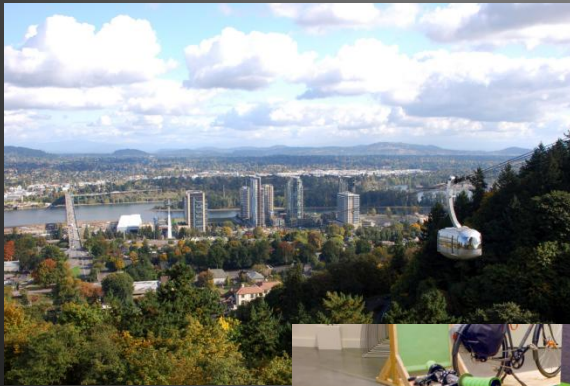


# Pacific Northwest Transportation Goodness And Interestingness\*

\* Technical term.



# Contents – 100% pictures, but a lot of them

## Seattle

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# Seattle: Light Rail & Subway

Seattle just began building light rail recently. They have one line open, with several more planned. The line that is open begins at the airport and goes to downtown.

This is the airport station:





# Seattle: Light Rail & Subway

It runs on the surface for most of its length.

In this picture it is passing a King County Metro bus facility.





# Seattle: Light Rail & Subway

Rail yard. I'm not sure if the green poles are just decorative, or if they hold up the catenary. This picture is from the top of a downtown skyscraper, zoomed way in.





# Seattle: Light Rail & Subway

When the light rail arrives downtown, it moves into a subway. The first subway station is next to Seattle's two historic intercity rail depots.

In this picture, the subway station is below the open-air plaza on the far left. The plaza functions as the station's mezzanine. The two prominent brick buildings are the intercity stations (more on those later).



# Seattle: Light Rail & Subway

This is that first subway station:





# Seattle: Light Rail & Subway

The cool thing about Seattle's subway is that it carries both trains and buses.

It was originally built as a bus tunnel, and only later retrofitted for light rail. Buses still use it.



# Seattle: Light Rail & Subway

The next station is Pioneer Square. Looks a little like WMATA.

Note the low floor platforms.





# Seattle: Light Rail & Subway

They do a really nice job with wayfinding. All this info is right on the platform.





# Seattle: Light Rail & Subway

This is the next station down. Nothing stops people from simply walking across the tracks to the opposite platform, except a sign.

I really like the compass embedded in the floor.



# Seattle: Light Rail & Subway

This is Westlake station, the main downtown intermodal hub. There are some interesting things about it...





# Seattle: Light Rail & Subway

The mezzanine extends the entire length along the station, immediately above the tracks. There are exits to the street at both ends, and in the middle.





# Seattle: Light Rail & Subway

Commuter store? Yes please.



# Seattle: Light Rail & Subway

Here's something you don't see in the DC area.





# Seattle: Light Rail & Subway

Here's something you do, unfortunately.





# Seattle: Light Rail & Subway

An extension is under construction north of downtown. This building will be a station.



# Seattle: Light Rail & Subway

Subway under construction in the Capitol Hill neighborhood (they have one too).





# Seattle: Streetcar

The streetcar is just getting started. It is just over 1 mile long, and started running in 2007. It's the first line in what they hope will be larger network.

They use the same vehicles as Portland and DC.





# Seattle: Streetcar & Monorail

This is Westlake Station again, above ground. The ground-level tracks are the streetcar's terminal stop. The elevated train is the monorail. Also note the articulated bus and the covered bike parking.





# Seattle: Monorail

Unfortunately the monorail is little more than a novelty for tourism. It only has two stops, going from Westlake to the tourist center where the Space Needle is located.





# Seattle: Monorail

This is the monorail's Westlake terminal. The building it's attached to is a shopping mall.





# Seattle: Monorail

Monorail interior.





# Seattle: Monorail

The other end: Seattle Center Station. Note the “track”.





# Seattle: Intercity & Commuter Rail

Remember this picture? The subway station is the plaza on the left. The two historic red brick buildings are Union Station (left/center) and King Street Station (right).





# Seattle: Intercity & Commuter Rail

Union Station is no longer used for transportation, but it sure is pretty.





# Seattle: Intercity & Commuter Rail

King Street Station serves Amtrak trains and “Sounder” commuter rail trains.





# Seattle: Intercity & Commuter Rail

Like many rail stations around the US, King Street Station was allowed to degrade in the 20<sup>th</sup> Century. It is currently being renovated.

## YESTERDAY. TODAY. TOMORROW. KING STREET STATION restoration project



For over one hundred years, King Street Station has served as a gateway for millions of train travelers coming into Seattle and the Pacific Northwest. It has connected our region to the rest of the country, spurred economic growth, and helped establish Seattle as a major metropolitan city. Unfortunately, the station has fallen into disrepair and has been unable to keep up with the demands of a growing number of commuters and travelers.

In February 2008, the city of Seattle purchased the landmark building from Burlington Northern Santa Fe (BNSF) Railway Company. The Seattle Department of Transportation (SDOT) is working with the community and its transportation partners to restore King Street Station to its former prominence and establish it as a modern transportation hub.

### The city of Seattle's \$50 million restoration of King Street Station will:

- Restore the building's historic character and grandeur
- Upgrade facilities to meet present and future needs of rail and transit users
- Enhance passenger safety and security
- Promote sustainable design with a LEED Platinum building certification
- Support efforts to transform the station into a modern transportation hub

### Thank you, Seattle!

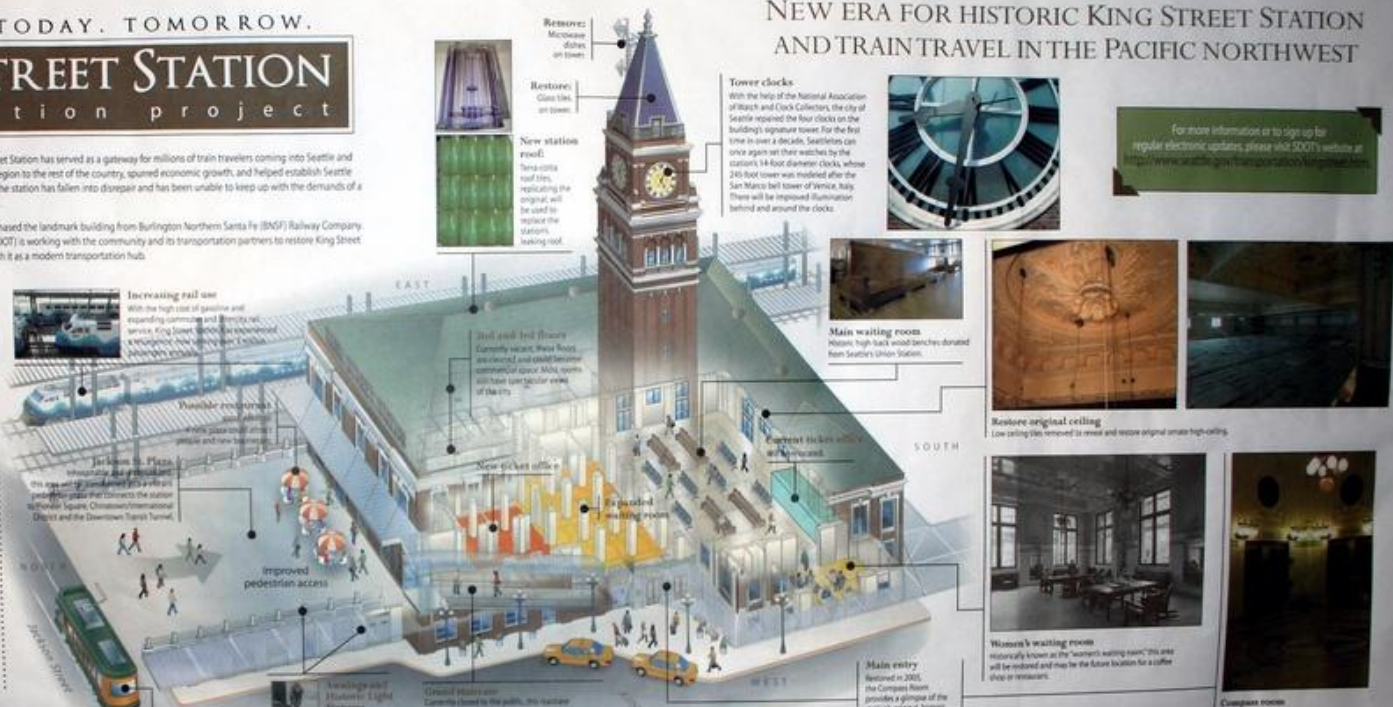


Ten million dollars to fund the restoration of King Street Station were provided by the Bridging the Gap transportation initiative, approved by Seattle voters in 2006. Thanks to our federal, state and local partners who have contributed \$40 million.

### CHRONOLOGY



## NEW ERA FOR HISTORIC KING STREET STATION AND TRAIN TRAVEL IN THE PACIFIC NORTHWEST



For more information or to sign up for regular electronic updates, please visit SDOT's website at <http://www.seattle.gov/transportation/kingstreetstation>



# Seattle: Intercity & Commuter Rail

King Street Station interior.



# Seattle: Intercity & Commuter Rail

This is a Sounder train. Sounder operates a lot like VRE and MARC.





# Seattle: Intercity & Commuter Rail

Sounder is a new system. The trains arrived a couple of years before the rails were ready, so for a few years some Sounder trains were leased to VRE and run in Virginia. This picture is from Burke, in Fairfax County.



# Seattle: Buses

Seattle has a pretty serious bus system. Since it is a fairly large city that until recently didn't have rail service, they move a lot of people via bus.

Seattle is the only city I have ever seen where articulated "accordion" buses visibly outnumber regular buses. They seem to be a clear majority, at least in the neighborhoods I visited.





# Seattle: Buses

Seattle is one of only 5 cities in the US to use trolley buses – buses powered by overhead wires. They cost more, but they are smoother, quieter, and cleaner than diesel, and they provide some of the sense of permanence that you get with rail. I'm a fan.



# Seattle: Buses

The other US cities that use trolley buses are San Francisco, Boston, Philadelphia, and Dayton.





# Seattle: Buses

Here's a close-up of the trolley arms and wires.





# Seattle: Buses

Most of the buses pictured so far have been King County Metro buses. They are local. Sound Transit also runs regional buses. Sound Transit is the agency that also runs the light rail and Sounder.





# Seattle: Buses

King County Metro has a premium bus service called Rapid Ride. It's not full BRT, but has a limited number of nice stops, runs in HOV, and has signal priority.



*Eribisu*

*This picture from flickr user Eribisu 27.*



# Seattle: Buses

In addition to the bus/train subway, there is some other interesting bus infrastructure. In a few locations there are median bus stops with short bus-only lanes.





# Seattle: Buses / Bikes

Here's a bus/bike lane. Similar to 7<sup>th</sup> Street in DC.



# Seattle: Bikes

Surprisingly, I did not see that much on-street bike infrastructure. The major exception was sharrows, which are liberally used throughout the city.





# Seattle: Bikes

There is a lot of bike parking, much of it covered. This is from the Westlake streetcar stop.



# Seattle: Bikes

On University Way they provide bike parking with a series of these on each block.

I like this look, although it's somewhat less functional than a traditional U rack.





# Seattle: Miscellaneous - Ferries

Seattle has a lot of ferries. I didn't ride any, but they look interesting.





# Seattle: Miscellaneous – Park and Ride

Using the land under an elevated highway as a park and ride is pretty clever.





# Portland: Light Rail

Light rail works better in Portland than I have seen it work in any other American city. While places like Denver and Dallas try to use light rail as a less expensive express system for commuters, Portland embraces it as an on-street technology. It runs slowly, but it works because Portland is not a very large city. Its urban scale feels more like Arlington than DC.





# Portland: Light Rail





# Portland: Light Rail

Some of the downtown streets where light rail runs have been converted to “transit malls,” where cars are completely prohibited.





# Portland: Light Rail

Outside of the central city, it looks more like this. Note the bulb out at the pedestrian crossing.





# Portland: Light Rail

Portland is the only American city I can think of where I've seen a curved station platform. I thought this was against FTA rules, but perhaps not.



# Portland: Light Rail

Dedicated space inside trains for bikes is nice, although it takes up a lot of room.

WMATA doesn't allow bikes on Metro trains at rush hour because trains are already filled to capacity.

I wonder what peak commuter crush load is like in Portland.

On the other hand, if you prohibited bikes at rush hour, this would provide extra standing room.





# Portland: Light Rail & Streetcar

The light rail runs in its own lane while the streetcar shares with cars, but otherwise they offer pretty similar service in the central city. In this picture, the white train is light rail and the red one is streetcar.





# Portland: Streetcar

The streetcars are fantastic. They look amazing, and are very popular.





# Portland: Streetcar





# Portland: Streetcar





# Portland: Streetcar

Stops are pretty basic.





# Portland: Streetcar

Dear Streetcar Skeptics,  
No, streetcars and buses are not identical.





# Portland: Streetcar

This developer clearly embraced the streetcar.



# Portland: Intercity Rail

The “go by streetcar” sign is a play on Portland’s nearby Union Station, which has had a “go by train” sign for decades. As you can see, Union Station is under renovation just like Seattle’s King Street Station.





# Portland: Intercity Rail

There are no commuter rail lines going to downtown Portland, so Amtrak is the only user of Union Station. Here's the interior.



# Portland: Buses

Portland's buses seemed pretty simple and straightforward. There wasn't much to note, except some interesting stops.





# Portland: Buses





# Portland: Buses

Note the “frequent service” flag, and the bench.





# Portland: Aerial Tram

Portland's most unique form of transportation is an aerial tram that goes from a riverfront neighborhood up a steep hill to a university/hospital campus.



# Portland: Aerial Tram

The tram's lower end is amidst those tall buildings. They are TOD, focused around the tram and the streetcar.





# Portland: Aerial Tram

The upper station.



# Portland: Aerial Tram

Waiting area in the lower station.





# Portland: Aerial Tram

Entrance to the lower station.





# Portland: Aerial Tram & Bikes

That's a lot of bikes. And this is only about half of them; I couldn't get them all in one picture.





# Portland: Bikes

Portland's reputation for bike infrastructure is well-earned. There are great-looking bike lanes everywhere. Many are painted green for extra visibility.





# Portland: Bikes

Bike box.





# Portland: Bikes

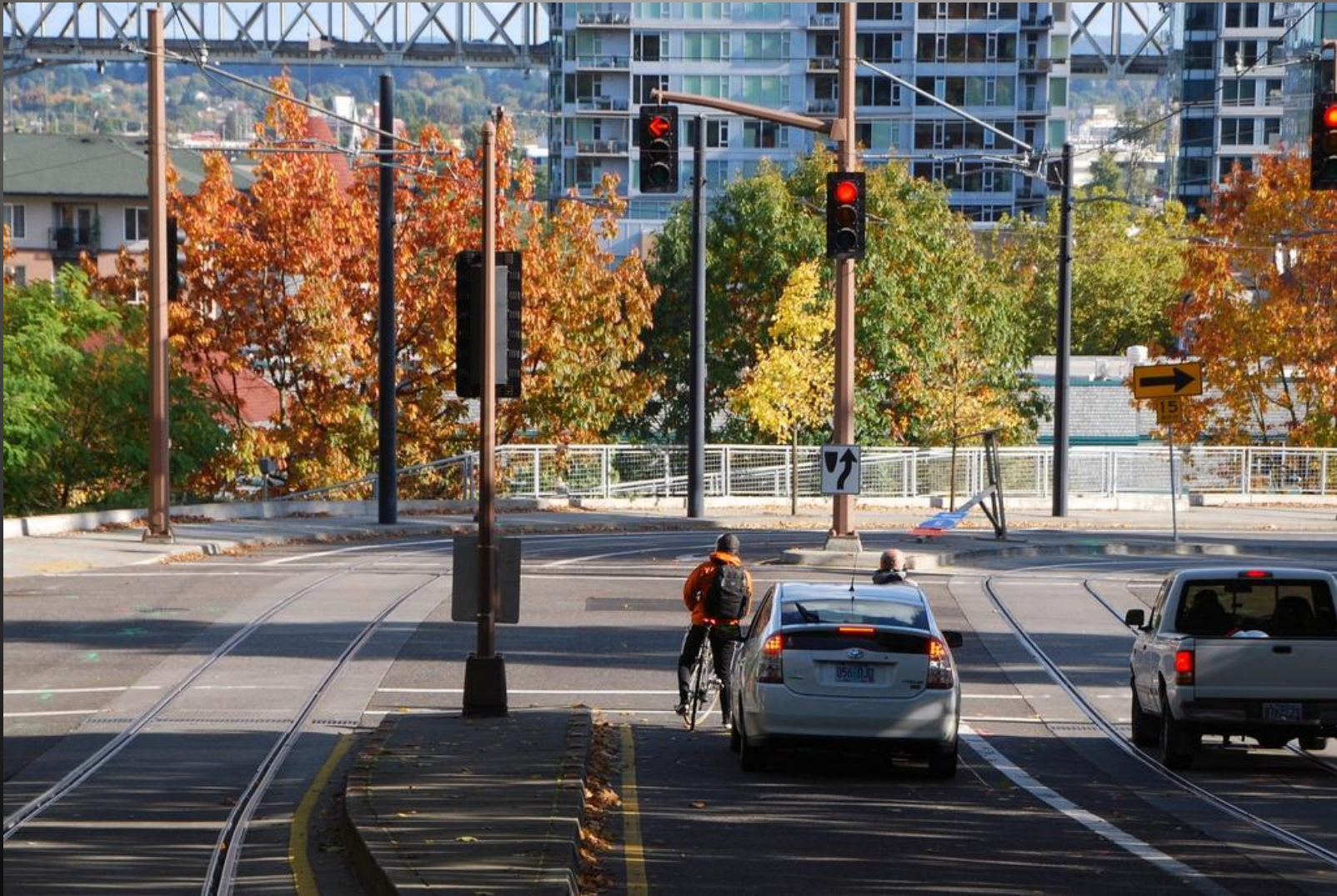
Cycle track.





# Portland: Bikes

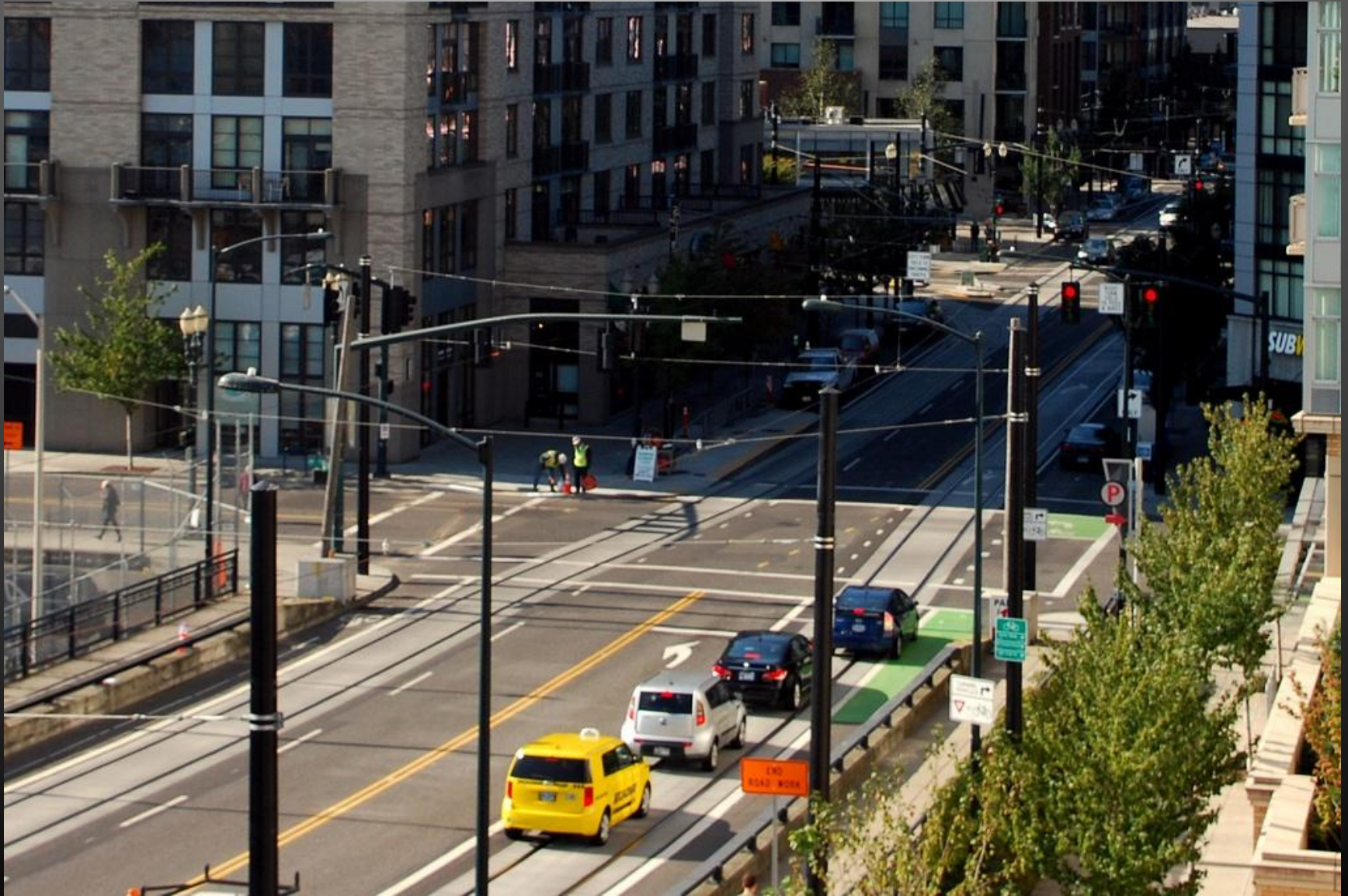
Bikes coexist with the streetcar perfectly well, just as they do in Amsterdam and many of Europe's best biking and transit cities.





# Portland: Bikes

Green bike lane and streetcar tracks side by side.





# Portland: Bikes

Wayfinding and covered parking.





# Portland: Bikes

Public stairs with a channel for bikes.





# Portland: Utility Bike Design Contest

A local museum had an exhibit in which bike designers were challenged to build a bike specifically oriented for urban utility transportation, instead of racing or recreation.

*More information at <http://oregonmanifest.com>.*





# Portland: Utility Bike Design Contest





# Portland: Utility Bike Design Contest





# Portland: Utility Bike Design Contest





# Portland: Utility Bike Design Contest



FUSEPROJECT x SYCIP DESIGNS



# Vancouver: SkyTrain

“SkyTrain” is the name of Vancouver’s rail system. It is technically light rail, but it is fully grade separated so it operates more like a heavier metro system. It is named “SkyTrain” because originally most of it was elevated.





# Vancouver: SkyTrain

However, some of it runs in a subway.





# Vancouver: SkyTrain

This is the front of a train. Can you spot what's weird about it?

(Answer on the next slide.)





# Vancouver: SkyTrain

## Answer:

SkyTrain is 100% automated. Trains do not have operators or operator cabs in the front.

This makes them much less expensive to operate, because they don't have to pay so many employees.

Since the trains are less expensive to operate, they can run more often. **Even at off-peak hours headways are less than 5 minutes.**

Since trains can run so frequently, they do not have to be as long. Subway stations are only long enough for 2 or 3 railcars, which makes them cheaper to build.

It's a *\*very\** impressive concept.



# Vancouver: SkyTrain

Inside a train. Note the multi-pole hand-holds, which allow more people to hold on while standing.



# Vancouver: SkyTrain

Oddly, there are no faregates. Despite the system being fully grade separated, payment is handled on the honor system like many light rail lines. You are not supposed to enter a “fare paid zone” unless you have a fare.





# Vancouver: SkyTrain

Suburban subway entrance. Note the compass embedded in the sidewalk.



# Vancouver: Intercity & Commuter Rail

Amtrak trains from the US go to Pacific Central Station. Like every other intercity rail station I used on this trip, it was under renovation.





# Vancouver: Intercity & Commuter Rail

Amtrak's train to Vancouver has a special fenced-off platform, to keep the platform on the US side of customs.





# Vancouver: Intercity & Commuter Rail

Pacific Central Station interior.





# Vancouver: Intercity & Commuter Rail

Waterfront Station is a few blocks away, and is the downtown hub for commuter rail and ferry services.



# Vancouver: Intercity & Commuter Rail

Waterfront Station interior.





# Vancouver: Intercity & Commuter Rail

Waterfront Station back side.



# Vancouver: Intercity & Commuter Rail

West Coast Express is like VRE.





# Vancouver: Intercity & Commuter Rail





# Vancouver: Buses

Like Seattle, Vancouver has trolley buses.





# Vancouver: Buses

An articulated trolley bus has got to be about as close to a streetcar as you can get, and still be a bus.



# Vancouver: Buses

Vancouver has a premium bus service called the “B-line”. One of its features is 3-door boarding, which greatly speeds up dwell time at stops.





# Vancouver: Ferries

Vancouver has a large ferry called the “Seabus” that goes from Waterfront Station to North Vancouver, every 15 minutes.



# Vancouver: Ferries

Interior of the ferry terminal.





# Vancouver: Ferries

Interior of the ferry itself.



# Vancouver: Ferries

They also have these little guys, which stay in the shallower water.





# Vancouver: Bikes

Vancouver has \*great\* bike infrastructure. There are cycle tracks everywhere.





# Vancouver: Bikes





# Vancouver: Bikes

Note the bike parking integrated with the cycle track curb, which doubles as a pedestrian bulb-out. Very clever.





# Vancouver: Bikes

Note how this one interacts with the bus stop.





# Vancouver: Bikes

They have a bike count program too.





# Vancouver: Bikes

There are also a number of off-street sidepaths.





# Vancouver: Bikes





# Vancouver: Bikes





# Vancouver: Bikes

They seem to use both red paint and green paint to designate bike lanes.

The left picture is a bike box.





# Vancouver: Bikes

There are a number of bike boulevards, especially in the outer neighborhoods.





# Vancouver: Bikes





# Vancouver: Bikes

The crown jewel of Vancouver's bike network is the seawall, a trail around the perimeter of the peninsula that the city is built upon.

Note how signs and barriers separate bike traffic from pedestrian traffic.





# Vancouver: Bikes





# Vancouver: Bikes





# Vancouver: Bikes

The north end of the Vancouver peninsula is a giant park. The seawall continues around it. Unfortunately, in the park the seawall is one-way only, which greatly limits its transportation utility. Note the painted one-way marking on the path.





# Vancouver: Bikes

The cycle tracks and trails are great as long as you can stay on them, but I've never felt as unsafe biking in mixed traffic as I did in Vancouver. Drivers and peds were actively hostile on multiple occasions. And then there was this (on an SUV, for the record):





# Vancouver: Miscellaneous

Weirdly, parking on the sidewalk is sometimes allowed.





# The end!

Here are some highways. Yay!

