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River-based public transport: Why won't Paris jump on board?

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A B S T R A C T

Given the magnitude of transport-problems in many large cities, the potential of rivers to serve as transport arteries is being recognized once again. However, some world cities, such as Paris, have failed to maximize their river potential. The Seine remains underutilized by mass commuter ferries serving the local population. Why, in the modern era, has Paris not taken advantage of its river for commuter transport? Will it do so in the future? This article answers these questions, which are important at the present time of grave sustainability concerns. The identified barriers include: (a) *funding constraints*; (b) *competition by other modes*; (c) *lack of political and institutional will*; (d) *lack of opportunity*; (e) *local legislation*; and (f) *technical issues*. The first three are common worldwide while the last three are specific to Paris.

Sous le pont Mirabeau coule la Seine, et nos amours...

– Guillaume Apollinaire, 1912

1. Introduction

Historically, major cities were built near rivers. There are many reasons for this, but a principal one is that rivers allowed for water transport. Prior to the invention of trains and cars, water transport was much faster, and often cheaper, than land transportation, which relied on carriages drawn by animals. Cities with access to water were in a much better position than landlocked cities to develop trade with neighbors and thus sustain their economy (Kostof, 1992).

In the mid-19th century, a series of factors conspired to lead to the decline of water-based transport. One was the shift in primary energy sources from wood to coal, which boosted the use of railways. Another was the emergence of bridges and tunnels that replaced most cross-river services. The pollution, diseases, and environmental degradation of rivers due to rampant industrialization further contributed to the demise of waterfronts. In the 1950s, the automobile boomed and abandoned riverfronts became premium locations to build concrete highways. For decades to come, these stood as polluted, noisy, and impassable barriers between the city and its river. By the 1970s, many cities had turned their backs to their rivers (Freemark, 2010).

Now, at the height of the urban revival movement, cities are rediscovering their river assets. With de-industrialization and the rise of

“containerization” in shipping, upriver ports have been replaced with large downriver facilities able to accommodate large ships, thus freeing up urban waterfronts (Tanko and Burke, 2017). Environmental awareness, globalization, and an emphasis on “quality of life” has triggered waterfront revitalization movements, first in the US, then in Europe and the rest of the world (Lechner, 2006). These projects are taking place in derelict docklands, which are re-emerging as gentrified and densified commercial and residential hubs that attempt to bring “blue space” closer to urbanites (Romain, 2010). Places are consciously reimagining or rebranding themselves as “river cities” in order to promote tourism and deliver a unique experience to visitors (Tanko and Burke, 2017).

Given the magnitude of transport-problems in many large cities, the potential of uncongested rivers to serve as transport arteries is being recognized once again. World cities as far apart as New York and San Francisco (North America), Sydney and Brisbane (Australia), Bangkok (Asia), and London, Copenhagen, Gothenburg, Hamburg, and Stockholm (Europe) have already put in place linear ferry commuter services, which have been rather successful (Camay et al., 2012; Soltani et al., 2015). Their introduction has been assisted by recent advances in maritime technology, including higher speed, high capacity, and low wake vessels that are more suitable for urban use (Tanko and Burke, 2017). Now Abu Dhabi, Washington DC and Melbourne are considering the introduction of ferry services.

Meanwhile, other cities, such as Paris, have failed to maximize their river potential. The Paris basin is crossed by the Seine, a major

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navigable waterway. In terms of land use, the latest masterplan identifies riverine suburbs as future growth areas. However, in terms of transport, public authorities have focused on rail- and road-based options. The largest European transport mega-project, Grand Paris Express, which was launched in 2014, does not include river transport solutions.¹ The Seine remains underutilized by mass commuter ferries serving the local population.

Why, in the modern era, has Paris not taken advantage of its river for commuter transport? Will it do so in the future? This article aims to provide answers to these questions, which are important at the present time of grave environmental, economic, and social sustainability concerns. A discussion of this neglected mode, and with a focus on future implementation, will close a gap in the academic literature. To provide greater insight into the barriers preventing Paris from taking advantage of the Seine, the Parisian case study is benchmarked against London, a city in which urban passenger ferry services have boomed in recent years. Among the places with successful contemporary ferry systems, London is the most similar to Paris in terms of size,² culture, and global presence. Moreover, the two cities are “competitors” but the respective planning authorities have been known to examine and borrow each other’s policies from time to time. Benchmarking has revealed issues that would have been ignored while focusing on a single case study.

2. Literature review: features of contemporary urban passenger ferry systems

The key characteristics and available information on existing systems have been summarized by other authors (see [Tanko and Burke, 2017](#); [Burke and Sipe, 2014](#)). Existing studies have found that systems vary by vessel and terminal type, by service frequency and scale, and by the urban context in which they operate. Vessels range from high speed catamarans to monohulls, with capacity between 60 and 298 passengers. Some can even accommodate bicycles on board. Systems can have just one main route which runs parallel to the shore or criss-crosses the river, or a network of complementary routes with transfer points. The total route length varies between 6 and 31 km.

The adoption of urban passenger ferry systems can benefit the public and private sectors alike, as well as users. From the perspective of the public sector, waterborne transport systems, especially those which avail of new, fast technologies, can help alleviate road congestion ([Camay et al., 2012](#)). Contemporary ferries are more eco-friendly than their land-based counterparts. Customized technologies make them more fuel efficient and reduce engine exhaust and noise pollution. The use of green technologies, such as electricity and hydraulic propulsion, is increasing ([CEREMA, 2016](#)).

Ferries employ an existing natural element (the river) and thus need little extra space or infrastructure. This allows for greater service flexibility than rail. New stops with adequate docking facilities can be added much more easily along a ferry route than along a metro route ([Thompson et al., 2006](#)). However, it must be noted that, if ferries are purely a private sector innovation, the systems risk developing separately from other public transport in the city. As such, they may be poorly integrated, and may struggle to modernize ([Tanko and Burke, 2017](#)).

In crisis situations, water transportation has proven to be invaluable. For example, in the aftermath of 9/11 and Hurricane Sandy in New York, ferries were used to provide assistance to isolated city dwellers. Ferries are more resilient to natural hazards due to their water-based location ([Sipe and Burke, 2011](#)). However, where ferry

systems are on rivers (rather than harbors or estuaries) they are very prone to flooding and less resilient. For example, in Brisbane, key terminals were out of operation for many months after the 2009 floods when all other city transit was back in operating within days.

A benefit for the private sector is the spurring economic development, particularly residential and commercial redevelopment – both small and large scale. For example, a recent study in New York concluded that ferry services have had a positive impact on property values (which have increased up to 8%) and the pace of development along their route ([NYCEDC, 2013](#)). In Bangkok, terminals are being modernized and equipped with stores, eateries, and ATMs. In fact, many urban linear ferry systems would not have been implemented, had they not served an economic function, in addition to transporting people ([Tanko and Burke, 2017](#); [Sipe and Burke, 2011](#)). Recognizing ferries’ role in stimulating land value uplift, some developers have been willing to pay for terminals and even subsidize fares ([Tanko and Burke, 2017](#)).

From the perspective of the public, ferries can provide pleasant, safe, secure, quick, and comfortable journeys. Many regular users attach a greater amenity value to linear ferry transport beyond its utilitarian transport function. Ferries have also been used to provide strategic access to “transit deserts” – for example, low-income areas – that are not served by existing land-based services ([Tanko and Burke, 2017](#)). In this case, ferries fill a void, without competing with other public transport operations. In some cities, ferries have become an icon and a tourist attraction – whether purposefully or not ([Tanko and Burke, 2017](#)).

Notwithstanding these advantages, major barriers stand in the way of ferry systems’ adoption in some river cities. If extensive and efficient land-based transit options exist, fierce competition with those other modes precludes the inclusion of ferries in the transport system. Ferries are at a disadvantage compared to heavy rail as they can offer less frequent services and insignificant savings in travel time ([Camay et al., 2012](#)). At the same time, ferries have a high cost of operation. Estimates for London indicate that the operating costs of ferry services on the River Thames are around £8.4 per km compared to £2.5 for buses and £35 for the subway (the Tube). Per unit, ferry services require more staff and fuel than buses and metros, and therefore, their operation requires financial subsidies from public transport authorities ([Buchanan et al., 2010](#)). Often, a strong political champion is crucial in triggering policy change in favor of ferries ([Tanko, 2015](#)).

Moreover, ferries can only serve land-uses which are adjacent to the river. This limits their impact and catchment area. Clearly, the success of new waterfront development projects does not completely rely on their access to a ferry terminal, epitomizing a perfect ferry-oriented development. Developers and home buyers will have other motivations for choosing a riverine location, including nice, open views and pleasant summer breezes ([Sipe and Burke, 2011](#)). But, while piers in themselves might not “cause” future development, the transit option that they offer certainly increases their attraction. Therefore, in some riverfront neighborhoods which already have a population threshold sufficient to sustain an effective service, commercial developers and businesses have lobbied for, and participated in, the funding of new pier infrastructure, as noted ([Buchanan et al., 2010](#); [Sipe and Burke, 2011](#)). In others, such funding (expected from the public sector) has not been forthcoming.

A few strategies have been proposed to tackle these issues. One solution is to route ferry services so that they address the needs of both commuters and tourists. To ensure coordinated routing, scheduling, and ticketing, river services must be integrated with the overall regional transport strategy and planning ([Sipe and Burke, 2011](#)). On a broader scale, ferry services must be integrated into the overall economic plan of the city to ensure their economic viability ([NYCEDC, 2013](#)). As with other planning initiatives, stakeholder engagement and sensitivity to the local context are important. Marketing and branding has a prime role in captivating city dwellers in a way that shifts their preferred transportation mode towards ferries ([NYCEDC, 2013](#)).

¹ A casual observer might believe otherwise, given the traffic generated by ocean liners carrying freight and by tourist cruise boats. Recently much fanfare has been generated around the futuristic proposal of Sea Bubbles: small, electric or solar vehicles which can fly, float, and sail on the river. However, even if put into use, Sea Bubbles will carry only four passengers at a time.

² With 7 (vs. 8.6) million inhabitants in the metropolitan region.

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