

WATERBORNE TRANSPORT, A UNIQUE CONTRIBUTION TO ENHANCING MOBILITY FOR CITIES ON WATER

A unique contribution to PTx2

Introduction

In recent years waterborne transport has become an integral part of the urban landscape. Renewed interest in waterfront development and urban rejuvenation, coupled with increased congestion on land-based transportation resources, has provided an opportunity for waterborne transport to play a significant role in urban mobility schemes. To that end, this Focus Paper presents the role that waterborne transport can play in contributing to UITP's PTx2 strategy of doubling the public transport market share worldwide by 2025 while enhancing quality of life for those residing in and visiting cities on water.

Waterborne transport: definition and history

Waterborne transport is the use of ferries or other waterborne vessels in the transportation of passengers via waterways (sea, rivers, lakes, lagoons, canals, etc.). Long before urban sprawl and motorways, waterways represented the original corridors of commerce and transportation. In the late 19th and early 20th centuries, many waterways became centres of industrial activity including ship building, warehousing and other land uses reflecting the industrial era which existed until the mid-20th century. Many cities in the latter part of the 20th century experienced a decline in industrial activity on their waterfronts which,



in turn, resulted in a decline in waterfront commerce and transportation. As cities turned inland and developed motorways, thus contributing to urban sprawl development, many cities turned their backs on their waterways, resulting in further decline. World-class cities, such as London, Liverpool, Gothenburg, Oslo and Hamburg, to name but a few, all experienced similar decline along their waterfronts. Waterborne transport, at one time the primary mode of transport for cities on water, also experienced declining use, with many cities reducing or curtailing services.

Urban rejuvenation

It has only been over the past 30 years that urban planning initiatives have focused on revitalising waterfronts, while using waterborne transport as a catalyst for sound land-use planning, including residential, commercial and recreational uses. Today, the waterfronts of many cities are the 'place to be' and have become an integral part of many urban centres. Many older cities in the UK and elsewhere in Europe have redeveloped their waterfronts while incorporating waterborne transport into their plans. Newer cities such as Brisbane, Sydney and Dubai recognised that their waterways offered great potential as an important part of urban life, and incorporated waterborne transport into their



The rejuvenation of the North Bank in Gothenburg has enabled this once-neglected former industrial zone to become a pleasant waterfront area.

urban planning schemes early in their development. In the United States, cities such as San Francisco, Boston and Seattle have removed elevated highways that once blocked access to the waterfront, in order to link the waterfront experience with the urban core of the cities. As cities return to the water, it is important that an integrated approach be sought to ensure harmony between the redevelopment schemes and the services that operate on the water when it makes economic sense to do so.

Waterborne transport, a unique contribution

Consistent with the renewal of waterfronts worldwide, waterborne transport authorities have worked hard to ensure that waterborne transport contributes to the overall redevelopment and mobility schemes. Initially, many waterborne operators and authorities focused on recreational uses consistent with redevelopment plans along the waterfronts. However, once the waterfronts evolved into multi-use developments, such as commercial and residential uses, it became a focus of many operators to pursue better integration into the main-

stream public transport operations by providing better connectivity, such as integrated scheduling and ticketing.

Although waterborne transport remains a 'niche' player in the overall transport schemes of many cities, this unique mode of travel offers significant benefits compared to land-based transport.

- Travel by ferry is often a more pleasant experience than other transport modes. No other mode offers a deck for when the sun is shining, on-board concession areas, a guaranteed seat and plenty of space to appreciate the views.
- With less physical restrictions than land-based modes, waterborne vessels offer plenty of space for cars and bicycles.
- Accessibility on waterborne services is often equal to or better than land-based transport services since there is extra space to accommodate persons with reduced mobility.
- Using a natural transportation corridor (water) that has existed since the beginning of time negates the need to develop expensive and potentially disruptive dedicated rights-of-way for trams, metros, BRTs and other modes of transport requiring dedicated corridors.
- Waterborne transport offers fixed travelling time and is very rarely blocked by congestion.



Accessibility of waterborne transport in London.

When properly implemented, waterborne transport can continue to evolve from a 'niche' player in the overall mobility scheme into a fully integrated mode of travel, complementing other modes of transport and urban development schemes.

Elements of a successful waterborne system

Development of visionary integrated policies and intermodality

Until recently, many waterborne systems operated independently from policies that guide land-based urban planning and transport policies. Successful systems today, whether they be leisure or commuter services, attempt to design services that are consistent with, and integrated into, the overall urban planning and mobility schemes in the areas and cities where they are located. In most applications, ferry stops are located in close proximity to land-based transportation systems, to minimise the walking distance between modes while encouraging connectivity between the modes. Urban and transportation planners developed visions and policies to ensure that their water services were consistent with the overall guidelines being considered for redevelopment of the waterfronts, while integrating the water services with the overall transportation mobility schemes.

Focus on service quality and meeting the needs of the public

In a similar way to land-based transport options, waterborne systems must provide a product that focuses on service quality and meeting the needs of travellers, whether the journey be for

leisure or commuting. This includes taking advantage of the 'unique' qualities that travel on water provides, such as vessel design optimising the view from the interior of the vessel, comfortable seating, and on-board amenities such as concessions. Providing these improvements enables waterborne transport to contribute to reducing congestion on land and enhancing the overall mobility objectives and policies.

Waterborne transport has a tremendous appeal for commuters compared to other modes of travel, but only if planners and operators concentrate on meeting the needs of the travelling public by taking advantage of the unique qualities that waterborne transport offers.

Provision of infrastructure investment to enhance the appeal of waterborne transport

Unlike traditional land-based transport modes, vessel and terminal design requirements are almost always driven by the 'unique' operating conditions where waterborne transport operates. For this reason, most ferry vessels are designed and built by ship builders with a keen understanding of the regional operating conditions that exist throughout the world, with the result often being that each vessel has a unique design. This is also true of terminal design, where each terminal must be designed to conform to the operating conditions existing in the area where the terminal is being constructed. For example, some vessels operate in places where tidal fluctuation is low, so it is not necessary to invest in expensive terminal design and construction, while others have to face very high tidal variations of up to 7 metres, requiring long and expensive ramps to



The Cais do Sodré Terminal (Lisbon) provides intermodal connections between all modes of transport, including rail, bus, taxi and water transport, with full accessibility for mobility impaired passengers and a fully integrated ticketing system.

access floating pontoons. Ease of access is an important criterion for waterborne transport, which enhances the appeal of this transport mode as a viable alternative to other modes of transport. Environmental design is taken into account as well, and some cities heavily invest in their terminals to ensure that they blend in with the natural environment while being directly and easily connected to the land-based public transport network.

Many places have invested in infrastructure projects to enhance the viability and appeal of waterborne transport and to ensure that integration with other modes of public transport is achieved. In all cases, this has led to an increase in journeys made using waterborne transport, thereby securing a higher modal split, which contributes to achieving the PTx2 objectives.

Energy and the environment

Historically, waterborne transport has lagged behind other modes of transport in ensuring that its services have as

little negative impact on the environment as possible. However, over the past four years, the UITP Waterborne Transport Committee has focused on the environment as one of its major initiatives. This led to a workshop on 'Low-carbon and low-impact waterborne transport operations' hosted by London RiverServices in October 2012. This workshop presented best practices and technologies to reduce the impact of vessel navigation on the environment. Alternative technologies including supercapacitors, solar, electric and fuel-cell vessels were featured, as well as hull designs, and eco-sailing technologies. These different technologies and efforts deployed by the operators and the ship builders contribute to the global effort and policies aiming to reduce CO₂ emissions and the impact of waterborne transport on the environment. As efforts continue to improve the impact on the natural environment of rivers, lakes and oceans, it is important that waterborne vessels develop alternative technologies to reduce reliance on fossil fuels and reduce emissions. To that end, the UITP Waterborne Transport Committee has placed this topic at the forefront of its annual work programme.

Improving the cost effectiveness of providing waterborne transport

Waterborne transport can be expensive to provide. Vessel construction, terminal design and fuel costs all contribute to the high cost of operating waterborne services. Nevertheless, there are methods to make waterborne transport more cost effective. These include diversifying



Many vessel operators provide public transport during peak times and leisure services during the rest of the day to diversify revenue. Here is the example of Bermuda.

the product offerings by providing commuter services during peak times and leisure services during off-peak times. Leisure services are usually more profitable than commuter services, since visitors and other leisure users are more willing to pay a premium price to use waterborne services. This is the case in Bermuda and with many operating authorities in the UK and Italy.

Many cities provide a variety of services to diversify revenues while improving the overall efficiency of their operations. This illustrates how waterborne transport authorities can improve the cost effectiveness of their service while contributing to the PTx2 objective to double the public transport market share worldwide by 2025.

Conclusions

This Focus Paper illustrates that waterborne transport can continue to evolve from a 'niche' mode of transport to become an important part of the transport network and waterfront redevelopment initiatives. By focusing on service quality and integration with other modes of transport and waterfront development projects, waterborne transport has a bright future in the overall mobility options for cities on water.

As cities return to their waterfronts, the opportunity arises for waterborne transport to make a major contribution to enhancing the quality of life and lifestyle choices for residents and tourists, thereby contributing to the UITP strategy to double the market share of public transport worldwide by 2025.

Recommendations for waterborne transport and its contribution to UITP's PTx2 strategy

- Integrate waterborne transport with other public transport modes by providing good intermodality and common ticketing, when it makes economic sense to do so.
- Integrate waterborne transport into the overall urban planning schemes, in particular for waterfront enhancement projects.
- Provide good accessibility to vessels and terminals to ensure smooth boarding for persons with reduced mobility.
- Diversify revenues and services by providing both commuter and leisure services, thereby maximising the potential for waterborne transport to contribute to reducing congestion during peak times and providing off-peak services for leisure journeys.
- Develop alternative technologies to reduce reliance on fossil fuels and reduce emissions.
- Reduce on-land congestion by providing high-quality waterborne services that meet the travel needs of commuters and tourists.

This is an official position of UITP, the International Association of Public Transport. UITP has over 3,400 members in 92 countries throughout the world and represents the interests of key players in this sector. Its membership includes transport authorities, operators, both private and public, in all modes of collective passenger transport, and the industry. UITP addresses the economic, technical, organisation and management aspects of passenger transport, as well as the development of policy for mobility and public transport world-wide.

This Focus Paper was prepared by the UITP Waterborne Transport Committee.

Responsible editor

UITP
Rue Sainte-Marie 6
BE-1080 Brussels
Belgium

Tel: +32 2 673 61 00
Fax: +32 2 660 10 72
info@uitp.org
www.uitp.org

