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**From Transit to Destination.
Regeneration strategies for underutilized urban spaces in Ukraine:
scenarios for Bohdan Khmelnytsky Street in Lutsk**

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June 2026

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Abstract

In the context of wartime and post-socialist heritage, most streets in Ukrainian cities serve as transit corridors rather than realizing their social and economic potential. This study analyzes four strategies for the regeneration of underutilized urban spaces – Shared Space, Complete Streets, Urban Acupuncture, and Co-design – both in theory and in practice, using Bohdan Khmelnytsky Street in Lutsk as an example. The "Link and Place" analytical framework was used to identify the "performance gap". The basic diagnosis includes a morphological audit of facades, street profile analysis, field observation, and a sociological survey. Based on the obtained data, four regeneration scenarios were developed, and their comparison was conducted on the basis of cost, social efficiency, sustainability, and military suitability. The research shows that the optimal strategy for the Ukrainian context is hybrid and sequential: Urban Acupuncture as a first step to restore social trust, followed by a transition to capital-intensive interventions as resources stabilize. The developed approach is adapted for use in other Ukrainian cities with a similar morphological typology.

Keywords: urban regeneration, underutilized urban spaces, Link and Place framework, urban acupuncture, co-design, wartime urban planning, Lutsk (Ukraine).

Word count: 17 701

1. Introduction

This study argues that public spaces – specifically streets and squares – are not merely conduits for transit and vehicular movement, but must serve as social infrastructure to enhance social cohesion and provide residents with meaningful reasons to spend time outside. Such places have the potential to define public life and improve people's daily quality of life, yet most public spaces in Ukraine do not adequately fulfill this mission.

There are many descriptors used in the academic and popular press to describe these spaces. They are often deemed “lost”, “dead,” or “wasted”. These terms are evocative, but they do not accurately describe the problem. For example, auto-dominated transportation corridors devoid of pedestrians still serve a needed function, even if they fail to live up to their potential. For this reason, this study uses the term “underutilized” rather than lost, wasted, or passive.

This choice is practical: it focuses on the “capacity gap” – the difference between a space's current use and its potential – leaving room for this potential to be uncovered, rather than a pessimistic view of it already being lost. Furthermore, in the Ukrainian context, the use of emotional terms to describe what is essentially a poor planning legacy may detract from the recognition that so many streets have been intentionally drained of life by military aggression. If you live in a frontline city, living on a “dead” street in Lutsk may seem like a dream.

Among the urban transformation paradigms, the study uses the term “urban regeneration”, which, unlike physical “renewal”, market-led “redevelopment”, or building-focused “revitalization”, provides a comprehensive approach that unites physical, social, and economic aspects. For Ukraine, this is more than rebuilding infrastructure – it is a functional necessity to reconnect the urban fabric with the changing needs of a society. The term regeneration also more closely conveys the idea that this should be a continuous “regenerative” process.

To diagnose whether the street is truly “underutilized,” the research adopts the “Link and Place” theory as its primary analytical lens to ensure objectivity. This theory interprets the street through a duality – a “Link” for movement, efficiency, and speed, and a “Place” for social and economic activity. Through this lens, it is possible to identify the “capacity gap” – the disconnect between a street's current state and its latent

potential as an urban destination.

The post-socialist urban transformation viewpoint provides additional context. The current "underutilized" state of many Ukrainian streets is a consequence of Soviet planning, which prioritized utilitarian transportation and top-down planning over human interaction. Certain elements of Soviet Planning, like open squares, were relatively straightforward to repurpose to the needs of a free society. Others, like monofunctional streets, were less so. Understanding the rigid barriers between private life and the planning that occurs enables a thought-out "healing" of the urban fabric by introducing the missing layers of social trust and functions of "Third Place" (neutral, welcoming environment apart from home and work where you can connect with others).

As strategies for this healing, the study explores four strategic paths, each tested through case studies, to transform utilitarian transit corridors into "Third Places":

- Collaborative Planning (The Social Path): focuses on consensus-building, stakeholder engagement, and co-design.
- Complete Streets (The Technical Path): Uses data-driven "Road Diet" methods to balance all users.
- Shared Space (The Behavioral Path): Removes physical barriers to encourage self-regulation through eye contact.
- Urban Acupuncture (The Tactical Path): Implements small-scale, high-impact interventions in strategically chosen places to influence the wider network through the placemaking approach.

The full-scale invasion has changed planning priorities in Ukraine. Certain streets should now be reimaged as spaces for mental health recovery, safe communal gatherings, and local economic stabilization, and should therefore be implemented as precisely as possible to deliver the maximum benefit.

The purpose of this study is to compare four regeneration strategies (Urban Acupuncture, Complete Streets, Shared Space, and Co-design) in both theory and practice, using Bohdan Khmelnytsky Street as an example. Then, develop the optimal scenario for B. Khmelnytsky Street and assess its adaptability to similar spaces in other Ukrainian cities. The study is guided by the following research questions:

Research question 1: How to identify the underutilized state of urban streets in Ukraine? To what extent can the "Link and Place" framework objectively identify the underutilized state of streets in the Ukrainian context?

Research question 2: How do the four regeneration models compare in terms of social efficiency and long-term cost-effectiveness?

Research question 3: Which of the four regeneration models (or their combination) can bring the maximum social efficiency indicator at different levels of funding (from low-budget tactical interventions to capital investments) and provide the best balance between transit function and public space quality for the studied street?

Research question 4: Is the developed approach adaptable for implementation in other Ukrainian cities with similar urban environment typologies?

2. Literature Review

2.1 Renew, redevelop, revitalize, or regenerate?

The literature on urban planning employs several closely related terms – urban renewal, urban redevelopment, urban revitalization, and urban regeneration – each is used by urban scholars as a “term of art”, yet there is no universal academic agreement regarding which term should be used in a given context, leading to some overlap in meaning. These definitions differ in emphasis depending on the spatial philosophy and the degree of intervention required to transform underutilized areas into livable environments. The main difference between these terms is whether urban interventions should strictly address physical or infrastructural deficits, or also address social and economic aspects (Roberts, Sykes, and Granger, 2017). These definitions can be considered in their order of appearance: renewal, redevelopment, revitalization, and, eventually, regeneration (Hadj Kilani, 2025).

The earliest paradigm, urban renewal, is considered a process of "essentially physical change" focused on the built environment (Roberts, Sykes, & Granger, 2017). Often, this approach involved the complete removal of existing structures, and today it is infamous, especially in the United States, for its consequences in breaking up Black and Latino communities. Such practice was criticized by Jane Jacobs for failing to account for the organic social fabric of cities: "Whole communities are torn apart and sown to the winds, with a reaping of cynicism, resentment and despair that must be heard and seen to be believed" (Jacobs, 1961, p. 14).

While the term “urban redevelopment” follows closely in time and meaning, it focuses on the further development of the specific area, upgrading its infrastructure and potential, typically through a market-led process but without the full-scale removal of housing and supporting infrastructure. It often prioritizes the "highest and best use" of land over social integration.

In contrast to these physical-centric models, urban revitalization emphasizes the social and aesthetic "rebirth" of a place but often focuses on the specific site rather than the surrounding area. Grodach and Ehrenfeucht state that revitalization "refers to a rebirth or revival in the conditions and character of a place that has endured a period of decline," with the purpose of "to build places that enable diverse people to thrive and prosper." It is, however, somewhat limiting, as it

implies that the goal is to restore the street to what it was, with less attention paid to what it may need to become in the future.

Urban regeneration, defined as a “comprehensive and integrated vision and action” (Roberts, Sykes, & Granger, 2017), is considered by many scholars to be the most holistic approach, addressing the physical fabric, social structures, economic and environmental conditions at the same time.

According to Ricciardelli and Raimo, the idea of urban regeneration encompasses the perception of city decline and the awareness that it is possible to trigger a process of recovery by intervening on the economic base and the social system.

The holistic approach to urban regeneration is particularly suitable for Ukraine's current recovery, where the challenge is not only physical rebuilding but reconnection of infrastructure development with the rapidly changing needs of society, while simultaneously establishing mechanisms for genuine citizen participation (Gorodnichenko et al., 2022).

However, while Western literature offers a framework for regeneration in mostly stable environments, there is a lack of research on how these strategies can be implemented in the post-socialist, radically restructured, wartime/post-war societal context, such as Ukraine.

2.2 Finding a term for lost space

Similar complications with terminology arise when it comes to specifying the name for a place in need of regeneration. The academic discussion regarding such spaces is divided into two primary positions – glass-half-full or glass-half-empty. There are those who view such areas as failures of urban planning and those who perceive them as places with potential.

Roger Trancik uses the term 'lost space' to describe the leftover urban landscape that fails to serve a social or physical function within the city. Areas like parking lots, deserted industrial sites, and "no-man's-lands" along highways sever connections between commercial centers and residential neighborhoods. Unlike positive urban spaces, lost spaces are essentially undesirable remnants of urban renewal or outdated industrial uses that do not contribute to the surrounding environment, resulting in a fragmented city where social interaction is suppressed. Such vacant spaces do not mean there is no awareness of the problem and a plan in place to address it, but likely that there is no capital or political will to

realize it.

Trancik identifies a shift in planning ideology, where modern design has replaced traditional urban spaces with "anti-spaces," characterized by isolated high-rises removed from street life. In contrast to historical models like the Renaissance city – where squares and streets were intentionally integrated with building masses to foster communal interaction – modern lost spaces are merely the "voids" left behind by freestanding objects and automobile-centric infrastructure. This lack of intentional design for the spaces between buildings leads to a lack of urban diversity, forcing residents into isolation. A similar perspective is shared by Bernardo Secchi (1993), who introduced the term "urban voids" to describe the ruptures in a city's continuity caused by deindustrialization or development stagnation.

Anthropologist Marc Augé introduced the concept of the non-place (non-lieu) in 1992. These are transient spaces – such as motorways, airport lounges, and hotel chains – that lack sufficient history, identity, or social interaction to be regarded as actual "places." While highly functional, they are "dead" in terms of social and cultural depth. Such places can appear inadvertently or by design, as with the use of hostile architecture – intended specifically to draw people away.

Kevin Lynch (1990) uses the term "waste space", which seems to mean something in the middle; he sees such places as both worthless and unused for human purposes, but at the same time as areas for children and teenagers to find adventure and freedom. Lynch underlines that, because waste spaces are not strictly programmed, they allow for "future branchings" and growth.

In contrast to these negative positions, other scholars view such spaces as resources for development. The term "terrain vague", coined by the Spanish architect Ignasi de Solà-Morales in 1995, refers to vacant, abandoned, or spaces with no function. This term holds a sense of freedom, describing areas where the city's strict order has dissolved, leaving room for alternative use.

Karen Franck and Quentin Stevens (2006) offer the term "loose space," asserting that these unregulated zones provide the conditions for spontaneous creativity, street art, and informal activities that cannot be held in parks or squares, which are more or less regulated and controlled.

Yet such terms do not fully explain the nature of these spaces in the post-socialist urban fabric of Ukraine, where the void often results from challenges in adapting Soviet-era

planning to the needs of modern communities. At the same time, finding mechanisms to reclaim underutilized land is critical to creating a compact, accessible city.

Therefore, this thesis prioritizes the terms "underutilised", which focus on the "capacity gap" – the difference between a space's current state and its social and economic potential. This shifts the discussion from a philosophical one to pragmatic, solution-oriented planning.

2.3 The Importance and impotence of regeneration: from underutilized to liveable

Though the importance of regeneration mentioned earlier might seem obvious, it is worth noting its overall benefits, along with the key factors this thesis will focus on, both in general and in the ongoing war-and-rebuilding context in Ukraine.

Regeneration of the space is not just about its aesthetics; it is, most importantly, about its functionality. The academic debate on the viability of urban space is largely based on Ian Gehl's work, who argues that the "liveliness" of a city is a direct result of physical planning and offers a classification of activities. Gehl divides public space activities into three categories: compulsory, optional, and social. Compulsory activities, such as commuting, occur regardless of the environment. In contrast, optional activities like resting can occur only when conditions are suitable. Social activities, from passive encounters to active conversations, are the defining quality of a public space and occur at the intersection of compulsory and optional activities.

To transform a street from underutilized to active, its framework must invite optional activities that later become a foundation for social interaction. Otherwise, opportunities for social contact never arise, leaving the space visited only when necessary.

In *The Social Life of Small Urban Spaces*, William Whyte (1980) famously concludes that "what attracts people most, it would appear, is other people." He identifies that the "impotence" of many public spaces stems from a lack of basic physical "invitations," primarily in terms of sitability. Whyte argues that "people tend to sit where there are places to sit," and that the most successful destinations are those that offer a variety of seating options that allow for both social interaction and private observation. For a transit-heavy street, this suggests that regeneration must begin with the "micro-scale" intervention of providing places to pause. The

sociological foundation for this idea is given by Ray Oldenburg (1989), who coined the term "Third Place". He describes it as a public environment, separate from home ("first place") and work ("second place"), which is vital for social cohesion. Regeneration is a tool for creating such "anchors" where previously only transit dominated.

Expanding on a functional perspective, Charles Montgomery (2013) argues in his work *The Happy City* that the physical environment acts as a "happiness engine," with a city's street-level facades directly influencing social trust. He notes that "blank walls are a sensory desert," and that people going through such a passive environment move faster, their heart rate increases, while social activity decreases. This suggests that the importance of regeneration lies in restoring the "sensory desert" of underutilized streets to promote social intimacy. He also argues that a city's "happiness engine" operates on subtle trust – the feeling that the person walking toward you is not a threat. Montgomery argues that the design of public space is a key driver of this trust.

However, the success of regeneration depends not only on the built environment. Edward Glaser (2011) criticizes the "edifice complex" – the belief that the built environment is the most important in making cities better. Many regeneration efforts fail because they focus solely on physical renewal, neglecting residents' human capital and social needs.

It is possible to conclude that the value of the street or space is maximized only when it functions as an active third place. In post-war Ukrainian society, "the absence of meaning" is not only a design failure, but a failure of social trust. Regeneration, therefore, becomes a functional necessity for the transition from transit to destination, where the physical frame begins to invite people to stay actively. Thus, strengthening society's resilience by creating opportunities for encounters in previously transit-only spaces.

2.4 Modernist planning past and how it influences our future

The implementation of regeneration practices and the creation or future of public spaces in Ukraine must be viewed through a specific lens: many underutilized spaces are a direct legacy of Soviet modernist planning. Western theories of regeneration are comprehensive in understanding the city, but their practical application conflicts with a context shaped by decades of ideological morphogenesis. Before developing strategies, it is necessary to examine how Soviet morphology

has led to the emergence of modern urban gaps and "lack of meaning" in public space.

The "sensory deserts" described by Montgomery in Ukraine are the outcome of the complete subordination of urban planning to state ideology. This legacy has shaped a type of underutilized space that today requires not just repair, but a complete revision of its functions.

The academic discussion regarding post-socialist morphology identifies the arterial roads as the primary tool of Soviet urban composition. According to Bogdan Tscherkes (2002), Soviet planners viewed the lack of long, straight axes in Western Ukrainian cities as a "deficiency" to be corrected. The city was organized around a "compositional axis" — a boulevard designed as a stage for political theater. The scale of such places was deliberately oversized to reflect the great importance of the state, while simultaneously underlining how small humans are.

Wagenaar (2002) notes that after the Soviet Union collapsed, the physical infrastructure it created and the logic behind it remained, while its social purposes vanished. This created a situation where the spaces keep their transit functions but fail as social destinations.

Additionally, Soviet planning contributed to the appearance of underutilized spaces by prioritizing large industrial zones in central districts and standardized residential blocks. Philip Allmendinger notes that this modernist approach relied on the organization of space, which in itself assumed the organization of people. By prioritizing technocratic designs over lived experience, this model created rigid structures that became "uneasy" dual spaces once the economic order shifted.

Kiril Stanilov notes that industrial zones, which often covered up to one-third of socialist towns, are now frequently vacant. Operating without land rent, planners designated prime real estate for low-productivity industrial uses, which have today become "dead spots" in the cities. In residential areas, buildings were built to maximize sunlight, leaving vast expanses of unowned land between them that serve no functional purpose. Following the collapse of the socialist system, such territories have become difficult to repurpose.

In *The Iron Curtains*, Sonia A. Hirt argues that socialist planning prioritized oversized public spaces while neglecting the "semi-private" layers. By eliminating transitional spaces such as sidewalk cafés and ground-floor shops, planners remove "eyes on the street" that balance privacy and social contact. This left a firm border between the small apartment

and the large-scale outside world. The failure of socialist planning led to a deep disbelief in a benevolent public world, with residents withdrawing into their private worlds. In the post-socialist era, this manifests as "spatial secessions," in which citizens wall themselves off behind solid gates, further depreciating the city's shared spaces.

Numerous spaces in Ukraine are today underutilized, as they were never designed for "passive contact" or "optional activities". Today, they represent infrastructure gaps that can and must be converted into social assets by returning human meaning to spaces that served as instruments of alienation for decades.

Attempting to copy Western regeneration strategies and mechanically transfer them to the Ukrainian context often results in spatial dissolution. These are often different scales – as Western European one often more compact. If European solutions are transferred to most Ukrainian arteries, they will "get lost" in a large space. In addition, regeneration in the West almost always relies on the interaction between the building and the street through transparent ground floors and open facades. In contrast, Soviet-era buildings along the main streets are often closed to pedestrians due to their high basements, distances from the red lines, and the purely technical purpose of their ground floors. This creates a barrier that cannot be overcome by landscaping or street furniture alone without structurally changing how the building interacts with its surroundings.

A separate analysis is required when the conflict arises within a relatively limited street profile that, however, continues to serve a transit function. In such cases, the Soviet planning legacy manifests itself through the dominance of the transport function, which actually absorbs the entire available street resource. In conditions of spatial deficit, the priority of speed and capacity turns the street into an isolated traffic corridor, where pedestrians are on the periphery, with no buffer from the intense flow. For such compact spaces, Western models that provide for expanded greening or the creation of recreational areas become unsuitable for direct borrowing precisely because of the physical impossibility of placing these elements without a radical revision of the very role of the street in the urban network.

Ultimately, regeneration in Ukraine should focus on testing new uses for voids and on finding local solutions to complement transit zones with non-motorized human activity. In this way, regeneration ceases to be an act of copying and becomes a

process of reshaping the Soviet planning and returning the right to the city to the community.

2.5 Discovering the "Link" and "Place" functions of spaces

While discussing underutilized spaces, additional challenges arise in determining which of them need regeneration. Such prioritization can be based on stakeholder engagement, yet such decision-making processes can risk leaning towards the most vocal communities.

It is important to note which streets are underperforming in their roles, either as movement conduits or as destinations. So it is important to recognize the roles and functions of streets. For streets that are either highways or pedestrian, it is more or less clear; for those in between, it becomes complicated.

The main drama of such places is underlined by Jones & Marshall in their *Link and Place: A Guide to Street Planning and Design*: a street serves as a link; its main function is to save time, but when it serves as a place, it becomes a place to spend time.

The Link function is future-oriented: people are here only to get somewhere else as quickly as possible. The Place function is present-oriented: people are here because the space itself is their purpose. They are physically interdependent – attempts to maximize the Link function (increasing speed, widening lanes) automatically make the space uninhabitable due to noise and discomfort. As soon as the space loses its ability to "hold" people, it becomes an underperforming segment where social activity fades, and the local economy declines.

The greatest drama unfolds precisely on the streets of the "High Link / High Place" type. These are the main streets of cities that must facilitate movement while remaining the centers of urban life. Jones and Marshall emphasize that traditional planning usually capitulates to this complexity, choosing the path of least resistance – the priority of transit.

This relationship is full of conflicts – since cross-sectional space is physically constrained, cars need wide asphalt, people need wide sidewalks and shade, cars need no obstacles, pedestrians need active facades, transit brings flow to the space, but only the destination brings profit to local businesses.

Also worth noting are additional aspects of such a division

– facilities provided by a Place are usually used by people classified as pedestrians, though they are not just passing through – they are active users of the Place. Moreover, it is not correct to attribute spaces to Links based on their transport-related activities – they can occur within Places, such as residents' parking, loading/ unloading, or transport stopping to drop off/pick up passengers.

Therefore, Jones & Marshall state that it is important to recognize "the entire spectrum of Link and Place activities, as this results in a more comprehensive consideration of street functions than would traditionally be addressed by a combination of a conventional Road Plan and a Land Use Plan."

To address such questions, Jones & Marshall offer an analytical matrix. This two-dimensional classification matrix allows every kind of urban street to be represented as a specific cell, reflecting the relative importance of each function. Link categories (typically I to V) reflect the importance of movement, from national arterials down to local roads. Place categories (typically A to E) reflect the size of the activity catchment area or the cultural significance of the fronting buildings.

Once the network is categorized, this approach identifies segments where the current street performance fails to meet the required standards for its assigned cell. To manage the physical limitations of urban corridors, the authors introduce the "trade-off triangle". This tool illustrates that because street width is finite, design options must balance the minimum and desirable space requirements for both functions.

By identifying the performance gap – the shortfall between current conditions and policy targets – planners can see areas for improvement. This methodology recognizes that optimal design solutions must adapt as users' needs change along a corridor, even if traffic conditions stay the same.

For the aims of this thesis, the Link and Place approach is considered a suitable methodology. In the Ukrainian context, where regeneration must be conducted as precisely as possible to maximize resource impact, this framework provides a structured way to identify street performance shortfalls and areas for improvement.

2.6 Regeneration strategies for underutilized spaces

Urban regeneration should be seen not only as a renewal of physical and social infrastructure, but also as a complex choice between different ideological and operational models. In the

context of Ukrainian cities, where addressing resource scarcity, security, and the restoration of the social fabric must be done simultaneously, the choice of planning strategy is crucial. Based on this analysis, the four most distinct strategic paths were selected for the study, which at the same time meet the basic requirements of regeneration and allow for the modeling of different scenarios for the development of public spaces.

The selection of the four strategic pathways – Shared Space, Complete Streets, Urban Acupuncture, and Co-design – was methodologically designed to contain the full analytical matrix of spatial, financial, and socio-political dimensions of contemporary urban regeneration, serving as a planning toolkit rather than mutually exclusive alternatives. Each scenario targets a specific systemic deficiency inherited from the street's post-Soviet, transit-dominant morphology.

2.6.1 Collaborative planning

The first strategy is based on the theory of collaborative planning, also known as shared decision-making, which delegates responsibility for plan preparation directly to stakeholders. According to Gunton and Day (2003), this approach is based on the principles of communicative rationality, in which planning is viewed not as a purely engineering or administrative task but as a process of reaching consensus. In contrast to technocratic methods, which involve experts to prepare solutions separately from the wider public, the collaborative approach centers on reaching consensus among stakeholders, with experts acting as facilitators.

The practical value of this approach lies in the formation of sustainable social capital and in a significant reduction in the risk of conflicts during implementation. Gunton and Day identify a number of criteria for the success of collaborative planning, among which the most critical are inclusive representation of all influence groups, independent facilitation, and clear accountability for the process. For cities in the reconstruction phase, such a path becomes not only a tool for creating high-quality space but also a mechanism for democratizing governance, in which the final regeneration scenario results from a conscious social contract.

Case study: Streets for Kids in Tirana

The Streets for Kids project in Tirana, Albania, is seen as an example of collaborative planning, where community engagement was the foundation for the physical transformation of the

environment. Children, teachers, and parents were full stakeholders in the design process. The process began with workshops and co-design sessions, during which students identified dangerous spots through drawings and mapping and proposed their own vision of a safe space. The engagement mechanism then moved into a “co-production” phase, where residents of the area, together with municipal services, painted the asphalt themselves to reclaim larger road space and redistribute it for safer sidewalks. This approach helped to achieve consensus among different groups: drivers agreed to traffic restrictions as a way to protect the children, while local businesses gained new outdoor seating spaces (Bloomberg Philanthropies, 2021). Community participation in the physical construction of the space created a sense of ownership, and as a consequence, long-term support for the project without significant security or maintenance costs. Given the limited budget of \$25,000, the success of the regeneration highly depended on the quality of facilitation and community connections.

The project’s results showed the effectiveness of the collaborative regeneration approach, as the number of people who felt safe near schools increased from 17% to 90%, with 99% of respondents satisfied by the results. The success of the initiative, with a budget of only \$25,000, became an impetus for systemic change: Tirana City Hall has already announced plans to implement similar safety projects in 20 more schools in the city.

The case demonstrates the implementation of the co-design model, where involving children was not a formal step, as their input helped identify real conflict points that are often ignored in standard road safety audits.

2.6.2 Complete Streets

The second strategic path places less emphasis on stakeholder participation and centers on professional expertise and objective data. The second strategic path is based on objective indicators of environmental productivity and the application of professional expertise. The foundation of this strategy is the concept of “Link and Place” (Jones & Marshall, 2007), which directly builds on the analytical block of identifying underutilized spaces.

This approach is most relevant for the modernization of transit corridors of Ukrainian cities in accordance with the European Complete Streets standards. Within this model, decisions are made based on the analysis of “performance gaps” – the difference between the actual and target levels of implementation

of the “Link” and “Place” functions. The use of the analytical “trade-off triangle” allows the planner to rationally redistribute the scarce space in the street profile (the Road Diet method), ensuring a balance among traffic safety, inclusiveness, and the economic vitality of the environment. This approach can be considered a modern, substantiated analog of technocratic planning, offering a toolkit for scientifically verified testing of road-space optimization scenarios.

Case study: Naugarduko Street in Vilnius

The regeneration of Naugarduko Street in Vilnius serves as an example of the Complete Streets concept, as defined by Lithuanian urban planning as “the humanization of streets”. Transit Naugarduko Street was reorganized into a multifunctional space – car-designated spaces were reallocating, creating more outdoor seating, and improving access for low-mobility population groups (Mockus & Jasiūnienė, 2024). The car lane width was reduced to 6.5 m (a total street width of 15 m), freeing space for bicycle lanes and greenery (Mockus, 2023). The architectural component of the regeneration included replacing parking spaces with “street courtyards” and mobile pavilions, including an outdoor amphitheater, bar, and play ramp, as well as planting dense bushes that create a natural barrier between pedestrians and traffic (DO ARCHITECTS, n.d.).

Analysis of these measures demonstrates their high effectiveness in assuring safety and changing drivers’ behavior by introducing calming traffic measures to the street. The average speed of the study area decreased to 35 km/h, while its official speed limit is 50 km/h (Mockus & Jasiūnienė, 2024). Other results include a 20% decrease in the total number of road accidents with injuries, with 97% of all accidents in the study area being property-damage-only, and accidents involving pedestrians and cyclists remaining isolated (Mockus & Jasiūnienė, 2024).

The socio-economic impact of the regeneration was enhanced through the Business Neighborhood program, which uses the street for a Sunday market (Naugardukas Street Market) and garage sales, stimulating the local economy and community cohesion (ABCitiEs, 2020). Despite the fact that there were initial concerns among local business owners regarding potential losses due to traffic restrictions, surveys conducted after the project’s implementation showed that businesses did not lose customers and business owners were satisfied with the updated environment (Savi & Villem, 2023). The Naugarduko Street case demonstrated

that transitioning to “humanized streets” increases safety and brings value to local communities and businesses.

2.6.3 Shared Space

The third approach, “Shared Space”, represents an alternative to functional zoning and is perhaps the most radical among the rest. This method eliminates hierarchical barriers between pedestrians, cyclists, and drivers. In historical zones and central squares of Ukrainian cities, this approach prioritizes the human scale. The “Shared Space” approach does not consider road signs, markings, and sidewalks necessary for safe and efficient road movement. Their absence forces drivers to rely much more on visual contact and self-regulation.

According to Hamilton-Baillie (2008), the effectiveness of shared space is based on a psychological paradox: eliminating artificial barriers, curbs, and signs forces drivers and pedestrians to rely on visual contact, which increases overall attention and safety. This approach is based on the “risk compensation theory,” which holds that perceiving the environment as less regulated encourages people to act more carefully and responsibly. Numerous case studies show a reduction in accidents after removing barriers and radically simplifying the street (Hamilton-Baillie, 2008). In addition, the “Shared Space” approach revitalizes the local economy by transforming transit corridors into destinations that encourage both retail development and social interaction. This strategy transforms a strictly zoned street into a living urban space, making natural self-organization a reliable regulatory instrument.

Case study: New Road in Brighton

The regeneration of New Road in central Brighton is a key example of the Shared Space concept, demonstrating changes to the street's hierarchy and how it functions as a result of the regeneration. Before, New Road could be characterized as a hostile transit corridor that failed to attract pedestrians, despite its proximity to theatres, parks, and cafes.

To stop this decline, the city commissioned Gehl Architects, in collaboration with Landscape Projects and Martin Stockley Associates, to develop a strategic vision for the public space. Through mapping of pedestrian and vehicle flows, planners concluded that the street had the potential to become a vibrant public asset and opted for a shared space approach. The new design eliminated the traditional separation between sidewalks

and the roadway, replacing it with a continuous surface of natural stone and granite. To encourage social and optional activities, a long wooden bench was installed along the edge of the space, enabling observation of the street's social life. The implementation of the shared space approach led to a visible change in user behavior.

According to field observations, car traffic decreased by 93%, while bicycle and pedestrian traffic increased by 22% and 162%, respectively. Most telling was the 600% increase in “staying activities” – people spending time in the space rather than simply passing through it. An aftermath safety audit found that removing formal traffic rules forced drivers to self-regulate, driving at minimum speeds and giving almost absolute priority to pedestrians.

This regeneration acted as a catalyst for local investment, encouraging local institutions and businesses to improve their own territories. The New Road case illustrates that an in-depth, observational understanding of public space, combined with the physical removal of barriers, can transform an isolated transportation route into an active destination.

2.6.4 Urban Acupuncture

The fourth strategy is based on the concept of “urban acupuncture” proposed by Jaime Lerner (2014), which argues that systemic regeneration does not necessarily require large-scale reconstruction. Instead, such an approach offers to implement targeted interventions in strategically selected locations, where qualitative changes will further trigger regeneration throughout the environment. Such targeted initiatives allow for the restoration of neglected spaces and the strengthening of the city's social infrastructure through the gradual, tactical implementation of changes.

It is also important to evaluate such local interventions in terms of their contribution to the formation of an "impact economy" (Casprini et al., 2026), as targeted projects create value for the local economy and strengthen social capital. The success of such interventions depends on their ability to integrate into local identity, as they must also create sustainable connections between residents and the renewed environment. Within this method, it is worth considering tactical urbanism approaches that allow for further reductions in expenditures while testing potential changes and making tactical interventions more considerate.

In the contemporary Ukrainian context, characterized by limited funding and time constraints, the path of acupuncture

regeneration is a potential “quick win” strategy that demonstrates to the community the real potential for change without the need for immediate excessive capital investment.

The study of these four strategies enables a shift from outdated, rigid norms to flexible tools that can address the complex challenges of war-torn Ukraine. This approach allows us to assess different facets of regeneration, from the formation of a social contract and technical optimization of space to changing behavioral scenarios and economic activation through targeted interventions. Thanks to this, reconstruction is transformed from a simple physical repair to a conscious choice of the most adaptive model.

Case study: Urban Acupuncture: NoLo in Milan

The “Piazze Aperte” program in the NoLo Milan district is considered a representative case study of the implementation of the urban acupuncture method. Urban acupuncture in the Milan context applies the principle of “temporality as a political approach”, which allows the municipality to test functional changes using tactical urbanism tools before making permanent infrastructural decisions.

According to Casprini, the main site demonstrating the effect of regeneration of the entire street network through the renewal of local “patches” is the intersection of via Venini and via Spoleto. Until the intervention, this area was an intensively loaded traffic node, creating a dangerous environment near the entrance to the local school. The intervention involved diverting transit traffic and creating a new space by installing street furniture and recreational elements in order to transform the transit corridor. The results of the multi-criteria assessment confirmed the effectiveness of this intervention, as it received the highest social impact score of 0.69.

Another intervention was held on via Rovereto, where a neglected parking lot at the park entrance was transformed into a 30 km/h safe zone, creating the necessary connection between the park and the surrounding streets to activate social networks that were previously absent. The scientific review of these two projects confirms that the street is revitalized not through a frontal replacement of the pavement, but through a change in behavioral scenarios at strategically selected nodes, stimulating inclusivity and the development of the local economy.

Interventions on via Venini and via Rovereto show that acupuncture regeneration can turn alienating streets into shared responsibility, creating a sense of ownership among local residents. For regeneration methodologies, this means moving

from technocratic design to a model where each micro-intervention becomes a catalyst for restoring the activity of the entire street. At the same time, it's worth noting that the success of this methodology depends directly on the project's ability to build on existing social capital.

3. Methodology

This study uses a mixed-methods approach to explore, test, and compare four distinguishable regeneration scenarios that can be implemented for Bohdan Khmelnytsky Street in Lutsk or for similar underutilized streets in Ukraine.

The research is structured into three stages: baseline diagnosis, strategic scenario modeling, and scenario comparison based on the first two stages.

Baseline diagnosis is aimed at identifying the “capacity gap” of the Bohdan Khmelnytsky Street in Lutsk by using the “Link and Place” analytical framework and simultaneously discovering the extent to which this framework can objectively identify the underutilized state of streets in the Ukrainian context. This “underutilized” state will be identified using primary instruments: street profiling, observation, and a user experience survey. Street profiling and observation allow an audit of the street’s physical environment, while the survey collects both quantitative and qualitative data on how people currently use the street, their discomfort points, and expectations for the street’s future. This data serves as the basis for finding the “performance gap” between the street’s current state and its social potential.

The next phase is to develop four strategic scenarios, each using specific analytical tools that sometimes overlap but provide distinct inputs. Co-design represents a social approach, where the street development scenario will be based on a survey of Lutsk inhabitants regarding the street usage, participatory action research, where stakeholders will be engaged in the design process to ensure the regeneration reflects community identity, and further vision consolidation, where stakeholder interests will be integrated into a unified conceptual map. A shared space path exploring the scenario of removing formal regulations will be developed through a conflict audit based on surveys and observations, as well as a first-floor activity analysis examining the functionality of facades and their potential to support public space regeneration. The complete streets path closely follows the “Link and place” analysis, applying its matrix to categorize street segments based on functionality, conducting a pedestrian comfort level audit based on the survey, and using the road diet method to adapt the environment for all users. An urban acupuncture strategy is conducted through street observation to identify “dead zones” and natural gathering points where micro-interventions can have the greatest social impact.

These four scenarios were chosen for their coverage of the full spectrum of possibilities for a modern Ukrainian city: from

situations with a critically limited budget to community readiness for large-scale spatial transformations. Co-design explores the outcomes of community planning, enabling a transition from top-down directive management to an inclusive recovery model. Shared Space is focused on restoring social trust and developing self-regulation by eliminating rigid barrier planning and vertical restrictions that have divided urban space for decades. The Complete Streets scenario aims to work with the physical legacy of Soviet planning – excessive road scale and transit dominance – to allow streets to return to a human scale and functional balance. Urban Acupuncture responds to the socio-economic challenges of wartime, offering a strategy of “quick wins” through pinpoint, low-budget interventions with high social impact in strategically important nodes. The chosen scenarios enable the creation of a flexible regeneration toolkit that accounts for the complex infrastructural legacy and the urgent needs of society in the context of reconstruction and limited resources.

The concluding phase of the research involves a multi-criteria assessment, in which all four resulting scenarios are evaluated against one another using metrics such as estimated implementation costs, economic potential, and social efficiency.

Testing four distinct models provides a "toolkit" for urban planners, making the findings applicable to other Ukrainian cities with similar challenges, yet varying budgets. By combining spatial data with stakeholder insights, the final proposal remains grounded in reality while addressing long-term sustainability and ownership.

Yet the methodology has several constraints. The process of gathering multiple data sources and exploring a large number of methods requires significant effort, which may compromise data quality. At the same time, due to its strategic direction, the research does not aim to provide ready-to-use documentation but rather to serve as a foundation for further steps.

4. Baseline diagnosis: the case of Bohdan Khmelnytsky Street

4.1 Justification of the choice of the research object

The choice of Bohdan Khmelnytsky Street in Lutsk as the main object of this study is due to its role as a representative “spatial laboratory” for the analysis of post-Soviet urban corridors in Ukraine. The street exhibits high morphological heterogeneity, serving as a transit zone between the city’s medieval core and its current center. Its development, spanning a wide time range from the brick architecture of the early 20th century to Soviet high-rise buildings, allows testing different regeneration scenarios within a single planning axis. An apparent functional conflict between Link and Place functions is observed here. The street functions predominantly as a transit space, which suppresses the social and economic vitality of the environment, making it a suitable case for evaluation of “performance gaps”.

Also, the physical limitations of the street profile create challenging conditions for implementing the “Complete Streets” and “Shared Space” models. Finding solutions for such spaces is important for Ukrainian cities, where the density of buildings often makes large-scale engineering reconstructions impossible.

4.2 General context and street profile

Bohdan Khmelnytsky Street is one of the key planning axes of the historical center of Lutsk and functions as an intra-quarter highway. It starts at the southern border of Teatralny Maidan and ends at Bratskyi Myst Square, the entrance to the Historical and Cultural Reserve. In the Urban Vision Lutsk study, the street is highlighted as a potential tourist route and marks the boundary between the established urban structure and a development-potential structure.

Bohdan Khmelnytsky Street has a distinct profile due to its ancient history, soil characteristics, and its structure, which consists of five separate streets formed at different times in the city's development. Its history begins with the ancient Starovolodymyrska Street, which led through the suburbs behind Hlushets to the gate and continued along the road to the north, and, from the end of the 16th century, also to the west through the Cherchytsky Crossing. At the beginning of the 19th century, Starovolodymyrska Street was united with Nyzhnaya Street (now Kryvyi Val), and from the second half of the 19th century - with Shpytalnaya Street. The latter abutted one end against the Parade Square (Teatralny Maidan), and the other end against the then

Shoseyna Street (Lesia Ukrainka). For this, part of the transverse Trinitarska Street (Medvedev Street) was attached to Shpytalnaya Street, and the beginning of Starovolodymyrska Street was formed into an independent Nyzhnobrudnaya Street. In the 1950s, the street was straightened, and the order of building numbers was changed. Now its beginning coincides with the beginning of Lesya Ukrainka Street, and its end runs along the former Obuvna (formerly Nyzhnobrudna) and the former Veselia (French) Streets.

A comparative analysis of the 1937 Lutsk plan and the modern street shows that the modernization of the street in the 1950s altered the city's organic fabric, resulting in a simplified transit corridor focused on automobile efficiency. This led to the loss of a constant active front and to departures from the red lines, creating unstructured voids and complicating possible standardization of pedestrian space.

4.3 Architectural morphology and zoning

The street is characterized by block-like development and a heterogeneous front, where buildings from the early last century and the pre-war years border on Soviet modernism. Some buildings remain unplastered, with original masonry of high-quality bricks, jointing, and cornice ornaments. In the late 1990s, the street was reconstructed, its facades updated, and its paving stones partially restored. The functional zoning demonstrates a mixed-use character: there are 6 healthcare and administrative facilities, 7 apartment buildings, 4 retail facilities, 2 cultural institutions, 2 manor buildings, and 1 industrial enterprise.

The density of buildings on the street is average: the percentage of built-up area varies from 20–40% to 40–60%, and only in one area does it reach 60–80%. The building-up coefficient of the areas is mainly 0–1, in some places 1–2. The demographic aspect is asymmetrical: on one side of the street, the population density is 50–100 people/ha, on the other, from 25–50 to 50–100 people/ha. The high concentration of public and administrative institutions generates intensive daytime pedestrian traffic. However, due to the lack of high-quality recreational areas, this space is currently used primarily as a transit corridor.

4.4 Inclusion and physical accessibility audit

A separate factor contributing to street underutilization is its high physical barrier. A field survey and visual audit identified shortcomings in inclusive infrastructure that greatly limit the mobility of vulnerable groups.

The main defect is the almost complete absence of curbstones lowered to level "0" at the intersections of pedestrian paths with the carriageway and at the entrances to the courtyards. The situation is aggravated by the unsatisfactory condition of the uneven paving, which has significant subsidence and wide seams, making movement uncomfortable and potentially traumatic in adverse weather. High curbs, combined with paving defects, actually segment the street into isolated areas, breaking the pedestrian experience's continuity. The identified barriers limit the diversity of urban life and reinforce the street's role as a transit corridor.

4.5 Segmentation of the study area

Given the street's complex profile, the studied section of Bohdan Khmelnytsky Street was divided into three segments. This division is based on the historical genesis of the development and changes in the street's parameters. Each segment reflects a different degree of conflict between the highway's transit function and its potential as a public space.

Segment A covers the area from the beginning of the street on Teatralny Maidan to the intersection with Kryvyi Val Street. This section is characterized by the most valuable historical development (manor buildings), wide sidewalks, and the predominance of institutional functions, which determine its representative and, at the same time, "closed" character.

Segment B runs from Kryvyi Val Street to the administrative center (area of buildings No. 37-38). This is the narrowest part of the street with a high concentration of commercial facilities, catering establishments, and intensive pedestrian traffic. This is where the highest level of social activity and, potentially, the greatest demand for spatial re-imagining are observed.

Segment C covers the lower part of the street to Bratskyi Most Square. This segment is characterized by a widening of the profile, significant open spaces, technical zones, and mixed-use development from the Soviet period. The segment serves as an important transport hub and entrance group to the Old Town, but currently has the lowest indicators of coziness and environmental comfort.

4.6 Street facades analysis

To comprehensively assess the quality of the pedestrian environment and determine the potential of Bohdan Khmelnytsky Street as a public space, a morphological analysis of its frontage

was conducted. The study is based on the classification of facades according to the level of their interaction with the sidewalk, with key indicators including the presence of active entrances, the visual transparency of the first floors, and a fine-grained architectural rhythm. All objects within the studied segments were divided into three categories: Active, Mixed, and Passive.

Street's Segment	Amount of objects	Active	Mixed	Passive
Segment A	20	10%	25%	65%
Segment B	18	28%	28%	44%
Segment C	13	31%	8%	61%

Analysis of Segment A revealed that, despite being the most architecturally aesthetic part of the street, it demonstrates a high level of passivity – 65% of the total number of objects. This condition is due to the predominance of banking, educational, and administrative institutions, the presence of blind fences and raised first floors, and the institutional closure of the development. Only 10% of the facades in this area provide full visual interaction with pedestrians, which is why architecturally valuable facades are perceived only as a background, not an active element of the environment, leading to the devaluation of the potential of the most significant historical section of the street

The most balanced situation is observed in Segment B, where the total share of active and mixed facades is 56%. This area serves as an active core of the street due to the concentration of small commercial facilities and service establishments, and to its strong connectivity with the neighboring pedestrian street. However, passive areas (44%) create significant gaps in the continuity of the active front, which prevents the formation of a holistic perception of space.

Segment C demonstrates a specific polarity of development, with a relatively high level of activity (31%) and an almost complete absence of an intermediate (mixed) link at 8%. The dominance of passive surfaces (61%) in the form of building blind ends and technical zones creates “sensory deserts” that break the connection between residential quarters and the street entrance area.

Summarizing the results of the morphological audit of all three segments of Bohdan Khmelnytsky Street, we can state an imbalance between its location, architectural form, and real social function. The total number of passive facades, which accounts for

more than 56% of the studied objects, indicates the dominance of the street's transit role over its potential as a public space. This confirms the hypothesis that the street currently functions mainly as an infrastructure corridor (Link), where the pedestrian experience is leveled by the closedness and monotony of the building.

Table 2. Overall Street Facades Analysis

Object Category	Amount of objects	% from overall amount
Active	11	21,6%
Mixed	11	21,6%
Passive	29	56,8%
Overall	51	100%

4.7 Roadbed usage analysis

To quantify the shortage of pedestrian space, cross-section profiles were analyzed at key nodes along each segment using a 1:2000 map. The data obtained confirm spatial heterogeneity in Bohdan Khmelnytsky Street. They also show the dominance of motor-transport infrastructure over the pedestrian network in most studied sections.

Table 3. Parameters of the Street Profile by Segments

Segment	Total width (m)	Carriageway (m / %)	Pedestrian zone (m / %)
Segment A	15.15	6.96 (45.92%)	8.19 (54.08%)
Segment B	12.67	7.24 (57.16%)	5.43 (42.84%)
Segment C	20.82	12.80 (61.48%)	8.02 (38.52%)

The most even distribution of space is observed in Segment A. Here, the pedestrian zone occupies 54.08% of the profile's total width. However, street equipment and occasional parking of private transport often limit the actual effective width. Despite

wide sidewalks, pedestrian flows are moderate in this section. A high percentage of passive facades (65%) combine with the spacious pedestrian zone to create a “rarefied environment.”

In Segment B, the street profile narrows to 12.67 m. The roadway share increases to 57.16%. This creates a “bottleneck” effect, where pedestrians are forced to move through a narrow space of just over 2 meters wide on each side. Such a narrowing almost eliminates the possibility of any stationary social activity. As a result, this segment becomes purely transit.

The biggest imbalance is shown in Segment C, where the total profile width is 20.82 m. Despite such spatial possibilities, more than 61% is given over to asphalt roadways. The pedestrian zone's absolute width is 8.02 m, but it remains unsuitable for comfortable use due to a lack of buffer greenery and heavy car traffic. The analysis of Segment C shows that simply increasing the area of sidewalks, without improving their quality or function, does not enhance the street's Place characteristics.

4.8 Analysis of greenery and ecological comfort of the pedestrian environment

An important component of the Place-characteristics of a street is the presence and condition of its ecological framework, which directly affects the microclimate, acoustic comfort, and psychological perception of space. As part of the field survey, an inventory of existing tree plantations was conducted, the results of which indicate a tendency to reduce the green fund from the historical center towards the street's entrance zone.

Table 4. Quantitative indicators of greening by segments		
Segment	Number of trees (units)	Approximate density of greenery
Segment A	19	Medium
Segment B	11	Low
Segment C	7	Critically Low

The highest concentration of green plantations is recorded in Segment A (19 trees), which partially compensates for the passive facades in this area. The presence of trees, combined with historical architecture, creates the most favorable conditions for social activity here; however, because the ground floor is not

active, this resource serves as a backdrop. In Segment B, the number of trees decreases to 11 units, which is insufficient to provide comfortable shading in the area of the greatest concentration of commercial activity and the narrowest sidewalk profiles.

The most critical situation is observed in Segment C, where, despite the expansion of the street profile and the increase in the asphalt pavement area to 61%, there are only 7 trees. This lack of greenery, combined with the high intensity of automobile traffic, makes this segment a “heat island” in summer and generally unsuitable for long-term stays.

The ecological framework analysis shows the need for new strategies in vertical and container gardening. These should target active transit areas to offset the negative impact of transport infrastructure.

4.9 Preliminary observation: mobility patterns and pedestrian activity

To strengthen the morphological analysis, a preliminary field observation was conducted using the stationary monitoring method. The observation point was located in Segment B (misto cafe, 26 Bohdan Khmelnytsky St.), which allowed us to record activity in the most “narrow” and functionally saturated segment of the street. The survey, conducted on January 21 at low temperatures (-5°C...-9°C), identified basic mobility patterns in extreme winter conditions; however, cold weather may underrepresent typical pedestrian activity.

Table 5. Quantitative indicators of traffic and pedestrian activity (January 21)

Time period	Private Transport (Transit)	Pedestrians (Transit)	Public Transport (# of vehicles)	PT: Boarding / Alighting
Morning Peak (-9°C)	342	90	32	14 / 96
Lunch Break (-5°C)	337	189	32	20 / 51

Evening Peak (-7°C)	336	133	29	59 / 18
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The results of the observation confirm the street's status as an intensive transit corridor. Private transport indicators remain consistently high throughout the day (over 1000 units in 3 hours of observation), which, combined with the narrow profile of Segment B (5.43 m of total sidewalk width), creates a high pedestrian load. Pedestrian movement is predominantly transitory, with peak flow occurring during the lunch break (189 people/hour). The data on public transport show that during the evening peak, passengers boarding (59) outnumber those getting off (18), which is the opposite of the situation in the morning. This indicates that Segment B serves as an important transport hub for employees of surrounding institutions. Thus, previous observations confirm the acute conflict between the high transit function (Link) and the underdeveloped Place function.

4.10 Results of the sociological study and analysis of user experience

To obtain empirical data on the functioning of Bohdan Khmelnytsky Street, a sociological survey of users of the space (N=367) was conducted. The results obtained allow us to verify the technical audit and to form an evidence base for developing regeneration scenarios based on residents' real needs and barriers.

Respondent profile and intensity of interaction: The study sample shows a predominance of women (63.6%) over men (34%) and of people aged 18-34 (68.3%). The majority of respondents are residents of other parts of the city, but a significant part of them interact with the street regularly: several times a week or daily, which emphasizes the city-wide significance of the street.

Analysis of street usage patterns shows it functions primarily as a transit node. Respondents' main reasons for being on the street are:

- Transit passage or passage – 66.3% (243);
- Visiting institutions/leisure – 60.8% (222);
- Completing errands – 52.6% (192);
- Waiting for public transport and work/study nearby – 22.5% (82) each;
- Living on the street – 9.3% (34).

Taken together, these indicators suggest that most outdoor activity is “mandatory,” occurring regardless of environmental

conditions as defined by Ian Gehl. Additionally, the low percentage of total leisure stays (26%) indicates that the main function is the Link rather than Place.

Subjective assessment of environmental parameters by respondents on a 5-point scale revealed average indicators that border on the level of discomfort:

- General comfort: 3.10;
- Noise level: 3.28;
- Lighting quality: 3.31;
- Pollution level: 3.18;
- Feeling of safety: 3.78.

A relatively high safety score indicates the absence of criminogenic fear, but a low comfort score (3.10) signals the street's infrastructural unsuitability for a long stay.

A key indicator of underuse is that 50.7% of respondents do not want to stop on this street for rest. The main reasons for refusing stationary activity are:

- Lack of places to rest: 34.8% (lack of places to sit);
- Acoustic discomfort: 21.0% (transport noise);
- Morphological conditions: 18.8% (narrow sidewalks);
- General psychological discomfort: 15.3%.

These data confirm that the physical narrowing of the street profile and heavy traffic create an environment that pushes pedestrians away.

When asked what would encourage them to stay longer, respondents prioritized: More trees and shade – 26.2%; Quality street furniture – 21.6%; More street cafes – 20.4%; Street art and exhibitions – 16.8%; Safe bike paths – 13.2%.

The most significant result is the consolidated vision of the street's future: 71.8% of respondents want to see it “cozy and green, oriented towards pedestrians and peace”. Only 15.9% support preserving the current transit function. The survey revealed a deep gap between the architectural potential of the street and its social productivity. Despite the heavy usage, the street does not serve as a “Third Place”. The social base for change is the fact that more than 70% of users are dissatisfied with the current transit model. Priority should be given to environmental comfort (shade, trees) and “pause infrastructure” (furniture), which directly responds to the request of 58% of respondents. High readiness to rethink space enables consideration of radical scenarios, as residents assess the current state of comfort (3.10) as unsatisfactory.

4.11 Current state diagnosis

The classification of Bohdan Khmelnytsky Street as Link III / Place D (Transit Junction) is based on objective indicators of traffic intensity and quality of the urban environment. The field observation indicator, which records a flow of more than 300 cars per hour, is a compelling argument for assigning Link III status, since such a traffic density within the historical area indicates the street's dominant role as an intensive trunk connection. According to the methodology of Jones and Boujenko (2009), traffic intensity of this level creates a significant acoustic and spatial barrier, which directly correlates with the Place D category - the minimum level of social productivity of space. This is also confirmed by sociological data: the low average comfort score (3.10) and the reluctance of 51% of respondents to stop on the street are direct consequences of excessive motorization and a shortage of space for pedestrians.

At the same time, given the community's request for a "cozy and green street", the site's strategic location in the historic center and its architectural and historical significance, the target benchmark for regeneration is the transition to the Link III/Place B (Main Street) category. It is this gap between the actual state of D and the potential level of B that determines the "performance gap", which in the urban context defines the street as underutilized. This indicates that the social, economic, and architectural capital of the space is currently not being realized due to the uneven distribution of the street resources. At the same time, the Place B status does not necessarily require a reduction in the Link III function; on the contrary, the concept of the "main street" involves harmonizing a high transit role with high social activity.

Table 6. Synthesis of Street Performance Diagnosis			
Analysis parameter	Current State	Policy Target	Performance Gap
Link and Place Balance	Link III / Place D (Transit corridor)	Main Street (Link III / Place B)	Deficit of Place function at two levels of Link and Place matrix
Facade Activity	56.8% passive facades	>60% active and mixed facades	"Sensory desert" and lack of visual stimuli

Profile distribution	Dominance of cars (up to 61.5% of the road space)	Multimodal profile	Spatial deficit for stationary social activities
Ecological framework	≈37 trees (deficit in Segments B and C)	Green buffer and shade	Potential heat island and high acoustic discomfort
Social experience	Transit/ Comfort Score 3.10	Destination/ Third Place	Lack of "pause infrastructure" and comfort

5. Strategies and scenarios for the regeneration of Bohdan Khmelnytsky Street

The diagnostic of the street confirmed the Link III/Place D classification and its performance gap, which established the key target for all four scenarios: achieving Place B status while preserving the Link III transit function. A street of architectural importance, with a central location and active pedestrian flows, should not function at the neighborhood level.

The facade analysis finding – that 56% of all facades across the street are passive – established that physical street redesign alone would be insufficient: a beautifully redesigned sidewalk in front of a blank institutional wall still produces a sensory desert.

The ecological inventory revealed a clear spatial injustice: the section of the street with the highest transit pressure and the weakest pedestrian environment also has the least ecological buffering. This finding made greenery a priority for functional infrastructure in all four scenarios.

The observation data confirmed that even in extreme winter conditions, private vehicle flows exceeded 300 units/hour, while pedestrian activity remained predominantly transitory with a peak of 189 people per hour during lunch. This finding confirmed the transit demand – no scenario could responsibly propose eliminating the Link function, which is why all four scenarios preserve the Link III classification. Second, the lunchtime pedestrian peak, even during cold weather, revealed a demand for stationary activity that the street currently cannot accommodate.

The survey results showed that 71.8% of respondents chose a pedestrian-oriented, green, and calm street over the current transit model, providing both legitimacy and a design brief for all

four scenarios. This figure establishes that there is social agreement for a significant reduction in car-oriented development, and that scenarios proposing radical spatial reallocation respond to a community demand.

This section will evaluate different scenarios for upgrading the street's Place function, examining their effectiveness, cost-benefit ratios, and implementation timelines. These scenarios are evaluated in descending order of their preliminary estimated costs: Shared Space, Complete Streets, Urban Acupuncture, and Co-design. The latter is characterized by financial uncertainty, as its implementation costs depend entirely on the community's participatory ideas and contributions, making it difficult to predict in advance.

5.1. Shared Space scenario for Bohdan Khmelnytsky Street

5.1.1. Justification of the site selection

The selection of Segment B of Bohdan Khmelnytsky Street as a priority site for implementing the Shared Space concept is based on the results of the basic diagnostics, which revealed the most acute systemic performance gap here. With a length of 280 meters and a profile width of 12.67–15 meters, this segment functions as a spatial “bottleneck” of the entire street. It is here that a critical spatial conflict is recorded: high transit intensity of automobile traffic, reaching over 300 units per hour, and significant pedestrian flows are forced to coexist in conditions of narrow, fragmented sidewalks and chaotic parking.

An additional factor in the selection is the high potential for capitalizing on the environment, since significant socio-commercial magnets have already formed within the segment but are, however, isolated from the public due to low connectivity. The morphological audit recorded 44% of passive facades here, which form “sensory deserts” and worsen the subjective sense of safety of pedestrians. Thus, Segment B is both underutilized and infrastructurally stressed along Bohdan Khmelnytsky Street. Reorganizing this area according to the principle of shared space will allow demonstrating the maximum Place effect at a minimum distance and launching the processes of natural renewal of adjacent territories.

5.1.2. Conceptual vision and strategic goals of the scenario

The conceptual vision for the Shared Space scenario in Segment B is an adaptive, flexible urban environment where

separation between user groups is completely eliminated. The main strategic goal is to transform the transit corridor, which currently has the local status of Place D, into a multifunctional urban space of city-wide significance - Place B. At the same time, the network function of Link III of district significance is preserved, but it is integrated into a single barrier-free space where people have priority, with car presence temporary and regulated. The project strategy is aimed at transforming the transit zone into a self-sufficient destination, where conditions are created for the development of the leisure economy, social interaction, and unhindered movement of low-mobility population groups, which directly responds to the request of 71.8% of residents for the creation of a "cozy and people-centric" street.

5.1.3. Spatial transformation and reorganization of the profile

The spatial regeneration model involves the complete dismantling of vertical barriers, retaining walls, and curbstones, allowing the formation of a single flat surface "from facade to facade". A critical engineering node in this transformation is the conversion of the open, chaotic parking lot at the beginning of the segment. Instead of an unstructured accumulation of private transport, an "entrance space" is proposed to mark the beginning of a calm zone and free up space for the expansion of the pedestrian front.

The site's material filling serves as an intuitive visual-tactile navigator. The areas of direct human presence and the facade areas are made of rectified tiles with minimal seams, and the traffic transit lane is visually separated using asphalt concrete pavement with colored pigment or textured embossing. The drainage system is integrated through recessed linear drainage channels laid along the conditional flush curb line or in the center of the street axis, preventing the formation of puddles and maintaining the barrier-free nature of the space.

5.1.4. Facade activation and ground floor management policy

The success of Shared Space spatial transformations directly depends on the implementation of soft regulatory tools. The presence of 44% of passive facades requires systematic work by the municipality with owners of commercial and residential real estate within Segment B. It is proposed to implement a program of facilitated workshops and economic incentives for the reformatting of ground floors: working with blank walls, creating

new active entrances, and attracting businesses that foster high social interaction (bookstores, workshops, galleries).

5.1.5. Mobility, safety, and integration of traffic flows

The Shared Space transport concept is based on the principle of a psychological speed limit of up to 20 km/h. Traffic safety is achieved through the curvature of the car flow trajectory, created by a staggered arrangement of container landscaping zones, parking pockets, and street furniture. The open nature of the space, without signs or markings, forces drivers to slow down and establish direct visual contact with pedestrians, minimizing the accident rate.

At a traffic intensity of 300 cars per hour and a speed of 20 km/h, the average time interval between cars is about 12 seconds. Such an interval provides a potential safe distance of about 60 meters for pedestrians to cross the road safely.

5.1.6. Lessons from the case study: New Road, Brighton

The case of New Road in Brighton relied heavily on a cultural district with high pedestrian traffic, existing powerful commercial drivers, and a more or less established driving culture adapted to unconditional pedestrian priority. In contrast, Bohdan Khmelnytsky Street in Lutsk functions as a transit corridor with a driving culture, where motorists claim the right of way, and local retail is currently fragmented. The Shared Space scenario adapts to these conditions by narrowing the shared area to a segment of the street rather than the entire length of the street. It also introduces expressive physical spatial design cues – contrasting textures of continuous paving, tactile delineators, and strategic placement of permanent street furniture – to force transit flow and visually establish pedestrian dominance without relying solely on goodwill or driver awareness.

5.2 Complete Streets scenario for Bohdan Khmelnytsky Street

5.2.1 Conceptual vision and strategic goals of the scenario

The Complete Streets scenario focuses on systemic modernization and the balanced distribution of space among all user categories along the entire length of Bohdan Khmelnytsky Street. The main goal of the scenario is to optimize the existing dimensions to increase the environment's social productivity to the target level of Place B, while unconditionally preserving the

network role of Link III as an important regional artery. The vision for the scenario is to ensure the continuity of the infrastructure, with pedestrian traffic, cycling, public transport, and private cars receiving clearly demarcated, safe, and inclusive spatial zones using the “road diet” methodology.

The Complete Streets scenario’s implementation requires its application along the entire length of Bohdan Khmelnytsky Street (approx. 930 meters) to create a unified road for drivers with movement of constant-speed, eliminate the “bottleneck” in Segment B, and improve inclusive access for pedestrians along the entire street.

5.2.2 Spatial transformation and reorganization of the profile

Spatial solutions within the Complete Streets scenario are based on strict geometric standardization of elements with maximum preservation of existing curb lines and building lines. To ensure the stable functioning of the Link function, the car and bus carriageway is narrowed to one regulatory lane with a width of 3.50 meters. This dimension is normatively justified and entirely suitable for the safe passage of large city buses and specialized equipment, but it prevents exceeding the speed limit.

Within the narrowest Segment B (minimum width 12.67 meters), the freed spatial resource of 9.17 meters is redistributed according to the principle of functional zoning. On the left side of the street, along the active front of the development, a linear row of orderly, parallel parking with a width of 2.00 meters is arranged, forming constructive pockets. On the opposite (right) side, a continuous two-way bicycle path with a width of 2.00 meters is being designed, isolated from the public transport lane by an eco-strip 0.50 meters wide with low shrubbery. The total width of pedestrian sidewalks thus increases to 4.67 meters (the left sidewalk expanding to 2.67 meters and the right one stabilizing at 2.00 meters), ensuring sufficient space for people with limited mobility.

On wider sections of the street (Segments A and B), where the overall width varies from 15.00 to 18.00 meters, the basic transport and bicycle frame (3.50 m - traffic lane, 2.00 m - parking, 2.00 m - bike path with a 0.50 m buffer) remains unchanged. The entire additional spatial resource of 2.33–5.33 meters is directed toward expanding the left pedestrian sidewalk to 4.00–5.00 meters in the areas of the greatest pedestrian concentration and toward deploying stationary green strips with rain gardens. Modernization of the drainage system with this approach is adaptive and focuses

on correcting individual stormwater wells without the need to reconstruct the network from facade to facade.

5.2.3 Facade activation policy and ground floor management

The street front activation strategy is based on creating a physically and psychologically safe buffer zone between heavy vehicle traffic and pedestrian space. Organizing the parking row and moving the bike path to the opposite side eliminates visual chaos. The municipal Street Activation Policy in this scenario involves using the freed space of parking pockets to install seasonal parklets - modular public platforms with street furniture and landscaping, which are placed at the same level as the sidewalk.

This solution allows local businesses to activate passive facades without blocking the transit part of the sidewalk. Creating comfortable conditions for pedestrian traffic, protected from traffic flow by a linear buffer and parking rows, encourages people to reduce their speed and increases the subjective time spent on the street, thereby directly helping minimize "sensory deserts" along the entire 930-meter corridor.

5.2.4 Mobility and safety

The Complete Streets scenario creates conditions for all modes of transport to move along the street at 30–40 km/h, eliminating the possibility of speeding. Traffic safety is achieved through Traffic Calming methods, such as raised pedestrian crossings at intersections and safety islands.

Separating bicycle infrastructure from pedestrian sidewalks completely eliminates conflicts between pedestrians and micromobility users.

The integration of public transport is implemented through bus bulbs - special expansions of the sidewalk towards the carriageway to the parking row line. This allows the bus to pick up and drop off passengers without maneuvering, directly in the traffic lane, ensuring strict adherence to schedules and a high level of barrier-free access.

5.2.5 Ecological framework and environmental comfort

In sections of the street where the total width exceeds the minimum 12.67 meters, design solutions provide for continuous distribution strips with lawns and low-density shrubbery. In the profile expansion zones, it is possible to arrange rain gardens –

deep biofiltration plantings that serve as elements of sustainable urban sewage, effectively retaining and cleaning surface runoff without additional load on the municipal network. Such linear green infrastructure acts as a natural screen that absorbs fine dust, improves the microclimate, reduces the "heat island" effect, and significantly reduces acoustic pollution from the roadway.

The comfort of the pedestrian environment is enhanced by modernizing the artificial lighting system: the existing high main supports are equipped with additional lower-level consoles (at a height of 3.5–4.0 meters) with warm-spectrum LED lamps aimed exclusively at the sidewalks and the bicycle path.

5.2.6 Lessons from the case study: Street Humanization in Vilnius

The experience of Naugarduko Street demonstrates that applying a systematic "road diet" can rebalance a transit-dominant corridor into a human-scale space. However, the Vilnius model has achieved success due to significant municipal capital investment, a city-wide approved street design manual, and a stable institutional framework. In Lutsk, implementing such intensive structural modeling across the entire 13,020 m² area faces severe municipal budget constraints in wartime conditions and the lack of standardized local technical regulations for "complete street" profiles. The "Complete Street" scenario responds to these realities by proposing a phased, modular approach to the "road diet". Instead of immediate capital-intensive structural reconstruction of underground networks and relocation of redline boundaries, the scenario uses less costly spatial redistribution methods – such as narrowing lanes with modular curbs, tactical road markings, and the sequential conversion of excess asphalt into linear rain gardens, prioritizing areas with the largest performance gaps.

5.3 Urban Acupuncture scenario for Bohdan Khmelnytsky Street

5.3.1 Conceptual vision and strategic goals of the scenario

The Urban Acupuncture scenario is based on the principles of tactical urbanism and focuses on rapid, local, and point interventions with the least capital intensity. Unlike previous scenarios, this approach does not involve large-scale structural restructuring of the transport or engineering framework of Bohdan Khmelnytsky Street. Instead, the strategy aims to identify critical spatial and functional nodes (points of degradation or passivity) and target their "revitalization". The main goal of the

scenario is to achieve a rapid Place-effect at the local level, when minimal financial and time investments trigger a chain reaction of regeneration of the surrounding urban fabric. The design efforts are focused on transforming individual pocket spaces, eliminating "sensory deserts," and socio-culturally programming the environment to increase its viability and adaptability.

5.3.2 Revitalization of the square near house No. 43 and spatial integration with Lesya Ukrainka Street

The critical node for applying the acupuncture method is the neglected public space near house No. 43. Currently, this object is in a state of spatial isolation and functional decline. The design solution involves its radical revitalization and the creation of end-to-end pedestrian and visual connectivity with the city's main pedestrian artery, Lesya Ukrainka Street. The integration of spaces is achieved through tactical design tools: the wayfinding systems (mural signs, information steles), continuous paving patterns at street intersections, and an accent lighting scheme. The square itself is transformed into an entrance hub that redirects pedestrian flows, inviting users to delve into the Bohdan Khmelnytsky Street space.

5.3.3 Functional expansion of St. Nicholas Square

St. Nicholas Square currently demonstrates an acute efficiency gap due to its functional monotony - the space is used exclusively for passive transit recreation, being limited only by standard linear benches. The urban acupuncture scenario proposes expanding the square's socio-spatial program without replacing capital structures. Multifunctional wooden platforms are integrated into the existing green frame and can serve as an amphitheater, reading areas, interactive children's micro-zones, or venues for intimate neighborhood events and open-air lectures. The saturation of the space with new types of street furniture (curvilinear benches, chaise lounges, integrated tables for board games or work) allows transforming the square into a lively, inclusive epicenter of the district community's urban life.

5.3.4 Aesthetic modernization and elimination of morphological defects: street furniture and murals

To overcome the negative impact of passive fronts and blank walls of buildings that form "morphological scars" within the street, the scenario involves the tools of monumental art and

environmental design. On the blank ends and facades of buildings, a series of curated murals is planned, conceptually related to the history and identity of Lutsk. These art objects act as powerful visual anchors that distract attention from degraded elements of the environment and structure the space. Aesthetic modernization is enhanced by the installation of custom human-scale landscaping elements: designer bicycle parking, bins for separate waste collection, trunk grilles, and interactive navigation elements. This allows you to saturate the space with small details, increasing the subjective attractiveness and tactile comfort of the street.

5.3.5 Modular parklets as a tool for temporary expansion of the pedestrian front

The main tool for overcoming the shortage of pedestrian space while preserving existing curb lines is the deployment of a network of parklets. Parklets are designed as temporary, seasonal, or permanent modular platforms made of natural wood or composite materials, installed in place of 1–2 standard parking pockets at the same level as the existing sidewalk.

The implementation of such micro-platforms directly near social activity objects (in particular, near misto cafes and passive facades undergoing revitalization) allows, without capital investments, to expand the usable area of the street for living functions. The modular design of parklets integrates seating areas, integrated planters with perennial greenery, and micro-infrastructure elements. This creates a protective buffer between the flow of cars and pedestrians, increasing the safety and comfort of the human-scale environment.

5.3.6 Light acupuncture and supergraphics as elements of navigational connectivity

To eliminate the spatial gap and attract pedestrian traffic from the main pedestrian street, Lesia Ukrainka, it is proposed to use light acupuncture and supergraphic (wayfinding) tools. Elements of color marking and tactical painting are applied directly to the pavement at entrance nodes, forming an intuitive visual vector that prompts pedestrians to change direction and enter the space of Bohdan Khmelnytsky Street.

Color solutions are supported by the "light acupuncture" scenario in the evening. The project involves installing suspended garlands (catenary lighting) above the roadway, architectural lighting of tree crowns in squares, and the use of gobo projectors to broadcast light patterns onto the blind ends of buildings. This

not only marks the street as a safe socio-cultural space during the dark hours, but also visually eliminates the existing “sensory deserts”, transforming degraded morphological elements into visual accents.

5.3.7 Municipal policies to stimulate creative entrepreneurship

Spatial interventions are supported by municipal policies aimed at transforming the economic landscape of Bohdan Khmelnytsky Street. The goal of the policy is to stimulate the emergence of “interesting businesses” - third places with high added social value (independent coffee shops, local galleries, art showcases, bookstores, and creative workshops). To this end, it is proposed to introduce a mechanism for quick permits for the temporary use of public space for pop-up events, provide municipal benefits or facilitation assistance to entrepreneurs who revitalize passive ground floors, and create conditions for holding regular street markets and mini-exhibitions. Such activation of the economic front enables filling functional gaps, attracting new user groups, and building a sustainable evening economy without significant budget investments.

5.3.8 Lessons from the case study: Acupuncture in NoLo

The NoLo Milan case confirms that precise interventions can catalyze network regeneration. At the same time, case notes that this effect depends on pre-existing social capital. The via Venini intervention succeeded partly because NoLo already had an active community of residents and small businesses. It is possible to state that Bohdan Khmelnytsky Street's social fabric is thinner. The Urban Acupuncture scenario responds to this difference by prioritizing interventions that are self-evidently useful even without community reinforcement – parklets that provide seating and murals that change the visual environment, regardless of whether residents claim ownership – while the municipal policy component is designed to cultivate the social networks that would strengthen the further interventions.

5.4 Regeneration scenario: Co-design

The scenario of co-design and visual coding (Co-design) is based on the synergy of the results of a participatory workshop, in which 27 people participated, divided into 4 profile working groups, and extensive empirical data from a sociological survey of local residents, which recorded 367 verified responses and was analyzed

in the previous sections of the study. The main goal of this stage was to develop a comprehensive, participatory scenario of spatial development for further comparative analysis with other developed regeneration models. This approach enabled converting the subjective requests recorded during surveys of 367 residents and the design work of 27 workshop participants into clear normative and spatial regulations.

The co-design workshop was conducted on an open-participation basis, with no selection criteria applied, and involved 27 residents. While this number is modest, open-call participation in urban planning workshops in Ukrainian mid-sized cities typically reflects genuine engagement – participants self-select based on personal interest. The workshop findings were united with the survey to ensure that small-group outputs did not distort the broader picture.

5.4.1 Spatial transformation, inclusivity, and pavement engineering

The spatial solutions for the scenario are aligned with the requirements of universal design and barrier-free access, which were a key request of the community during the pre-project study. The concept involves the reorganization of the profile according to the Shared Space principle - designing the territory at one level from facade to facade with the rejection of vertical curbstone. The division into functional zones is implemented through the use of restrictive columns (bollards), which frees up usable space for pedestrians and ensures full inclusion for low-mobility population groups. Within the framework of road engineering, taking into account the high aesthetic value of authentic paving and existing complaints about discomfort from vibration, a differentiated approach to the use of paving stones is proposed. To preserve the paving stones, they will be relocated and used in buffer and recreational zones, where they will serve for functional zoning, creating a tactile and visual contrast that separates recreation areas, parking, and landscaping elements from the smooth pedestrian pavement of the sidewalks. The pedestrian space itself is radically expanded by optimizing traffic lanes, and the existing metal fences in the middle of the sidewalks are completely dismantled to create a single safe environment.

5.4.2 Mobility, cycling, and parking reorganization

The transport model developed during the workshop uses flexible planning solutions due to the steep terrain and the street's

limited dimensions. Due to the lack of profile width, an asymmetric cycling infrastructure is designed, with cyclists provided with joint movement in a common lane with public transport under strict speed limits on the descent, and an isolated dedicated cycle path on the ascent. Regular bus and trolleybus traffic is fully maintained to ensure high transport accessibility to the city center; however, the safety of vulnerable users is enhanced through the individual design of each intersection as an autonomous “safety node,” with increased coverage and narrowing of turning radii. To relieve the profile on weekends and holidays, a complete ban on private passenger transport is being introduced, temporarily transforming the street into a pedestrian recreation and leisure area. The complete cleaning of the street profile from chaotic car parking is compensated for by the deployment of a municipal system of multi-level parking lots on the periphery of the city's central area, where the Old Market area, as well as Kovel'ska and Naberezhna streets, are identified as priority locations.

5.4.3 Ecological framework and landscape design

The planting of greenery aimed at protecting against heat, dust, and overheating, will be coordinated with the architectural front to preserve the facades' visibility. Trees with narrow columnar crowns along the street's linear front provide necessary shading but do not cover the unique architectural details of the buildings. In wide open areas, in particular on the site in front of the lyceum, trees with wide spreading crowns are planted to form continuous shade curtains. The landscape filling is supplemented with tools for vertical greening of blind walls, the active use of flower pots and potted plants as mobile elements of tactical urbanism, and the stimulation of residents to green their own balconies after a mandatory inspection of their technical condition. To give the street a unique coloristic and aesthetic status, decorative species such as sakura or hawthorn are used, and new green areas are geometrically connected to the main pedestrian trajectories, following the example of Kryvyi Val Street. Given the significant slope of the street and the problem of rainwater runoff during downpours, the engineering part of the eco-framework provides for the creation of a system of rain gardens - deep biofiltration zones that retain, absorb, and clean surface runoff.

5.4.4 Sociocultural programming and activation of street life

The strategy of returning the street to an active public space is implemented by saturating the environment with new sociocultural functions and scenarios. The project involves reviving the historical tradition of film viewing through the creation of a specialized film club and the organization of systematic street events, markets, and festivals, held once every two weeks, which will allow residents to plan their leisure time in advance. The cultural framework is strengthened by the design of an art space - Primachenko Alley on the pedestrian connection between Bohdan Khmelnytsky Street and the Batkivshchyna Cinema, as well as the involvement of local theater communities in street performances. The development of the leisure economy is based on the legalization and regulation of street trade formats and street coffee shops. Municipal policy aims to stimulate the emergence of third places with high social value by revitalizing and opening closed courtyards for public access as restaurants and art spaces, through collaboration with local institutions and neighbors. Infrastructure for comfort includes eliminating the critical lack of street lighting, installing custom street furniture, integrating a large number of bicycle parking spaces, and adding interactive art installations.

5.4.5 Design code regulations and protection of architectural heritage

The visual language and aesthetic control in the Co-design scenario are based on strict regulation and the implementation of a single street design code, in accordance with the requirements of Article 15 of the Law of Ukraine “On Improvement of Settlements”. A pastel color scheme is approved for the restoration of low-rise facades, with a predominance of warm yellow and gray tones that correspond to the historical profile. Strict control over the condition of authentic exteriors is being introduced through a system of municipal fines for violating the architectural appearance of buildings and for cluttering facades with advertising. Commercial signs should be minimalist, composed of separate three-dimensional letters on a translucent substrate, such as tempered glass or colorless film, to prevent them from covering historical wall decor and to reveal the tourist potential of architectural heritage. The lighting scenario involves eliminating the visual accumulation of lampposts by modernizing the supports and introducing architectural lighting on facades in the dark, turning the evening street into a safe and attractive place for walks after sunset.

5.4.6 Lessons from the case study: participatory street design in Tirana

Interventions in Tirana demonstrate that intensive citizen engagement, public-private and municipal-civic partnerships can build a deep sense of local ownership, mobilize resources, and successfully shift city governance from a top-down prescriptive model to an inclusive framework. At the same time, the Tirana model depends on a municipal political will, an institutionalized participatory platform, and peacetime conditions. In Lutsk, the local government is less flexible, while its community experiences high levels of war fatigue and skepticism about the pace of municipal planning. The Co-Design scenario developed for Khmelnytsky Street addresses these obstacles by using a structured engagement toolkit that divides the participatory process into targeted workshops and transforms community requests into actionable concepts.

6. Scenarios comparison

All four scenarios are compared through seven different indicators – those regarding the implementation of the projects themselves and their physical dimension (cost, time, and durability)

6.1 Cost analysis

Cost Categories	Scenario 1: Shared Space	Scenario 2: Complete Streets	Scenario 3: Urban Acupuncture	Scenario 4: Co-design
Area	4,200	13,020	13,020	13,020
Preparation	\$150.00	\$60.00	\$0.00	\$30.00
Cost per 1 m²/Total (\$)	630,000	781,200	0	390,600
Utilities and Drainage	\$160.00	\$40.00	\$0.00	\$20.00
Cost per 1 m²/Total (\$)	672,000	520,800	0	260,400
Final Paving and Surfacing	\$150.00	\$100.00	\$4.00	\$35.00
Cost per 1 m²/Total (\$)	630,000	1,302,000	52,080	455,700

Landscaping, Lighting, and Amenities	\$60.00	\$40.00	\$12.00	\$30.00
Cost per 1 m ² /Total (\$)	252,000	520,800	156,240	390,600
Design and Supervision	\$52.00	\$24.00	\$1.60	\$11.50
Cost per 1 m ² /Total (\$)	218,400	312,480	20,832	149,730
Unit cost (1 m ²)	\$572.00	\$264.00	\$17.60	\$126.50
Total	\$2,402,400	\$3,437,280	\$229,152	\$1,647,030

Source: Calculated and compiled based on expert estimations.

The cost analysis confirms a steep hierarchy across the four scenarios. Shared Space is the most capital-intensive per unit area at \$572.00/m², while Complete Streets reaches \$3,437,280 – the highest total expenditure of all four scenarios. Urban Acupuncture costs much less than the others, while Co-design sits between Urban Acupuncture and Complete Streets in unit-cost terms.

The main cost driver for Shared Space, the integrated drainage system, also represents the highest wartime vulnerability, as this is the most difficult component to repair if damaged. For Complete Streets, final paving and surfacing represent the largest cost category. Urban Acupuncture's near-zero preparation and drainage costs confirm its fundamental advantage: it works within the existing infrastructure rather than replacing it.

Co-design, despite being a community-led process, carries a higher absolute cost than Urban Acupuncture by a factor of seven. This reflects the comprehensive physical transformation the community proposed and underlines that participatory processes do not necessarily produce low-cost outcomes. What Co-design does produce is higher ownership and social durability per dollar spent.

The unit cost comparison shows that at low funding levels, Urban Acupuncture delivers the highest social efficiency, with an immediate, visible impact and no dependence on infrastructure completion. At medium funding levels, a Complete Streets approach offers considerable corridor improvement. At high funding levels, Shared Space and Co-design offer the most transformative Place outcomes, but also carry implementation risks.

6.2 Time to visible result

The time between the beginning of intervention and the first visible change differs across scenarios. Urban Acupuncture can deliver visible results within weeks. Co-design produces tangible results within months following the facilitation process, yet in the case of Bohgana Khmelnytsky, the first co-planning results show that the community sees the need for capital reconstruction, which is a long-term process. Complete Streets requires full construction over the years, though phased implementation can speed up the project's delivery by segments, while Shared Space has the longest lead time and carries the risk of funding interruptions.

6.3 Capacity to elevate Place and preserve Link functions

All four scenarios preserve the Link III transit function by design, however, their capacity to do so differs. Complete Streets is the most systematic approach to achieving Place B along the full corridor, redistributing space through the road diet to create conditions for pedestrians, cyclists, and social activity across the whole street. Shared Space achieves the most radical Place transformation within Segment B, but does not address the full corridor, expecting spillover. Urban Acupuncture elevates Place function at specific nodes without transforming the corridor as a whole – producing islands of Place B quality within a Place D environment, expecting further spillover as well. Co-design proposes Place transformation through physical redesign with sociocultural programming, but its success also depends on sustained community engagement and municipal policy implementation.

6.4 Required and generated social capitals

Each scenario requires a different level of community trust and its engagement capacity. Shared Space requires moderate social capital – drivers and pedestrians must be willing to negotiate space through visual contact and mutual deference. Complete Streets requires relatively low social capital from residents – it is expert-driven and can be implemented with light community consultation – but it requires high institutional capacity from the municipality. Urban Acupuncture has a low social capital requirement – individual interventions can be carried out by municipalities or small community groups without sustained civic infrastructure. Co-design has the highest social capital

requirement: it needs residents to be able and willing to articulate their needs, negotiate differences, and sustain engagement over an extended process.

Generated social capital measures the degree to which the intervention builds community trust, civic ownership, and long-term engagement with public space. Co-design inherently generates the highest social capital. As demonstrated by the Tirana Streets for Kids case, community participation in construction led to maintenance support without additional costs. Urban Acupuncture generates moderate but immediately apparent social capital by creating local reference points that community networks can activate further. Complete Streets builds social capital through improved physical conditions, but its top-down approach yields little ownership. Shared Space has the potential to generate high social capital through the daily negotiation it requires – but only if trust is present.

6.5 Physical and social durability

It is important to evaluate durability along two dimensions: physical durability, which refers to how well the intervention withstands damage and lack of maintenance, and social, which refers to whether the space continues to function as a Place without additional resources.

Complete Streets scores highest in physical durability, as the approach produces traffic-calming effects passively, requiring minimal maintenance to remain functional. Shared Space has high physical durability but low social durability – it relies on continuous behavioral norms that can break down without active management. Urban Acupuncture scores lower on physical durability – parklets can be damaged, murals can fade – but higher on social durability because each intervention is independently replaceable without losing the overall logic of the scenario. Co-design scores highest in social durability when the process is genuine: spaces built by communities tend to be maintained by them, as a sense of ownership creates informal stewardship. However, this durability is contingent on the quality of the participatory process – a performative co-design produces neither ownership nor durability.

6.6 How scenarios work with the post-Soviet context

Shared Space directly works with the most damaging planning legacy – the hierarchical separation of user groups and the elimination of semi-private transitional layers. By removing

curbs, signs, and barriers, it reconstructs the negotiated street space. Yet its entire safety mechanism rests on the assumption that drivers and pedestrians will make eye contact and self-regulate. The behavioral assumption that strangers will cooperate through eye contact in public space may be precisely what decades of Soviet alienation eroded. Without trust, removing formal regulatory barriers might produce conflict or avoidance. Additionally, Shared Space works most effectively in compact, human-scaled historic street profiles. But the oversized profiles create a scale in which achieving proximity, which is determinative for Shared Space function, becomes more difficult.

Complete Streets directly contrasts the modernist planning by redistributing excess road space to pedestrians, cyclists, and greenery. However, Complete Streets carries its own risks, as it remains fundamentally a technocratic model. If applied without honest community engagement, the approach risks reproducing that same dynamic with better intentions. Yet it can be mitigated by using participation as a foundation for the road diet calculation.

Urban Acupuncture can be considered as the contextually appropriate strategy for the post-socialist situation. Soviet planning destroyed not just physical space but social trust in public space as a concept. Urban Acupuncture addresses this legitimacy problem by operating at a scale where residents can immediately verify the change through their own experience. However, Urban Acupuncture depends on existing social capital to amplify its effects, which may not be present.

Co-design is the most ideologically direct response to the Soviet legacy and simultaneously the most fragile in that context. It positions residents as authors of planning decisions. In that sense, implementing Co-design in a post-Soviet Ukrainian city is a reconstruction of the relationship between citizens and their public environment that the Soviet period deliberately dismantled. Collaborative planning assumes that diverse stakeholders know their needs and can build consensus. Yet post-Soviet societies tend to exhibit low institutional trust and tend to disengage from public decision-making processes.

No single strategy fully resolves the post-socialist legacy on its own – Shared Space requires civic trust that needs rebuilding, Complete Streets risks repeating a technocratic approach, Urban Acupuncture needs a social support that might be absent, and Co-design depends on communicative capacity that may also be missing.

This suggests that the optimal regeneration approach for Ukrainian cities is necessarily hybrid, sequenced to first rebuild the

conditions each strategy assumes, which, in all cases, are about regenerating social trust.

6.7 Wartime viability

Any evaluation of regeneration strategies for Ukrainian cities developed since 2022 must account for the possibility that what is built today may be damaged, defunded, or deprioritized tomorrow. The full-scale invasion has introduced conditions that fundamentally reorder how regeneration strategies should be assessed – cost is both a budget and a risk question, and visible impact becomes a political necessity.

Shared Space carries the highest wartime risk. Its value is entirely front-loaded into capital construction that must be completed to function. An interrupted project leaves a street in disarray, with even worse conditions than before. It is also the hardest path to justify when emergency infrastructure is built from the same municipal budget.

Complete Streets follows a phased approach where independently completed segments deliver independent benefits. However, the logic of creating a full corridor is sensitive to funding interruptions, which might lead to outcomes like those of the Shared Spaces strategy.

Urban Acupuncture might be the most wartime-compatible strategy. Each separate intervention doesn't carry a significant capital loss if damaged; each is independently valuable, with impact almost immediately visible. All these factors are especially important in a context where municipal spending is under public scrutiny, and communities need evidence of efficient fund allocation.

Co-design needs sustained facilitation, multi-stakeholder engagement, and consensus-building consume time and energy that are scarce during conflict, among both citizens and institutions. Its primary wartime value is therefore establishing the social foundation rather than spatial transformation itself.

6.8 Synthesis

All four scenarios are evaluated through nine weighted criteria mentioned above, grouped into five thematic dimensions: wartime and resource constraints (wartime viability, cost efficiency, and speed to visible result), urban performance (capacity to achieve Place B status), social capital (required and generated), durability (physical and social), and post-socialist context compatibility. Each criterion is scored on a three-point

scale – 1 (low), 2 (medium), 3 (high) – and multiplied by its assigned weight. A three-point scale was selected to avoid false precision: given that the scoring relies on qualitative diagnostic data rather than precise measurement, a finer scale would imply a level of accuracy the data does not support. Two criteria are scored inversely: Cost, where lower expenditure per m² yields a higher score, and Required Social Capital, where lower dependence on civic capacity yields a higher score.

To systematically evaluate the scenarios, a multi-criteria decision analysis framework was constructed, on the basis of the author's heuristic evaluation method to convert qualitative diagnostic data into quantitative parameters. The weights of the criteria reflect the specifics of the context in which regeneration takes place – wartime, limited resources, and the need to quickly demonstrate the result to the community and institutions. This weighting approach follows the logic of context-sensitive multi-criteria decision analysis, in which criteria weights reflect the specific conditions of implementation.

Wartime Viability (20%) received the highest weight, since in the conditions of a full-scale invasion, any strategy that requires a significant capital investment and carries the risk of non-completion is potentially harmful.

Cost/Budget Efficiency (15%) and **Place B Achievement** (15%) were given equal weight as the two main indicators within the study's framework: any scenario must be both financially realistic and able to increase the street's social productivity.

Speed to Visible Result (10%) and **Generated Social Capital** (10%) reflect two interrelated dimensions: the first is the physically visible result that confirms the intervention's feasibility and cost-effectiveness; the second is the intervention's ability to restore social trust in public space.

Physical Durability (10%) and **Social Durability** (10%) assess the long-term durability of the outcome—the ability of the physical infrastructure to withstand a lack of maintenance and the ability of the space to function as a place without constant support.

Required Social Capital (5%) and **Post-Socialist Compatibility** (5%) received the least weight because they are prerequisites, not goals: their levels are relatively fixed at the time of implementation and depend little on the choice of scenario.

Table 8. Weighted Score of the Proposed Regeneration Scenarios					
Criterion	Weight	Shared Space	Complete Streets	Urban Acupun- cture	Co-design
Wartime & Resources					
Wartime Viability	20%	1	2	3	2
Cost (Budget Efficiency)	15%	1	2	3	2
Speed to Visible Result	10%	1	1	3	2
Urban Performance					
Place B Achievement	15%	2	3	1	2
Social Capital					
Required Social Capital	5%	2	3	3	1
Generated Social Capital	10%	2	1	2	3
Durability					
Physical Durability	10%	3	3	2	2
Social Durability	10%	1	2	2	3
Context Fit					
Post-Socialist Compatibility	5%	1	2	3	2
Weighted Total Score	100%	25% Rank 4	55% Rank 3	70% Rank 1	57,5% Rank 2

7. Conclusions

Research question 1: The Link and Place framework in the Ukrainian context

The Link and Place framework proved effective as a diagnostic instrument for identifying underutilized streets in the

post-Soviet Ukrainian context, but its application also revealed its contextual limits. The classification of Bohdan Khmelnytsky Street as Link III / Place D was confirmed by four data sources – facade audit, cross-section analysis, field observation, and resident survey – demonstrating that the framework provides a reliable structural foundation for diagnosis when supported by mixed-methods research. However, the framework does not address limitations specific to the post-socialist context.

The framework measures functional underperformance but does not capture cultural disengagement from public space. The survey found a gap between a relatively high safety score of 3.78 and a comfort score of 3.10, and 50,7% of respondents refused to stop on the street., This suggests that people avoid staying because the environment offers no reason to remain. The Link and Place matrix classifies this as Place underperformance but provides no explanation for why it is happening, despite the street's evident architectural and locational value.

Additionally, the framework does not account for the disconnect between architectural quality and ground-floor activation that Soviet building typology produces. Segment A, the most architecturally significant section of the street, recorded the highest rate of passive facades at 65%.

This suggests that, in the Ukrainian context, the Link and Place framework should be combined with additional analytical layers to create a more comprehensive assessment of street underperformance.

Research question 2: Comparing the four models

The multi-criteria weighted assessment produced a clear ranking: Urban Acupuncture scored highest, followed by Co-design and Complete Streets, with Shared Space scoring lowest. This ranking diverges significantly from what a purely spatial or cost-based assessment would produce, and that divergence is analytically significant.

Urban Acupuncture's highest score reflects its alignment with three conditions specific to the wartime context – the lowest baseline social capital, the least infrastructural vulnerability, and the most immediate social impact per invested dollar. Yet in Ukrainian cities where displacement has disrupted community networks, the acupuncture may not fully hold: it stimulates existing connections, but not necessarily creates them where they have been severed.

Complete Streets, despite being the most systematic approach, carries its own risk: applied without genuine community

engagement, it risks reproducing the technocratic planning logic it was designed to replace. This risk can be mitigated – but mitigation requires deliberate process design that the strategy does not inherently provide.

Co-design is simultaneously an ideologically necessary response to the Soviet planning legacy – positioning residents as authors of their environment rather than its passive recipients – and at the same time an institutionally fragile strategy under wartime conditions. Co-design can have great achievements when civic trust and community continuity are present. In the Ukrainian context, these conditions must be actively developed rather than assumed.

Shared Space, which achieves the most radical Place transformation per square meter and is perhaps the most theoretically compelling of the four strategies, scores lowest when wartime viability, social capital requirements, and post-socialist compatibility are included as evaluative criteria. This finding directly challenges the tendency to assess shared space primarily on the basis of its behavioral mechanism and physical outcomes. In the Ukrainian context, the preconditions for shared space – civic trust, behavioral self-regulation, financial stability, and institutional continuity – are precisely the ones Soviet planning eroded, and the full-scale invasion continues to degrade. A strategy that performs excellently under stable Western European conditions may be the least appropriate strategy for the context where it is most visually appealing as a solution.

Research question 3: The optimal Scenario at different funding levels

The cost analysis confirms a steep hierarchy of scenarios, but the most analytically important finding is the relationship between cost and contextual risk.

At low funding levels, Urban Acupuncture delivers the highest social efficiency: immediate visible impact, no dependency on infrastructure completion, and no capital loss if a single intervention is damaged or abandoned. This makes it the only strategy that is simultaneously affordable, resilient, and politically justifiable in the current wartime municipal budget environment.

At medium funding levels, a phased Complete Streets approach offers systematic corridor improvement, but only if each phase is designed to deliver coherent, independently functional results – meaning that an interrupted project does not leave a dangerous transitional condition. This requires deliberate phasing

logic that the standard Complete Streets methodology does not specify.

At high funding levels, both Shared Space and Co-design can deliver transformative outcomes, but these outcomes depend on financial stability, civic trust, and institutional continuity. Proposing these scenarios as near-term implementation targets would be hurried. Otherwise, considering them as long-term visions that current tactical interventions should be designed to enable is the most thought-through way.

The optimal approach is a hybrid one. Perceiving Urban Acupuncture as the immediate strategy delivering visible change and building trust, Co-design executed in parallel for legitimacy-building and establishing the social trust that capital-intensive scenarios will require, Complete Streets as the medium-term structural transformation once phased funding can be assured, and Shared Space as the optional long-term vision for Segment B, which works both as a solution and city-wide experiment that can be later scaled.

Research question 4: Adaptability to other Ukrainian cities

The diagnostic and strategic framework developed in this study is adaptable to other Ukrainian cities with similar urban environment typologies, under three conditions.

The first condition is street typology. Streets that combine historical architectural significance with Soviet-era profile modifications – a common typology in medium-sized Western Ukrainian cities, including Ivano-Frankivsk, Ternopil, Rivne, and Khmelnytsky – are the most direct analogs to the Lutsk case and represent the primary scope of applicability. Streets in larger cities with higher traffic volumes may require different Link function thresholds; streets in smaller cities may have insufficient pedestrian demand to justify capital investment in any scenario beyond Urban Acupuncture.

The second condition is funding availability. Cities with access to, for example, international reconstruction funding and capacity for continuous project management can consider the Complete Streets or Shared Street approaches; cities operating on constrained municipal budgets should prioritize Urban Acupuncture as the foundation and use it to build the case for larger investment.

The third condition is community continuity. Cities that have experienced significant population displacement – either outward evacuation or inward displacement from frontline areas – face a specific co-design challenge: the community that is consulted may

not be the community that inhabits the result. Any co-design process conducted in such cities should be explicitly scoped as provisional, with mechanisms for revisiting decisions as demographic conditions stabilize.

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Annex 1. Survey Questions

Block 1: General

1. Do you consent to the processing of your responses within the framework of this study?
2. Your gender:
3. Your connection to Bohdan Khmelnytsky Street (e.g., I live here, work here, transit, etc.)

Block 2: Associative and emotional perception of space

4. Describe the street in three words that come to mind.
5. Which places on the street evoke positive emotions in you and why?
6. Which places on the street evoke negative emotions in you and why?

Block 3: Mobility patterns and street use

7. How do you usually use Bohdan Khmelnytsky Street?
8. How often do you visit this street?
9. How do you usually move along this street?

Block 4: Assessment of safety, comfort, and environmental factors (scales)

10. How safe do you feel as a pedestrian?
11. How comfortable do you think the street is?
12. Rate the noise level.
13. Rate the level of gas pollution.
14. Rate the quality of lighting in the evening
15. Do you find the houses on this street interesting and beautiful?

Block 5: Environmental issues and barriers

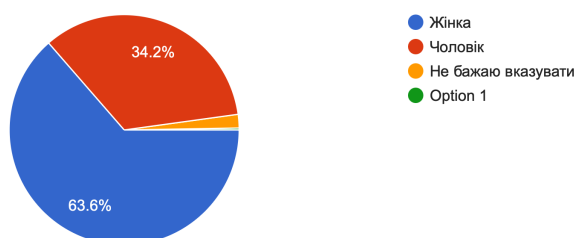
16. Do you feel like stopping on this street just to rest?
17. If "No", what bothers you the most?
18. Which part of the street seems to you the most "problematic" or inconvenient, and why?
19. If you use public transport, what do you miss the most while waiting for transport?

Block 6: Vision of the future and community involvement

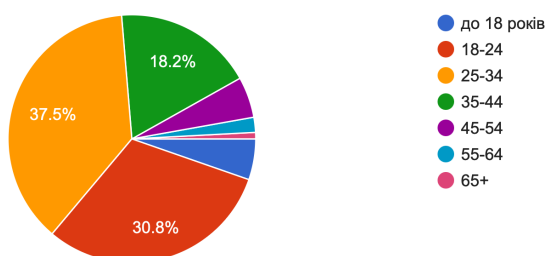
20. What would make you stay on this street longer than usual?
21. What would you like to see Bohdan Khmelnytsky Street look like in a few years?

Annex 2. Distribution of Answers

Ваша стать:
368 responses

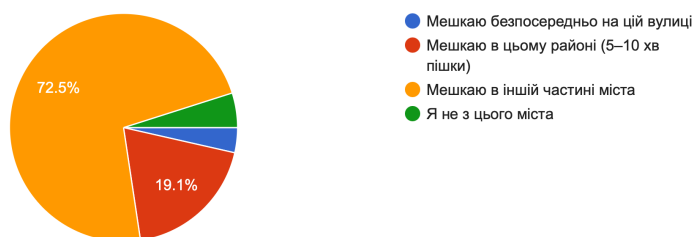


Ваш вік:
357 responses



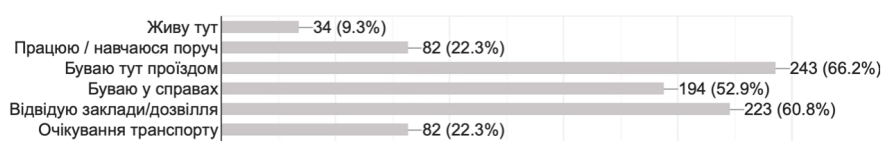
Ваш зв'язок із вулицею Богдана Хмельницького

367 responses



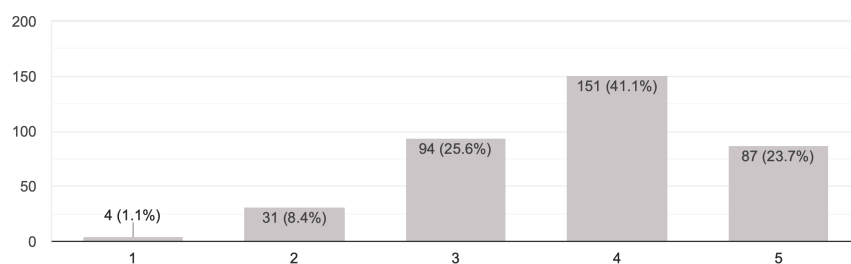
Як ви зазвичай користуєтеся вулицею Богдана Хмельницького?

367 responses



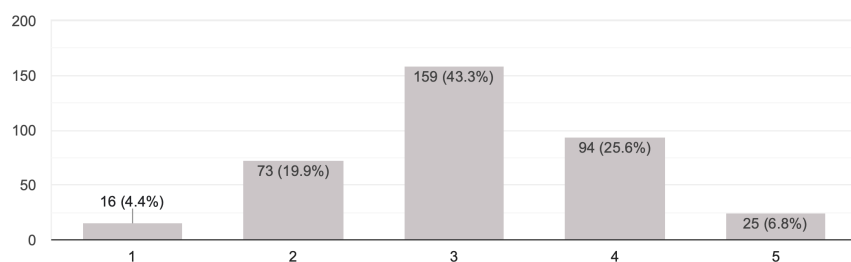
Наскільки безпечно ви почуваетесь як пішохід?

367 responses

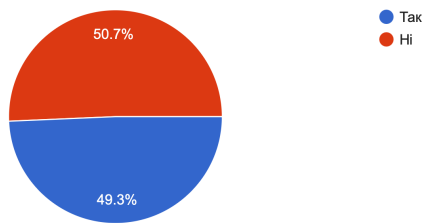


Наскільки, на вашу думку, вулиця зручна?

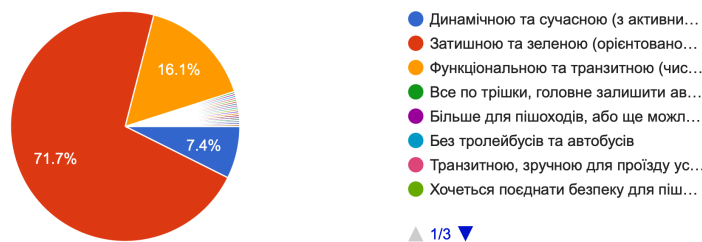
367 responses



Чи виникає у вас бажання зупинитися на цій вулиці просто відпочити?
367 responses



Якою б ви хотіли бачити вулицю Богдана Хмельницького через кілька років?
367 responses



Annex 3. Co-Design Workshop Briefs for Groups

Traffic on Bohdan Khmelnytsky Street

Your task is to rethink how Bohdan Khmelnytsky Street moves. Today it works mainly as a “transit corridor” for cars, but it is important to make it convenient for everyone: from the bus driver to parents with a stroller or a person in a wheelchair. The survey showed that the street's convenience is quite low, and the noise from the paving stones and the difficulty of navigation are barriers that people of Lutsk try to avoid this street as quickly as possible without stopping.

Optional questions:

- What should the street ideally look like? It is narrow and jammed with traffic. Maybe it is worth expanding the sidewalks at the expense of the carriageway? Can the street become completely pedestrian on weekends, turning into a recreation area?
- What to do with the paving stones? Many people associate it with this street, but now it is a source of noise and shaking. We need to find the optimal solution: leave the cobblestones, asphalt them, or somehow combine the historical stones with even strips (for example, for wheels (trolleys, scooters) in the transition and stop zones)?
- How can the path be made accessible to everyone? Where exactly should we remove the curbs and level the surface to make movement convenient?
- How to make intersections safe? Are they convenient now?

- Where to find a place for bicycles? On this street, this is a real challenge. What is better: a separate path or a safe common space with a speed limit for cars?
- And what to do about parking?

Quotes from the survey

"uncomfortable paving, can shake your whole soul out of you, traffic is strong, uncomfortable"

"Shaking in the bus"

"Crooked paving"

"Uncomfortable: neither for pedestrians nor for drivers"

"Steep slope, poor road surface, narrow road"

"Shaking in the marshrutka, departments, city cafe"

"the street is beautiful, with beautiful old houses, but due to the constant traffic this beauty is not noticed, you don't want to walk along it"

"The road is noisy"

"It's nice to look at the paving, it gives the feeling of an old city, where the road goes to the castle"

Nature and comfort on Bohdan Khmelnytsky Street

Your task is to think about how you can make Bohdan Khmelnytsky Street with the help of greenery.

The survey showed that above all, people want to see it cozy and green. We need to find a way to make the street comfortable for recreation, without turning it into a forest, but without leaving it as hot asphalt.

Optional questions:

- Where to find a place for trees and bushes? The street is narrow and historic. We need to decide where exactly to plant so that they provide real shade in the heat without interfering with walking.
- What to do with rainwater? The street slopes down, and during heavy rains the water flows in streams (is it possible to install rain gardens to retain this water, or is there another way to solve the problem?)
- How to protect yourself from noise and dust? The wheels of cars on the pavement create a constant hum. Can hedges serve as a natural barrier, making a walk quieter and more pleasant?
- How not to hide the beauty of houses? Architecture is one of the main values of the street. How can we add greenery to emphasize the beauty of the facades?

Quotes from the survey

"More trees and shade are what would make you linger"

"I want this street to be cozy and green"

"Cobblestones, hot, downtown"

“Big, empty, dusty”

“There is a park and some uncomfortable benches with covers on the street now, they are unattractive”

“Concentrate greenery only in certain zones and sections, but not along the street, because the branches will cover the few interesting facades and they will visually disappear”

Street life on Bohdan Khmelnytsky Street

Your task is to fill Bohdan Khmelnytsky Street with life and make it a place you want to stop at, not just pass by as quickly as possible. The survey showed that people appreciate the beauty of houses, but they lack basic comfort: places to relax, cozy cafes and a sense of safety in the evening.

Optional questions:

Where to put street furniture? People complain that they have nowhere to sit. Where are the best spots on this street for benches, chairs, or places to relax that won't obstruct the flow of traffic?

How to arrange cafe terraces? The street is narrow, but the establishments make it lively. How can we find a balance so the cafe tables add coziness without blocking the sidewalk for pedestrians? Where should these establishments and tables be placed?

What should the lighting be like? Light is not only about safety, but also about the atmosphere. What kind of lighting will emphasize the beauty of old facades and make evening walks more pleasant? How to revitalize "empty" spaces? Are there areas on the street that currently look neglected or uninteresting. What can be added there: street art, small exhibition areas, or perhaps activating covered courtyards?

Quotes from the survey

“I really like that we have more and more coffee shops and local cafes where you can sit down with your family and relax”

“There is almost nowhere to sit down. There is nowhere to sit down at all.”

“Climate, old, lacks refinement”

“Cozy, compact, green”

“City council, darkness, cobblestones”

“A network of food establishments, interesting cozy courtyards, good lighting”

“The street is beautiful, with beautiful old houses, but due to the constant traffic this beauty is not noticed”

The Face, History, and Design of Bohdan Khmelnytsky Street

Your task is to work on the “visual language” of Bohdan Khmelnytsky Street and find a way to emphasize the identity of central Lutsk.

The survey showed that Lutsk residents consider it one of the most beautiful cities thanks to its architecture, but at the same time note that this beauty is often hidden behind chaotic signage, darkness, and unclear navigation.

Optional questions:

- How to improve the appearance of houses and the street? Suggest ways to improve the appearance of facades to better reveal the potential of the street.
- How to illuminate the street at night? Nowadays, the evening street is associated with darkness. Think about how the illumination of facades can make walking safer and turn the street into an interesting place even after sunset.
- How not to get lost and learn more? The street has a rich history. What should the navigation (signs, signs) be like so that people understand the street better?
- How to remember “old Lutsk” through art? Where is there a place on the street for modern art (murals, installations, memorial plaques) that would remind of the past and the peculiarities of this artery of the city?

Quotes from the survey

“The beginning of the street from the center is like a sip of the past. The architecture is very beautiful”

“The buildings are interesting, but neglected or covered with advertising”

“Climate, old, lacks culture”

“Uncomfortable, little interesting, one of the main arteries of the city for public transport”

“In my opinion, Bohdan Khmelnytsky Street is one of the best and most promising in Lutsk. »

“I want this street to be cozy and green, and to preserve the architecture of the surrounding buildings”

“Historic buildings, authentic cobblestones, a central street”

“Although the neglected exteriors of the buildings add to the vibe of this street, it often looks extremely depressing.”