

ABSTRACT

The topic of waterfront transformation is a vast and challenging issue, which in small and medium-sized cities is still unexplored. With growing global interest in the matter of regeneration of city-water relationship and increasing public awareness of the value of waterfront public spaces, actions to transform abandoned waterfront areas have been undertaken in many Polish port cities. City of Elbląg, located in northern Poland, is an interesting example in which historic waterfront is undergoing process of transformation. The article presents the case of waterfront transformation in this medium-sized city, focusing on historic part of the waterfront, which has been significantly destroyed during World War. The article analyses the land use of the waterfront area, the usage of the wharf, the level of access to the water and municipal policy towards waterfront development in order to better understand the current state of waterfront area and water-land relation, to identify its weak points and to indicate possible future directions for its development. The research reveals a significant disproportion in development of eastern and western riverside, underdevelopment of large part of waterfront area and lack of coherent, comprehensive municipal strategy towards waterfront along the river. This lack of planning is not conducive to strengthening the water-land relationship. The article identifies key opportunities and threats for central waterfront and general directions for sustainable development of the city.



Polish waterfront in the process of transformation: The case of Elbląg port city

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KEYWORDS

Port city; Elbląg; Poland; Waterfront; Transformation; City-water relation

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Introduction

Since the second half of the 20th century, researchers have shown an increasing interest in the global transformation of former port areas and in restoring the connection between cities and water. Many municipalities have already considered rethinking water-land relations as crucial for the development of their cities, especially port metropolises all around the world (Hein, 2016). Due to the relocation of port activities outside city centers and the abandonment of former port areas, central unused waterfronts became huge barriers separating urban tissue from the water. Since the second half of the 20th century in many cities, after many years of neglect, abandoned waterfronts have been undergoing a process of transformation, recently also in Poland.

The topic of development of the area at the edge of water and land in port cities is a vast and challenging issue, which includes such aspects as urban design, flows of goods, human interactions, and intangible element of the unique port identity of a city (Hein, 2016). Within the field of urban science, researchers are invariably interested in the topic of the spatio-functional characteristic of the waterfront area, which became visibly noticeable at the break of the 20th and 21st centuries. A number of significant publications relate to waterfront transformation and the aspect of the evolution of city-port spatial relations (Bird, 1973; Meyer, 1999; Krosnicka, 2005, 2018; Zaremba, 1962) as well as their economic interactions resulting in the spatial and functional layout of port cities (Ducruet, 2006; O'Connor, 1989; Vallega, 2001). The scientific interest in waterfront development experienced significant growth at the break of the 1980s and 1990s which related mainly to the topic of transformation of the post-industrial waterfront as well as the spatial and functional characteristic of this area after the relocation of the port activities outside the city center (Betsky, 1995; Bruttomesso, 1993; Burda, 2015; Breen and Rigby, 1994; Feilier, 2007; Hall, 1993; Hein, 2016; Hoyle, 1989, 2000; Hudson, 1996; Januchta-Szostak, 2011; Kinder, 2015; Klaasen, 1993; Kochanowski, 1998; Lorens, 2013; Marshall, 2001; Moore, 1994; Moughtin, 2003; Niemann and Pramel, 2017; Nyka, 2013; Olthuis and Keuning, 2010; Prominski et. al., 2012; Yang, 2006).

Although the phenomenon of the transformation of post-industrial areas has been thoroughly elaborated by urban scientists in the subject of big metropolises' cases such as London, Hamburg, or Rotterdam, it has not been yet profoundly investigated in the case of medium and small cities. Several waterfront transformation cases in small port cities have been described already at the break of the 1980s and 1990s in North America (Petrillo, 1987; Frederick and Stadler, 1991), however, they did not receive that much attention as spectacular projects located in capitals all around the world. Similarly, European case studies relating to small and medium-sized cities for example in Greece (Gospodini, 2001) or Montenegro (Jelovac, 2013) are in minority in comparison to vast metropolitan waterfronts. The waterfront transformation process in these cases is often bound with urban, administrative, economic, and social difficulties that are not necessarily present in large settlements. Unlike port metropolises, small cities usually face the problem of abandonment of central post-industrial waterfront due to economic and political reasons for port relocation rather than the global influence of containerization. Describing selected cases of waterfront transformation in small North American port cities, Petrillo highlights that although post-port waterfronts in small cities have significant aesthetic, economic, and recreational potential, city authorities often do not have enough funds, human resources, and know-how to manage the process of transformation (Petrillo, 1987). Lorens argues, that in the case of small cities the waterfront transformation may have even greater meaning and influence than in the case

of large urban settlements, as it can largely change the economic and spatial profile of the city (Lorens, 2019). The city of Elbląg is an interesting example of a medium-sized port city in northern Poland which used to be strongly connected to the river and was one of the major port cities in Europe in medieval times. Today, however, Elbląg has lost its strong water identity. The city currently struggles with recovering its port character and is in the process of transformation of its former medieval port waterfront. The history of the city and spatial development of its historic center is described in publications of prominent historians, conservators, and specialists within the field of urban history (Gierszewski, 1978; Gierszewski, Groth, 1993; Groth, 2000, 2001, 2002, 2005; Lubocka-Hoffmann, 1998, 2004; Myślińska, 1998; Skolimowska, 2013; Zajchowski, 2015).

The aim of this paper is to investigate the evolution of waterfront areas in Elbląg and situate it in the context of the global trend of the waterfront transformation process. The article presents the case of waterfront transformation in a medium-sized city in which Old Town together with historic waterfront has been significantly destroyed during World War. The paper contributes to research on development strategies for small cities' waterfronts in central Europe, thus enriching the scope of published case studies of this scale, which might be useful in further discussion on historic waterfront transformation in small and medium port cities. The paper shows the evolution of Elbląg's waterfront basing on research on historical maps, local zoning plans, and literature on the subject, which constituted a starting point for the analysis of the current development of post-port areas. Using cartographic data, orthophoto maps, and observations carried out during site visits, the author conducted research on the state of the waterfront, its functions, level of development, and access to water within city administrative boundaries. This particular analysis is crucial for the recognition of actual, practical integration of water and land, including a potential visual and physical connection between users of the waterfront and the river and also functional relation between water and land area. The paper presents an urban analysis of the functional layout of the waterfront area, which gives insight into existing functional water-land connections and the level of exploitation of the potential of the river, followed by an analysis of usage of the wharf. On the basis of this urban analysis, the author indicates opportunities for the future development of Elbląg's waterfront. The comparison of identified opportunities and city policy gives an insight into the level of actual exploitation of the waterfront area and possible directions for further actions.

Historical background of Elbląg port city

The city of Elbląg is located in northern Poland by the River Elbląg (Figure 1) and is inhabited by approximately 120.000 citizens. The city was founded by the Teutonic Order by the river with its own port in the place of the former Scandinavian settlement Truso. Elbląg from its very beginning was inextricably connected with the river, which majorly determined its shape and growth.

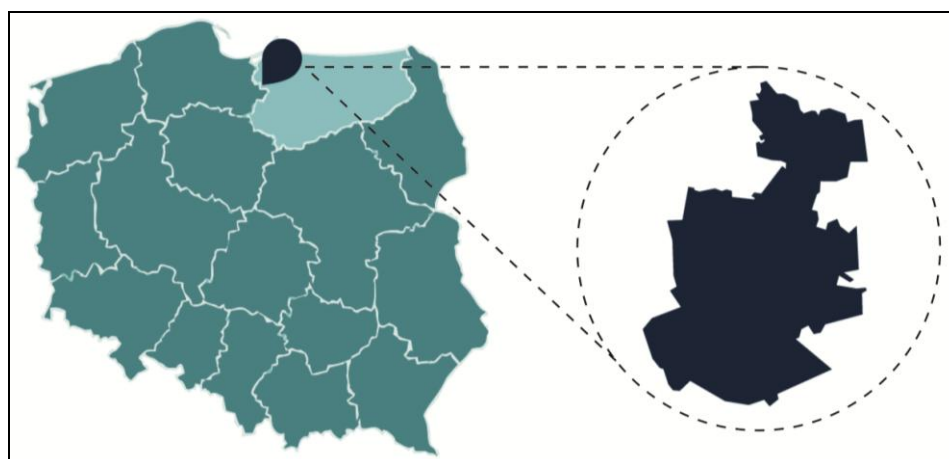


Figure 1. Location of city of Elbląg in national and regional boundaries of Poland.

Elbląg from its very beginning was inextricably connected with the river, which majorly determined its shape and growth. The Old Town, located on the right riverside, was designed as the typical port city in northern Europe with a long market at the widest street parallel to the riverfront and narrow, perpendicular streets connecting it with the port. The urban structure soon grew on the left side of the river due to the activity of the Teutonic Order and the income from the water trade and port activity. Thanks to the connection to the Vistula River and access to the Baltic Sea the city became the flourishing port city, which at the end of the 13th century was the largest seaport in the region. The port was initially located exclusively along the right riverbank. In the 14th century the opposite side of the river – later called the Granary Island – was incorporated into the existing port mainly as a storage area with granaries, cranes, and port facilities and connected with the other riverbank via two bridges (Figure 2). In the 14th century, east to the Old Town, the New Town was erected as a competitive city with its own church, town hall, and fortifications, which in the 15th century was incorporated into the city of Elbląg and since then these two constituted one settlement. The importance of Elbląg as a port city decreased around the 15th century in favor of the port of Gdańsk – currently the most developed port in the country – mainly due to lack of direct access to the open sea and problem of silting of the riverbed, which had to be often regulated (Gierszewski, 1993).

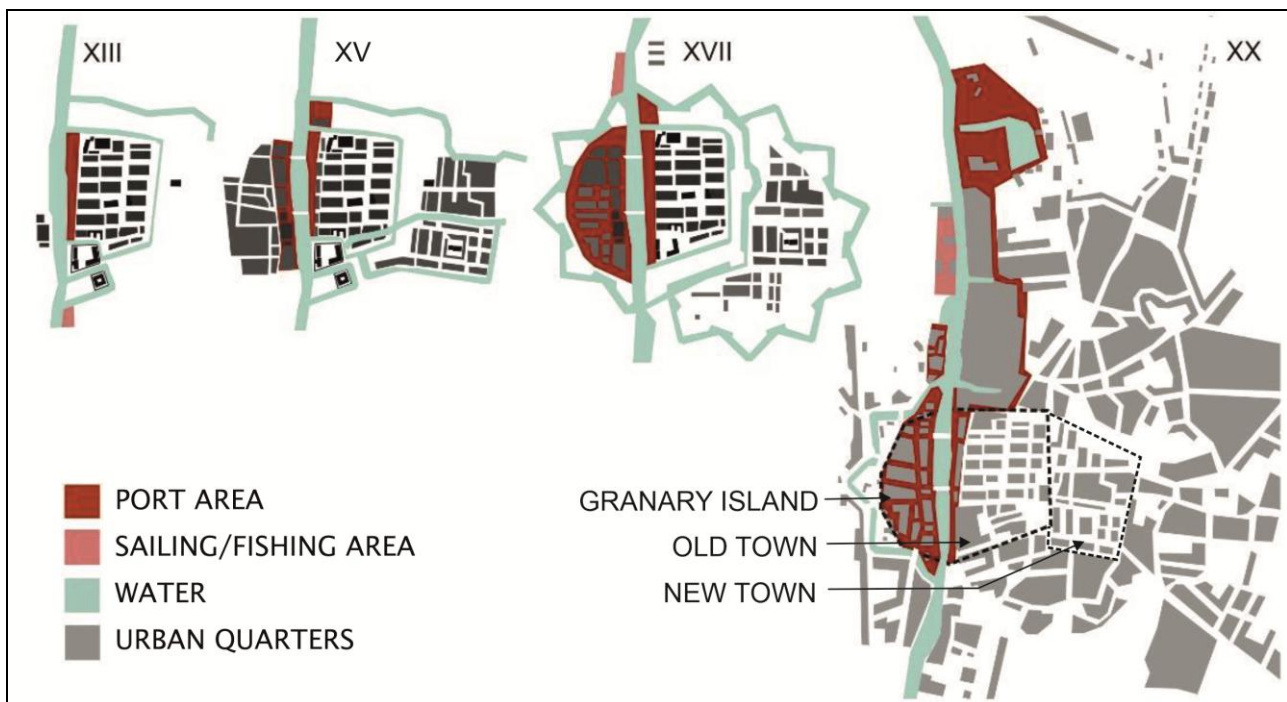


Figure 2. Scheme of historic development of Elbląg in relation to water and port activity. (Brés J., 2017).

In the 17th century, the fortifications around the Old Town and New Town were transformed into a bastion system. Later the city suffered from the attack of the Swedish army, followed by the first partition of Poland in the 18th century when it went under Prussian jurisdiction. New authorities invested major funds in deepening the riverbed and reviving water activity of the city. Already in the late 18th century, the water trade in Elbląg's port regressed and soon the city was about to transform from the port city to an industrial hub (Gierszewski, 1978).

The shipbuilding industry developed in the 19th century largely thanks to the activity of Ferdinand Schichau, who launched his first shipyard in 1854. Besides new shipyards, lots of other industrial activities were taking place by the waterfront such as automotive, rail, heavy mechanics, military production, or brewing. Soon the whole right side of the river (stretching from today's Old Town till the brewery) was occupied by the Schichau's industrial hub majorly connected with shipyard activity (Gierszewski, 1978). The waterfront north to the Old Town changed its look from the

romantic and medieval to a highly industrialized one. In the case of Elbląg, similarly to the majority of port cities, the period of industrialization resulted in the gradual separation of industrial and port activity from the city center (Hein, 2016; Hoyle, 1989; Meyer, 1999). Along with the gradual relocation of port activities to the north, where the industrial hub was growing, the historic waterfront did no longer perform its original transshipment function. The central waterfront remained open to the public performing rather commercial and touristic function (Figure 3), however, since the 19th century the public access to the water was limited due to the erection of private industrial factories north to the Old Town.



Figure 3. Postcard with the Old Town waterfront and High Bridge dated for 1915-1920. (Source: www.fotopolska.eu).

Differently to other European industrial waterfronts, the decline of Elbląg's waterfront was not related to the process of the deindustrialization of post-port areas in the second half of the 20th century but started already before II World War. Schichau's enterprise was on the verge of bankruptcy at the beginning of the 20th century. When the city went under Polish jurisdiction in 1945, port activity continued to decline due to the Soviet Union taking control over the connection between the Vistula Lagoon and the Baltic Sea, thus limiting Elbląg's access to the open sea.

After the time of industrialization and rapid growth of the city, World War II had a destructive impact on Elbląg's city center (Figure 4). Almost 60% of it was demolished. The Old Town together with Granary Island and New Town was practically destroyed (it is claimed that 90% of the buildings of the Old Town and almost 100% of the New Town was destroyed) (Myślińska, 1998). The oldest part of the waterfront was totally demolished, however, buildings of the Schichau's factory remained almost intact. In the '40s of the 20th century what was left from the historical part of the city was largely transported for the reconstruction of Warsaw and Gdańsk.



Figure 4. Picture of Elbląg's waterfront after II World War.
(Source: *Unter Polischer Verwaltung Tagbuch*, 1958).



Figure 5. Picture of Elbląg's waterfront in 2020. (Source: own archive).

After the war, the still functioning part of the port of Elbląg moved to the north of the privatized industrial hub, however, nowadays its activity is not very prominent and mainly focuses on inland general cargo transshipment and local tourism. At present, the Port of Elbląg is a regional port that supports Vistula Lagoon and Baltic coastal freight and passenger traffic. In 2019 the port handled nearly 90 thousand tons of cargo (mainly coal and general cargo) and over 40 thousand passengers were transported, however, the tonnage of cargo handled has been decreasing since 2014. Nevertheless, since relocation of the port to the north and massive war destruction, the central waterfront was abandoned and the city center turned its back on the river disregarding its huge potential.

Waterfront regeneration in the light of Old Town and Granary Island restoration process

As the process of redevelopment of the historic part of the city has been stretched over nearly half a century, the approach towards waterfront transformation has evolved in the meanwhile. First post-war plans included reconstruction of the historic urban tissue in its original form – as it was in the case of Warsaw or Gdańsk. The historic restoration was not carried out in Elbląg, which was a provincial city, for some recognized as “foreign” due to its German tradition (Lubocka-Hoffman, 1998; Urban, 2020). The process of demolition of remained ruins was launched in 1958 (Skolimowska, 2013). In 1959 another plan for Elbląg’s Old Town was developed, followed by the 1966 General Development Plan for the City of Elbląg, both of which, according to Lubocka-Hoffman, showed no respect for the historic layout of the streets and buildings and largely changed the functional program, almost totally excluding housing (Lubocka-Hoffman, 1998). In the 1970s, another concept emerged, kept in the spirit of architecture of modernism, which suggested the erection of a high-rise building complex, which fortunately was not realized (Lubocka-Hoffman, 2004).

The poor economic condition of the city prevented any rebuilding actions. This was changed only in the 1980s. In the 1970s new concept – described by Urban as ‘neo-historical panel plan’ – was introduced by Baum, Semka, and Anders. This plan was passed in 1978 and ensured the maintenance of the historic urban layout of the Old Town (Urban, 2020). In the same year, an archaeological and historical research program was launched and covered the whole area of the Old Town, which later was followed by Old Town’s reconstruction concept by Lubocka-Hoffman (General Voivodeship Conservator). Her concept was adopted in 1986 and introduced the unique idea of so called “retroversion” of Elbląg’s Old Town (Lubocka-Hoffman, 2004). The concept of “retroversion” constitutes the base for the currently binding local zoning plan passed in 1997 (with changes introduced in 2010). What was unique in this idea, is the approach to achieve the golden mean between historic reconstruction, as for example in the case of Warsaw, and radical break from the tradition of destroyed historic architecture, as it took place in Rotterdam. That was to be achieved through the preservation of the historic layout of the Old Town and the introduction of post-modern architectural forms. The rebuilding of Elbląg’s Old Town was influenced by Polish conservation tradition as well as new conservation trends included in the 1982 Declaration of Dresden, which focused not only on material aspects of urban heritage but also its immaterial values such as the character of the place (Urban, 2020).

The local zoning plan requires maintaining of the horizontal plan of the medieval city, the depth and plan of tenement houses, the height of buildings not exceeding the ones before 1945, or the structural and functional division between individual tenement houses. The plan ensured the general form of tenement housing with compact frontage, elevated ground floor, and pitched roof with ridge perpendicular to the street. It is only possible to use historical detail in a way that does not suggest that the building is a reconstructed object or a historical original.

One of the major changes in current urban layout of the Old Town compared to the 1997 local zoning plan is the introduction of open public square joining the Cathedral of St. Nicholas with the river, instead of a closed building quarter, as it used to be before the war (Figure 6). According to the local zoning plan for the Old Town and Granary Island, the waterfront area is to play the role of a prestigious water-related forum with a representative boulevard, waterfront square on both sides of the river with exclusive pedestrian traffic, touristic cruise terminal, catering, and commercial services. The topography of this space should allow good exposure of the Old Town architecture, organization of events, and usage of wharfs for yachts and touristic ships mooring. On Granary Island, there is also an area designed for recreational purposes with blue and green infrastructure, including regeneration of historic city moat.

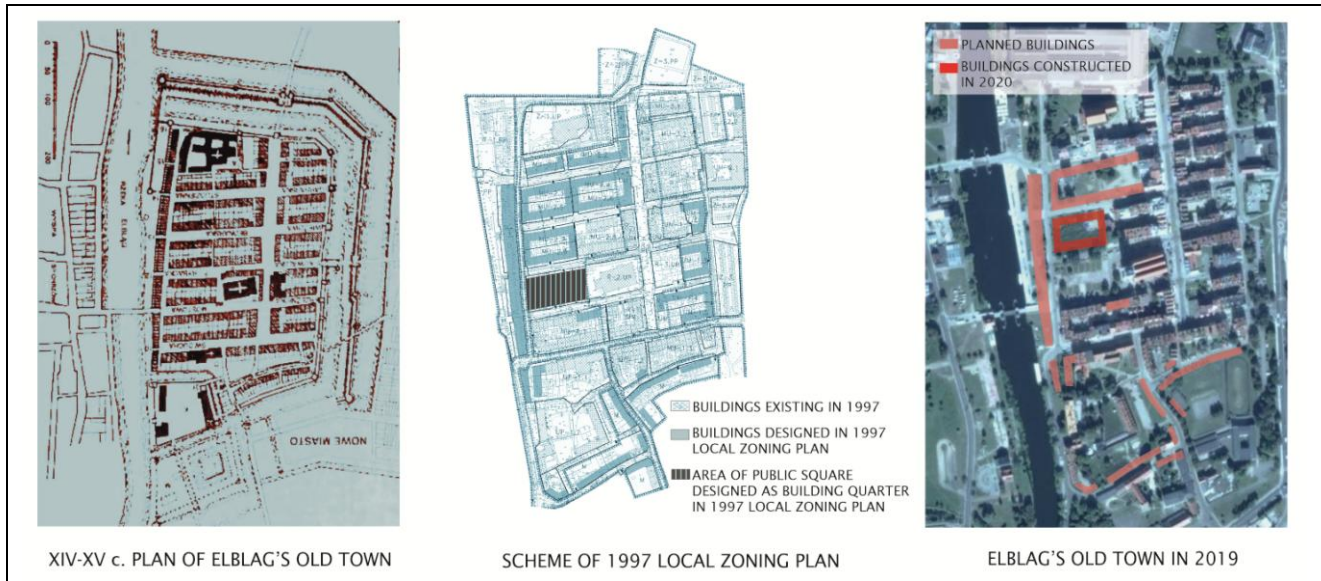


Figure 6. Development of central waterfront area within Old Town's area.

The Old Town has been mostly rebuilt, with only one quarter in the central part and long frontage along the riverfront planned to be brought up. In 2013, the city announced a public contest for the concept of spatial development for Granary Island, however, the winner has not been selected. Since that time, despite several attempts, the concept has not been developed and no investors have been found to invest in this precious land. The Granary Island, together with the western waterfront, is still largely undeveloped (Figure 7), despite several architectural contests for the development of the island and attempts of city authorities to encourage potential undertaking in this area.



Figure 7. Picture of Old Town's waterfront on the left and Granary Island on the right side.

The key aspect of the transformation of central historic waterfront from medieval times, through industrialization, war destruction until now, is the evolution of dominant function – from port activities focused on transshipment, storage of goods and related craftsmanship in middle ages, through port trade and tourism into a touristic and recreational function at present. The significant spatial difference is the level of building density along the waterfront – until II World War the embankment used to be surrounded by tenement houses, whereas, now Old Town's waterfront is designed as a double level boulevard with an open view to the street and cathedral's square and Granary Island is largely undeveloped. Currently, there is no sign of former port activity in this area – none of the port facilities or infrastructure, that used to stand here in late medieval and modern times has been maintained.

Historic waterfront in the context of the city- water relation

The historic waterfront is currently situated in the south-western part of the city. On the course of the city's development, the urban structure dominated the right side of the river and spread to the north-east, whereas, the western part remained largely undeveloped, which was due to better building conditions on the eastern side and distinctly lower flood risk. The current functional structure of the waterfront area is presented in the following scheme (Figure 8).

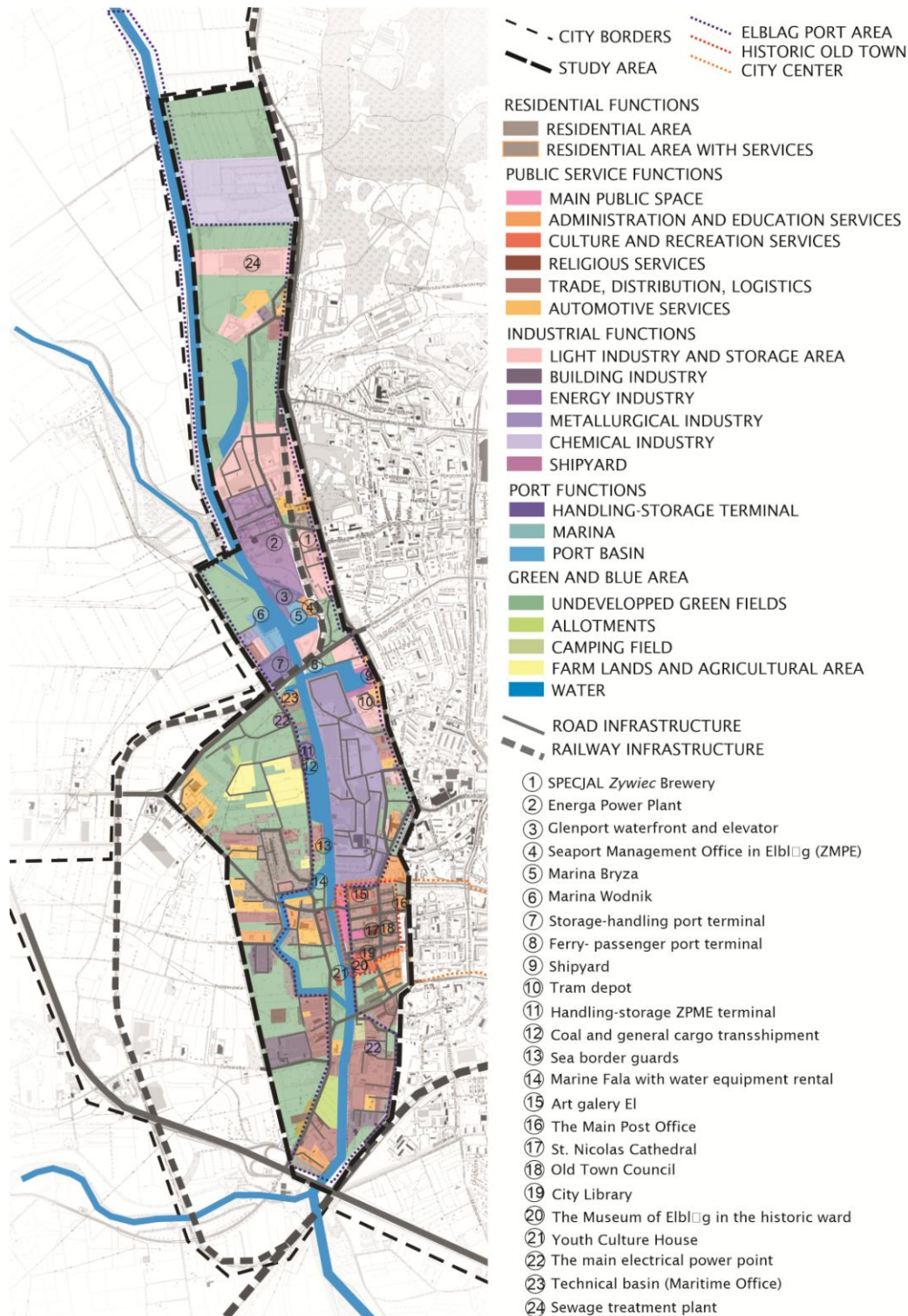


Figure 8. Functional layout of analyzed waterfront area within city boundaries. (Brés J., 2017).

The Old Town constitutes a cultural and recreational center and the biggest residential area within the whole waterfront area. The territory north to the Old Town is dominated by heavy and light industries closed to the public. The major industrial area remains within the boundaries of former Schichau's enterprise (later Zamech industrial complex) with three key companies and smaller private enterprises. At the very north of the waterfront, there is a significant amount of undeveloped land, providing the space for new investments. The southern part of the waterfront holds largely wholesale and logistic companies with minor multifamily housing and is similarly unavailable for public activity in its major part. South-eastern waterfront area, for short period after the war, was used for the purpose of port activity, however, currently port facilities remain empty to a large extent and the whole area became dilapidated. In comparison to the eastern waterfront, the western one is significantly less intensively developed and holds a spontaneously growing urban structure of low density – majorly single-family residential buildings or wholesale companies.

The western side of River Elbląg became forgotten and detached from the city center with a number of visible social problems. Although Granary Island and the surrounding housing district is very close to the Old Town, it remains distant in the perception of inhabitants. The river became a barrier rather than the center of activity and social interaction, as it used to be in history. The historic waterfront lacks integration between its western and eastern part but also in the north-south axis – both in the spatio-functional and in transportation aspect. The wide stripe of industrial use of former Schichau's enterprise, where access to the river is largely impossible due to private and industrial character, effectively detached the historic city center from the northern waterfront area. As a result, the port with a cruise passenger terminal and two yacht marinas located 2,5 km from the historic center, although not that distant on the map, is practically inaccessible via pedestrian connection along the river.

Although the waterfront within city boundaries is approximately 12 km long, there are not many functions connected strictly with the water. The length of the port working quay is less than 4 km. The port activity takes place in the cargo terminal with transshipment quays and storage facilities (no 7 in Figure 8) and passenger terminal (no 8 in Figure 8) in the northern part of the city. Apart from that, there is a private transshipment quay with grain storage next to the port terminals (no 3 in Figure 8), a small shipyard (no 9 in Figure 8), and two small marinas (no 5, 6 in Figure 8) in this part of the city. Within the central waterfront area, there is rarely used, renovated mooring quay along the Old Town with stopping point of the passenger shipping vessel and canoe, sailing, and motorboat rental at the verge of Granary Island.

The whole central waterfront on the right riverside is paved and largely well maintained (Figure 9). Practically, only the north end of the eastern waterfront remains undeveloped and in its natural state. On the contrary, the western side of the river is undeveloped in more or less 70% of its total length and besides port and yachting activity it is hardly paved anywhere. The developed waterfront serves mainly for the purpose of transshipment and storage or touristic traffic (yachting, cruise ships). Although the right side of the river is more developed than the left one, nearly half of the waterfront is unavailable for public use as it belongs to the port or private enterprises. About 30 % of the eastern part of the waterfront is undeveloped – it is not paved or the surface is in poor condition – and from time to time it serves as the fishing spot.



Figure 9. Usage of the waterfront and access to the water within Elbląg's waterfront area. (Brés J., 2017).

Opportunities and threats for the future development of the post-port waterfront in Elbląg

The river is the heritage that connects past, present, and the future and benefits the port city in spatial, social, cultural, and landscape aspects (Hein et al., 2019). Still, it is often underestimated in local development strategies in favor of terrestrial heritage, as majorly strategic and spatial documents refer to water only in relation to land to which it is adjacent or onto. Basing on presented analysis of the functional and spatial state of waterfront area within city boundaries, the article proves that the Old Town and its waterfront between two bascule bridges is the only attractive waterfront for the general public. It is situated in the city center, has strong historic value, enables connection with the river and presents good aesthetic quality.

The current municipal policy works well for the regeneration of city-water relation in the historic area, including such elements as successful waterfront boulevard renewal, new bascule bridges, annual and occasional sport, and artistic events within the waterfront and aquatic space of the river, introduction of water square as a joint public space between historic Old Market and River Elbląg. Granary Island is considered the area of priority due to the direct relation with the Old Town and its unquestionable historic and landscape values. Its waterfront, however, has not been regenerated yet and certainly needs a set of development and animation actions. This area hosts great opportunities for future touristic and recreational investments, owing to its attractive location, cultural value, access to the river, and a significant amount of free land to develop. Besides terrestrial area by the water, the river itself, which is currently underestimated in planning documents, should be given more attention in local strategies in order to provide waterfront resilience and exploit the opportunities given by it to the highest.

An important external factor that appears as a great opportunity for city development is the ongoing governmental project of the channel across Vistula Spit that will provide direct access from the Baltic Sea, through Vistula Lagoon to the port of Elbląg. The accomplishment of this undertaking will significantly influence trade and touristic traffic along the river Elbląg. That could bring great profit for the whole city and especially the port and waterfront area as long as city authorities will take advantage of this opportunity.

One of the most significant threats that need to be taken into consideration in the process of further waterfront transformation is the risk of flood, which is present basically along the whole area. The issue of sustainable water management and protection against natural disasters, such as floods should be thus of the highest priority. Another issue that appears problematic is the lack of funds for public investments along the river and the need for the introduction of incentives attracting potential private investors for the undeveloped waterfront area.

Directions for the future development of Elbląg's waterfront

The role of waterfronts and ports is to connect water and land instead of preventing access and interaction between those two bodies (Hein, 2016). Although Elbląg city authorities implement actions aiming to re-establish the connection between urban area and water in the central part of the city, the waterfront areas within city boundaries still remain largely neglected, which results in loosening the city's connection with the water, which is an essential part of Elbląg's identity.

As argued by Maurizio Carta, waterfronts are "fluid geo-communities" which require the application of complex strategy that will enable exploitation of cultural and economic benefits potentially provided by the water" (Carta, 2017). Some waterfront cases, such as for example Volos in Greece (Gospodini, 2001), Bydgoszcz in Poland (Muszyńska-Jeleszyńska, 2014) or New York (Lorens, 2013) already proved that, although the transformation process finally was successful,

one of the major problems was the fragmentation of the whole undertaking divided into separate, uncoordinated actions resulting in spatial and functional conflicts. Another negative issue connected with waterfront transformation in some cases is the homogenization of functional program introduced to the post-industrial waterfront area, which causes gentrification and exclusion of particular social groups from the space as well as speculation on the real estate market, as in the case of famous London Docklands (Lorens, 2013), Thessaloniki (Gospodini, 2001) or Poznań waterfront (Januchta-Szostak, 2011).

Risk management and coordination of different actors in the process of transformation, especially in the case of small cities, might also become a significant problem. The actions should be therefore managed comprehensively within the complex strategy covering the whole area by the river, provide multifunctionality and connection between the public waterfront and the river as well as waterfront and port (Hein, 2016) in order to provide sustainable growth of the city which character and prosperity largely based on presence of water and port activity. According to Petrillo, in the case of small port cities large scale waterfront projects are not feasible due to lack of required population and commercial density, contrary to circumstances in large cities. As he argues, however, there are some general principles of successful waterfront transformation that might apply effectively to large as well as small port cities such as the provision of public access to the waterfront and view to the body of water, introduction of commercial and recreational functions, development of the connection between the waterfront and inner-city, and ensuring flexibility of project management in time with regard to dynamics of this specific environment (Petrillo, 1987), which also applies to the case of Elbląg.

River Elbląg should become the joint between eastern and western riverside and connect them to the inner city, becoming thus the spine of the city with the heart in the Old Town constituting one, coherent complex with developed Granary Island. Apart from boosting the historic identity of the port city, the central and southern areas of the city might offer a new value of urban living through newly developed residential and mixed-use areas by the river. The waterfront has the potential to benefit the city's economy enhancing industrial activity in its northern part with relocated port and strongly promoting water-related recreation and touristic services within the central, historic area of the Old Town and Granary Island. To achieve this, the aquatic space of the river must become a focal point of all activities related to waterfront development and should play a key role in municipal strategic documents, not only as a resource but also as a space of activities, interactions, and local heritage. The area at the edge of water and land is a unique urban blue space, which constitutes aquatic as well as terrestrial space remaining in close spatial, functional, environmental, social, and cultural relation (Brés, 2018; Taufen Wessels, 2014), thus strengthening port city's identity.

Port cities, mainly due to vicinity of the water and rapid development of port technologies, face complex problems connected with water-related disasters such as floods, challenges of climate change affecting the level of water and increasing amount of heavy storm events as well as spatial and administrative conflicts. In order to overcome those challenges, it is necessary for port and city authorities (which in the case of small and medium Polish port cities is often one and the same public authority) to collaborate, understand the historic resilience of port cities, and to provide integrated spatial planning of waterfront areas encompassing environmental, economical, administrative, social, technological and spatial aspect (Hein and Schubert, 2020). The created network of attractive public spaces by the River Elbląg, with the introduction of blue and green infrastructure, would contribute in a positive way to tightening connection with water, enhancement of recreational infrastructure as well as to sustainable water management and flood protection.

Each port city is a unique organism characterized by different geographical, climatic, economic, historical, political features (Hein, 2016), which is why it is impossible to copy the applied

solutions from one city to another. Small and medium-sized cities are characterized with different scale of urban structure, economic potential, and political position than metropolises, therefore they need to work out alternative strategies for waterfront transformations than in the example of many already well-known waterfront “success stories” basing largely on large-scale urban projects and mixed-use functional pattern (Lorens, 2019). Thus, it is vital to exchange gained experience and learn from mistakes through shared knowledge and discussion on port city cases of various scales.

Conclusion

Despite the difficult history and loosened city-water relation the city of Elbląg gradually aims to the renewal of connection between the river and urban structure through the transformation of the post-port waterfront. The transformed Old Town’s waterfront boulevard, renovated by the city’s authorities in the second decade of the 21st century, is an initial step towards creating an attractive water frontage that will benefit the city’s development. Still, a lot needs to be done in order to regain the strong, port character of the city and take advantage of the opportunities connected with the presence of the river, especially in the aspect of touristic profile of the port.

It is necessary to develop a comprehensive strategy for the transformation of the city’s waterfront within city administrative boundaries that will balance the development of both sides of the waterfront area, which significantly differs at the moment, causing various spatial, functional, and social problems. The strategy should ensure a connection between those two using the river as a spine of the whole water-related area with the provision of a safe and resilient environment. It is vital to implement actions in order to exploit inactive aquatic space of the river thus enhancing city-water relation, connect urban waterfront public spaces, and provide spatial coordination between the port and urban development. It is essential to consider the capabilities of the city of Elbląg and avoid ineffective duplication of patterns used in larger cities which do not apply to the reality of medium-sized cities. At the same time, it is important to monitor the transformation process, which will enable assessment of achieved results, introducing necessary changes, and share knowledge and experience among small and middle-sized European port cities.

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