

II. СУСПІЛЬНО-ГЕОГРАФІЧНІ ДОСЛІДЖЕННЯ

UDC 911.3

DOI: 10.17721/1728-2721.2023.86.2

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REGENERATION OF A SMALL MONOFUNCTIONAL CITY (A CASE OF ZHOVTI VODY)

Background. In the context of post-socialist economic restructuring, small monofunctional cities in Ukraine are confronted with a myriad of challenges that jeopardize their socio-economic development and result in inefficient utilization of urban space, consequently leading to the gradual or rapid decline of such cities. This necessitates a scholarly examination of the particularities of approaches to urban space regeneration in small monofunctional cities, taking into account their national and local specificities.

Methods. Drawing upon the existing scientific literature, expert analytical reviews, and the prevailing urban planning and strategic documentation of Zhovti Vody, the authors conducted a comprehensive examination of the city's socio-economic landscape, with the objective of delineating its distinctiveness as a small monofunctional city and identifying the preconditions and requirements for urban space regeneration. To enhance the understanding of the challenges and prospects of Zhovti Vody in the context of monofunctionality, a SWOT analysis of its socio-economic position was undertaken. Additionally, a population survey was conducted in order to ascertain the desires and attitudes of the city's residents towards urban space regeneration, as well as to uncover latent issues perceived by inhabitants from different districts. An in-depth interview was conducted with a former employee of the Zhovti Vody City Council to gain insights into the institutional and budgetary readiness of the city for urban space regeneration.

Results. It is determined that the primary impediments to the regeneration of Ukrainian small monofunctional cities reside in the lack of stakeholder alignment in strategic planning due to deficient communication, coupled with the limited interest of the state in the development of such cities. The need for regeneration in the city of Zhovti Vody arises from the economic, demographic, social, and ecological challenges. From a strategic standpoint, it is essential to prioritize the regeneration of the industrial sector and the housing stock.

Conclusions. The ideas proposed for the regeneration projects of specific urban territories within the industrial and residential zones of Zhovti Vody were developed taking into account the peculiarities of the city's socio-economic and spatial development, as well as public opinion, and could be considered by the authorities of the Zhovti Vody urban territorial community, entrepreneurs, government officials, public organizations, initiatives, and other potentially relevant stakeholders involved in the city's regeneration.

Keywords: urban regeneration, small monofunctional city, urban space, urban development, urban regeneration project, functional zoning, Zhovti Vody.

Background

Urban areas represent complex and dynamic systems. They serve as the locus and, at the same time, the product of various transformative processes. The relative importance of each urban function changes over time; new technologies, economic activities, land use patterns, and infrastructure demands emerge, among other factors. It is not surprising that some urban spaces cease to efficiently fulfill their original function, either ending up outside the spatial configuration of the city's functioning processes, or worse, transforming into neglected, polluted, and hazardous urban areas (Couch, Sykes, & Cocks, 2013; Roberts, Sykes, & Granger, 2013). In such cases, urban space regeneration becomes a paramount concern – the restoration of its full functionality for the urban community by either reviving its former purpose or redefining its functional role and developing new functions. This regeneration can apply to the city as a whole or to specific, most problematic parts of it.

The most famous classic examples of urban regeneration are typically associated with large cities. However, small cities, particularly those that are monofunctional in nature, confront an acute need for regeneration. This need arises not only to enhance their competitiveness, attractiveness, and overall comfort but, more crucially, for their very survival as viable urban entities. Even the most adaptable small cities increasingly encounter development problems due to their inadequacy to cope with

the ever-changing conditions and contemporary population needs. Even the most adaptive monofunctional cities face challenges in their socio-economic development.

The principal aim of this research is to develop approaches to the regeneration of a small monofunctional city in Ukraine, exemplified by the city of Zhovti Vody as a case study. To achieve this objective, the following tasks have been identified by the authors: 1. Identify the specifics of small monofunctional cities and projects related to their regeneration. 2. Analyze the preconditions and opportunities for the regeneration of Zhovti Vody in the context of its monospecialization. 3. Study the perception of the urban environment of Zhovti Vody by the local population, as well as their attitudes toward potential projects for urban space regeneration, both overall and in specific functional planning zones. 4. Propose high-priority projects for the regeneration of specific urban areas based on the analysis of the city's socio-economic situation, spatial development characteristics, the availability of institutional and financial capacities for regeneration, and the local population's vision and perception.

Small monofunctional cities and their regeneration. Monofunctional (or monoprofile) cities are urban settlements characterized by a narrow economic specialization in a particular sector of economy. Typically, the economic foundation of monofunctional cities is formed either by (1) a single dominant enterprise, or (2) several enterprises

belonging to different industries but sharing a common owner, or (3) multiple enterprises operating within the same industry but under different ownerships/companies. As a result, a limited number of enterprises, the functioning of which is critically necessary for the city's existence, shape the economic landscape of monofunctional cities. The monospecialization of a city not only determines the nature of its subsequent development but also impacts the functioning of all urban subsystems, leading to the formation of a distinct urban community characterized by its own specific type of social organization. Within this community, economic, technological, social, and cultural relations form a relatively autonomous (independent) mechanism for resource regeneration (Kuzmenko & Soldak, 2010). Consequently, monofunctional cities exhibit the predominance of one or two profiling industries in terms of the number of employed individuals and the proportion of taxes and non-tax revenues contributed to the local budget (Dotsenko, 2011; Dubnitskiy & Lunina, 2015).

In Ukraine, the official definition of a monofunctional city was first established in the Cabinet of Ministers' Resolution of 2000 "On the main directions for ensuring the comprehensive development of small monofunctional cities" (Cabinet of Ministers of Ukraine, 2000), which is no longer in effect. Based on this document a small monofunctional city is defined as a city with a population of up to 50,000 people, where economic active population's specialization is determined by enterprises primarily engaged in one or two profiling economic sectors. These enterprises generate the city's revenue, support the functioning of social infrastructure, and provide other essential services for the population's well-being. Monofunctional cities are also suggested to be defined based on two criteria: (1) the presence of an enterprise employing over 25 % of the economically active population, and (2) the presence of an enterprise contributing more than 50 % of the industrial output in the locality (Radionova, 2019). Ukrainian legislation also separately identifies satellite monofunctional cities associated with enterprises engaged in uranium ore mining and processing as "administrative-territorial units with the specialization of the population's labor determined by enterprises operating nuclear facilities and uranium-related facilities" (Verkhovna Rada of Ukraine, 2019).

Toward the end of the 20th century, nearly a quarter of cities in Ukraine were monofunctional (Zhabinets, 2009). Most often, the city-forming enterprises are representatives of the mining, processing, engineering, energy, and defense industries. Depending on the degree of specialization, monofunctional cities in Ukraine are categorized as narrowly specialized (where the dominant industry accounts for more than 90% of the local economic base), specialized (with the dominant industry representing 75–90 % of the local economic base), moderately specialized (with the dominant industry accounting for 60–75 % of the local economic base), and non-specialized (where the dominant industry accounts for less than 60 % but more than 50 % of the local economic base) (Dotsenko, 2011).

The majority of monofunctional cities are small in terms of population. It is characteristic that small cities fundamentally differ from large cities in their narrow-profile development directions (Dmytrenko et al., 2019). Moreover, most small cities in Ukraine are characterized by a low level of socio-economic development and business activity, increasing unemployment, low incomes of the population, excessive demographic sensitivity of the urban system, and increased dependence on surrounding rural areas (Petrak, 2011; Dmytrenko et al., 2019).

Thus, contemporary small monofunctional cities in Ukraine face numerous challenges, including budget dependency on the economic success of a single enterprise and the condition of the specific industry, low labor mobility, narrow educational qualifications of the workforce tied to the specific industry, lack of alternative employment opportunities, critical deterioration of infrastructure, and high environmental pressure (Melnyk, 2004; Kuzmenko & Soldak, 2010; Dotsenko, 2011; Troeller & Kokot, 2014; Dubnitskiy & Lunina, 2015). Consequently, compared to other urban categories, such cities are highly vulnerable to contemporary social, economic, environmental, and geopolitical challenges.

Apart from heightened vulnerability, another challenge for the development of monofunctional cities is the inertia of the local community – the difficulty in involving local residents in any social, cultural, or civic activities. There is also a high level of paternalism, where there is hope that a benefactor (the government, philanthropist, new mayor, or new manager of the specific enterprise) will come and solve all the problems. When this (as usually) does not happen, societal disillusionment deepens, and a multitude of urban development issues intensify. This is why grassroots civic activism is particularly important for the development of monofunctional cities, as demonstrated, for instance, in the case of Kramatorsk (Szymańska, 2022).

The authors have analyzed international experience in regenerating small monofunctional cities, as well as the state policies of Ukraine and other countries aimed at promoting their development. Significant shortcomings in Ukraine's state policy regarding small monofunctional cities have been identified. Specifically, the problems outlined in the Program for the Development of Small Cities are formulated too generally and are characteristic not only of small cities but also of large cities and regions in general. As for the objectives, they require substantial changes aimed at directly addressing the problems of specific small cities (possible generalization of these problems within certain functional types of such cities). Measures should be focused on unwaveringly accomplishing these objectives and solving the problems of small cities (Ukrainian Center for Cultural Research, 2018). Overall, such broad programmatic documents are unlikely to be effective tools for addressing the development issues of small monofunctional cities (Dotsenko, 2011).

A strategic direction for the development of Ukraine's monofunctional cities is their gradual transformation into polyfunctional ones. Economically, this means diversification of the economy as a whole and industrial production, in particular (Dotsenko, 2011; Pidgrushnyi et al., 2011; Maruniak et al., 2021). For specific types of cities, depending on their vulnerability, current socio-economic dynamics, and economic profile, funding schemes can be established, including investments from the state budget, donor programs, or municipal bonds (Birkmann, Garschagen, & Setiadi, 2014). Modernization of existing and construction of new modern social infrastructure facilities, expanding the range of services they provide, and building new housing can serve as incentives for the social development of small monofunctional cities (Dotsenko, 2011). Socio-economic indicators of a small city's development are related to factors such as its geographic location, specialization, historical development, and taking these factors into account and comprehending them by the authorities when planning urban development (Servillo et al., 2014). However, the diversification and restructuring of the urban economy demand improvements in the

mechanism of strategic management of the development of monofunctional cities (Dotsenko, 2011; Ukrainian Center for Cultural Research, 2018).

Previously, city-forming enterprises resolved all the problematic issues related to the socio-economic development of small monofunctional cities, but now, opportunities for involving various stakeholders in urban development have expanded due to local activism, external grants, and the use of new approaches and concepts in urban development (Provotar & Volkova, 2022).

An example of the transformation of a monofunctional city can be found in Tumbler Ridge, British Columbia, Canada, which shares a historical trajectory resembling Ukrainian cities like Zhovti Vody in Dnipropetrovska Oblast, Novyi Rozdil in Lvivska Oblast, and other Ukrainian small monofunctional settlements that heavily rely on natural resources and faced decline due to mine closures. Tumbler Ridge was established in the early 1980s in the remote backcountry of British Columbia to serve two coal mines, Quintette and Bullmoose. The city's development was triggered by a 15-year contract to supply 100 million tons of coal to a consortium of Japanese steel mills. At full capacity, the two mines provided 70% of all local jobs and contributed 65 % to the local tax base. However, a crisis struck the city when the Quintette mine unexpectedly closed three years ahead of schedule. While the initiators of the project had initially intended to transition to a more diversified economy, the few initiatives proposed in this direction lacked support from local enterprises and government bodies, leading to limited implementation. Consequently, the population decreased as many residents were unable to find new jobs. Subsequently, regional and city authorities established a special commission for the city's revival, which devised a three-stage transitional planning process: 1) short-term plans focusing on providing essential services, resolving housing issues, and implementing worker retraining programs; 2) medium-term plans aimed at restoring local economic stability, population measures, and stabilizing the provision of local services; 3) long-term plans directed towards diversifying the local economy, supporting new

businesses, and implementing new business ideas. The diversification strategy included the development of forestry, oil and gas extraction, leisure and tourism industries, private enterprises, and a pension-educational center. The region initiated an international marketing campaign centered on affordable housing and a comfortable lifestyle amidst the beautiful natural landscape. The city appointed a director of social planning, whose responsibility was to develop social networks and strengthen the social cohesion of the local community. The city's lands were divided into plots with various purposes, and an efficient market for goods and services was established. Tumbler Ridge's advantage was its affiliation with a region that offered diverse economic opportunities in the oil and gas industry, tourism, forestry, and agriculture. Moreover, Tumbler Ridge benefited from political support from the neighboring local administrations, which considered the survival of this community crucial for the entire region (Troeller & Kokot, 2014).

Analyzing the Ukrainian experience of transforming cities in the Western Donbas sub-region of Dnipropetrovska Oblast, Slavutych in Kyivska Oblast, and Novyi Rozdil in Lvivska Oblast revealed common features and shortcomings in urban regeneration policies in Ukraine. One of the main mistakes in the regeneration process was the lack of involvement of all relevant stakeholders in strategic planning. Specifically, the opinions of the municipal community, local civic organizations, and urban planning experts were not taken into account. Foreign partners played a significant role in the transformation of these cities, while the state's contribution was minimal. Consequently, most implemented projects had local significance, focusing on short- and medium-term goals without being integrated into a coherent system with a common vision and concept. It is essential to understand that the passiveness, helplessness, and inactivity of the municipal community, particularly characteristic of small monofunctional cities, hinder any development progress. Therefore, involving the population as much as possible in regeneration projects for such cities is of utmost importance (Troeller & Kokot, 2014; Dronova & Kononenko, 2019).

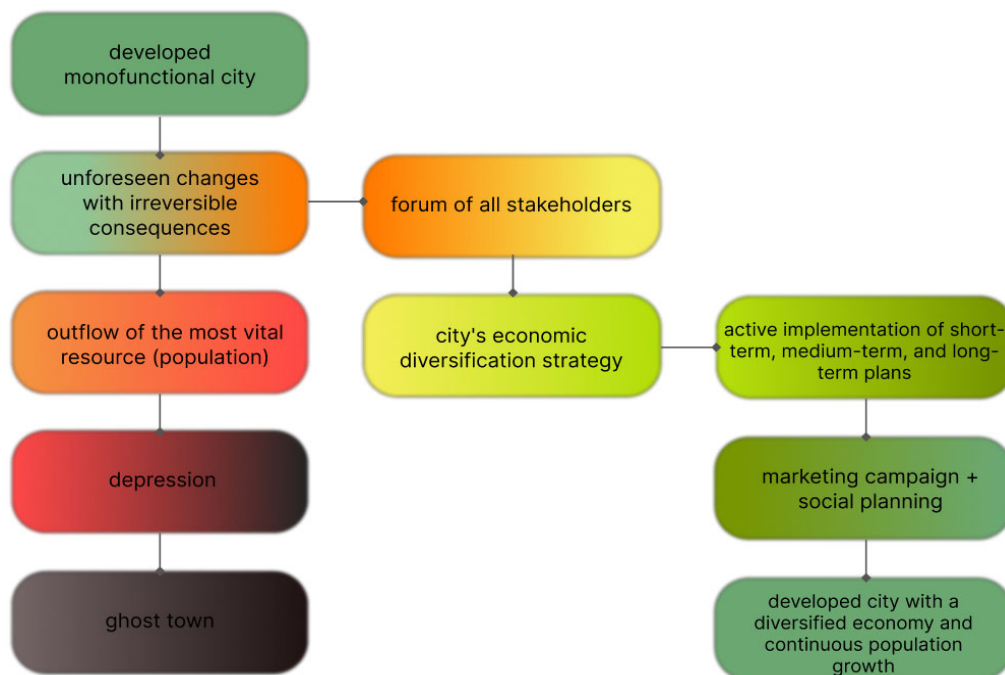


Fig. 1. Trajectories of monofunctional city development

After analyzing international and Ukrainian experiences in regenerating monofunctional cities, the authors have developed a visual representation of two generalized development trajectories for monofunctional cities: either transforming from a developed monofunctional city into a ghost town or, through timely and active regeneration efforts, becoming a developed city with a diversified economy (Fig. 1). Irreversible changes with significant consequences, such as sudden energy price hikes, bankruptcy of certain economic structures, or global political or economic changes, are understood as unpredictable events. The main objective of social planning, particularly in the context of Ukrainian small monofunctional cities, is to rid the municipal community of inertness and isolation.

Methods

Based on existing scientific literature, expert analytical reviews, and current urban planning and strategic documentation of Zhovti Vody city, the authors conducted an overview of the socio-economic situation in Zhovti Vody with the aim of delineating its specificity as a small monofunctional city and identifying preconditions and needs for urban space regeneration. To gain a better understanding of the city's issues and prospects in the context of its monofunctionality, the authors conducted a SWOT analysis of its socio-economic situation.

In order to comprehend the population's needs and opinions regarding urban space regeneration, the authors conducted a survey of city residents (a total of 48 individuals). The respondents mainly comprised individuals over the age of 30 (an attempt was made to include two male individuals aged 14; however, from the conversation, it became evident that they were unaware of the city's problems, their causes, its history, and had no desire for any changes – they wished to move to another city). Among those surveyed, 40 % were internally displaced persons (IDPs) from southeastern regions, while the remaining 60 % were born and raised in Zhovti Vody (although most reside in the city, they earn their livelihood abroad). The survey was conducted in two locations within the city: (1) Bulvar Svobody [Boulevard of Freedom] – the main avenue of the newer city districts (densely populated and vibrant areas with supermarkets, scarce green and recreational zones, and nine-story Soviet-era apartment blocks); and (2) Vulytsia Bohdana Khmelnytskoho [Bohdan Khmelnytsky Street] – the main area of the old city districts (quiet, cozy, surrounded by greenery, located between two parks and near the Palace of Culture, with residential buildings consisting of two to three floors). The questionnaire included the following questions (summarized): (1) which specific functional areas of Zhovti Vody require changes and updates? (2) What changes should occur in the city as part of regeneration projects? (3) What types of urban regeneration are unfeasible or irrelevant for implementation in Zhovti Vody? (4) Which parts of the urban territory need regeneration as a priority, and why? (5) Who could serve as financial donors for potential regeneration projects? (6) Is it reasonable to carry out regeneration of the former "Elektron" instrument-making plant? (7) Which parts of the city's housing stock are most in need of regeneration? (8) What are the most characteristic problems related to the housing stock?

To gain a better understanding of the city's institutional and budgetary readiness for urban space regeneration, as well as its experience in interacting with financial donors, an interview was conducted with a former city council employee (from 2016 to 2019) – hereinafter referred to as "CCE".

Results

Characteristics of Zhovti Vody as a small monofunctional city. Zhovti Vody is situated in the western part of Dnipropetrovska Oblast, near the border with Kirovohradska Oblast, close to the Zhovta River. The name of the city is linked to the first decisive victory of the army led by Bohdan Khmelnytsky over the Polish nobility in April-May 1648.

Zhovti Vody is a phenomenon of a former closed city. Until 1957, the city was not marked on maps and was given the conditional name "Poshtova Skrynina 24" [Post Box 24]. Visitors from outside required permission to enter the city and access any government institution's territory. Simultaneously, one enterprise – the Eastern Mining and Processing Plant (currently known as the "Eastern GZK" State Enterprise) – provided for all aspects of life in the city, from ore extraction to the functioning of socio-cultural establishments. With the collapse of the USSR, everything changed abruptly, the system disintegrated, and the city became unwanted and progressively transformed from a clean, comfortable, and prosperous place to a forgotten, neglected, and ruined city (*Zhovti Vody City Council, 2023*). The transformation processes of urban space typical of the post-socialist era, including modernization, had limited and fragmented dissemination in Zhovti Vody (*Gnatiuk, 2017*).

The main resources of the city are iron and uranium ores. Specifically, Eastern GZK was one of the 28 uranium mining centers worldwide and ranked among the top ten until 2020, making it the largest in Europe (*Eastern Mining and Processing Plant, 2018*). It was the only Ukrainian enterprise that ensured the extraction of natural uranium and the production of its oxide concentrate. The uranium concentrate produced by Eastern GZK was of almost nuclear purity, complying with world standards, along with sulfuric acid and machinery production (*Zhovti Vody City Council, 2023*).

The city had its highest population in 1989 (*Main Department of Statistics..., 2021*), which can be attributed to the peak of its economic prosperity. Following the collapse of the USSR, the city's economic situation declined, accompanied by a continuous population outflow. The moment of Eastern GZK's suspension of activities in 2018 marked the most significant population exodus from the city, illustrating the monofunctionality of the city and demonstrating the primary problem of a monoprofile economy: the loss of one enterprise/resource sector/production industry leads to the city's decline. The analysis of the age structure of Zhovti Vody population indicates population aging. The proportion of people aged over 65 in Zhovti Vody constitutes 20.6 % of the total population (*Main Department of Statistics..., 2023*), which is 7 % higher than the population aged 0 to 15. Again, population aging is a consequence of the city's monofunctionality. Since 2018-2020, after the cessation of Eastern GZK's activities, the city lacks resources to provide basic infrastructure development. In 2018, the Cultural Palace municipal cultural center ceased active operations – a central hub for cultural leisure in Zhovti Vody. Consequently, with the absence of the Institute of Entrepreneurship "Strategy" and other establishments since 2018, the younger generation has no reasons to stay in the city, leading to migration of families to other cities in Ukraine and abroad.

The results of the SWOT analysis of Zhovti Vody's socio-economic situation in the context of its regeneration (as of 2023) are presented in Fig. 2.

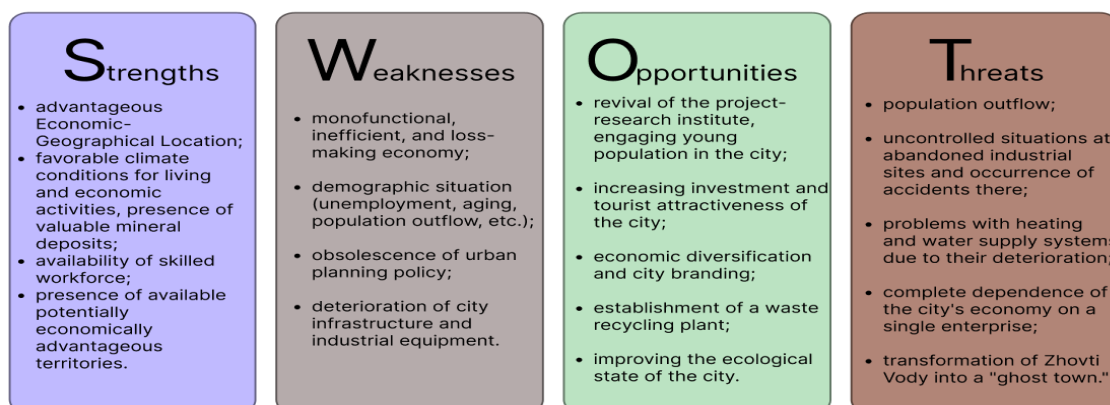


Fig. 2. Results of SWOT analysis of the socio-economic situation of the city of Zhovti Vody

Need for urban regeneration in Zhovti Vody and opportunities for implementation. As noted earlier, the origins of the need for urban regeneration in cities vary significantly. In the case of Zhovti Vody, the need for regeneration arises from its economic, demographic, social, and ecological challenges. With no city-forming enterprises remaining in the city and half of its budget relying on intergovernmental transfers, Zhovti Vody cannot sustain itself independently and is reliant on state expenditures.

The continuous outflow of economically active population is occurring due to the closure or idle status of almost all major enterprises in the city. Additionally, the inertia of the urban community and the closed nature of local authorities further compound these problems. Zhovti Vody has been listed among the non-transparent cities of Ukraine during the period of martial law (*Transparency International Ukraine*, 2023). On the municipal community's website, it is impossible to access the city budget structure and its execution status, despite public information access being a constitutional right of every individual, which the local authorities should facilitate. Transparency is one of the key principles for the successful revitalization of Ukrainian cities and for maintaining support from international partners. Moreover, with increased transparency in a city, potential investors are more inclined to invest resources.

All functional areas of the city require renewal and regeneration (*Gnatiuk*, 2017). However, from a strategic standpoint, it is essential to prioritize the regeneration of the industrial sector and the housing stock. This is because establishing enterprises that would form the basis of Zhovti Vody's economy is crucial, as it would pave the way for the development of essential infrastructure and attract economically active residents back to the city. Simultaneously, regenerating the housing stock is necessary to provide the population with decent living conditions since the buildings, constructed during the Soviet era, have deteriorated physically and require repair. Additionally, the engineering aspects of the residential structures were designed for a 50-year lifespan, and they are currently in a dilapidated state. The older districts of Zhovti Vody with 2-3-story buildings are aesthetically appealing, have abundant greenery, offer tranquility, and are ecologically favorable, making them potentially attractive to newcomers if regenerated.

It should be noted that certain regeneration goals, including economic, ecological, and demographic aspects, were mentioned in the Zhovti Vody City Development Strategy until 2027 (*Zhovti Vody City Council*, 2022). However, these goals are quite vague, lacking clearly

defined implementation steps to achieve them. For instance, the strategy mentions the need for economic diversification, with intermediate steps such as supporting small and medium-sized businesses and improving the investment climate, but it does not specify how these goals will be accomplished. Moreover, in the economic component, only the development of small and medium-sized businesses is considered, despite the demographic aspect calling for providing a large number of people with job opportunities (with a small-sized enterprise employing no more than 50 individuals and a medium-sized one employing no more than 250). Furthermore, the strategy does not elaborate on the actions planned for fostering international cooperation, despite its significance as an issue discussed for many years. Local planners did not involve the public in the development of the strategy.

In response to questions about potential donors for the regeneration of Zhovti Vody, the CCE mentioned that it is challenging to consider funding from the city budget. The analysis of last year's city budget execution revealed a deficit of 10 million UAH (due to tax arrears and the closure of a tobacco factory). Therefore, it is necessary to involve a range of stakeholders at all levels of government, taking into account the city's development strategy. In this regard, the state could become one of the financial donors for projects that are of interest to the state in terms of Ukraine's development prospects (e.g., financing the industrial complex, developing new iron ore deposits, expanding uranium enrichment based on the Eastern GZK). In areas where the state cannot or is not interested in being a donor, alternative options must be explored. Currently, this is not so challenging, given that many foreign investors, funds, and charitable organizations implement numerous projects to assist communities with significant development potential and ready project proposals. Examples abound: in the 2000s, when Zhovti Vody still maintained its image as an industrial and research center, German investors from Samsung showed interest in establishing a production facility for computer components (motherboards) at the South Radio Plant (now defunct). However, the former municipal authorities declined their proposal. It is pertinent to involve businesses in financing regeneration projects, but clear alternatives must be formulated, such as tax incentives or reduced land lease payments.

According to CCE the city council should coordinate the regeneration process, while various expert groups (such as ecological, industrial, residential, recreational, marketing, etc.) should develop its strategy. It is essential to involve the population, including potential narrow-profile

specialists who could contribute to the project development. Thus, the regeneration project should be comprehensive, with defined priority areas – namely, the industrial sector and housing stock.

The CCE also highlighted the need to create an investment passport for Zhovti Vody, a document that is currently lacking but crucial for successfully implementing the city's regeneration. The investment passport is vital for conveying necessary information about the community to potential investors and encouraging them to take action. It serves as the first step in marketing the territory, thereby enhancing its investment attractiveness to potential investors by providing them with essential information required for making investment decisions.

According to survey results, the majority of respondents believe that the industrial zone and road infrastructure should be regenerated first. Newcomers to Zhovti Vody were surprised by the condition of the former "Elektron" instrument-making plant, considering they came from an area of active armed conflict to peaceful Zhovti Vody and found buildings in a similar state as those in Donbas. The survey also revealed that the city's residents are unaware of its ecological issues, despite the city having received over 79 million UAH for pollution discharge directly into its water bodies in 2022. It seems that the presence of numerous green areas in the city masks the existing environmental problems in the perception of the population.

As for the regeneration of functional zones, respondents agreed that all zones require some form of regeneration. However, it is worth noting that a significant number of respondents do not see the need for regenerating the recreational and nature conservation zone. Additionally, eight pessimistic "catastrophists" were identified among the

respondents, who believe that while all functional zones require regeneration, nothing will come of it, projects will not be implemented, and the city is heading for decline. This observation once again confirms a typical issue in a community of a monofunctional city – mistrust in the authorities and the government.

During the survey, it was revealed that the city's residents generally do not consider the possibility of attracting investors for Zhovti Vody's regeneration. They believe that funding should primarily come from the city budget or a combination of the city budget and private businesses. The desire of some respondents to finance regeneration projects solely from the city budget is explained by their mistrust in the "corruption of the city mayor". There were implications that the city should be rebuilt through the efforts of the city mayor rather than relying on the city budget.

Regarding the regeneration of industrial zones, the authors propose regenerating the industrial zone of the former "Elektron" instrument-making plant, covering 10.8 hectares, and the Institute of Entrepreneurship "Strategy", where specialists for the future industrial complex could be trained. As of the preparation of this article, the potential of the studied zone is largely untapped, with only a few purchased premises, while the "Elektron" instrument-making plant has been in a poor technical condition for several decades. Moreover, there have been several fires in this area. Considering these arguments, this urban area requires regeneration on a priority basis. The industrial zone lies between the park in the east and residential areas in the west. To the south of the industrial zone, closer to the city's border, are wheat fields, while 144 meters to the north of the industrial site is the Institute of Entrepreneurship "Strategy" (Fig. 3).

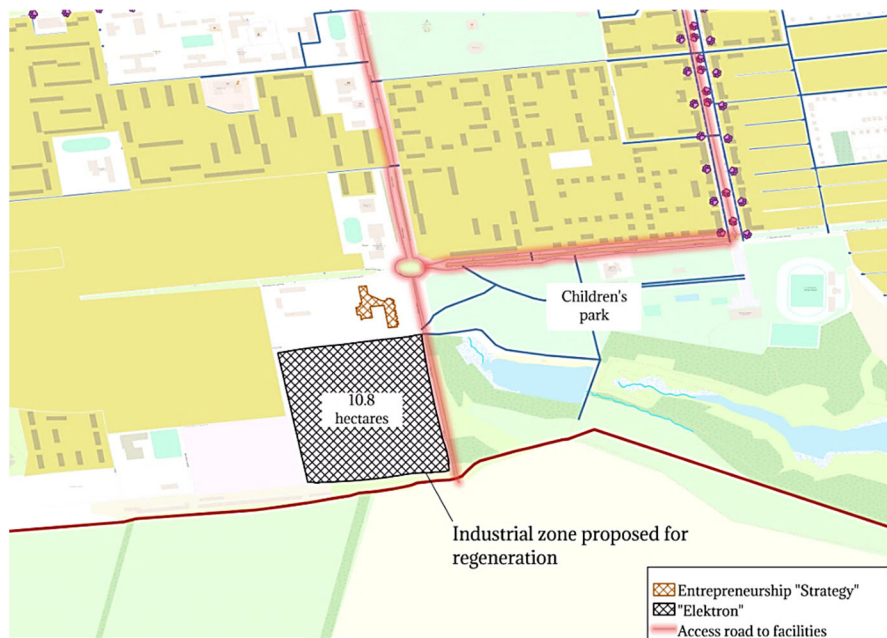


Fig. 3. Proposed area for the regeneration of industrial development in the city of Zhovti Vody

As mentioned during the interview with the First Deputy Mayor of 2016–2019, the regeneration of the city's industrial complex should include an analysis of existing enterprises and the possible return of military-industrial functions to the former "Elektron" plant. While not necessarily with the same functionality, the production of ammunition could find its place there. Considering that some premises in the industrial

zone have been acquired by the PAT "GARANT METYZ INVEST" (hardware factory), there are enough available spaces for potential placement of a production facility following a technical audit. The advantage of locating production in the old part of the city and specifically at the former "Elektron" plant is due to the presence of the nearby Institute of Entrepreneurship "Strategy", which could be

used to train personnel for this plant and simultaneously regenerate the educational space of Zhovti Vody. Establishing programs for defense-related specialties at the "Strategy" institute could potentially attract young professionals and their families from other cities in Ukraine.

Moreover, there is another problematic aspect that underscores the need for a comprehensive approach to the regeneration process – the level of development of the transportation and road infrastructure, which any investor would consider. The existing road access to Zhovti Vody is very problematic, with two roads featuring terrible road conditions to reach the industrial site. Therefore, the regeneration of the proposed industrial zone will require simultaneous investments in the city's transportation infrastructure. However, the city's energy capacities should be sufficient for a new large-scale production since it was designed for this purpose, and many people have left, leaving the energy capacities underutilized with potential to spare.

Therefore, the regeneration of the industrial zone, along with the return of the higher education institution to the city, will bring employment opportunities and highly skilled professionals to the community. It will also help address demographic issues such as unemployment, population outflow, reduction, and aging, as well as economic problems. Moreover, it will contribute to the city's budget and

in the long term help diversify its economy, making Zhovti Vody more renowned and appealing to investors.

Regarding the regeneration of residential areas, the last major renovation of the housing stock in Zhovti Vody took place 30 years ago, which included capital repairs of facades, roofs, sewage, and water supply networks. Although current repairs are ongoing, they are mostly carried out by residents, and municipal services are not significantly involved in the regeneration of residential zones.

From the survey results, it became apparent that both residents of new and old housing prefer spending their leisure time and free time in the old districts of Zhovti Vody. These areas are characterized by two to three-story buildings, abundant green spaces, and the presence of social-cultural facilities. Therefore, it is suggested to prioritize the regeneration of one of the quarters in the old district. Most residents consider this residential development as the "face of the city" as it is located in the cultural center of Zhovti Vody. Moreover, these buildings were constructed much earlier than the typical 9-story buildings in newer districts and require more urgent regeneration of facades, roofs, and especially utilities. The territory of the residential zone proposed for regeneration is marked with red hatching on the map (Fig. 4).

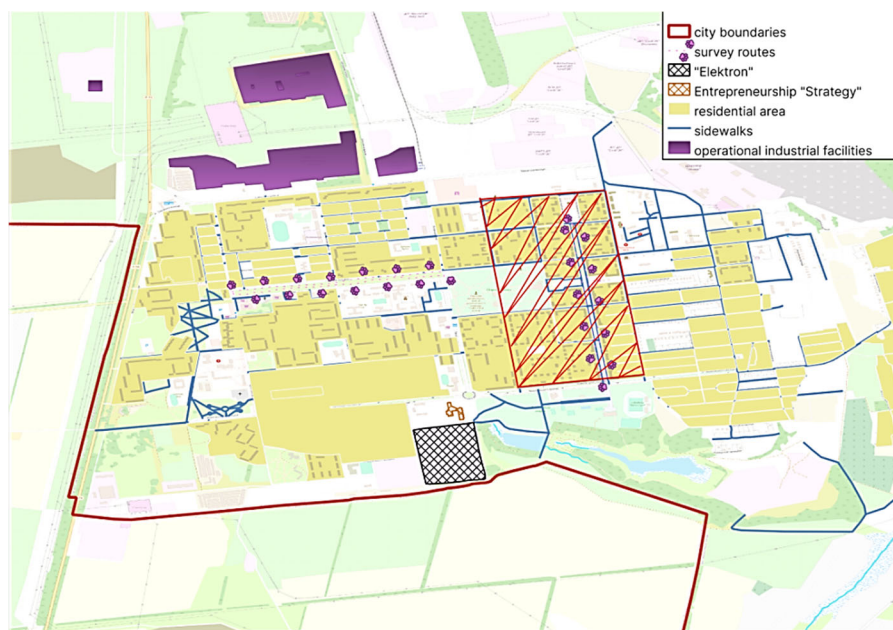


Fig. 4. Proposed area for the regeneration of residential development in the city of Zhovti Vody

The proposed residential area is located in one of the most popular parts of the city, namely in the Park of Glory, which partially covers this zone. The Park of Glory serves as the venue for all events and concerts and is the cultural hub of the city. Within the district that requires regeneration, there are approximately 203 buildings. The technical condition of the residential infrastructure is unsatisfactory, though not yet critical (Gnatiuk, 2017).

As previously mentioned, the regeneration of the residential zone should be financed through private businesses (via proposed alternatives and incentives), government support, international charitable organizations, investors, etc. The regeneration of the housing stock will make the city more attractive to its residents, IDPs, and

tourists, while also enhancing the quality of life and the overall health of the population.

Discussion and conclusions

The research has analyzed the prospects of regenerating the small monofunctional city of Zhovti Vody. The need for regeneration arises due to the city's economic, demographic, social, and environmental problems. With all city-forming enterprises either liquidated or in a state of idle, there is a constant outflow of economically active population, resulting in the deterioration of urban infrastructure and neglect of public spaces and residential buildings. In addition to these issues, the inertness of the urban community and the closed-mindedness of the local authorities towards innovations and communication, as well as the lack of alignment among stakeholders regarding the

city's development strategy and response to current challenges, further hinder the city's institutional readiness for regeneration. The urban planning documentation of Zhovti Vody only partially reflects the need for urban space regeneration, lacking clearly defined steps to achieve the strategic objectives of urban development.

The survey of local residents indicates that they generally approve of the idea of regenerating the city, albeit with partial belief in its success. The public evaluation of the priority directions for regeneration and its funding sources is only partially adequate, influenced by certain perceptual stereotypes (residents tend to underestimate the city's ecological problems due to its high level of greenery), political sympathies, and paternalism (distrust of the city authorities while simultaneously expecting them to be primarily responsible for the current state and future development of the city).

Since all functional zones of the city require at least some form of renewal, the regeneration of Zhovti Vody should be comprehensive. However, the first priority, due to the need to provide employment for the population, should be the regeneration of neglected industrial zones with full or partial restoration of their industrial functions. The second priority should be the regeneration of quarters with old residential buildings, as it will improve the quality of life for residents, preserve the authentic urban architecture of the mid-20th century, and maintain an important element of the city's identity. Funding for regeneration projects may be a mix of sources, including state finances (for areas and objects of direct strategic interest to the country), local budget resources, private businesses, and international charitable organizations. Private investors could also be offered tax or other incentives. It is crucial to involve local experts (including municipal administration employees and ordinary residents), the urban community, small and medium-sized businesses, as well as representatives of state authorities in the development, discussion, and implementation of the regeneration strategy/plan and specific projects, considering the strategic significance of Zhovti Vody's sector of the economy for Ukraine's national security.

The ideas proposed in this article for the regeneration projects of specific urban territories within the industrial and residential zones of Zhovti Vody were developed taking into account the peculiarities of the city's socio-economic and spatial development, as well as public opinion, and could be considered by the authorities of the Zhovti Vody urban territorial community, entrepreneurs, government officials, public organizations, initiatives, and other potentially relevant stakeholders involved in the city's regeneration.

Contribution of the authors: Oleksiy Gnatiuk – conceptualization, methodology, conclusions and implications; Olha Khrebtishcheva – empirical data collection and analysis, literature review, conclusions and implications.

Acknowledgement: The authors received no financial support for the research, authorship and publication of this article from any financial institution in the public, commercial or non-commercial sectors. The authors are thankful to anonymous survey participants, as well as to the informants from the city administration in Zhovti Vody, for their valuable information used in the research.

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Отримано редакцією журналу / Received: 18.04.23

Прорецензовано / Revised: 02.05.23

Схвалено до друку / Accepted: 30.06.23

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РЕГЕНЕРАЦІЯ МАЛОГО МОНОФУНКЦІОНАЛЬНОГО МІСТА (НА ПРИКЛАДІ МІСТА ЖОВТІ ВОДИ)

Вступ. В умовах постсоціалістичної реструктуризації економіки малі монофункціональні міста України зустрічаються з цілою низкою викликів, що загрожують їхньому соціально-економічному розвитку й зумовлюють неефективне використання міського простору та, як наслідок, поступовий або швидкий занепад таких міст. Це вимагає наукового осмислення специфіки підходів до регенерації міського простору в малих монофункціональних містах з урахуванням їхньої національної й місцевої специфіки.

Методи. На основі аналізу наявної наукової літератури, експертних аналітичних оглядів і чинної містобудівної та стратегічної документації міста Жовті Води авторами було здійснено огляд соціально-економічної ситуації в місті Жовті Води з метою окреслення його специфіки як малого монофункціонального міста та виявлення передумов і потреб у регенерації міського простору. Для кращого розуміння проблем і перспектив Жовтих Вод у контексті монофункціональності було зроблено SWOT-аналіз його соціально-економічного становища. З метою виявлення побажань і ставлення населення міста до регенерації міського простору Жовтих Вод, а також з'ясування неочевидних проблем міста у сприйнятті жителів різних його районів, було здійснено опитування населення міста Жовті Води. З метою кращого розуміння інституційної й бюджетної готовності міста до здійснення регенерації міського простору проведено глибинне інтерв'ю з колишнім співробітником Жовтводської міської ради.

Результати. Установлено, що головними перешкодами на шляху до регенерації українських малих монофункціональних міст є неузгодженість дій стейкхолдерів у стратегічному плануванні через брак комунікації, а також низька зацікавленість держави в розвитку малих монофункціональних міст. Потреба регенерації міста Жовті Води постає, виходячи з економічних, демографічних, соціальних та екологічних викликів. Зі стратегічної позиції пріоритетними мають стати регенерація промислових зон і житлової забудови.

Висновки. Ідеї щодо проєктів регенерації окремих міських територій у межах промислової та житлової зон міста Жовті Води, що були розроблені спираючись на особливості соціально-економічного та просторового розвитку міста, а також на громадську думку, можуть бути використані органами місцевого самоврядування Жовтводської міської територіальної громади, підприємствами, урядовцями, громадськими організаціями й ініціативами, а також іншими потенційними стейкхолдерами, залученими до регенерації міста.

Ключові слова: регенерація міст, мале монофункціональне місто, міський простір, міський розвиток, проєкт з міської регенерації, функціональне зонування, Жовті Води.

Автори заявляють про відсутність конфлікту інтересів. Спонсори не брали участі в розробленні дослідження; у зборі, аналізі чи інтерпретації даних; у написанні рукопису; в рішенні про публікацію результатів.

The authors declares no conflicts of interest. The funders had no role in the design of the study; in the collection, analyses or interpretation of data; in the writing of the manuscript; in the decision to publish the results.