



**PORTLAND-MILWAUKIE**  
LIGHT RAIL PROJECT

# **PMLR**

## **Station's Final Design:**

Update to City of Portland, Design Review Commission

**Robert W. Hastings, FAIA**

Agency Architect, TriMet

August 2, 2012

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## Project Overview

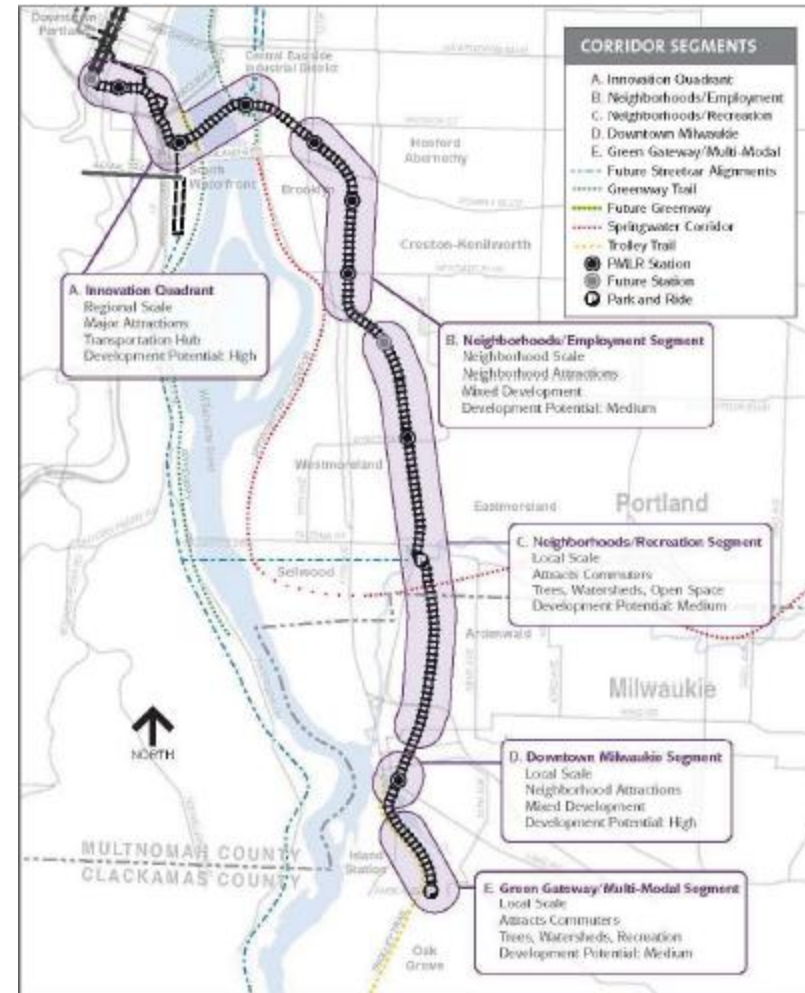
- Extension of light rail from Portland State University south
- 10 new stations—two on the west side of the Willamette River and eight on the east side
- The Portland-Milwaukie Light Rail Bridge spanning the river from OSHU's future South Waterfront campus to OMSI
- South terminus on SE Park Avenue in Clackamas County





## Corridor Segments

- Innovation Quadrant
- Neighborhoods/Employment Segment
- Neighborhoods/ Recreation Segment
- Downtown Milwaukie Segment
- Green Gateway/ Multi-modal Segment





## TriMet's Design Criteria

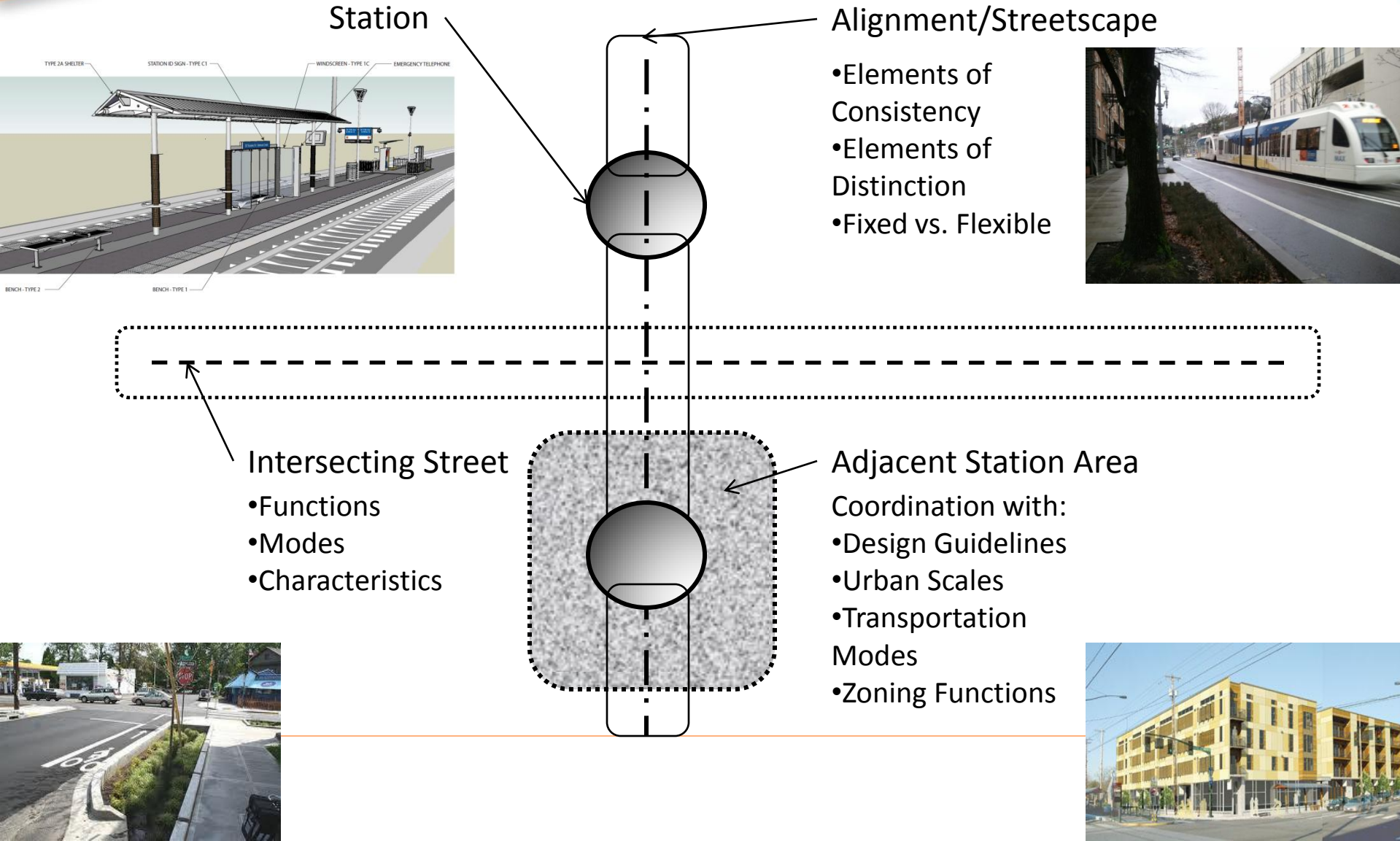
**“Create a civic architecture that is permanent, has a characteristic thread and contributes to its context—one that is not entirely derivative of the transit system, but of the neighborhoods and community of which it is a part.”**







## Station Area Urban Design Diagram





## Summary Review:

- Key Station Design Issues
- Key Station Design Elements
- Key Station Area Elements of Distinction
- Public Art elements





## Station – Urban Design:

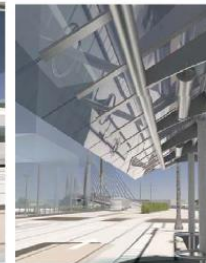
Lincoln St/SW 3<sup>rd</sup> Ave Station; South Terminus to Naito Parkway

### Key Issues-

- ‘New Lincoln’
- Portal to downtown & South Waterfront
- Connection to Halprin district

### Key Elements-

- Station- glass roof shelter
- Elements of Distinction- Eco-track, ‘Green Thread’- 5<sup>th</sup> Ave. to Naito Parkway
- Public Art- Elizabeth Conner



POTENTIAL NON-STANDARD ITEMS IN THE RIGHT-OF-WAY - GLASS ROOF SHELTERS





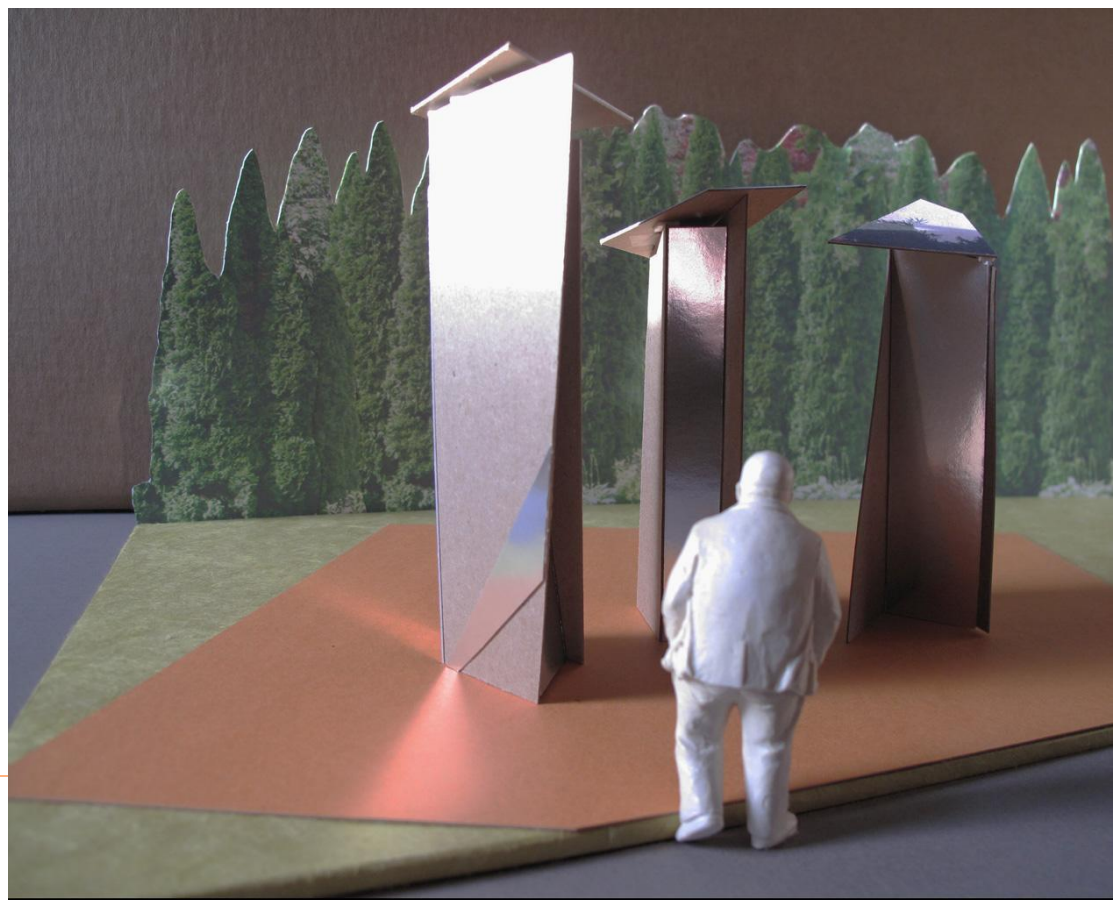


## Station – Urban Design:

Lincoln St/SW 3<sup>rd</sup> Ave Station; South Terminus to Naito Parkway

**Public Art-** Elizabeth  
Conner

Three abstract steel sculptures were inspired by the theatrical and participatory work of choreographer Anna Halprin and Lawrence Halprin, the architect of the adjacent Halprin District.







## Station – Urban Design:

Lincoln St/SW 3<sup>rd</sup> Ave Station; South Terminus to Naito Parkway





## Station – Urban Design:

Elevated Structure- Naito Parkway to SW Moody Avenue







## Station – Urban Design:

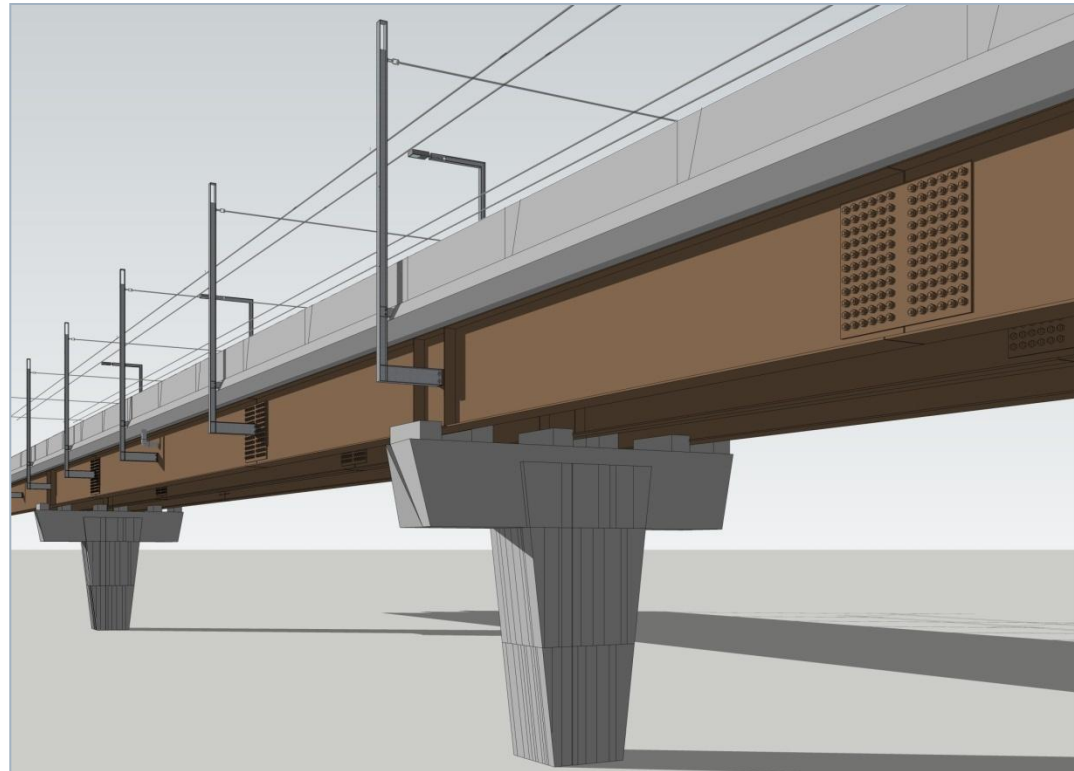
Elevated Structure- Naito Parkway to SW Moody Avenue

### Key Issues-

- Continuity
- Lightness
- Refinement
- Experience

### Key Elements-

- One system
- Line and shadow
- Connections
- Linearity
- Polychromy
- Syncopation
- Balance of weights





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## Station – Urban Design:

Elevated Structure- Naito Parkway to SW Moody Avenue







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## Station – Urban Design:

Elevated Structure- Naito Parkway to SW Moody Avenue





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## Station – Urban Design:

Elevated Structure- Naito Parkway to SW Moody Avenue







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## Station – Urban Design:

Elevated Structure- Naito Parkway to SW Moody Avenue







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## Station – Urban Design:

South Waterfront/SW Moody St Station; SW Moody St to Portland-Milwaukie Light Rail Bridge





## Station – Urban Design:

South Waterfront/SW Moody St Station; SW Moody St to Portland-Milwaukie Light Rail Bridge

### Key Issues-

- Station compliments South Waterfront Design Guidelines
- Multi-modal connections-regional bike connections; Moody to McLoughlin, strives for more than code requirement
- Station supports 'Innovation Quadrant' scale and aesthetic
- Civil design anticipates future Greenway connections; builds plaza



### Key Elements-

- Station- glass roof shelter, bike shelter on SW Moody,
- Elements of Distinction- SWF colors
- Public Art; Jim Blashfield



## Station – Urban Design:

South Waterfront/SW Moody St Station; SW Moody St to Portland-Milwaukie Light Rail Bridge

### Public Art- Jim Blashfield

Four narrow steel enclosures (west & eastbound platforms) with video screens show slow moving images that allude to local history, the river, and nearby cultural institutions and businesses in a poetic, non-narrative form.



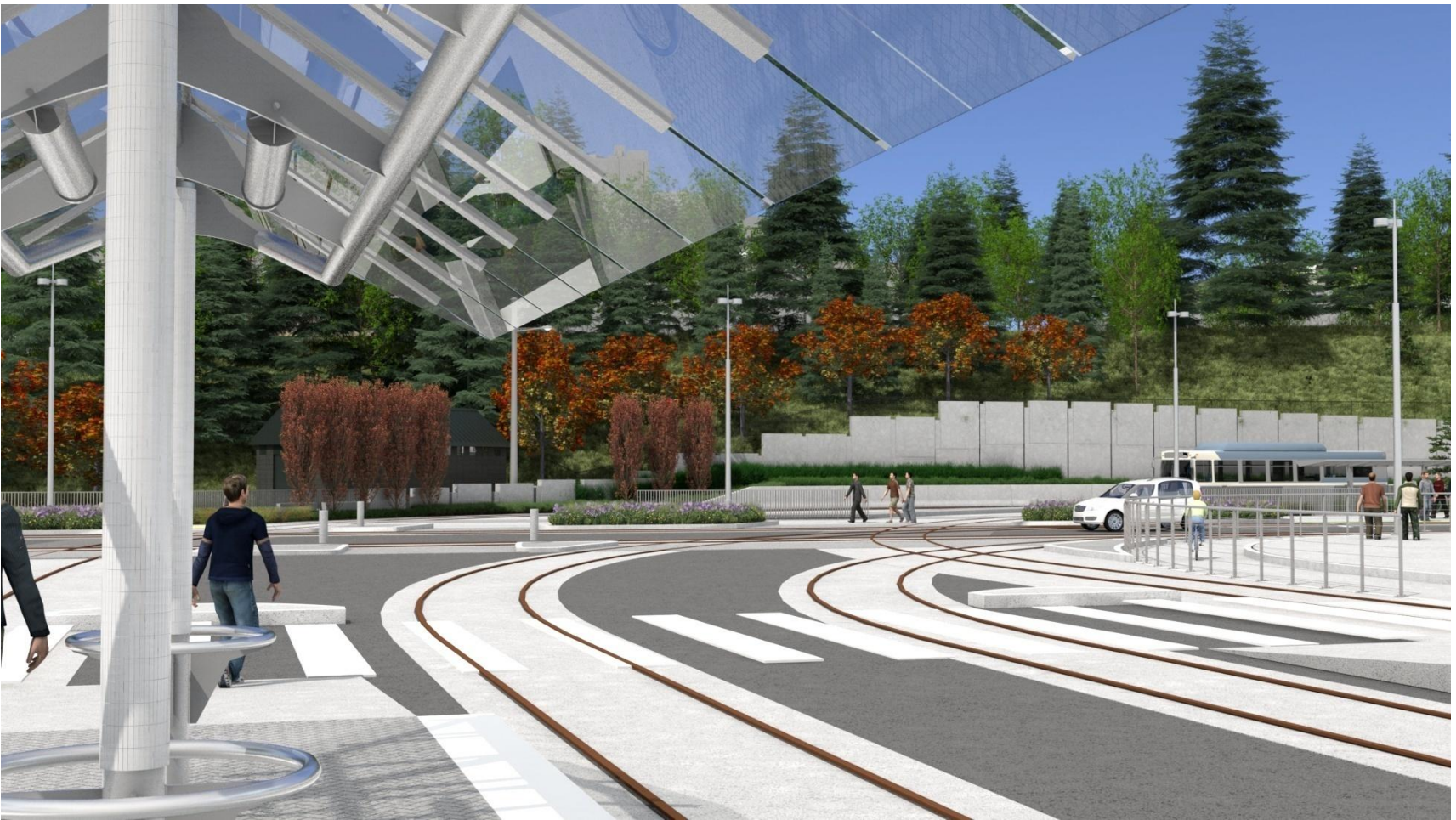




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## Station – Urban Design:

South Waterfront/SW Moody St Station; SW Moody St to Portland-Milwaukie Light Rail Bridge







## Station – Urban Design:

South Waterfront/SW Moody St Station; SW Moody St to Portland-Milwaukie Light Rail Bridge





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## **Station – Urban Design:** Portland-Milwaukie Light Rail Bridge







**PORTLAND-MILWAUKIE**  
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## Station – Urban Design: Portland-Milwaukie Light Rail Bridge







## Station – Urban Design:

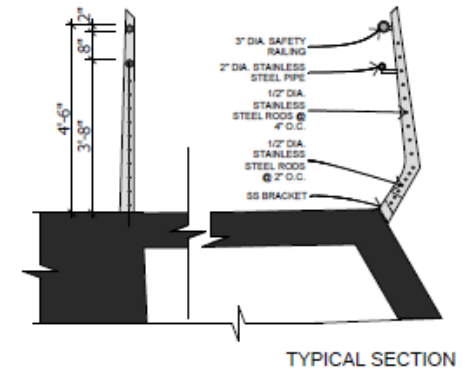
### Portland-Milwaukie Light Rail Bridge

#### Key Issues-

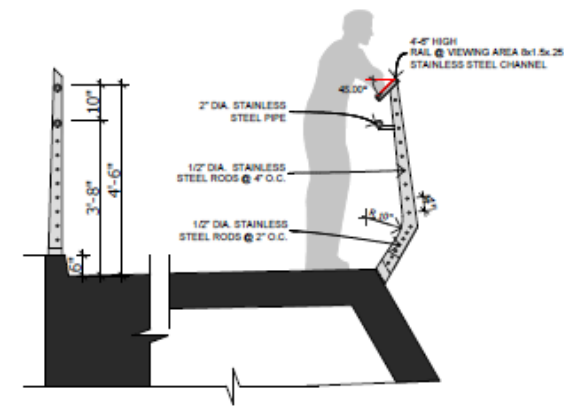
- Multi-modal connections; regional & district
- Pathway; delineation of peds & bikes
- Bridge supports 'Innovation Quadrant' scale and aesthetic

#### Key Elements-

- Iconic- new landmark for the City
- Elements of Distinction- Stainless steel pathway railings; on the bridge and landside approaches
- Public Art- Anna Valentina Murch, Douglas Hollis- (Buy America compliant lighting challenges). Sonic path not being pursued



TYPICAL SECTION



SECTION @ BELVEDERE



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## Station – Urban Design:

Portland-Milwaukie Light Rail Bridge

Art- Anna Valentina Murch and Doug Hollis

Programmable lighting slowly moves across the bridge cables and piers echoing the rhythms of the water and making the bridge appear to breathe.





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## Station – Urban Design:

Portland-Milwaukie Light Rail Bridge

**Art-** Anna Valentina Murch and Doug Hollis

Curved abutment walls reflect sound and light.







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## Station – Urban Design: Portland-Milwaukie Light Rail Bridge





## Station – Urban Design:

OMSI/SE Water Ave Station; Portland-Milwaukie Light Rail Bridge to SE New Water Avenue

### Key Issues-

- Connections to OMSI station area; Opera, ORHF, CEID
- Multi-modal connections; bike, ped, rail(s)
- Station supports ‘Innovation Quadrant’ scale and aesthetic
- “Clinton to the River” coordinates with Springwater Corridor & Esplanade connections

### Key Elements-

- Station- glass roof shelter
- Elements of Distinction- OMSI station lighting & poles, bioswales, Old Water ‘Plaza’
- Public Art; Jim Blashfield





## Station – Urban Design:

OMSI/SE Water Ave Station; Portland-Milwaukie Light Rail Bridge to SE New Water Avenue

### Public Art- Jim Blashfield

Four narrow steel enclosures (west & eastbound platforms) with video screens show slow moving images that allude to local history, the river, and nearby cultural institutions and businesses in a poetic, non-narrative form.







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## Station – Urban Design:

OMSI/SE Water Ave Station; Portland-Milwaukie Light Rail Bridge to SE New Water Avenue



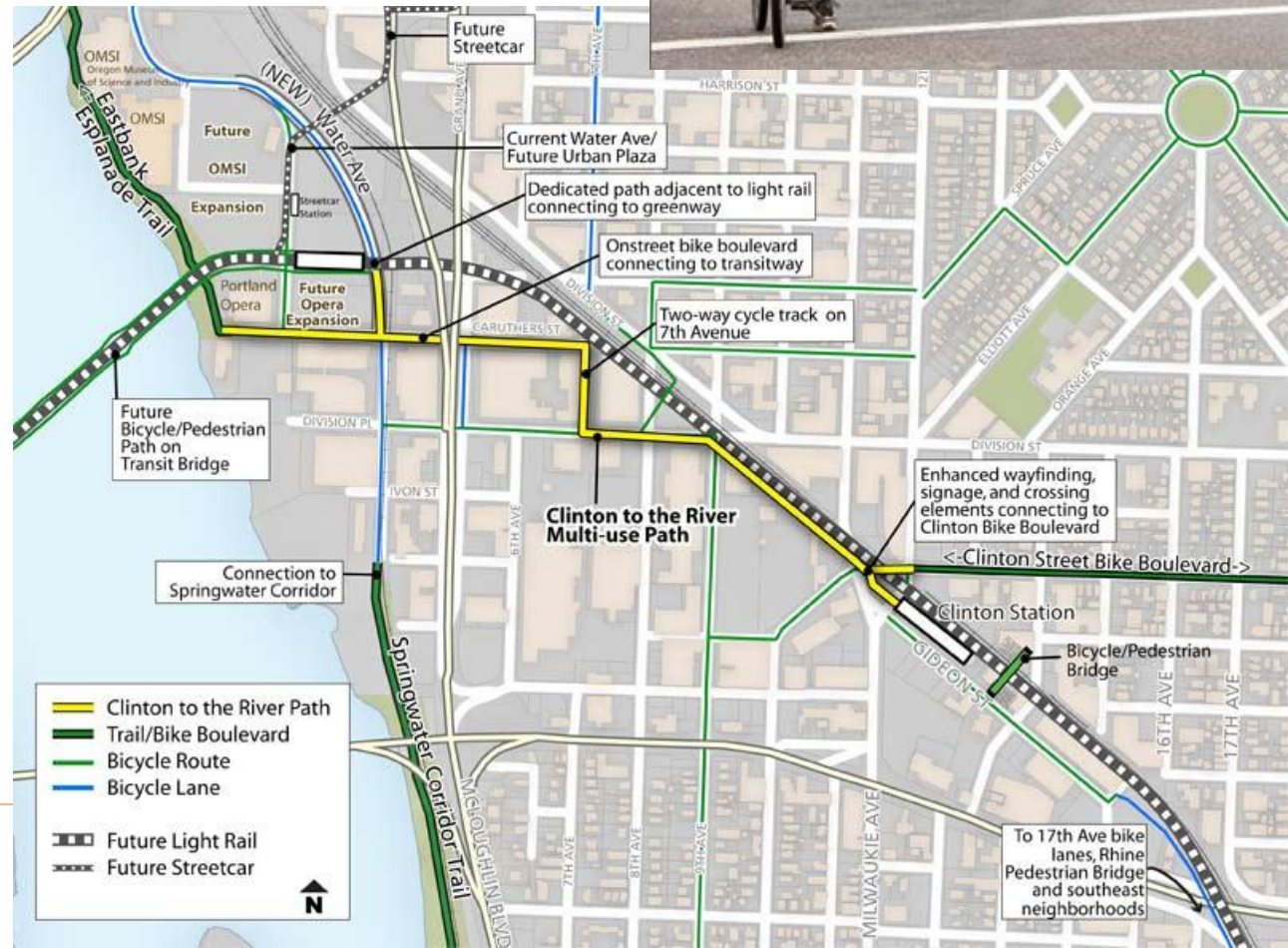




## Station – Urban Design: “Clinton to the River”

### Key Issues-

- Connects peds and bicycles from HAND neighborhood to Portland-Milwaukie Light Rail Bridge
- Project ‘betterment’





## Station – Urban Design:

Clinton Station/SE 12<sup>th</sup> Ave; SE Division Street to SE Powell Blvd

### Key Issues-

- Connections to HAND neighborhood
- ‘New Industrial’ place-making & transit supported development
- Bicycle connections to OMSI & CEID

### Key Elements-

- Station- stainless steel metal roof
- Elements of Distinction- landscaping, bioswales, urban tree canopy, Bicycle Parking/shelter
- Public Art- Rebar/Matthew Passmore







## Station – Urban Design:

Clinton Station/SE 12<sup>th</sup> Ave; SE Division Street to SE Powell Blvd

### Public Art- Rebar/Matthew Passmore

An illuminated steel sculpture constructed of repurposed freight rail track bent into curves recalls the vocabulary of transit maps and railroad trackways.

Uses texture/pavers around sculpture for context and safety. Provides vertical 'place-making' urban design element.





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## Station – Urban Design:

Clinton Station/SE 12<sup>th</sup> Ave; SE Division Street to SE Powell Blvd







## Station – Urban Design:

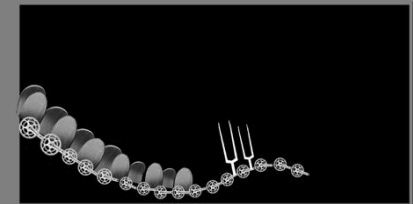
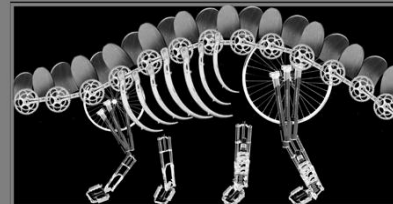
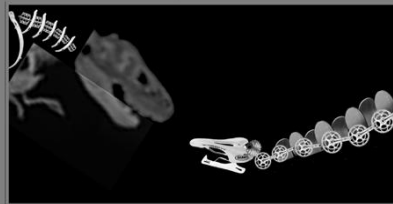
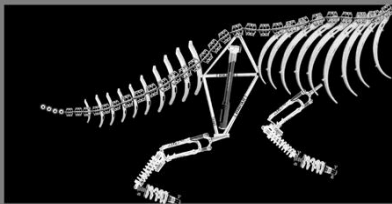
SE Powell Blvd Overpass

### Key Issues-

- Reconfigures ODOT underpass; safety
- Peds & bicycle connections; Brooklyn to City

### Public Art- Horatio Law

Recycled bicycle and skateboard parts are arranged to resemble skeletal remains of prehistoric dinosaurs or “velosaurs” in a series of concrete bas-relief panels embedded into the retaining walls.







## Station – Urban Design:

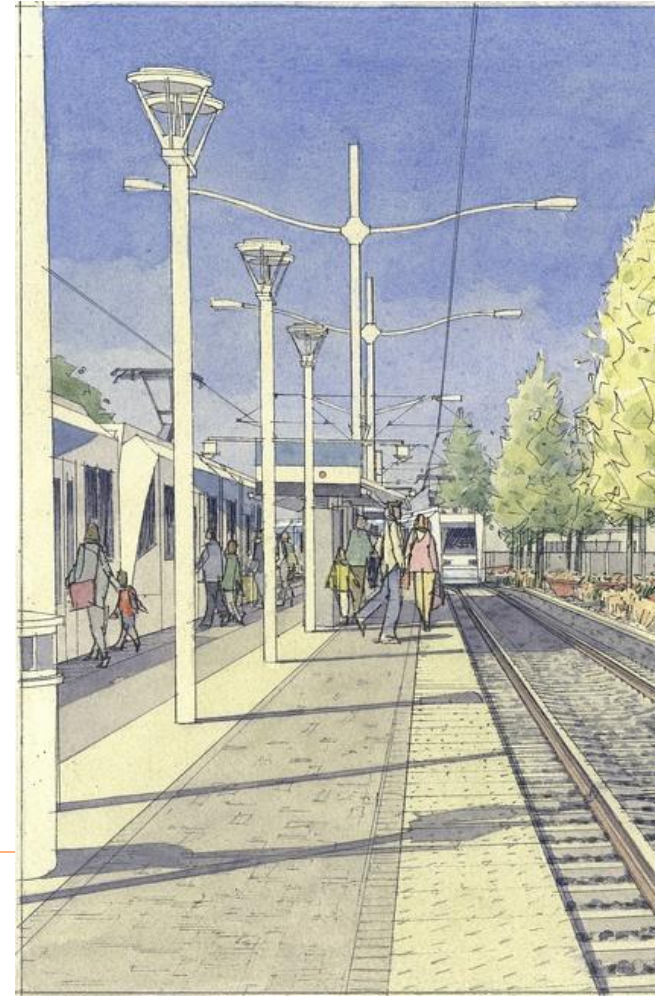
SE 17<sup>th</sup> Ave & Rhine St Station; SE Powell Blvd to SE Center Street

### Key Issues-

- New Streetscape along SE 17<sup>th</sup>
- Brooklyn neighborhood connections
- Reinterpretation of SE 17<sup>th</sup> Avenue; bicycles & pedestrian
- TOD; retail & housing along 17<sup>th</sup>
- TriMet Center Street 'World Headquarters' remodel & LEED aspirations

### Key Elements-

- Station- stainless steel metal roof shelters
- Elements of Distinction- trackway landscaping & streetscape bioswales
- Public Art- Bill Will





## Station – Urban Design:

SE 17<sup>th</sup> Ave & Rhine St Station; SE Powell Blvd to SE Center Street

Art- Bill Will

Thirty-seven, weathered steel boat sculptures appear to float in the landscape strips drawing on the natural history of “brook land” and celebrating green street improvements along this corridor.







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## Station – Urban Design:

SE 17<sup>th</sup> Ave & Rhine St Station; SE Powell Blvd to SE Center Street







## Station – Urban Design:

SE 17<sup>th</sup> Ave & SE Holgate Blvd Station; SE Center Street to SE McLoughlin Blvd

### Key Issues-

- Holgate TOD opportunities
- Brooklyn & SE Portland neighborhood connections
- Reinterpretation of SE 17<sup>th</sup> Avenue; bicycles & pedestrian
- SE 17<sup>th</sup> TOD; retail & housing

### Key Elements-

- Station- stainless steel metal roof shelters
- Elements of Distinction- Bicycle Parking/Shelter
- Public Art- Bill Will



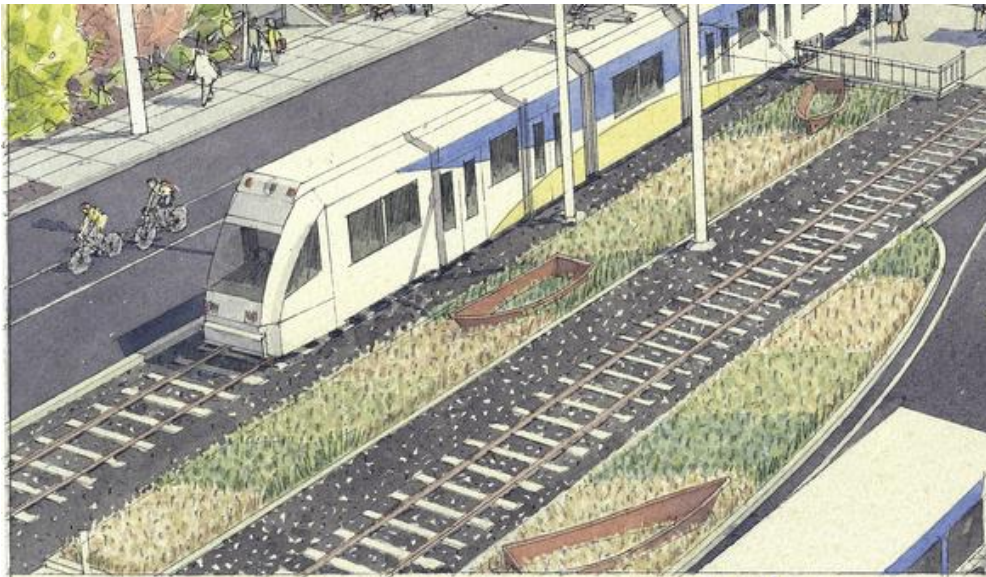


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## Station – Urban Design:

SE 17<sup>th</sup> Ave & SE Holgate Blvd Station; SE Center Street to SE McLoughlin Blvd

Public Art-  
Bill Will







## Station – Urban Design:

SE 17<sup>th</sup> Ave & SE Holgate Blvd Station; SE Center Street to SE McLoughlin Blvd







## Station – Urban Design:

SE McLoughlin Blvd.; SE Harold Street to SE Tacoma Street

### Key Issues-

- Access to UPRR at Harold Street
- Habitat restoration at Crystal Springs
- SE McLoughlin Blvd existing trees along McLoughlin are not impacted at all!





## Station – Urban Design:

SE Bybee Station; Sellwood-Moreland & Eastmoreland

### Key Issues-

- Connections to SMILE
- Bus pull out/ modal connection
- 2<sup>nd</sup> turnout, eastbound

### Key Elements-

- Station- glass roof shelters
- Elements of Distinction- Station specific 'Headhouse', Bike central parking, Glass enclosed elevators
- Public Art- Dana Lynn Louis





## Station – Urban Design:

SE Bybee Station; Sellwood-Moreland & Eastmoreland

### Key Issues-

- Second turnout, eastbound

### Key Elements-

- Elevator access to platform







## Station – Urban Design:

SE Bybee Station; Sellwood-Moreland & Eastmoreland

Public Art- Dana Lynn Louis

A rotating lantern with imagery inspired by Crystal Springs serves as a beacon for the station.





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## Station – Urban Design:

SE Bybee Station; Sellwood-Moreland & Eastmoreland

Public Art- Dana Lynn Louis

Drawings abstracted from nature are etched into the elevator and windscreen glass and appear in two light projections on the station platform.



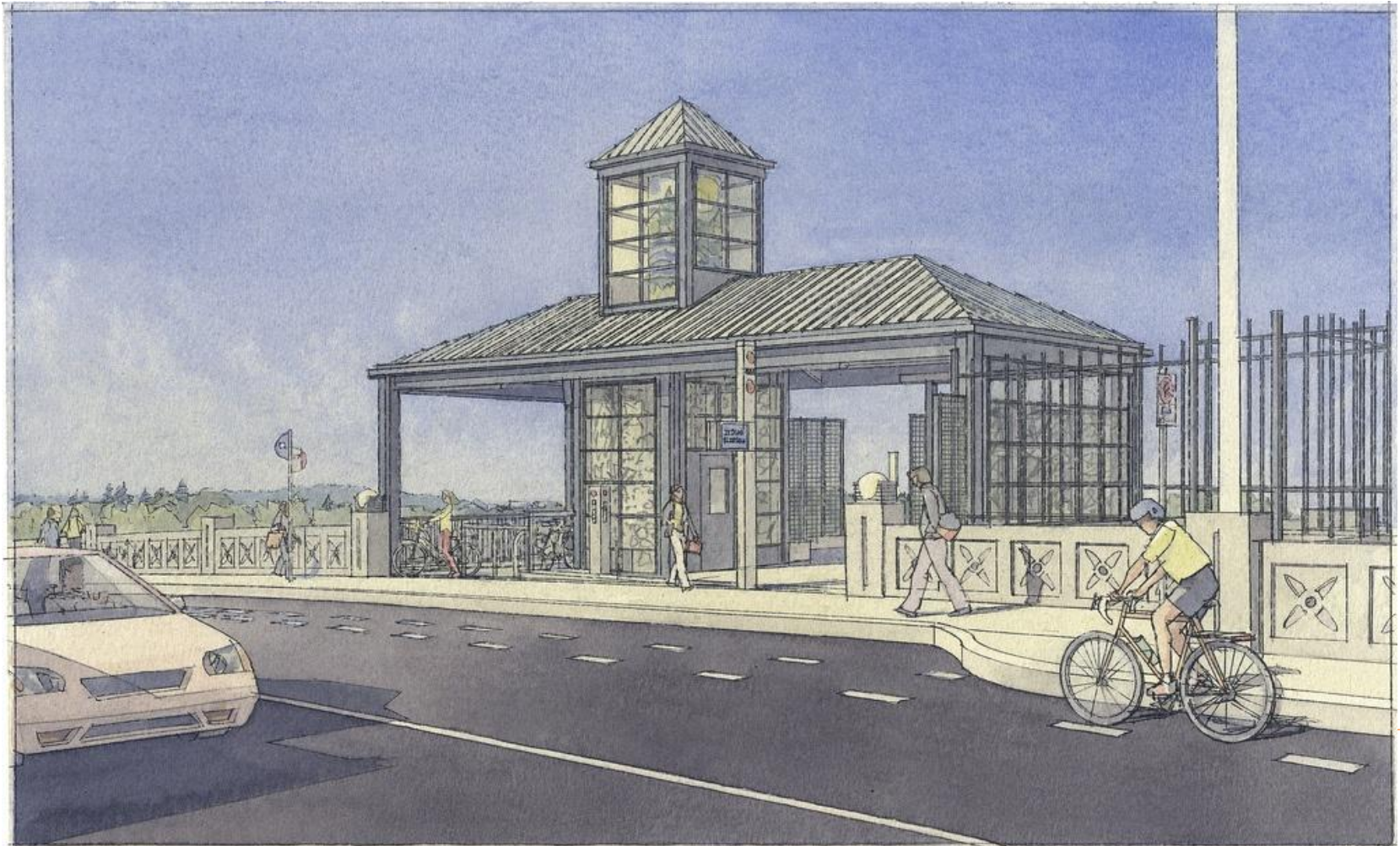




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## Station – Urban Design:

SE Bybee Station; Sellwood-Moreland & Eastmoreland







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## Station – Urban Design:

SE Bybee Station; Sellwood-Moreland & Eastmoreland







## Station – Urban Design:

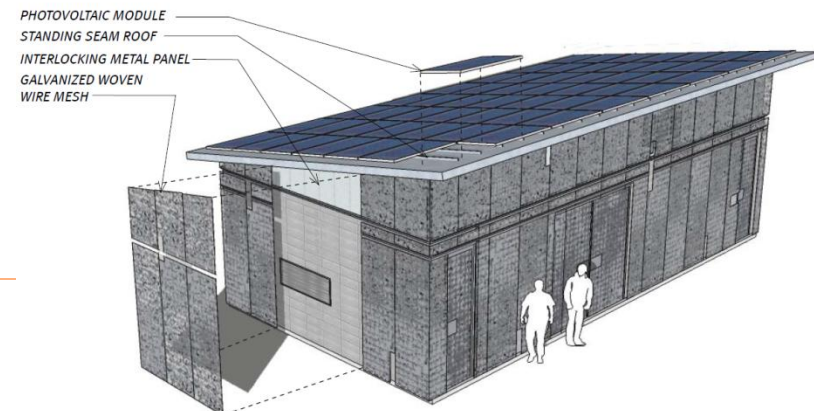
SE Tacoma St/ Johnson Creek Station and Park & Ride; SE Tacoma Street to Springwater Corridor

### Key Issues-

- Connectivity to adjacent neighborhoods & Springwater Corridor
- Johnson Creek habitat
- Capture commuter auto traffic
- TOD potential; Pendleton Woolen Mills

### Key Elements-

- Station- stainless steel metal roof shelter
- Elements of Distinction- bike & ride station, solar & regenerated energy, Habitat restoration, Sustainable 'landscaping'
- Public Art- Thomas Sayre





## Station – Urban Design:

SE Tacoma St/ Johnson Creek Station and Park & Ride; SE Tacoma Street to Springwater Corridor

**Public Art-** Thomas Sayre

Two large earth-cast wheels serve as landmarks for the station and reference the history of Johnson Creek, where a 19th-century sawmill first turned the wheels of local industry.







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## **Station – Urban Design:**

SE Tacoma St/ Johnson Creek Station and Park & Ride; SE Tacoma Street to Springwater Corridor







## Station – Urban Design:

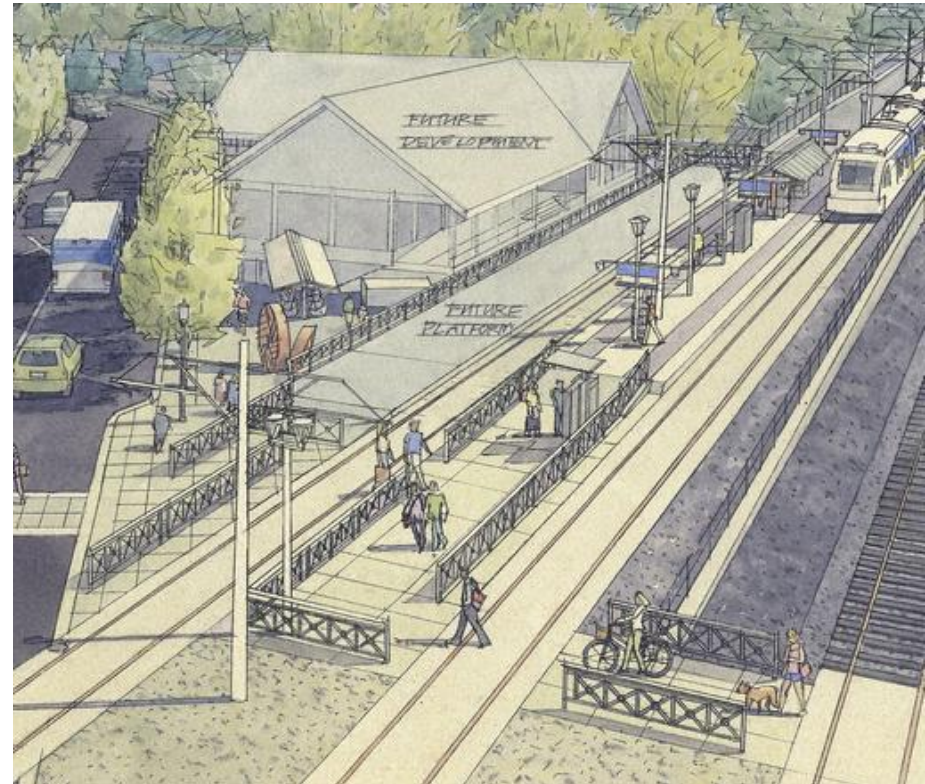
Milwaukie/Main St Station; Main Street to SE 21<sup>st</sup>

### Key Issues-

- TOD adjacent to station
- Pedestrian/bike access improvements
- Adjacent to UPRR tracks
- Catalyze downtown planning/development, Lake Road redesign

### Key Elements-

- Station- glass roof shelter
- Elements of Distinction- Milwaukie Design Guidelines,
- Public Art- Brian Goldbloom





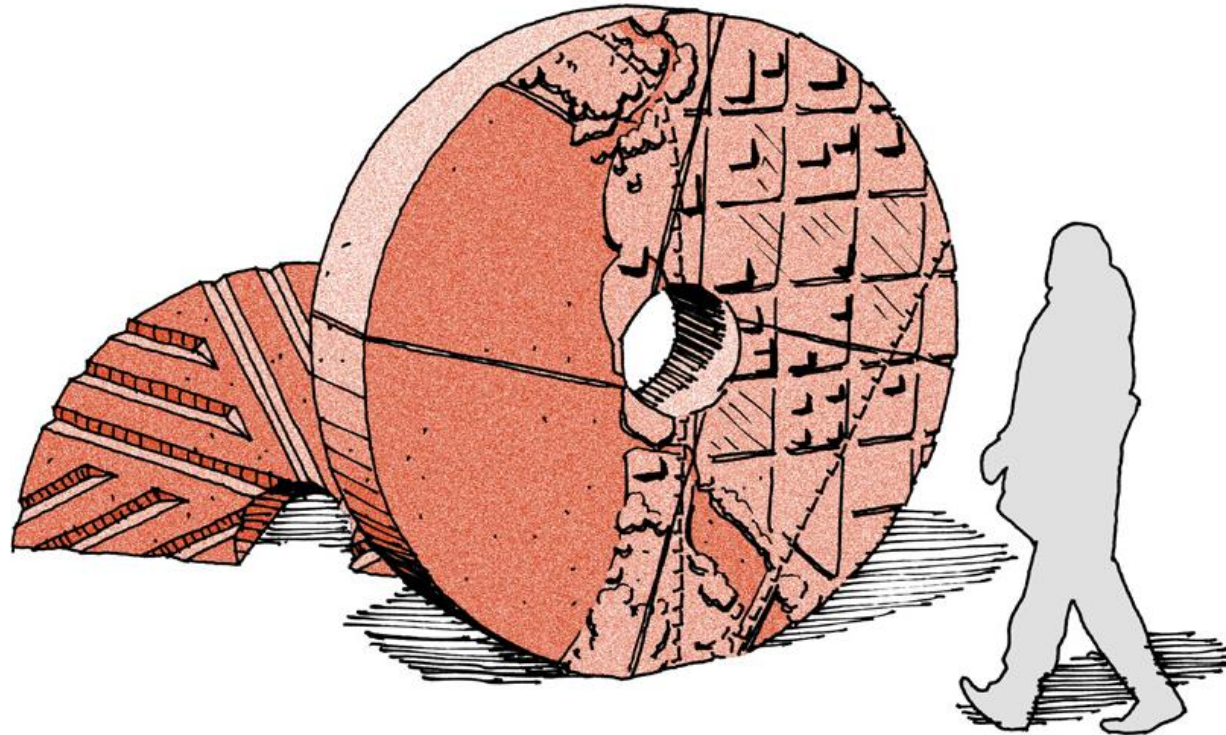


## Station – Urban Design:

Milwaukie/Main St Station; Main Street to SE 21<sup>st</sup>

**Public Art-** Brian Goldbloom

A pair of carved granite milestones at the north entrance of the station alludes to the flour mill that was once at the site.



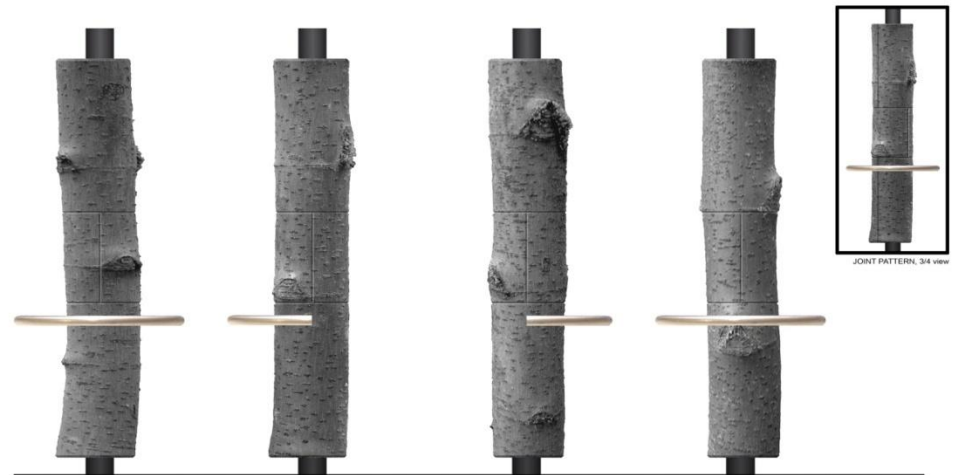


## Station – Urban Design:

Milwaukie/Main St Station; Main Street to SE 21<sup>st</sup>

Public Art- Brian Goldbloom

Carved granite stone 'tree trunks' clad the station's shelter columns, as reference to Oregon white oak, once plentiful in the region.



**SHELTER COLUMN ARTWORK**  
Milwaukie - Main Station  
scale: 1" = 1'-0"



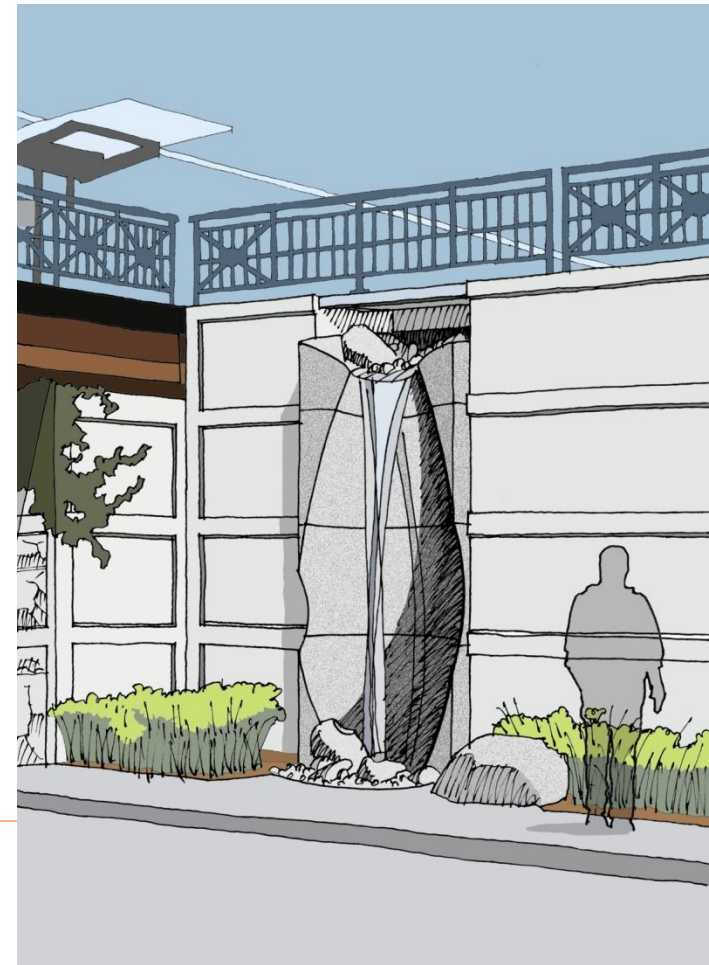


## Station – Urban Design:

Milwaukie/Main St Station; Main Street to SE 21<sup>st</sup>

**Public Art-** Brian Goldbloom

Next to the south station entrance, a carved granite streambed routes storm water into the landscaped area along Lake Road streetscape.





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## Station – Urban Design:

Milwaukie/Main St Station; Main Street to SE 21<sup>st</sup>







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## Station – Urban Design:

Milwaukie/Main St Station; Main Street to SE 21<sup>st</sup>





## Station – Urban Design:

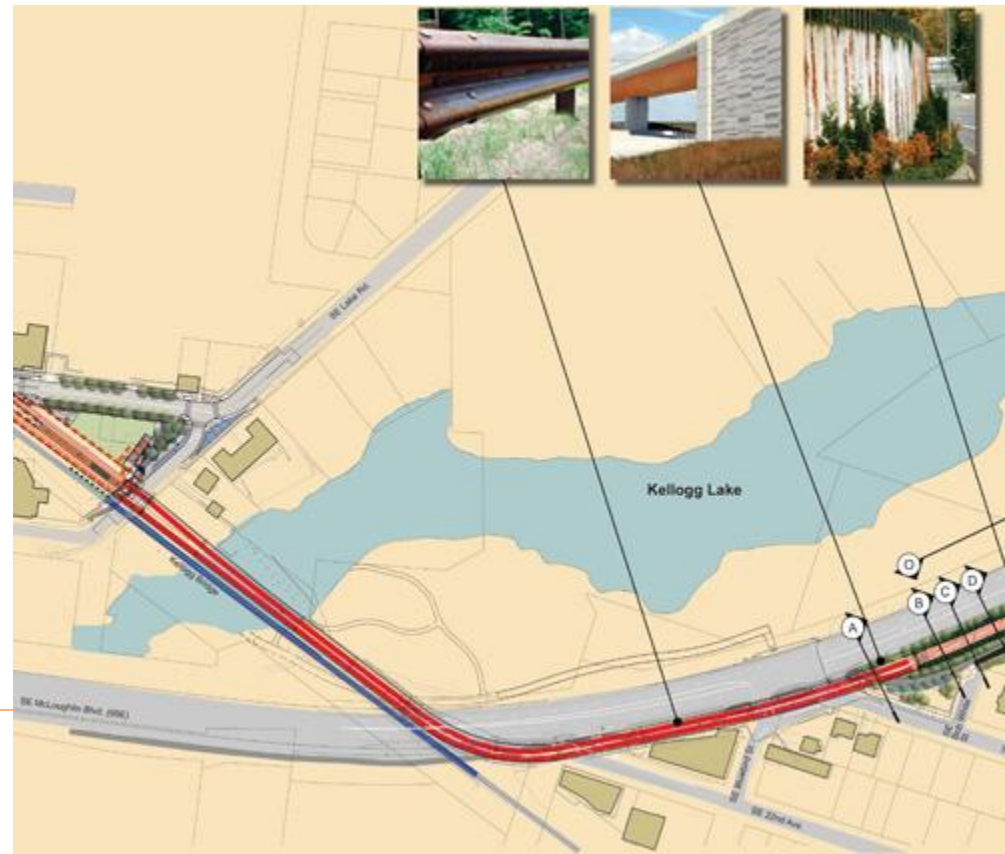
Milwaukie/Main St Station to SE Park Avenue Station; over and adjacent to McLoughlin Blvd

### Key Issues-

- Bridge over Kellogg Lake
- Elevated over McLoughlin Blvd.
- Touch down at Trolley Trail

### Key Elements-

- Weathered steel, elevated structure
- Cast concrete piers
- Public Art- Andre Caradec & Thom Faulders







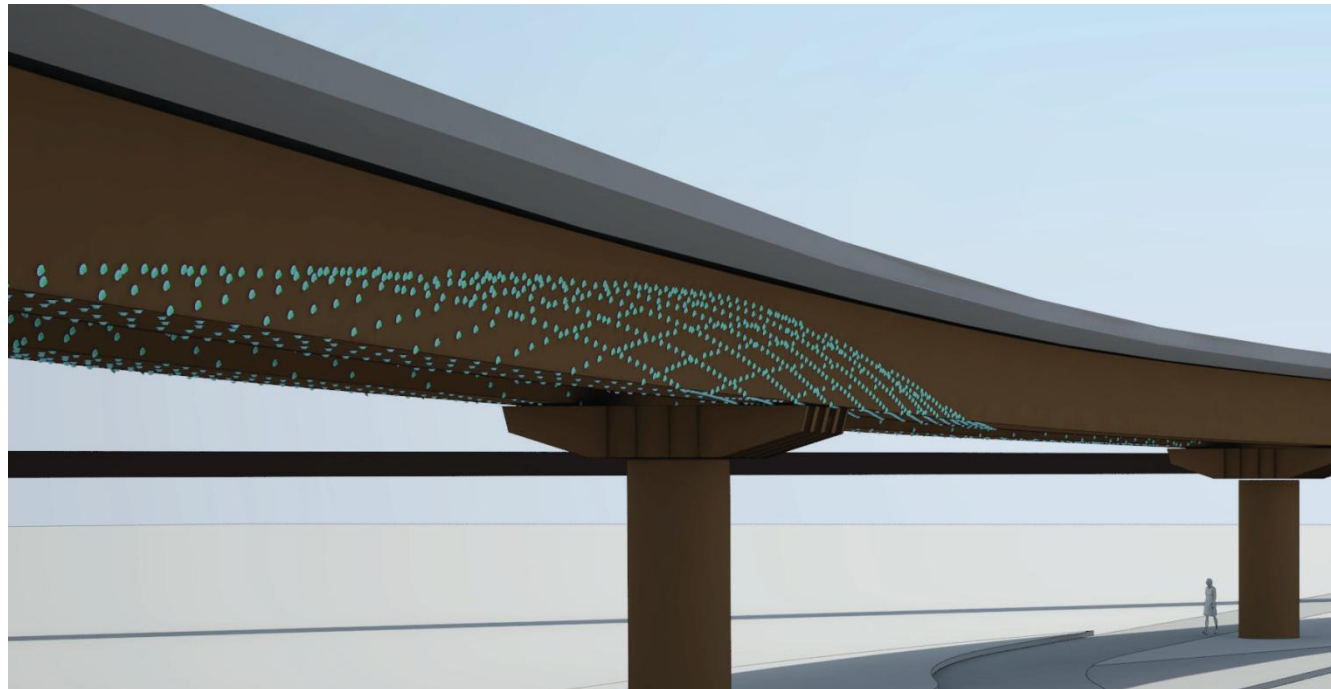
## Station – Urban Design:

Milwaukie/Main St Station to SE Park Avenue Station; over and adjacent to McLoughlin Blvd

### Public Art-

Andre Caradec & Thom Faulders

Multiple sky blue discs with green reflectors create a “flow zone” that appears to move over the Trolley Trail.





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## Station – Urban Design:

Milwaukie/Main St Station to SE Park Avenue Station; over and adjacent to McLoughlin Blvd







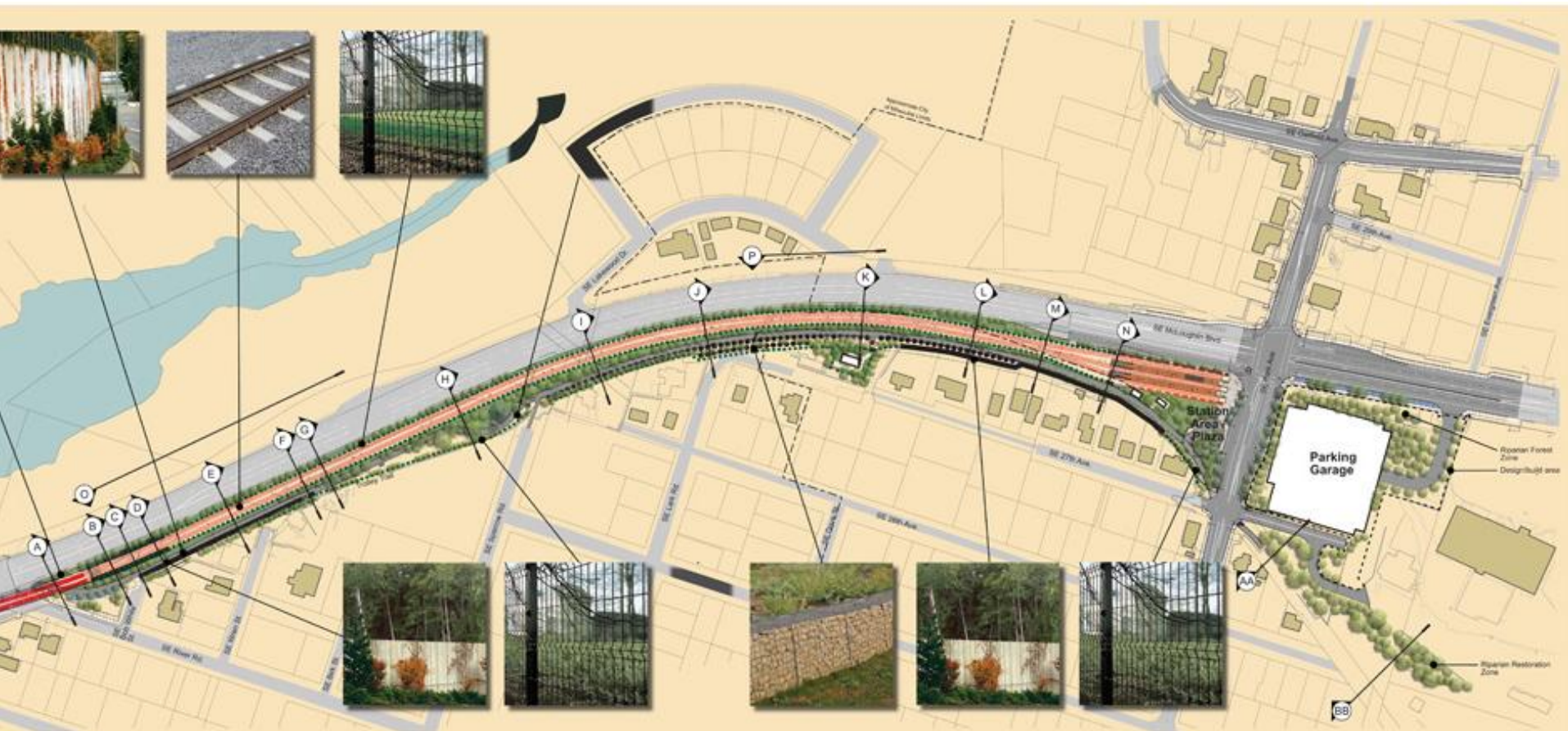
## Station – Urban Design:

Milwaukie/Main St Station to SE Park Avenue Station; over and adjacent to McLoughlin Blvd



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## Station – Urban Design:

Milwaukie/Main St Station to SE Park Avenue Station; over and adjacent to McLoughlin Blvd





## Station – Urban Design:

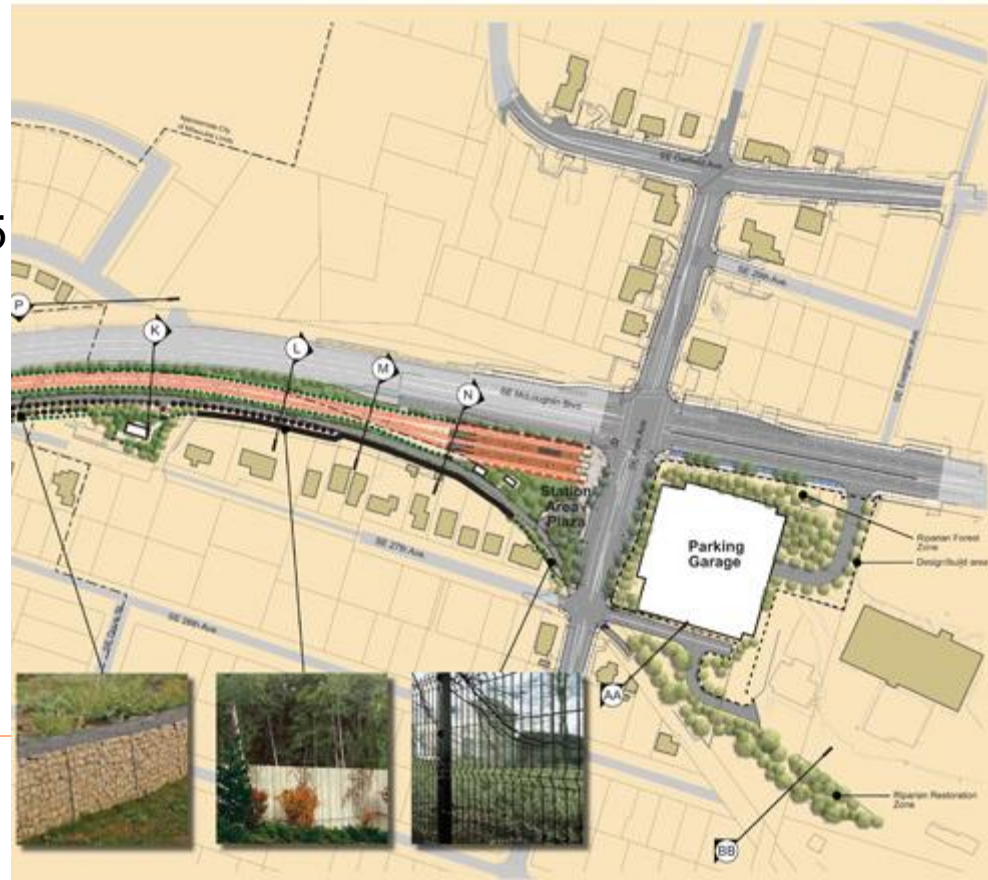
SE Park Ave Station and Park & Ride; at SE Park Avenue and McLoughlin Blvd

### Key Issues-

- Connections to Trolley Trail
- Collaboration with community
- ‘Greening’ goals
- Catalyze TOD to the south
- ‘Green’ parking structure (355 spaces)

### Key Elements-

- Station- glass roof shelters
- Elements of Distinction- Eco-roof buildings, habitat restoration, plaza
- Public Art- Susan Zoccola







## Station – Urban Design:

SE Park Ave Station and Park & Ride; at SE Park Avenue and McLoughlin Blvd

Public Art- Susan Zoccola

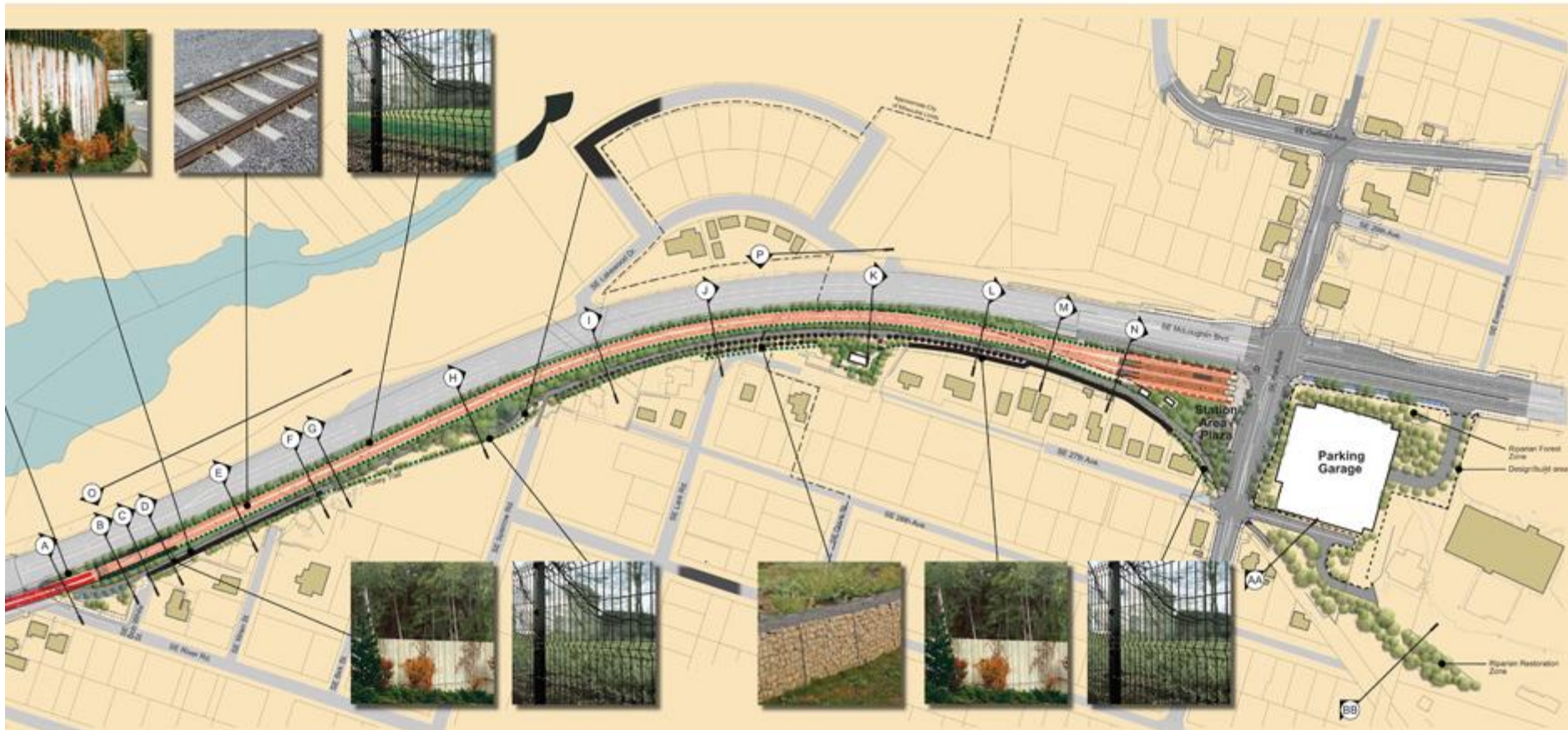
Three tall arches join to form an open canopy-like sculpture that serves as a landmark for the plaza and a gathering place for the community





## Station – Urban Design:

SE Park Ave Station and Park & Ride; at SE Park Avenue and McLoughlin Blvd







## Station – Urban Design:

SE Park Ave Station and Park & Ride; at SE Park Avenue and McLoughlin Blvd





## Station – Urban Design:

### System's Buildings

#### Key Issues-

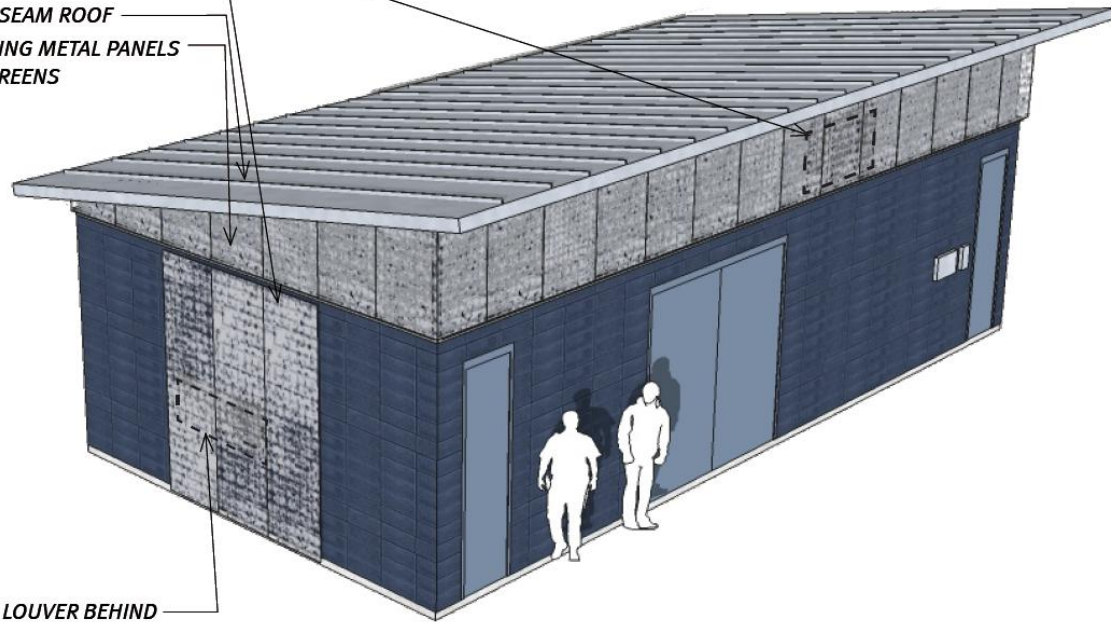
- Upgrade HVAC system
- Upgrade maintainability, vandal resistance
- 'Family' of sizes & types

#### Key Elements-

- Clean, straightforward design
- Site build
- Common materials- use un-common craftsmanship

AIR EXHAUST LOUVER BEHIND  
CNC LASER-CUT METAL SCREENS  
STANDING SEAM ROOF  
INTERLOCKING METAL PANELS  
BEHIND SCREENS

AIR INTAKE LOUVER BEHIND



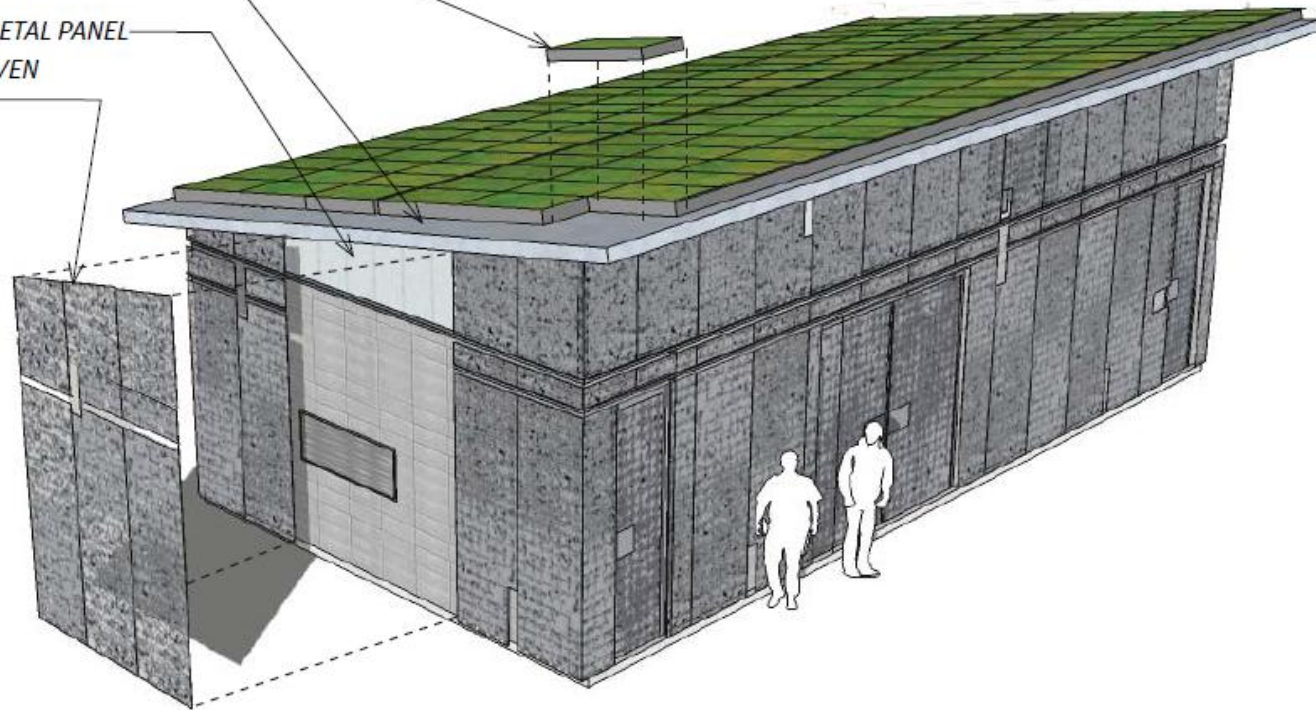
Substation-base design with glazed tile exterior





## Station – Urban Design: System's Buildings

*PRE-VEGETATED GREEN ROOF MODULE*  
*BUILT-UP ROOF*  
*INTERLOCKING METAL PANEL*  
*GALVANIZED WOVEN WIRE MESH*



Substation: Eco-roof alternative design, with woven wire mesh screening



## Station – Urban Design: System's Buildings

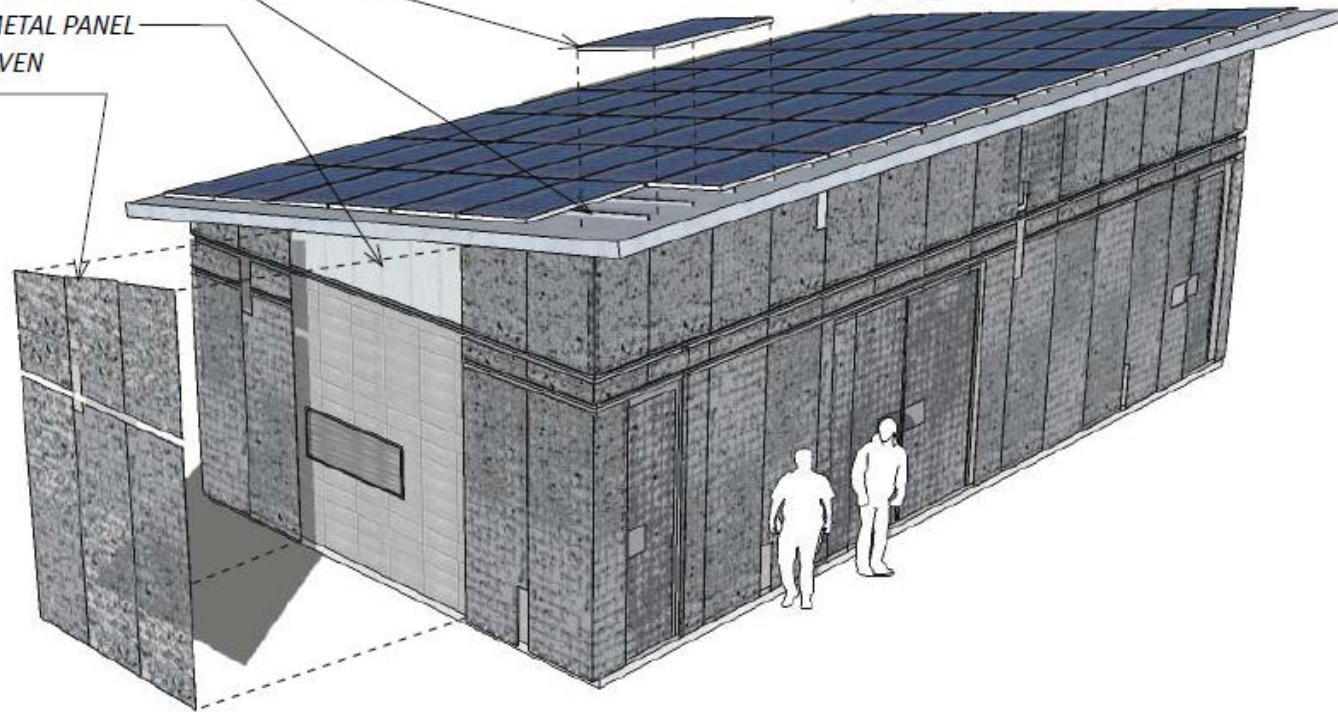
PHOTOVOLTAIC MODULE

STANDING SEAM ROOF

INTERLOCKING METAL PANEL

GALVANIZED WOVEN

WIRE MESH



Substation: Solar Energy-roof alternative design, with woven wire mesh screening





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**Thank you!**

<http://trimet.org/pm/index.htm>

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