

## CHANGING WATERBUS ROUTES AND INCREASINGLY DIVERSE BOAT DESIGNS IN THE TOKYO RINKAI (WATERFRONT) AREA

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### Abstract

Recent years have witnessed a growing interest in the Tokyo waterfront, which includes the Sumida River and Tokyo Rinkai areas. This research investigates the changing waterbus routes and increasingly diverse boats operating in the Tokyo Rinkai area. The history of waterbuses in Tokyo began during the Meiji Period; business declined during the period of rapid economic growth because of deteriorating water quality. New waterbus operators were inspired to enter the market when water quality improved during the waterfront boom of the 1980s. In the 1990s, there were wide-area routes on the Arakawa and Kyu-Edogawa rivers, but these were replaced by routes on the Sumida River and near Odaiba in the 2000s. In recent years, the variety of different boats has increased due to the introduction of small boats that travel on small and medium-sized rivers, as well as new model boats with unique designs. This has enhanced the role of waterbuses as tourist attractions.

*Keywords:* Tokyo Rinkai area, waterbus, route, urban tourism, tourist attraction

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## 1. INTRODUCTION

### 1.1 Research background and objective

In recent years, interest in the Tokyo waterfront, including the Sumida River and Tokyo Rinkai area, has been growing due to factors such as the construction of the Tokyo Skytree (May 2012) and Tokyo's successful bid to hold the 2020 Olympic Games (September 2013). Law (1993) described the advantages of cities with waterfronts, indicating that these physical environments create deeply impressive scenery in tourist zones. Tokyo's waterbuses are targets of attention, reflecting the growing interest in Tokyo's waterfront in recent years. Many of the special features of waterbuses have been showcased in commercial magazines from the late 2000s. In addition, Tokyo's waterbuses have also been featured in travel guidebooks (Dodd and Richmond, 2008; Yanagihara, 2009). In the travel guidebook *Lonely Planet*, Yanagihara (2009) wrote, "In addition to enjoying the fresh air, waterbuses are a means of transportation that allow you to experience Tokyo's legacy that was born from its rivers." In this way, he encouraged the use of waterbuses on the Sumida River as a form of transportation between Tokyo's sightseeing spots. The charm of waterbuses is described as allowing passengers to enjoy the waterside scenery while traveling throughout the city.

Prior research includes studies on the role of water transport as a form of transportation for urban sightseeing. Pearce (1995) argues that riverboats serve as a form of transportation in cities, indicating that boat cruises complement regular sightseeing bus tours in urban tourism. Citing a similar example of waterbuses complementing congested land transportation, Tanno (2004) discussed the waterbuses on the Seine that make it possible to enjoy sightseeing in Paris from boats covered by transparent hoods. These research projects claim that waterbuses complement land transportation in urban tourism, enabling tourists to enjoy waterside scenery while traveling. Because waterbuses are a type of urban transportation, research has focused on waterbus routes. Kurihara et al. (2008) and Shiobara et al. (2009) mentioned route profitability and the existence of tourist facilities at waterbus ports as the primary factor determining waterbus routes in recent years. Routes are important topics in waterbus research, as described above, but no one has studied how these routes have changed over time.

Moreover, based on the higher profile of waterbuses in recent waterfront tourism, there is a need to focus on the operators and patrons of the waterbuses as tourist attractions, while considering points that have not been given sufficient attention in past waterbus research. Therefore, the objective of this research is to explore Tokyo's rivers and the Rinkai area, studying how the waterbus routes have changed, and also how the functionality of waterbuses as tourist attractions has changed, due to the increasingly diverse nature of boats and operators.

## **1.2 Research subjects and methods**

The Ministry of Construction's River Bureau (1997) divided normal water transportation into three categories: 1) sightseeing and passenger transport in major cities, 2) freight, and 3) sightseeing. Within these categories, waterbuses represent a form of "sightseeing and passenger transport in major cities." Due to the development of land transportation, today's waterbuses are mainly used for sightseeing; they no longer serve as a method for commuting to work as they did before World War II. Waterbuses function as urban pleasure boats for sightseeing and transporting passengers between sightseeing spots in cities. In this way, they differ greatly from mere attractions, such as boat tours, which are classified under "sightseeing." "Waterbus" is a nickname used by the various operators, rather than a term regulated by law. This research targets business operators using the name "waterbus" (the subject of this research) to clarify the history of waterbuses in Tokyo and to see how their routes have changed.

The research methodology used materials obtained through a survey of current waterbus operators and a survey that investigated the current state of routes and boat types. Past routes were identified by referring to the literature, travel magazines, and special feature articles on waterbuses among other sources.



Figure 1. Rivers in Tokyo and the distribution of principal tourist facilities

## 2.THE HISTORY OF WATERBUSES AND THEIR CHANGING ROUTES IN TOKYO

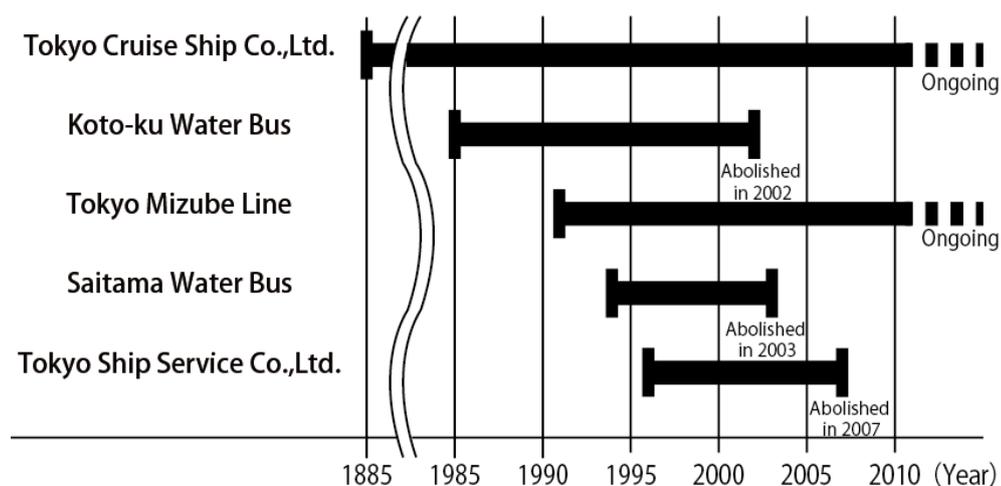
### 2.1 Waterbuses from the Meiji Period until the period of rapid economic growth

According to Tanaka (1988), the regular operation of the first waterbuses in Tokyo began in 1885 between Asakusa and Ryogoku. In those times, there were few bridges on the Sumida River and land transportation methods were undeveloped; a zigzag route was established between the eastern and western banks of the Sumida River. During World War II, boats were requisitioned for use in World War II and damaged in air raids, and the pre-war waterbus business was destroyed. In 1950, during the period of postwar recovery, the Tokyo waterbuses were revived. Waterbuses served as a means of transportation within the city for residents during the period of postwar recovery, but during the period of rapid economic growth, the construction of towering, vertical concrete embankments and expressways completely changed the scenery along the Sumida River waterbus route. Furthermore, the Sumida River had become so polluted that passengers had to cover their noses with handkerchiefs to avoid the bad odor (Jinnai 1993). Water pollution caused the number of passengers to fall, and the waterbus business was in a decline in the 1960s (Tanaka 1988).

### 2.2 The revival of Tokyo's waterbuses

As described above, the waterbus business in Tokyo slumped because of water pollution in the Sumida River. In the mid-1970s, the water quality of the Sumida River gradually began to improve and the number of waterbus passengers to increase (Tanaka 1988). In 1974, the Tokyo Cruise Ship company, in addition to its traditional Sumida River route, began to operate a new Museum of Maritime Science line connecting Hinode Pier and Odaiba (Osawa 1997).

The waterbus revival also received a boost from the waterfront boom of the 1980s. New waterbus businesses operated by public works contractors and private sector business operators entered the market. Table 1 shows the year in which each waterbus business operator entered the market, as well as the year it closed down. The first public institution to launch a waterbus business was in Koto Ward in 1985. In 1991, the Tokyo Mizube Line was opened by the Tokyo Metropolitan Park Association. The Saitama Waterbus, a Saitama Prefecture business linking Kasai in Edogawa City and Akigase in Saitama Prefecture, was launched in 1994. The private Tokyo Ship Service followed in 1996. Although the Tokyo Ship Service was a ferryboat operator in the Port of Tokyo, it entered the waterbus business in anticipation of marine transport to the Rinkai Fukutoshin area, which was scheduled to be the venue for the World City Expo Tokyo '96.



**Figure 2.** Changing waterbus business operators in Tokyo  
**Source:** Shiobara et al. (2009)

### 2.3 Changing waterbus routes from the 1990s

As shown in Figure 2, waterbuses were operated by five business operators in the 1990s. In the 2000s, however, the Koto-ku Waterbus, Saitama Waterbus, and Tokyo Ship Service all closed down in quick succession.

This paper will plot waterbus routes from the 1990s onwards, to clarify how waterbus routes have changed in recent years. The waterbus route maps from 1997 and 2003 shown below were organized and plotted based on prior research by Koike (1997) and Manabe (2003). The 2011 route map was plotted based on fieldwork and pamphlets published by each of the waterbus business operators.

#### 2.3.1 Routes in 1997

Figure 3–a shows the waterbus routes in 1997. These routes can be grouped into two major categories: routes centering on the Sumida River and Odaiba, and routes involving the Arakawa and Kyu-Edogawa rivers. The Sumida River and Odaiba routes were controlled by three business operators: Tokyo Cruise Ship, the Tokyo Mizube Line, and Koto-ku Waterbus. In contrast, there were wide-area routes in Tokyo’s surrounding regions that included Koiwa, Akigase, Shinagawa, and other locations. The longest route was the 36.7-kilometer link between Kasai and Akigase (Figure 3–a). One characteristic of these 1997 routes was the inclusion of the new destinations of Arakawa and Kyu-Edogawa as well as the Sumida River

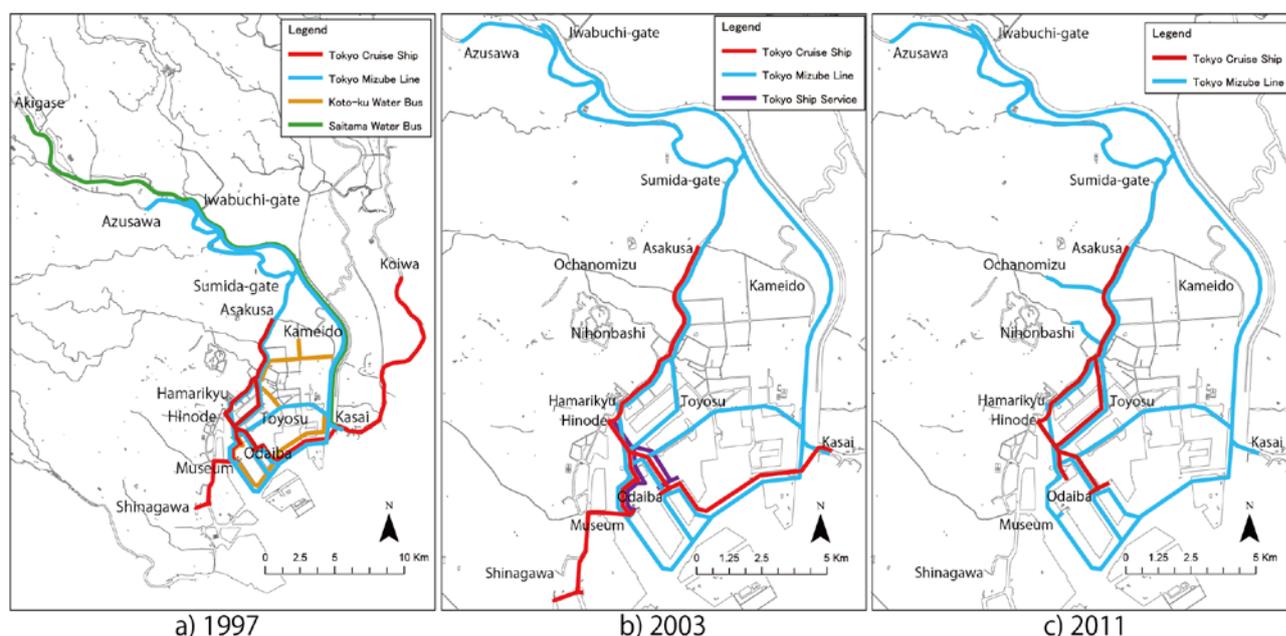
and coastal areas near Odaiba, locations that had been part of the network before World War II.

### 2.3.2. Routes in 2003

In 2003, there were many changes, including the abolition of the longest route linking Kasai and Akigase. The route between Kasai and Koiwa was closed (Figure 3–b). Consequently, the wide-area Arakawa and Kyu-Edogawa Rivers route was also abolished, and 2003 waterbus transportation was limited to Tokyo, including the Sumida River, Arakawa River, and the coastal areas near Odaiba (Figure 3–b). In 2003, the Tokyo Ship Service introduced waterbuses linking Hinode Pier with the Odaiba area. Because Tokyo Cruise Ship and the Tokyo Mizube Line also operated routes between Hinode Pier and Odaiba, three waterbus business operators were competing in 2003 to provide marine access to Odaiba.

### 2.3.3. Routes in 2011

The Tokyo Ship Service was abolished in 2007, and by 2011, there were only two waterbus companies, Tokyo Cruise Ship and the Tokyo Mizube Line. It is believed that the Tokyo Ship Service was pushed out of business by land transportation when the Rinkai Line was opened in 2002 (Shiobara et al. 2009). One characteristic of the route changes that took place between from 2003 and 2011 was the further reduction of wide-area routes. The link between Hinode and Shinagawa was abolished on September 29, 2008. Accordingly, the only waterbus routes in 2011 were those on the Sumida River and towards Odaiba (Figure 3–c). Consequently, Tokyo Cruise Ship’s scope of operations was limited to a portion of the Sumida River and the coastal areas near Odaiba, concentrating traffic in those areas to an even more remarkable degree.



**Figure 3.** Changing waterbus routes in Tokyo  
**Source:** Koike (1997), Manabe (2003), <https://www.suijobus.co.jp/>, and <http://www.tokyo-park.or.jp/waterbus/>

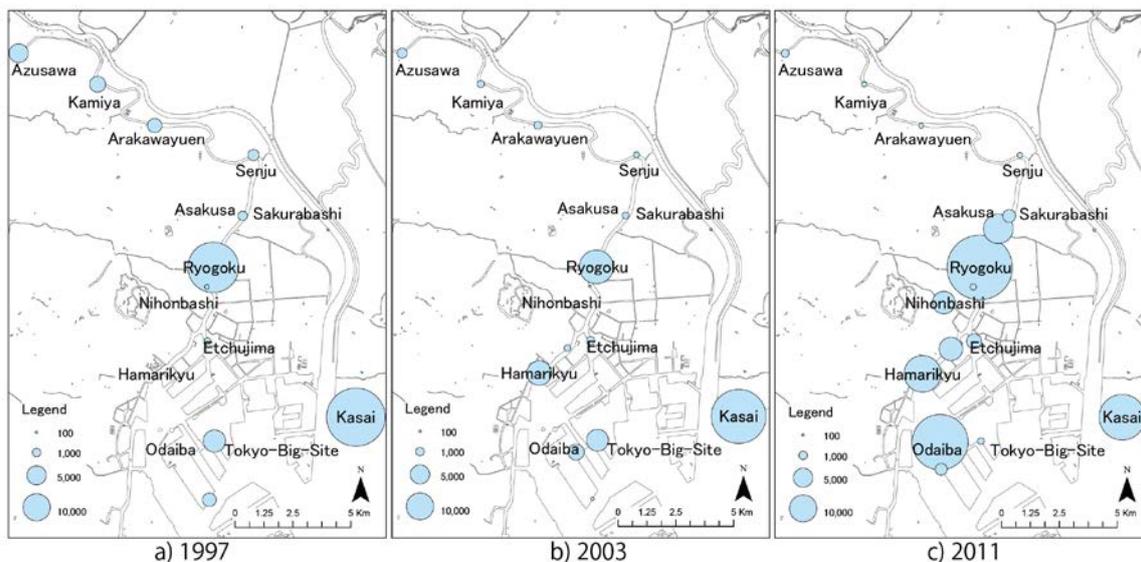
### 3. CHANGING ROUTES AND INCREASINGLY DIVERSE BOAT OPERATIONS AS SHOWN BY THE NUMBER OF WATERBUS PASSENGERS

#### 3.1 Changing routes as shown by the number of waterbus passengers

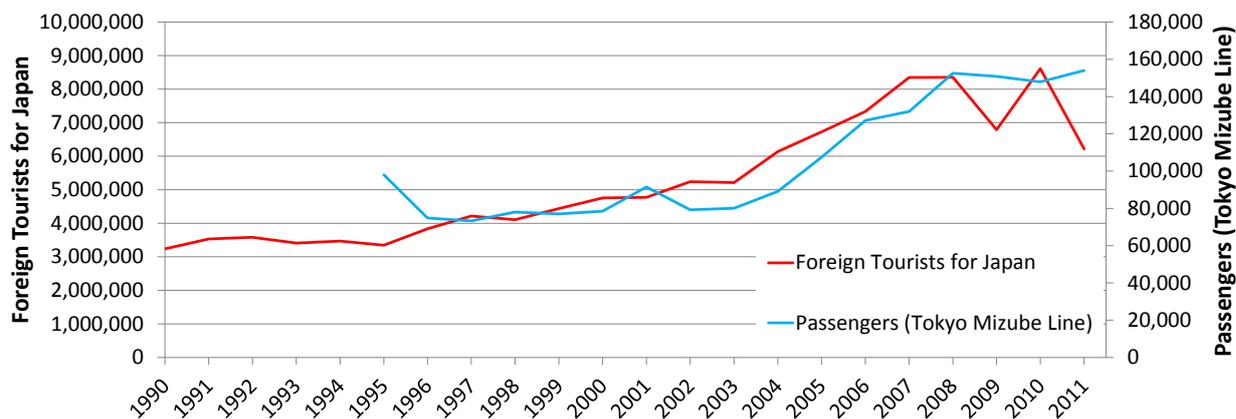
So far, this paper has looked at temporal and spatial changes in waterbus routes in relation to particular business operators. From this point on, it will focus on route changes as shown by the number of waterbus passengers, considering how waterbus routes changed along the Tokyo waterfront. A unique event in 1997 was the establishment of wide-area routes stretching more than 30 kilometers inland from Tokyo Bay. These wide-area routes had been abolished in 2011, when all waterbus traffic was restricted to Tokyo's rivers and the coastal areas near Odaiba. Waterbus business operators tried to optimize resources by eliminating wide-area routes with few passengers.

Next, Figure 4 shows the number of Tokyo Mizube Line passengers by port, based on the *Tokyo Metropolitan Park Association Business Report* (1997; 2003; 2011). According to this report, in 1997, Tokyo Mizube Line passengers were concentrated in Kasai in the Rinkai area and Ryogoku on the Sumida River (Figure 4–a). In addition, there were close to 4,000 passengers at Asakusa and ports further north, including Azusawa, Kamiya, and Arakawayuen (Figure 4–a). Incidentally, the number of passengers at Asakusa and ports further north (including Azusawa, Kamiya, and Arakawayuen) declined in 2003 (Figure 4–b). On the other hand, the number of passengers at ports in the coastal areas (such as Hamarikyu and Odaiba Marine Park) increased. This trend became more pronounced in 2011, when the number of passengers at Ryogoku and stops further north (including Azusawa, Kamiya, and Arakawayuen) fell even further. At the same time, the number of passengers drastically increased at ports on the Sumida River and in the coastal areas, including Ryogoku, Etchujima, Hamarikyu, and Odaiba. In this way, the annual total of passengers at Ryogoku and Odaiba increased to roughly 60,000 and 50,000 respectively (Figure 4–c).

Figure 5 compares the number of foreign tourists in Japan with waterbus passengers, suggesting a connection. The banks of the Sumida River are dotted with places that are popular with foreign tourists, including Asakusa, Tokyo Skytree, Ryogoku, and Odaiba (Figure 1). It therefore makes sense that the increased number of foreign tourists would be related to the increasing number of waterbus passengers on the Sumida River. Looking at the elimination of wide-area routes and the number of passengers using each port, as described above, it is clear that waterbus routes in Tokyo are increasingly centered on the Sumida River, where there are many tourist facilities. The number of passengers using each route and the presence of foreign tourists are thought to be factors contributing to route changes of this sort.



**Figure 4.** Number of passengers by waterbus stop  
**Source:** Tokyo Metropolitan Park Association Business Report (1997; 2003; 2011)



**Figure 5.** Number of foreign tourists to Japan and waterbus passengers  
**Source:** Tokyo Metropolitan Park Association Business Report, and Japan Tourism Marketing Co.

### 3.2 Increasingly diverse boat designs and patronage of waterbuses as tourist attractions

In July 2011, the Tokyo Mizube Line introduced *Kawasemi*, a smaller waterbus model, and established new routes (Figure 6–a). Conventional waterbuses generally required 150 to 300 personnel but *Kawasemi* had only 70. Accordingly, *Kawasemi* could be used on small to medium-sized rivers, such as the Kanda and Nihonbashi rivers. In this way, waterbus routes on narrower rivers, unused since the abolishment of the Koto-ku Waterbus in 2002, were reestablished. The *Kawasemi* had its own port on the Nihonbashi River, and was used by approximately 7,000 passengers in 2011 (*Tokyo Metropolitan Park Association Business Report*, 2011). As a result, boat operations, which had focused on large waterbuses navigating relatively wide waterways, such as the Sumida and Arakawa Rivers, became more diverse. The introduction of the small *Kawasemi* waterbuses into Tokyo’s smaller rivers, made it possible to view the bridges on the Nihonbashi and Kanda Rivers (small to medium-sized rivers) from the rivers themselves. In addition, the *Kawasemi* category included excursion boats that returned to their points of departure without passing through other ports.

Since 2013, excursion boats departing from and arriving at Asakusa have become tourist attractions for viewing the Tokyo Skytree from the Sumida River.

Boat decoration and design have also changed since the 2000s. Tokyo Cruise Ship commissioned designs for the *Himiko* (2004) and *Hotaruna* (2011) from a manga artist called Leiji Matsumoto. The *Himiko* and *Hotaruna* have uniquely futuristic designs and differ greatly from traditional waterbuses (Figures 6–b and 6–c). The introduction of new model ships with unique designs enhanced the appeal of waterbuses as urban tourist attractions. The *Himiko* and *Hotaruna* are operated on Sumida River routes linking Asakusa and Odaiba. Furthermore, the *Atakemaru*, modeled after the pleasure boats used exclusively by feudal lords during the Edo Period, was put into regular operation in 2011 (Figure 6–d).

As described above, the introduction of smaller waterbuses and boats with unique designs into small and medium-sized rivers is thought to have added new enjoyment to waterbuses, which are unusual vehicles. This is in addition to the traditional role of waterbuses within urban transportation as an urban tourist attraction, allowing tourists to enjoy waterside scenery while traveling (Pearce 1995; Tanno 2004). The introduction of boats including the *Kawasemi*, *Himiko*, *Hotaruna*, and *Atakemaru* has increased the number of passengers who patronize waterbuses as tourist attractions; this has been achieved through corporate efforts to diversify boat designs by waterbus operators. For this reason, the number of passengers has drastically increased at ports served by the new-model boats (Odaiba and stops on the Sumida River such as Asakusa, Ryogoku, Etchujima, and Hamarikyu).



**Figure 6.** New waterbus designs in recent years

**Source:** <https://www.suijobus.co.jp/>, <http://www.tokyo-park.or.jp/waterbus/>, Photo by K.O.

#### 4. CONCLUSION

The waterbus business in the coastal areas of Tokyo slumped because of water pollution during the period of rapid economic growth and was then gradually restored in the 1980s due to a range of factors, including the entry of new business operators and the opening of wide-area routes by existing business operators. Wide-area waterbuses travelling inland more than 30 kilometers from Tokyo Bay were steadily eliminated between the 1990s and 2000s, and this trend became more pronounced in the 2010s. Consequently, routes on the Sumida River and in coastal areas near Odaiba came to serve as the central waterbus routes. In recent years,

waterbuses have increasingly become tourist attractions because of their increasingly diverse designs. New boats with unique designs, such as the *Himiko*, *Hotaruna*, and *Atakemaru* have been introduced.

This research clarifies how waterbus routes have changed along the Tokyo waterfront, and examines the increasing diversification of the boats in operation. Routes on the Sumida River and the coastal areas near Odaiba are the central waterbus routes in Tokyo, and are also routes in which rival business operators compete for customers. Therefore, it is difficult to obtain recent data on management matters, such as route establishment and passenger usage. In the future, the author hopes to research the decision-making process of waterbus business operators in relation to route establishment and management.

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(\*Title etc. translated by K.O.)