and Gibbs in 2006.

Aqua: The aqua line is proposed to operate from PSU Urban Center to NE 7th in Phase 1 (aqua1), SE Clay to OMSI in Phase 2 (aqua2), and in a loop around the Central City in phase 3 (aqua3).

With 15-minute frequency on the rose and aqua lines, the service level for the shared alignment on 10th and 11th Avenues would be 7.5-minute frequency. With the two lines and the improved frequency on 10th/11th, it is recommended that 15-minute frequency be established as the baseline service.

	Round Trip Times	Number of Trains	Frequency	Operating Costs
Rose (NW / Gibbs)	90	6	15	\$4.2
Aqua1 (PSU / Lloyd)	60	4	15	\$2.8
Aqua2 (PSU / OMSI)	90	6	15	\$4.2
Aqua3 (Loop)	118	8	15	\$5.6

Development Potential

The Technical Committee and Steering Committee reviewed extensively the development potential of various options. Figure 5 provides the historic districts and the urban renewal districts that are served by the proposed lines. The Oregon Convention Center and Central Eastside urban renewal districts include the eastside line within the district.

Figure 6 depicts properties that have buildings that are on the property tax rolls for less value than the land. These are estimated to be properties with significant redevelopment potential.

Figure 7 is the zoning and comprehensive plan map for the districts. The IG1 zoning in the Central Eastside is industrial sanctuary and would limit redevelopment. There is a considerable commitment to this zoning as part of the Central City Plan. The MLK/Grand corridor has EX zoning to encourage higher intensity development in that corridor.

Figure 8 contains Lloyd District landmarks with the recommended alignment. Figure 9 depicts the development strategy which includes the central core designated as Lloyd Crossing. This area is well served by the proposed Grand and 7th alignment.

Figure 10 provides the floor area ratio (FAR) which is the ratio of building floor area to land area on a site. The larger the FAR the larger the building. For example, on a 40,000 s.f. parcel, a site with FAR 4:1 may build a 160,000 s.f. building. A site with FAR 12:1 may build a 480,000 s.f. building. The MLK/Grand corridor contains the highest FAR's in the Central Eastside, meaning it has the highest potential for redevelopment without zoning changes.

Revenue

Capital Costs

It is recommended that federal funds be sought for construction of the eastside streetcar. Federal legislation is being considered for a special category of streetcar for federal funds with 50% match requirement. Local improvement districts (previous districts have covered 17% of cost) and tax increment funds are have also been used to support the construction of streetcar. The streetcar is contained in two urban renewal districts and would be eligible for tax increment funding. The following are preliminary sources:

Phase 1 – Total Cost

Federal Transit Administration	\$19,800,000
Local Funding	13,200,000
Local Improvement District	<u>6,600,000</u>
	\$39,600,000

Phase 2 – Total Cost

Federal Transit Administration	\$22,000,000
Local Funding	14,520,000
Local Improvement District	<u>7,480,000</u>
	\$44,000,000

Operating Costs

Operating costs for streetcar are the responsibility of the City of Portland through a service agreement with TriMet. Currently TriMet provides \$1.6 million for a period of five years ending June 30, 2006. Until 2006, TriMet operating funding is being provided on a basis of 2/3 of the operating cost with the remainder derived from other fund commitments, farebox and sponsorships. Parking revenues from meters along with parking fine revenues have been used to support the streetcar operation. The projected full operation of streetcar lines: Rose from Northwest Gibbs, and the Aqua Central City Loop is \$9.8 million. A 14-train operation is projected requiring a minimum of 17 trains in the fleet. A long-term plan for operating funding for streetcar is needed to assure the continued operation and expansion of service.

Ridership

Ridership estimates have not been prepared for the Eastside Streetcar. It is anticipated that estimates will be developed in the conceptual engineering phase of the project development. FTA has traditionally relied on ridership estimates for project funding eligibility. The new streetcar legislation will place a stronger emphasis on urban development as opposed to existing ridership which should strengthen the ability of this project to secure federal funding.

Portland Streetcar ridership is approaching 5,000 riders per day and over 1.5 million annual riders. The Eastside Streetcar is expected to experience strong ridership connecting across the Willamette River between the Lloyd District and the River District and will serve major destination such as the Memorial Coliseum, Rose Garden, Lloyd Center, Oregon Convention Center and OMSI. Existing transit service for that connection does operate with buses today. The Phase 2 line to the Central Eastside (Figure 11) will provide important transfer service and connection to the Lloyd District. An estimated 32% of employees in the Lloyd District live in Southeast Portland creating considerable potential for commuter ridership and transfer on the eastside.

Ridership for the current TriMet Bus Line 6 was conducted. Total boardings per day northbound in 2003 are 1,290. Total boardings southbound were 1,400 per day. There is already strong transit demand in the corridor.

Bicycle Compatibility

Phase I of the Eastside Streetcar project proposes to extend the current streetcar line from the Pearl District to the Lloyd District. The recommended alignment includes the NE Broadway/Weidler one-way couplet and NE 7th Avenue, both of which are major eastside bicycle corridors with striped bicycle lanes. Experience with the current streetcar operations has resulted in significant safety issues between bicyclists and the streetcar. Accommodating bicycles safely will be an important project goal and issue to address. The conceptual engineering analysis will include examination of design and alignment treatments that would address safety concerns between streetcar and bicyclists. The bicycle community, including the Portland Bicycle Advisory Committee and the BTA, will be involved during this engineering design phase.

PUBLIC OUTREACH

The following meetings/workshops were held during the preparation of this document. Each was open to the public and over 100 different people attended the various meetings.

- **Portland Streetcar Eastside Steering Committee Meeting**, Wednesday, February 5, 2003, 2:00PM – 3:30PM, Liberty Centre, 650 Holladay Street, lower level.

Thirteen members of the Steering Committee attended this meeting in addition to eight staff members. Several people from the eastside community also attended. This meeting was open to the public and announced via newspaper and press release.

- **Portland Streetcar Citizen Advisory Committee Meeting**, Wednesday, February 12, 2003, 3:00PM – 4:30PM, Lloyd Center Tower, 825 NW Multnomah, 2nd floor.

Invitations were sent to all neighborhood and business associations on or near the proposed streetcar eastside alignment to discuss the eastside alignment study and the public process. Attendees: 10 from the current CAC and 20 people from various Eastside neighborhoods. This meeting was open to the public.

- **Portland Streetcar Eastside Steering Committee Meeting**, Wednesday, February 19, 2003, 2:00PM – 3:30PM, Oregon Convention Center King Boardroom.

Twelve members of the Steering Committee attended as well as 6-7 staff. We had about 10 neighborhood representatives at this meeting. This meeting was open to the public.

- **Portland Streetcar Eastside Workshop**, Wednesday, February 26, 2003, 5:00PM – 7:00PM, Lloyd Center Tower, 825 NE Multnomah, 2nd Floor.

Invitations were sent to 1400+ property owners, and neighborhood and business associations along the proposed eastside alignment. About 60 people attended. This meeting was open to the public.

- **Portland Streetcar Eastside Steering Committee Meeting**, Wednesday, March 5, 2003, Oregon Convention Center, King Boardroom, 777 NE MLK, Portland.

This meeting was open to the public.

- **Portland Streetcar Citizens Advisory Committee Meeting**, Wednesday, March 12, 2003, 3:00PM – 4:30PM, Lloyd Center, 825 NE Multnomah, 2nd Floor.

This meeting was open to the public.

- **Streetcar Presentation at Hosford Abernethy (HAND) Neighborhood Meeting,** Thursday, March 20, 2003, 7:00PM, St. Philip Neri Parish Hall, 2408 SE 16th Avenue, Portland.

Vicky Diede gave a presentation on the current Streetcar operations as well as information on the proposed Eastside alignment. About 15 HAND neighborhood representatives attended.

- **Portland Streetcar Eastside Workshop,** Thursday, April 3, 2003, 5:00PM – 7:00PM, OMSI Auditorium, 1945 SE Water Avenue, Portland.

Invitations sent to 1400+ property owners and neighborhood and business associations along the proposed eastside alignment. About 50 people attended. This meeting was open to the public.

Minutes of meetings are available upon request.

ALIGNMENT ISSUES

The Eastside Streetcar Alignment Steering Committee and Technical Committee prepared a list of alignment issues for the streetcar. The issue or question is followed by the Technical Committee's answers in italics.

General Alignment

1. **Alignment Decision:** What is the impact of the recommendations of the Steering Committee for the preliminary alignment? *The recommendation from the Steering Committee will be forwarded to City Council for adoption. The alignment may very well change with subsequent analysis. The initial recommendation is important as part of starting the process. Equally important is the assessment of the support and feasibility.*
2. **Bicycle Compatibility:** Bicycle and streetcar compatibility is an issue. *It is agreed that bicycle compatibility requires special attention which is recommended to be included in the detailed corridor analysis in subsequent phases. Bicycles trying to operate in a lane with streetcar tracks encounter a hazard. This conflict is recommended to be minimized.*
3. **Grade:** What grade can streetcar safely operate within? *Streetcar can operate on up to a 9% grade.*
4. **MAX and Streetcar:** Can MAX and Streetcar operate on the same tracks including the proposed Caruthers Bridge? *MAX and streetcar can operate on either track with the same overhead wire system. The streetcar vehicle is narrower than light rail by about 3 inches. Light rail could not operate on segments with streetcar platforms without modifications. Operation issues of using the same tracks would have to be resolved with regard to communications, tracking and operator training. Streetcar should consider a design that would allow light rail trains to operate on the same trackage between the Caruthers Bridge through the eastside to the Lloyd District and Holladay to provide flexibility for future operations and an option in case of severe damage to the Steel Bridge. Analysis to date indicates that streetcar and light rail should avoid sharing stations.*
5. **Financing:** The streetcar was funded through parking garage bonds not available for the eastside. What sources of funding are available for streetcar? *Potential funds for streetcar include a local improvement district along the line, tax increment financing, and federal funds. A special new category of federal funding for demonstration streetcar projects is being sought through the TEA 21 reauthorization anticipated to be approved in 2003. This would enable streetcar to seek federal funds to support the project.*

Central Eastside

1. **Grand:** An MTIP grant is being sought for \$1.6 million to improve Grand from I-84 to Hawthorne. What are the plans and how might it impact the streetcar proposal? *These plans call for eliminating ramps at bridgeheads, extending existing curbs and improving the pedestrian environments. All would support the streetcar.*

2. **UP Railroad Crossing:** Can streetcar obtain permission to cross the Union Pacific mainline at Water Avenue? *A mainline rail crossing agreement would be very difficult. Sound Transit in Tacoma has obtained an agreement for a spur rail line crossing after 2+ years of process. Their wire must be above 20 feet to assure clearance at the rail line crossing which required modification to the vehicle.*
3. **Hawthorne Bridge:** Metro and Multnomah County have been evaluating the Hawthorne Bridge for potential inclusion of light rail. What information has already been developed on this issue? *A technical document on the potential use of the light rail on the Hawthorne Bridge includes a description of alignment issues, cost and technical issues. The South Corridor project has recommended building a new crossing by constructing the Caruthers Bridge. The South Corridor project concluded that rail could be placed on the outside lanes of the Hawthorne Bridge, though this carries a considerable cost.*

Similarly, the Hawthorne Bridge can be retrofitted to accommodate the streetcar. Some work towards such a retrofit was completed as part the County's Hawthorne Bridge rehabilitation project in 1997. Further improvements would be required to accommodate the streetcar on the Bridge and its approach ramps. Preliminary engineering will be required to determine the full scope of improvements. However, as with the South Corridor project, the preferred south crossing for the streetcar is a new bridge as Caruthers.
4. **Ross Island Bridge:** Has there been consideration of using the Ross Island Bridge for the streetcar? *It is not recommended that the Ross Island Bridge be evaluated because the distance and construction costs would necessitate considerable investment for a less attractive option. The Caruthers Bridge is recommended as the preferred option with the Hawthorne Bridge as a viable option in the event that the Caruthers Bridge cannot be constructed. The shorter distance is recommended to enable the loop system to work effectively.*
5. **Development South of Hawthorne:** How can service be assured south of Hawthorne? *Current plans call for streetcar and MAX to operate in the same corridor with Caruthers and Hawthorne as options. Phase 2 is currently recommended to extend as far as OMSI which would provide some service south of Hawthorne regardless of ultimate river crossing.*
6. **Grand/MLK Bridge:** The bridges on MLK/Grand between Lloyd and Central Eastside are State bridges. Can they handle streetcar? *ODOT will be contacted and the issue of bridge strength will be addressed in the technical work to be conducted. Traffic issues related to the entrance ramp at NE Grand and I-84 eastbound entrance ramp will be further investigated. PDC has been working with ODOT and PDOT on the reconstruction project. Federal bridge money is only available for reconstruction and limited to accommodate bikes, cars, and pedestrians.*

7. **TriMet Transfer:** A key transfer point for the streetcar is MLK and Hawthorne which intersects most southeast bus lines traveling to downtown. 32% of the employees in the Lloyd District live in Southeast. Easy transfer would provide significantly improved service. The intersection at Hawthorne and MLK is difficult with options, including Clay or Main for access.
8. **Grand/MLK:** Discussion has occurred with regard to a long-term proposal to revise Grand/MLK to two-way streets. Streetcar operation should be set to accommodate such potential. If streetcar is located on MLK and Grand, then action should be considered to make these streets more compatible for pedestrians and streetcar operations.

Lloyd District

1. **Broadway Bridge:** Is the Broadway Bridge capable of handling the streetcar? The Broadway Bridge can be retrofitted to accommodate streetcars. The scope of the required improvements will not be known until preliminary engineering has been completed for the Bridge. Needed improvements may include upgrades to the main span, the lift deck, and the approach ramps, as well as seismic retrofits.
2. **Broadway Bridge Rails:** Can existing rails under the pavement on the bridge be used for the Streetcar? No. The gauge of the existing rails is too narrow to accommodate modern streetcars.
3. **NE Broadway/Weidler:** Can streetcar operate on streets with 35 mph and faster traffic? Streetcar is capable of speeds up to 45 mph and could operate in a similar fashion to TriMet buses with regard to movement in traffic. Traffic issues at NE Broadway and Weidler near the entrance and exit ramps to I-5 were noted as potential concerns and will be investigated.
4. **7th and 9th Options:** Should streetcar operate on 7th or 9th Avenue? Both options are feasible. The various Lloyd District interests need to consider proximity to service, development potential and other issues in recommending a preferred alignment. 7th Avenue provides direct service into the heart of the district and connects with the light rail station serving the Ashforth and Kaiser properties. 7th Avenue is a difficult streetcar turn at Broadway and is a congested intersection currently. 9th Avenue serves more closely Lloyd Center along with Ashforth properties and intersects light rail a block away from the station. 9th Avenue is a wider street with fewer auto conflicts at the turn at Broadway/Weidler.
5. **Service in Neighborhoods:** Can streetcar extend service to the neighborhoods by extending to 16th or beyond? This issue may be considered by the Steering Committee. Extensions are possible as streetcar has already committed to extending the existing line south to Riverplace. A similar approach can be used on the eastside. The current project is envisioned as a loop, and service that far east would compromise the effectiveness of the loop.

6. **7th Avenue Bridge:** Should the 7th Avenue Bridge be constructed as part of the project? *The Lloyd District development strategy identifies the bridge as crucial with or without the streetcar.*

Westside Issues

1. **Lovejoy and 11th:** The turn at NE Lovejoy and 11th could be congested from the traffic on Lovejoy. *Current traffic counts show that intersection with reasonable operation. Future engineering will be required at this intersection to identify issues.*
2. **SW 1st Avenue:** A two-way street operation would be required if streetcar were to use First Avenue to connect to the Hawthorne Bridge because 1st Avenue is only one-way, requiring a second street for northbound traffic. *This operation is anticipated in the Central City Plan.*
3. **Riverplace Stop:** With light rail and streetcar sharing track to the Caruthers Bridge, special provisions will be needed for the Riverplace stop to accommodate the different widths of the cars. *Streetcar stops would have separate tracks from light rail.*
4. **Northwest Hoyt and Broadway:** *The Lovejoy Ramp could be avoided by remaining on Broadway to Hoyt providing service to Union Station and reducing duplicated service.*
5. **Federal Funding Issues:** *Congress is expected to include a demonstration program for streetcar in the next 6-year funding package that will include significantly streamlined regulations.*

ILLUSTRATIONS

Attached are the following Figures in support of the Report:

Figure 1 – Eastside Streetcar Draft Recommendation – Phasing Strategy

Figure 2 – Eastside Streetcar Design Options

Figure 3 – Eastside Streetcar Designs – Distances

Figure 4 – Eastside Streetcar Transportation System

Figure 5 – PDC Eastside Development Area, Historic Districts and Urban Renewal Areas

Figure 6 – Eastside Streetcar Redevelopment Areas

Figure 7 – Central City Zoning

Figure 8 – Eastside Streetcar Lloyd District Landmarks

Figure 9 – Eastside Streetcar Lloyd District Development Strategy

Figure 10 – Central City Floor Area Ratio (FAR)

Figure 11 – Lower Central Eastside

CENTRAL CITY STREET CLASSIFICATION MAPS

Attached are the following Maps in support of the Report:

Traffic Classifications

Transit Classifications

Bicycle Classifications

Pedestrian Classifications

Freight Classifications

Emergency Response Classifications

Street Design Classifications