First Hill Streetcar Project Preliminary Engineer/Schematic Design Review

Seattle Design Commission

April 7, 2011
Project Overview & Context
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- Modern Streetcar Project Providing Regional Transit Connections & Center City Circulation
- Busy Arterial Environment
- Diverse Neighborhoods/Historic Districts
- Major Institutions/Small Businesses
Project Overview & Context

Map of Seattle showing key locations such as Pike/Pine, Seattle Central CC, Light Rail, Seattle University, Yesler Terrace, Bailey Gatzert, Rail/Bus Hub, and Pioneer Square.
Scope Overview

- 2.5 Miles of Embedded Track & Roadway Improvements
- 10 Stops—Mix of Side & Center Platforms, with Art Program/Landscape
- Overhead Contact System
- Traffic Signals & Train Signals
- Maintenance Facility
- Utility Relocations—Primarily Water
Trackway & Platform
Overhead Contact System & Signals
Denny/Broadway

140' Streetcar Terminus

60' Bus
Denny/Broadway
Denny/Broadway
Denny/Broadway
Pike/Pine Broadway
Boylston/Broadway
Streetcar Plazas
Streetcar Plazas: Precedents

McGraw Square
Broadway/Yesler
12th-14th/Jackson
12th-14th/Jackson
7th/Jackson

First Hill Streetcar
7th/Jackson
Artist Team Shelter Concept

- Mags Harries & Lajos Heder, Artist Team
- Concept Conditionally Approved by Public Art Advisory Committee
- Schematic Design
If sponsorship were found, the Community Window can become an Electronic Bulletin Board.
Two-way platform
Cross Section
Center Platform Elevation
Main Beams, standard steel channels for all shelters, 18” deep, 4” wide, with cut outs that match train windows, 2 pairs of 6x6 square tube columns, color consistent for all stations, modified only if required by historic district regulations.

Secondary Extension Beams, 13” deep, 4” wide steel channels with cut outs, consistent color, to signal system. 6”x6” steel end column may take on accent color.

Perpendicular sign steel channel Beams, can take on accent colors.
Inverted 6” deep, 4 ½” wide steel “T” framed laminated safety glass framed roof for single platform

2-way platform roofs will slope to middle and can conduct rain water to Small planting bed at center of platform

Roof framing will use accent colors and some transparent inserts in glass, varied by neighborhood
Ground level Community Window furnished with electronic way finding and bulletin board only if sponsorship is available, otherwise it remains as an open window to frame specific parts of the community.

High window glazed with laminated safety glass with images of transformed, transparent environmental details from the community.
Wayfinding/Signage

- “Community Window”
- Alignment Map/Neighborhood Map
- Static or Digital TBD
If sponsorship were found, the Community Window can become an Electronic Bulletin Board.
Green accents are proposed for near New parks on Broadway and on 14th Avenue.
Near the new park by Swedish Hospital
The shelter can engage the park design
Platform Railings Concept
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Platform Lighting

- Pavement Luminaires
- Linear, 6’-8’ On Center
- White or Blue Light
- Street Lighting Provides Primary Lighting
Sustainability Features

- Filtera Stormwater Management System
- Platform Natural Drainage Opportunities
- Maintenance Facility LEED Gold Target
- Vehicle Onboard Energy Storage/Regenerative Braking
**Bioretention**
Plant/Soil/Microbe Complex
Removes Pollutants, TSS,
Phosphorus, Nitrogen, Bacteria,
Heavy Metals, Hydrocarbons, etc.

**Filtterra Flow Line at Higher Elevation than Bypass Flow Line**

**New or Existing Catch Basin, Curb Cut or Other Means of Overflow Relief**

**High Flow Bypass**

**Clean-out**

**Curb and Gutter**

**Storm Water Inflow (“First Flush”)**

**Energy Dissipator Stones**

**3” Mulch**

**Filtterra Engineered Media**

**Filtterra Concrete Container**

**Treated Stormwater Underdrain System**
MAINTENANCE FACILITY

Site Program

- Tracks for connection to the mainline
- Vehicle operations and maintenance facility (12,500 sq. ft. footprint, 20,000 sq. ft. total)
- A covered exterior vehicle storage and wash track
- Parking/loading spaces
- Refuse and recycling
MAINTENANCE FACILITY

Building Program

- 2 vehicle positions with platforms for top of vehicle maintenance
- 1 vehicle position with pit and jacking capability
- Machine shop
- Support spaces including: Operations, Training, Breakroom, Battery Room, Parts Storage, Toilet/Locker Rooms
MAINTENANCE FACILITY

Building Elevations

East

North
MAINTENANCE FACILITY

Building Elevations

West

South
Sustainability Features

- Minimum LEED Silver Certification
- Integrated Design Process
- Extensive Stormwater Mitigation Features: full green roof, pervious paving, green wall
- Renewable Energy: PV (photovoltaic) array
- Energy Efficiency: highly efficient heating system (variable refrigerant flow [VRF] and radiant flooring), daylighting to offset electric lighting, occupancy and daylighting sensors, natural ventilation
- Occupant Health and Comfort: natural daylighting, access to views, low to no-toxicity building materials
- Locally Sourced Materials
- Electric Car Charging Stations
MAINTENANCE FACILITY

Rendering
Vehicles & Operations

- Similar to South Lake Union Line
- Wireless Operating Segments
- Passenger Information Systems (On-Board/At Platforms)