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Why Portland Is Building a Multi-Modal Bridge That Bans Cars

The first of its kind in the U.S., the Tilikum Crossing will reflect the city's enduring transit culture.

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The car-free Tilikum Crossing is being hailed the "bridge of the people." (Flickr/TriMet)

PORTLAND, Oregon—It's an early-summer morning at the construction site for Portland's first new bridge in a generation, the Tilikum Crossing, and Dan Blocher is feeling good about its progress. Completion is still a year away, but since the two ends of the bridge were connected in the middle several weeks ago, public response in self-described Bridgetown (when it's not, say, the Rose City, Stumptown or Rip City) has been positive.

"Most people can sort of viscerally recognize an inherent beauty when the bridge is properly designed for its need," says Blocher, executive director of capital projects for TriMet, the city's transit agency. "I think you know when you've got it right when the completed product just seems to fit, just like it belongs there. And we feel very good about the feedback we're getting on this bridge now that you can see what it's going to look like."

As we stand along the banks of the Willamette River, where workers are toiling both above us on the recently completed deck and below in small boats where the footings meet the water, Blocher points to a number of the bridge's unique design features. The H-shaped towers are smaller than those of most cable-stay bridges, for example. That's because Tilikum threads single cables up through the towers and down again to the deck, rather than using two sets of cables connected separately to the tower. The bike and pedestrian paths on either side also jut out in the middle, he says, to reduce wind drag. The angle of the white cables is meant to recall the triangular form of Mount Hood, standing tall in the distance and visible from the bridge.

Though cable-stay bridges such as these are common, perhaps even overly ubiquitous, the design by San Francisco's Donald McDonald is smaller and more slender than most multi-modal bridges, with a kind of jazzy, kinetic energy to its triangular forms. Looking up at the bridge in the morning light, it's not so absurd to hear Blocher reference a similarly framed and well-known image, from the movie *Manhattan:* a black and white shot of Woody Allen and Diane Keaton sitting before the Queensboro Bridge.

A rendering of the Tilikum Crossing, designed by San Francisco's Donald McDonald. (HNTB)

Yet within a few seconds, Blocher stops himself, with a kind of prideful admission. "It's an act of urban planning maybe even more so than a transit project," he says. Tilikum Crossing is the nation's first multi-modal bridge that will be off-limits to private automobiles. It will carry MAX light rail trains (the impetus for construction) as well as Portland's streetcar line and city buses, and of course pedestrian and bike lanes on both sides—but no cars. If the bridge looks elegant in its slenderness, that may be because the omission of private automobiles keeps it from taking on a more gargantuan array of lanes and entry/exit ramps.

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Portland has long been known for this kind of compact, pedestrian and transit-oriented planning. In the early 1970s, the city rejected a plan recommended by consultant Robert Moses to build an east-side freeway after a spirited citizen campaign against it; instead, federal highway funds were used to build Portland's first light rail line, MAX (for Metropolitan Area Express), one of thefirst such lines built in the United States since before World War II. In the 1980s, a multilane downtown thoroughfare along the Willamette River was removed to build a park. The city was among the first in the late 20th century to bring back streetcars.

This stretch of river also has long reflected America's changing economics, as well as its attitudes about city-building. As we watch Tilikum Crossing construction that morning, Blocher recalls seeing a photo from 1964 showing the west side of the Willamette at this site. Back then the river was lined with decommissioned Liberty Ships from World War II, while a massive bridge for the new Interstate 5 freeway, the Marquam, was under construction.

The reason for excluding cars at Tilikum Crossing was not a desire to pioneer or make a statement but rather a more practical reality. "What makes this one so unique is basically because it's a product of its environment. There's not a road network at either end of it, " Blocher explains. "Plus, we have this great redevelopment happening on both sides of the river, and we're going to carve it up with freeways on both sides? That's kind of a non-starter."

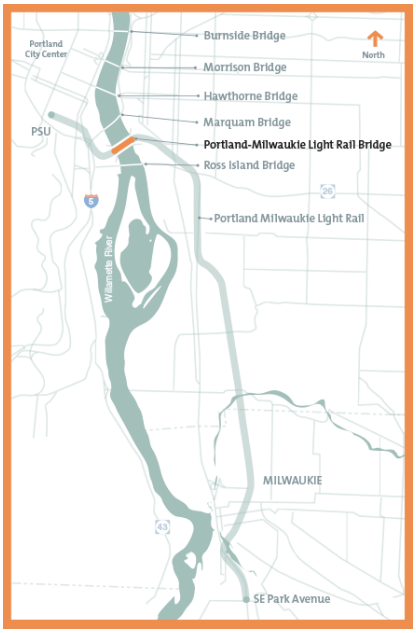
This 1964 photo of the west side of the Willamette River shows a massive bridge for the new Interstate 5 freeway, the Marquam, under construction (upper right). (City of Portland Archives)

Rather than building any new bridge, the cheapest option would have been to put MAX on the existing Hawthorne Bridge, although its century-plus age and frequent drawbridge lifts would have been problematic. Instead, the agency worked in close collaboration with City of Portland planners to span the river in a diagonal, northeast direction, dipping the west bridgehead south and thereby serving the burgeoning South Waterfront district. Tilikum

Crossing may be about moving light rail, but it's just as much about creating connections between new close-in 21st century neighborhoods.

Situated on a long, thin former brownfield site along the Willamette River that's hemmed in by Interstate 5, South Waterfront has cluster of tall condos and medical buildings that sprouted during the pre-recession real estate boom. Yet it was not merely a get-rich dream for private developers. The district is the centerpiece of Portland's (and Oregon's) ongoing effort to curb sprawl by increasing density on existing close-in land, much of it formerly industrial. Besides the condos, South Waterfront and the adjacent Zidell Yards (former shipyard land) are becoming home to a new riverfront campus for Oregon Health and Science University. While the freeway is close by, it can only be accessed in one direction, and most of South Waterfront thus feels disconnected from the broader downtown street grid. The district needs mass transit to flourish, which is why Portland extended both streetcar and light rail lines there in addition to the Portland Aerial Tram (only the nation's second such tram), connecting OHSU's hillside main campus with its new buildings along the water.

There was a time during the depths of the Great Recession when numerous South Waterfront condominiums were subject to foreclosure and high vacancy, but along with the return of the real estate market, the presence of Tilikum Crossing is helping to transform the district by connecting it to the rest of the city. That connection couldn't have been accomplished with new roads, because I-5's configuration wasn't going to change and the east side of the bridge is already filled with rail yards. TriMet and city planners realized a transit bridge was the best solution.



A map of Portland bridges, with the Tilikum appearing under the name Portland-Milwaukie Light Rail Bridge. (TriMet)

Besides the mix of high-density housing and a bio-sciences campus occupying the bridge's west side, the east side where Tilikum Crossing touches down is also eyed for future development. Although the Central Eastside district just north of the bridge is a protected industrial enclave—albeit increasingly home to creative-class workers in skinny jeans more than light industrial workers in Dickies—the acreage around the bridge near the Oregon Museum of Science and Industry is being rezoned as another high-density pocket of commercial and residential development. This will be part of the city's "innovation quadrant" that links west-side institutions like OHSU and Portland State University with the east side's OMSI and Portland Community College. In boom or bust, transit and planning have been in lock-step.

"I think transit agencies have to have an urban planning instinct, because they're about moving people around in some way other than a car," says Guinevere Millius, who heads the city's all-volunteer Design Commission and was part of Tilikum Crossing's advisory committee. "Transit has a huge impact on urban planning. I mean, if you look at our city, it was designed around streetcars. On some level, it has to be part of their DNA." Millius says the transit culture goes back to Portland's anti-Moses sea change in the early 1970s. "I think that original decision to turn down federal dollars for a freeway and instead to invest that in MAX, that's a fundamental shift that other American cities don't make," she says.

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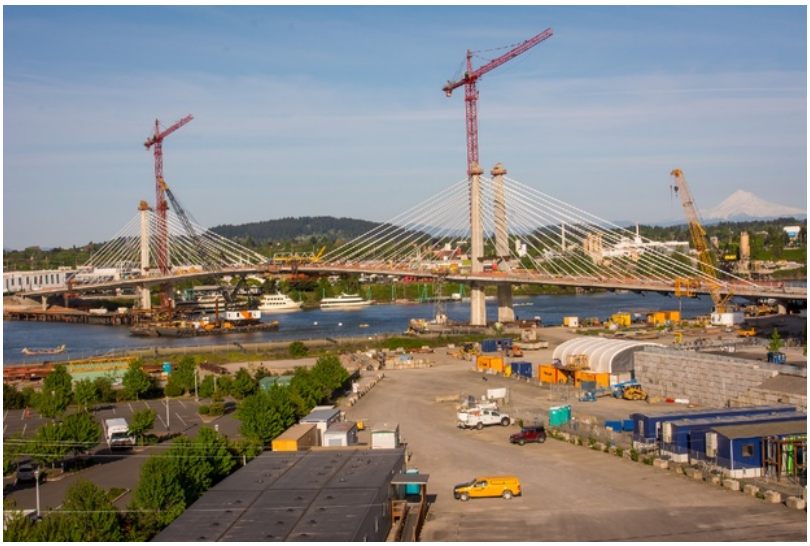
Although Portland had practical reasons for excluding private automobiles from the bridge, Tilikum Crossing nevertheless seems to tell a broader national story: of heretofore mostly industrial waterfronts transitioning to public use; of an industrial economy transitioning to high tech and health care; and of more workers finding alternative means of getting to work.

"They're looking to the future and saying maybe automobiles were a big part of our past development, but going forward we're going to need a mix and a balanced system," says Art Guzzetti, vice president of policy for the American Public Transit Association. "As cities grow, their ongoing growth has to have transit. Automobile growth tends to be more spread out, and you can't spread out forever. Transit is more efficient from an urban development point of view. An urban core designed around transit can use about 9 percent of its land for streets and roads. A more auto-oriented area can use as much as 35 percent."



Tilikum Crossing (top, April 2014 construction) is expected to open in fall of 2015. (TriMet / Flickr)

Blocher and TriMet take pride in the high degree of public involvement that occurred throughout the Tilikum Crossing planning and design process, including a citizen advisory committee led by former Portland mayor Vera Katz. But the process wasn't without friction. TriMet upset Portland's design community, and even members of its own advisory committee, by choosing a ubiquitous cable-stay bridge type over one proposed by Boston architect and bridge designer Miguel Rosales. Known for Boston's Leonard P. Zakim Bunker Hill Bridge over the Charles River, Rosales envisioned a bridge that would have been the first of its kind, combining suspension and cable-stay types in a way that was perhaps more elegant while also referencing Portland's most beautiful span, the St. Johns suspension bridge a few miles north of the city center.

"It was a missed opportunity," says Millius. "I don't think TriMet has an interest in putting themselves out on a limb when it comes to design, and a lot of their projects kind of bear that out." Even so, she adds, Tilikum is "going to be a nice bridge, no question."

The stretch of river that Tilikum Crossing occupies is only a couple hundred yards from bridges on either side, and McDonald's design minimizes tower height and span width enough to avoid seeming like it's a large foot being wedged into a small shoe. Yet while McDonald has a long track record that includes the new Bay Bridge connecting San Francisco and Oakland, Tilikum's attractive slender proportions also directly result from its lack of private automobiles. "It would be a lot wider if it had automobiles," says McDonald. "On bridges with cars you have to have spaces to pull off. It'd be maybe twice as wide. The towers might have to go considerably higher."

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In the distance beyond the bridge's construction site as we visit that day, Blocher and I can still see a host of highways and thoroughfares on both sides of the river and across it, carrying thousands of cars. If Portland is known for its mass transit, walkability, and bikes—the modes that will use Tilikum Crossing—it's still largely in relation to sprawled-out, car-centric fellow West Coast cities. Yet bridges are symbols, and Tilikum Crossing seems to fit not only along its Willamette River spot but into the broader Portland narrative.

"It's not for everybody," says Blocher of transit ridership. "A lot of people like to drive their cars because of their scheduling needs or childcare needs or so forth. But for everyone who does ride the transit system, that's a car off the road. It has to be looked at as a total transportation system. And Portland is really the poster child on the integration of land use and transportation planning. People come from all over the world to study how it's done here."

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http://www.citylab.com/commute/2014/08/why-portland-is-building-a-multi-modal-bridge-that-bans-cars/378665/