

## Portland, a virtuous urban and university ecosystem



Laurent Perrin/IAU IdF

**Portland cultivates its difference in a wide variety of fields such as sustainable urban planning, sports industries and the outdoors. Its universities make an active contribution in this respect through their research and their real estate practices in synergy with metropolitan public transport projects. Nothing spectacular, but all achieved with exemplary intelligence and pragmatism. This *Note rapide* supplements the *Science Cities* series of case studies.**

Portland, the economic capital of Oregon, is only the 24<sup>th</sup> biggest US metropolis in terms of population<sup>(1)</sup>, but it is one of the most progressive in urban planning terms. It is, in fact, something of a laboratory for the development of sustainable urban planning policies<sup>(2)</sup> based on:

- a significant investment in the urban renewal of the downtown area (the Pearl District, for example),
- a high quality of design and implementation of public amenities and spaces,
- a system of government similar to that of an urban community (see boxed text on the Portland Metro),

- a network of soft transport and public transport which is closely interlinked, comprising numerous bus and tram lines in the city centre and tram-trains to the main suburban hubs and the airport (Metropolitan Area Express or "MAX" network),
- a master plan for development and planning incorporating the concept of the Urban Growth Boundary enshrined in the law of the State of Oregon<sup>(3)</sup>.

In economic terms, Portland hosts a highly diverse productive fabric, composed of multiple small businesses, mostly serving local markets. However, on the scale of the metropolitan area, major international groups are established, especially in Silicon Forest, specialising in high tech-

### Portland Metro

Portland Metro comprises 25 municipalities and three counties for a population of over 1.5 million people across a land area of approximately 1,000 square kilometres. Its density is therefore almost 6 times lower than that of Greater Paris. Created almost 30 years ago, it is the only US metropolitan government directly elected by universal suffrage. It is headed by a President elected by all citizens of the territory and six metropolitan councillors elected by district. Its expertise mainly covers strategic planning, public transport, waste management and natural spaces as well as metropolitan facilities (exhibitions, conventions, zoo, etc.). It should be noted that it does not deal with economic development policies at the metropolitan level. Its annual budget is around \$520 million (2012-2013).

(1) Its metropolitan area statistically defined by the US Census Bureau has a population of nearly 2.3 million people, which is ethnically fairly homogeneous being three-quarters of European origin.

(2) Putting North American approaches into practice such as "smart growth" and "transit-oriented development", based on enhanced integration between urban planning and public transport and soft modes on different scales, in order to combat the chronic disease of American cities: urban sprawl.

(3) Which is fundamentally aimed at preserving farm land in the face of Portland's outward spread.

nology around Intel in a corridor running between Beaverton and Hillsboro or around Nike in Beaverton, Washington County. More recently, a large number of data centres have moved in and developed thanks to a very attractive tax policy.

The workforce is highly skilled but still very regional. There is little in the way of immigration although things are changing since the reputation of Portland, celebrated for its independent artistic movements, sustainable urban development, penchant for Slow Food and its community spirit, is now attracting a new workforce which is more creative and entrepreneurial.

In 2009, the Portland municipality adopted a five-year economic development strategy to foster economic growth and job creation. The municipality has several objectives: complete the transformation of the Portland economy, the city having experienced a severe recession in the 2000s, seek to build the most sustainable economy in the United States and ultimately create 10,000 new jobs by end 2014. By end 2012, Multnomah County had already created 15,000. Portland is betting on three areas of development: competitiveness (job growth, increased exports), urban innovation (buildings and processes) and the rebalancing of economic vitality in its suburbs. The metropolis has chosen to concentrate its actions

via the Portland Development Commission (PDC) around four major industrial clusters: Athletic and Outdoor (see boxed text), Clean Techs, Advanced Manufacturing and Software. These four sectors were selected for several reasons, in line with the municipality's priorities: they are growing rapidly and are big exporters, they offer jobs with good wages and they focus talents and enterprises in clusters in and around Portland. For companies in these sectors who choose to settle there, Portland presents competitive advantages compared to other American cities.

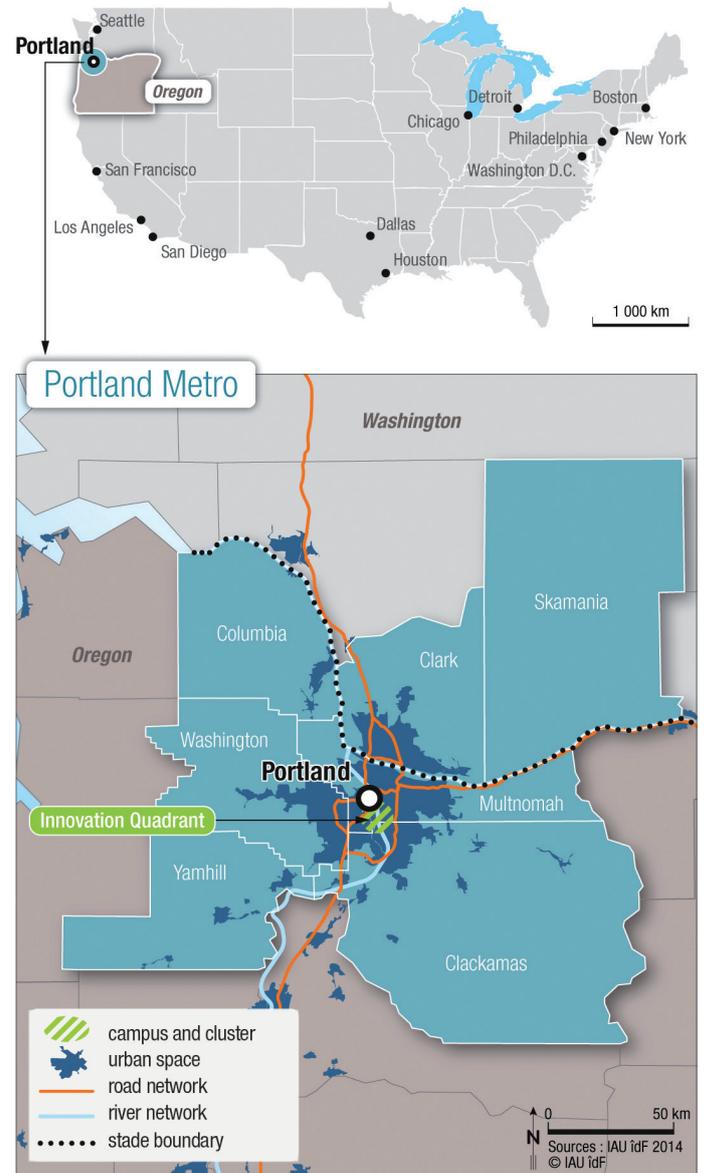
### Booming universities

Portland hosts two public research universities in the south of its downtown: the Portland State University (PSU) and the Oregon Health and Science University (OHSU). PSU is a comprehensive university of 29,000 students whose urban planning and transportation department enjoys a fairly good reputation in the US, while OHSU welcomes 10 times fewer students in medicine and the life sciences. On the other hand, OHSU has a significant impact on the region with a large teaching hospital, a workforce of 14,000 (making it the largest employer in Portland) and an annual budget of about \$2.1 billion. For historical reasons, it occupies 116 acres at the top of Marquam Hill, a site which is poorly served by public transport and complicated to

develop due to topographical and natural constraints. However, PSU occupies a 49.5 acres cam-

pus at a lower level which is fully integrated into the urban grid of downtown Portland and perfectly

### Portland and the Innovation Quadrant in their national and regional contexts

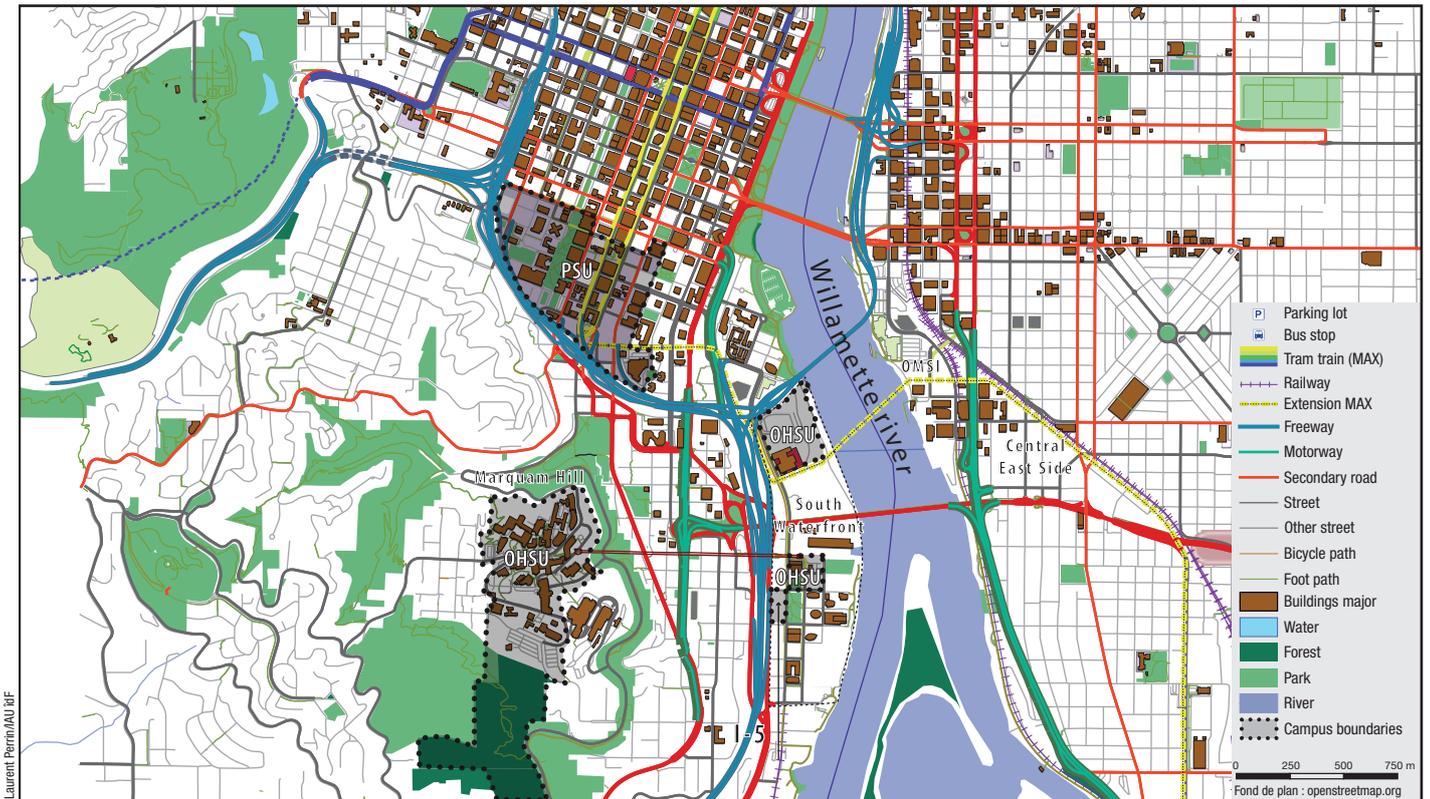


Marquam Hill campus, an historic part of the OHSU campus.



The streetcar runs smartly across the PSU campus (underneath the Urban Center building).

## Oregon Health & Science University (OHSU) and Portland State



Location of PSU campus and OHSU's with its 2 lower annexes, among which the new Collaborative Life Sciences Building. These campuses are not anymore enclaves in the city, but are on the contrary fully integrated in the urban development master plan of Portland's downtown.

### The Portland-Milwaukie tram-train project

In 2015, the 7.3-mile long Portland-Milwaukie Light Rail Transit Project will extend the yellow and green lines of the MAX network from the PSU campus to neighbourhoods on the right bank of the Willamette southeast of Portland, which have a high potential for renewal due to their fabric of activities. This is the largest public transport project led by TriMet, to the extent that its inclusion or its insertion requires the building of numerous civil engineering

structures in order to cross the highway interchange to the south of the PSU campus then the Willamette via a new cable-stayed bridge reserved for public transport, bicycles and pedestrians. With a total length of 1,720 ft and an average width of 72.5 ft, it will cost almost \$134 million and include two cycle paths and side pavements directly connected to the cycle paths running along the river.

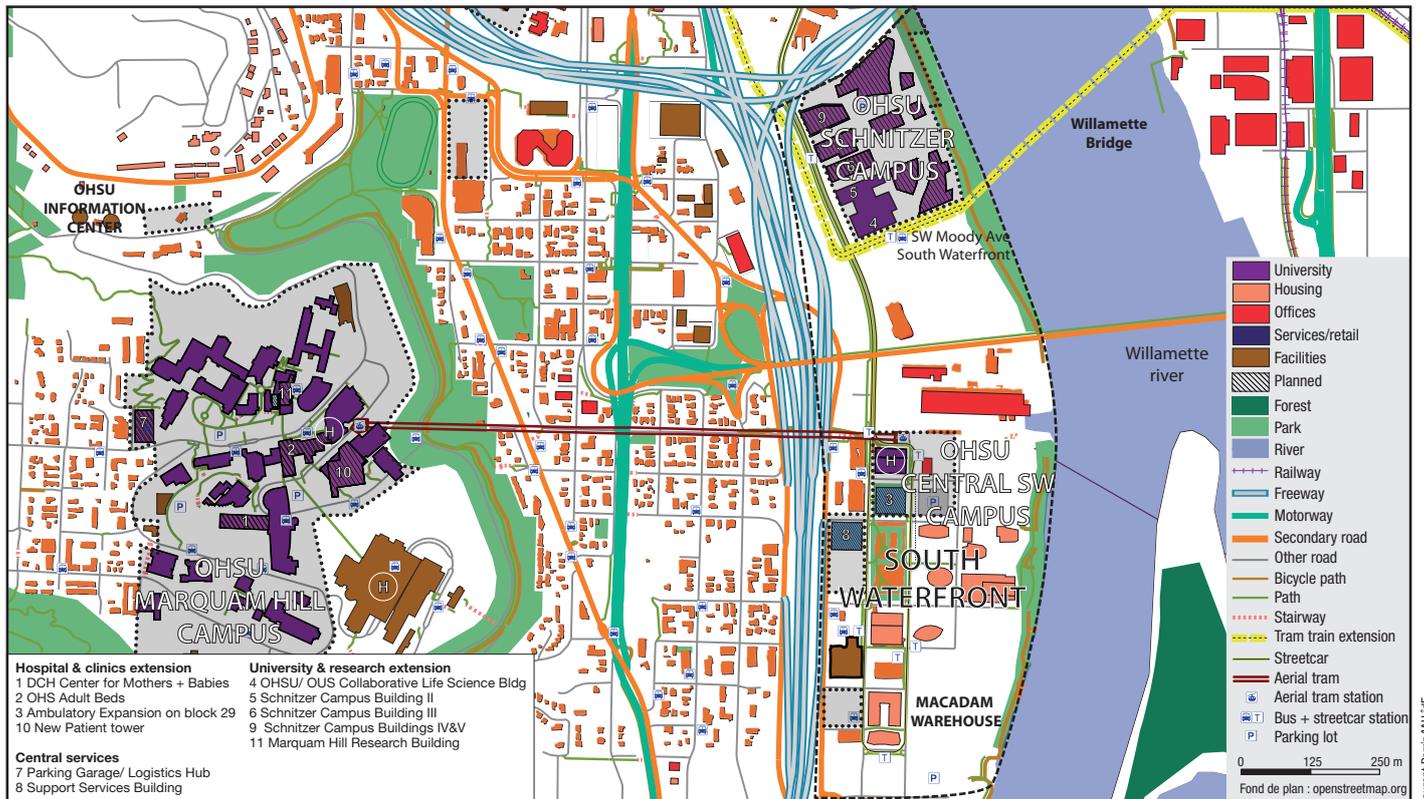


Perspective over the new TriMet intermodal station and Collaborative Life Sciences Building.

The South Waterfront/SW Moody Ave station is designed to allow intermodality between buses, trams and tram-trains perpendicular to the new Collaborative Life Sciences Building.

TriMet is a public corporation of the State of Oregon, overseen by a board of 7 members appointed by the State Governor. It ensures more than 100 million trips per year, of which 41% via the MAX network. Its operating budget (\$473 million in 2013) and expenditure (\$105 million) is funded by federal and state grants, ticket sales and taxes levied on the payroll of state-owned companies. It is able to issue and sell bonds.

# Portland University (PSU) campuses within Portland agglomeration



Focus on OHSU's multiple campuses. The historic one on the top of Marquam Hill is now well connected to the South Waterfront District under development via the aerial tram, while Central SW and Schnitzer campuses are 2 important pieces of this major redevelopment operation.

## The Innovation Quadrant

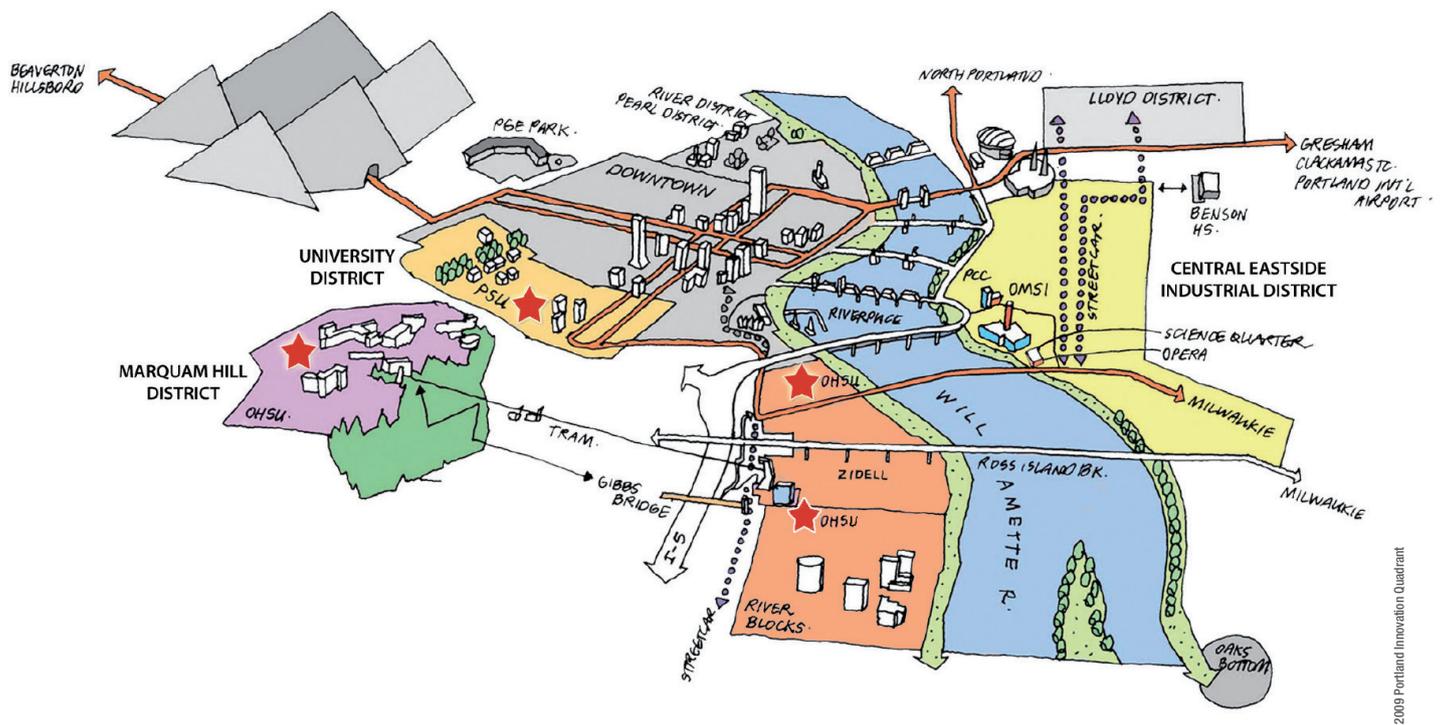


Diagram illustrating the relationships and synergies between university developments, urban and public transport projects in the Innovation Quadrant.

served by the public transport network (making it comparable with the situation at the université Diderot in Paris, for example). To remain attractive in the North American context and anticipate their growth<sup>(6)</sup>, each university has committed to an ambitious development master plan since the beginning of the decade. That of PSU, designed by the Sasaki Associates agency, in partnership with the Portland municipality, plans to transform its campus into an eco-neighbourhood. The project consists in merging the university facilities and accommodation on the site with private or public housing programmes combining the entire range of central urban functions, while taking the opportunity to eliminate the boundaries between university and city residential areas through landscaping of attractive pedestrian pathways towards the neighbouring but hard-to-access Willamette River. The idea is to use PSU's grey matter to turn this project into a collective learning laboratory. In all, the capacity for development through densification, preferably around stations on the public transport system, is estimated at around 7,000,000 sq.ft of floor space (compared with 4,500,000 sq.ft currently).

The constraints of the historic OHSU campus led it to focus on external growth in order to ensure its development through the acquisition of nearby land.

It therefore bought six plots in the central part of Portland South Waterfront. This is a major mixed property transaction covering around fifty hectares located 1 km below, between the I-5 highway and the Willamette, which has been developing for nearly 15 years on former ship repair and demolition yards.

In 2006, OHSU opened its new inpatient hospital there at the foot of the aerial tram serving the Marquam Hill campus (see boxed text: "Portland aerial tram").

In the north of the operation, it also acquired 19 acres of land which will enable it to create several teaching and research facilities, including the Collaborative Life Sciences Building. This building offering 480,000 sq.ft of floor space, the result of a partnership between OHSU, PSU and Oregon State University, includes an advanced research centre for space biomedicine and classrooms for different specialties taught at OHSU, as well as experimental biology and chemistry laboratories, not to mention a 400-seat amphitheatre for PSU students.

This partnership, initially born out of financial necessity since OHSU lacked the means to fund this ambitious and expensive project in its entirety (\$295 million!), embodies a first tie-up between OHSU and PSU which many university and economic players in Portland would like to

### Portland's athletic and outdoor "signature" cluster

It is a little known fact outside of the US, but Portland is the birthplace of Nike and Oregon hosts a global cluster of more than 800 companies and 14,000 jobs<sup>(4)</sup> specialising in the sports industry and the outdoors<sup>(5)</sup>. Since its creation in the 70s on the outskirts of Portland, Nike has played a leading role in catalysing around it a cluster specialised in sport and technology. Today, this cluster hosts companies such as Nike, Columbia, Adidas, Pendleton, Jantzen and a myriad of very small specialised companies like Keen Footwear and Icebreaker. Portland companies are world renowned for their expertise in design and especially innovation. Supported by a demanding local market and

easy international accessibility, they find that it offers the kind of talent and environment which is conducive to their growth and the development of start-ups. This cluster is crucial for the economic attractiveness of the metropolis since its many businesses and start-ups attract young talent around Portland eager to enjoy an affordable standard of living, a better work-life balance but also and especially drawn in by the "cool" and aspirational image of the city that blends creativity with alterna-



and ecological lifestyles (8% of people in Portland cycle to work, tenfold the US national average). The city hosts a plethora of local farmers' markets.

(4) <http://aoportland.com/explore/discover-portland/#by-the-numbers>  
(5) <http://pdxeconomicdevelopment.com/clusteractivewear.html>

see strengthened. This process, which could eventually lead to a merger, will take on real meaning on the ground thanks to a new MAX tram-train line connecting the PSU campus with the south-eastern suburbs of Portland, while serving the new collaborative building (see boxed text: "The Portland-Milwaukie tram-train project"). Thus, thanks to the aerial tram, tramway and tram-train, the four campuses of the two universities will soon be closely interconnected.

The emergence of these different projects and development visions has naturally required close coordination between the various players involved, whether the State of Oregon? via its public transport authority (TriMet)? Portland Metro, the Portland municipality? through its economic development agency (PDC)? both universities, neighbourhood associations or individual proprietors concerned, first and

foremost Zidell Corp., the company which operated the South Waterfront shipyards. This work, carried out at the height of the economic crisis in the late 2000s, was intended to promote the urban regeneration of this whole area (at that time dubbed the "Innovation Quadrant") in order to repopulate it and revitalise it economically (11,000 households and 30,000 jobs are expected for in the next 25 years). This mainly made it possible to obtain the necessary funds from the Federal Department of Transport and the State of Oregon in order to create the transport infrastructure that will not only connect the new campus of OHSU to downtown Portland and PSU but also open up the Central Eastside Industrial District, a primarily industrial zone near the city centre and the

(6) Between 1998 and 2009, the number of students enrolled at PSU almost doubled and the figure is expected to surge by 50% over the next 25 years!



**Aerial view of 3 OHSU campuses. In the foreground, the historic campus and in the background, at a lower level, its two extension sites. In blue, the volumes still buildable. In orange, the aerial tram right of way.**

Oregon Museum of Science and Industry (OMSI). The redeveloped right bank of the Willamette River therefore presents a medium-term potential in terms of economic dynamics in relation with the elements of the campus and the site's industrial past. It has all the ingredients required to attract businesses, SMEs and start-ups which will benefit from public transport, soft transport modes and access to affordable former industrial buildings in the vicinity of the OMSI museum and the opera.

### Portland, eco-focused and responsible

Decade after decade, Portland has demonstrated that it is able to renew itself through dialogue between its regional players, by offering a different urban model for North America. A fairly effective model from an energy viewpoint and conducive to city life which now seems increasingly attractive to a young, urban, creative and environmentalist class fed up with life in "suburbia"<sup>(7)</sup>. A point which the city has in common with its bigger Californian neighbour down the coast San Francisco, but with much more affordable property prices.

The combination of this anti-conformist identity ("green attitude" and "community spirit"<sup>(8)</sup>), a climate of tolerance, its alternative culture, its independent art scene, its many cafes and bars, and the low cost of living is attracting increasing numbers of creative professionals and young American entrepreneurs to Portland, on a model which is close to Berlin in Europe. Portland is fashionable. But will it be able to capitalise on these new assets to bolster its future competitiveness?

Laurent Perrin, Odile Soulard ■

(7) Generally dubbed the "Hipsters" class.

(8) Portland hosts many vintage stores, including the largest second-hand bookstore in the world (Powell's books), community gardens, social services for the disadvantaged, affordable public transport, public provision of private space by companies such as Wieden+Kennedy, etc.

### The Portland aerial tram



The Portland aerial tram was designed at the initiative of OHSU and the Portland Transportation Department in order to connect the central part of the new South Waterfront District to the Marquam Hill campus. Built in 2006 by the Swiss company Doppelmayr, it ascends to more than 1,000 metres and drops 150 metres in just 3 minutes. Since it first came into service, the aerial tram has carried 10 million passengers, making nearly 350,000 trips. Its rated capacity is 960 passengers per hour in each direction, with each cabin able to hold 80 people and departures every 5 minutes.

A comparative study of transport systems led by the Portland Transportation Department concluded that the aerial tram was better than the bus both in terms of journey time, load capacity, urban quality, maintenance, cost of upkeep in the long term and environmental impact (especially sound). It cost \$56 million to build, an admittedly high price and above initial estimates, but which also includes the construction of a footbridge spanning the I-5 highway negotiated by the inhabitants of the neighbourhood it passes over (following fierce opposition to the project) and the additional cost of building the tower bearing the upper station.

Although an integral part of the public transport system in Portland, its cost was mainly borne by the OHSU and other landowners in the South Waterfront Central District, including the Portland Development Commission (PDC). The municipality only subsidised 15% of the project. The aerial tram is free for employees or students of OHSU and costs \$4 for other users. Its annual operating cost is about \$1.7 million.

The lower station is directly accessible by bus and tram and a large guarded bicycle park is available to users. Bicycles are also allowed inside the cabins as indeed in all other modes of public transport. Intermodality with other soft transport modes is therefore certainly key to its success.

Beyond its role as a link between the old and the new campus of OHSU, the Portland aerial tram has become an icon of identity and a vector of development for tourism in Portland. It is true that it offers unparalleled views over the Willamette and the chain of Oregonian volcanoes.

### For more information Portland

- Portland Development Commission: <http://www.pdc.us/our-work.aspx>
- Tri-Met: [www.trimet.org](http://www.trimet.org)
- Plan for the strategic development of Portland Metro by 2040: <http://www.oregonmetro.gov/index.cfm/go/by.web/id=29882>
- Master plan for development of the OHSU campus: <http://www.ohsu.edu/xd/about/services/cpdre/planning/ohsu-facility-master-plan.cfm>
- Master plan for the university eco-neighbourhood of PSU: <http://www.pdx.edu/planning-sustainability/university-district-framework-plan>

### On campuses and clusters

- SOULARD Odile, « Campus et clusters mondiaux : un détour par l'ailleurs », *Note rapide*, n° 607, IAU îdF, novembre 2012.
- PERRIN Laurent, SOULARD Odile, *Science Cities : campus scientifiques et clusters dans les métropoles du XXI<sup>e</sup> siècle. Séoul : Digital Media City et Songdo New City*, IAU îdF, octobre 2011.
- PERRIN Laurent, SOULARD Odile, « Science City et Zurich-Ouest, les deux piliers du Wissenshub zurichois », *Note rapide*, n° 514, IAU îdF, juillet 2010.
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