



# The potential of the Tiazhylivka River

*The section from Kyivska Street to the  
Mozhaika district*

Analytical report on urban research

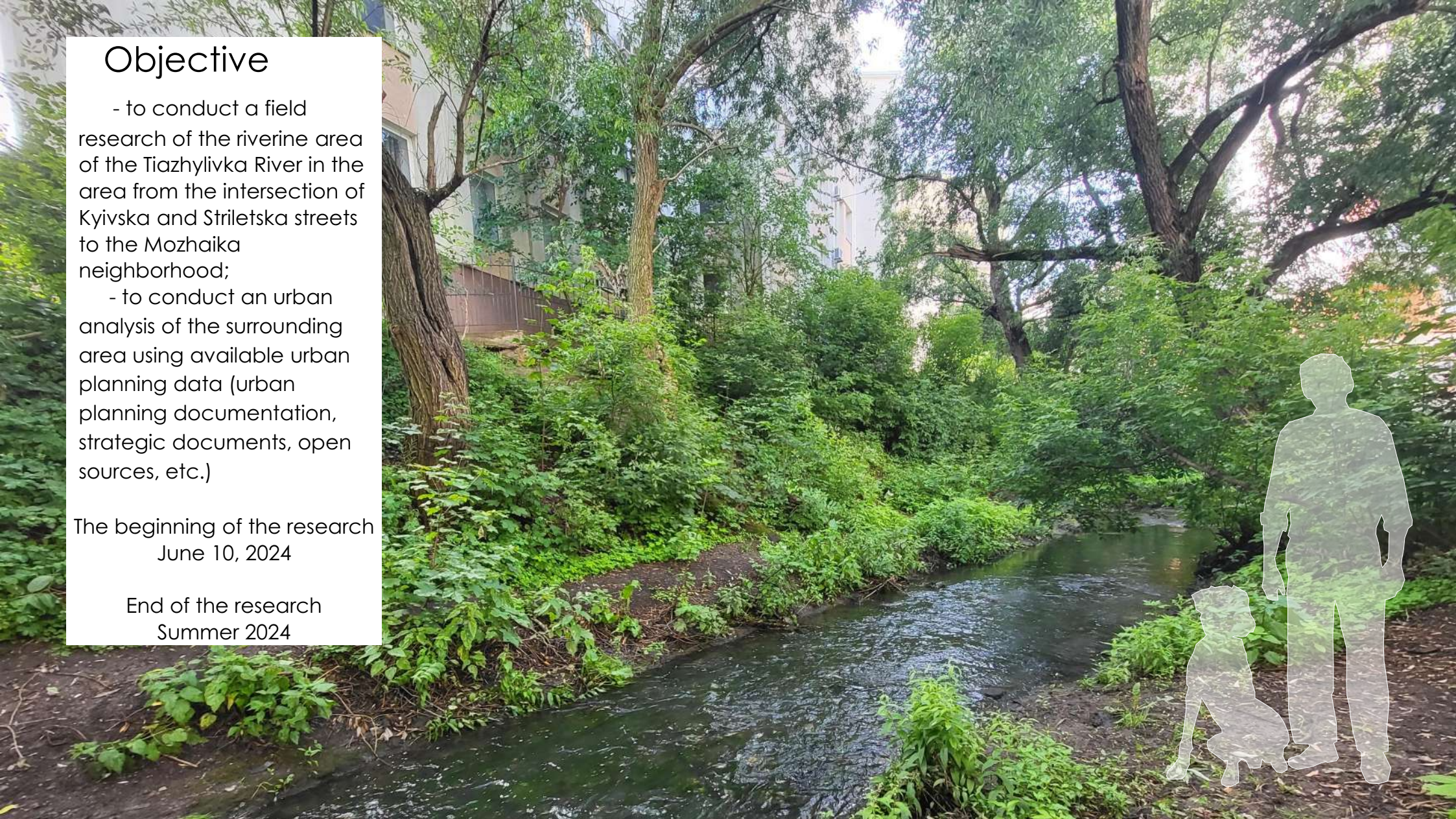
# Objective

- to conduct a field research of the riverine area of the Tiazhylivka River in the area from the intersection of Kyivska and Striletska streets to the Mozhaika neighborhood;

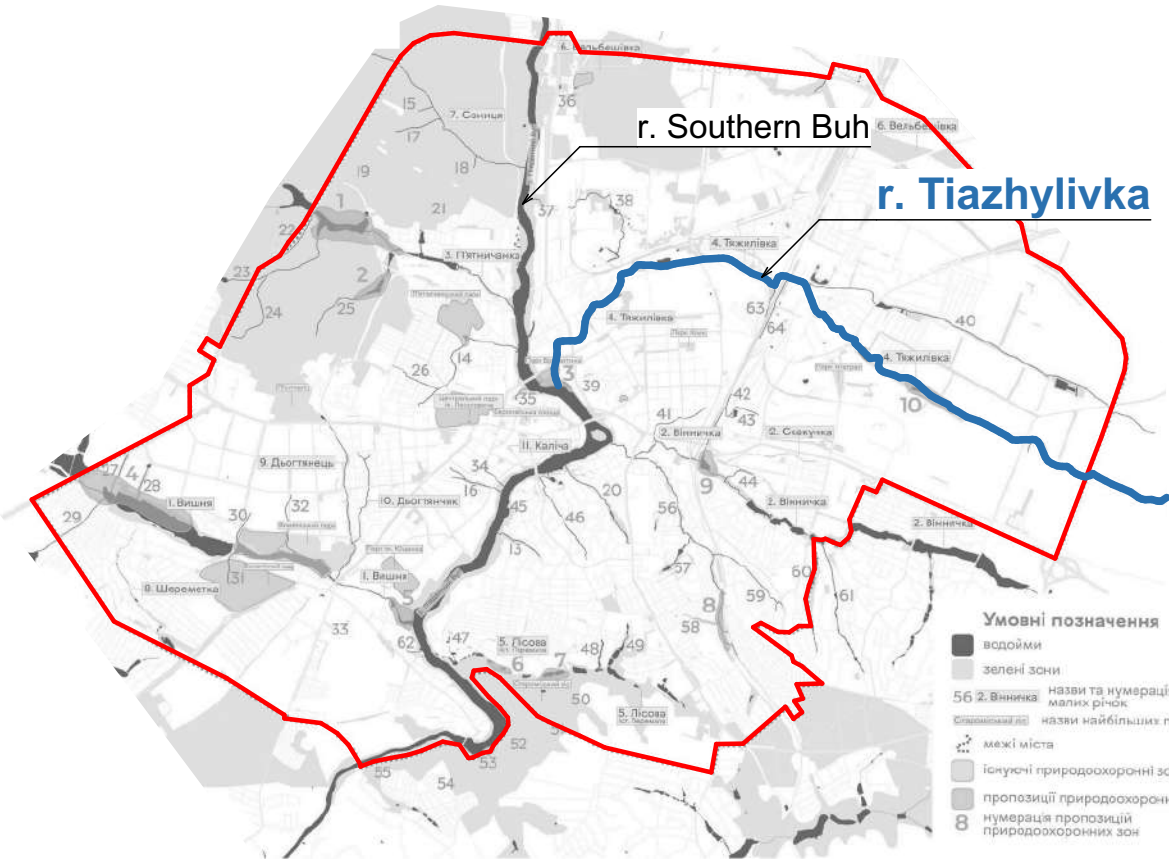
- to conduct an urban analysis of the surrounding area using available urban planning data (urban planning documentation, strategic documents, open sources, etc.)

The beginning of the research  
June 10, 2024

End of the research  
Summer 2024



# Tiazhylivka is one of the largest small rivers in Vinnytsia



The total length of the river is **11.4 km**, **10.3 km** within the city limits.

Artificial reservoirs on the river: 5 pcs.

It originates in the northeast of the city and flows southwest, where it enters the Southern Buh on the Brigantine Peninsula. The scientific report "Local Scheme of the Ecological Network of Vinnytsia" defines the Tiazhylivka River as a local river-valley (hydroecological) eco-corridor "Tiazhylivskyi" with an area of 87.03 hectares.

Catchment area: 49.7 km<sup>2</sup>

It flows through the following districts: Kyivska, Mozhaika, Zamostia  
General problems of the river:

- Medium to high pollution, sources of pollution - household plots, cesspools, outdoor toilets, 7 domestic wastewater outlets.
- The CPS are not located in the field. Within the CPS there are 8 garage cooperatives and spontaneous buildings.
- Invasives: Sosnovsky's hogweed, Canadian goldenrod, Break grass, Wild five-leafed grape, etc.



# Project perimeter (riverine territory within the study area)

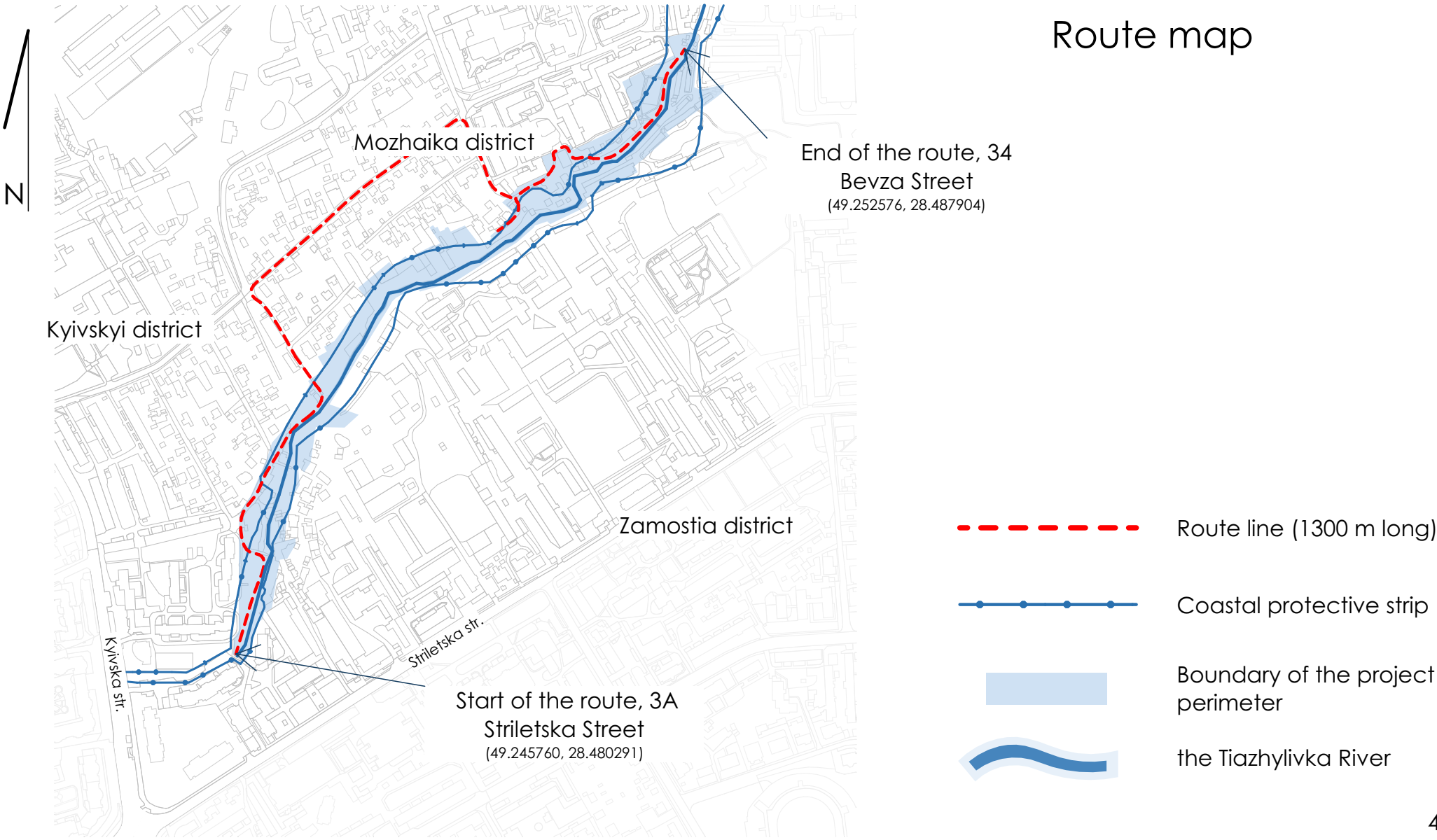
The length of the river within the study area is **800 m**

The area of the riparian zone within the study area is **4.94 ha**

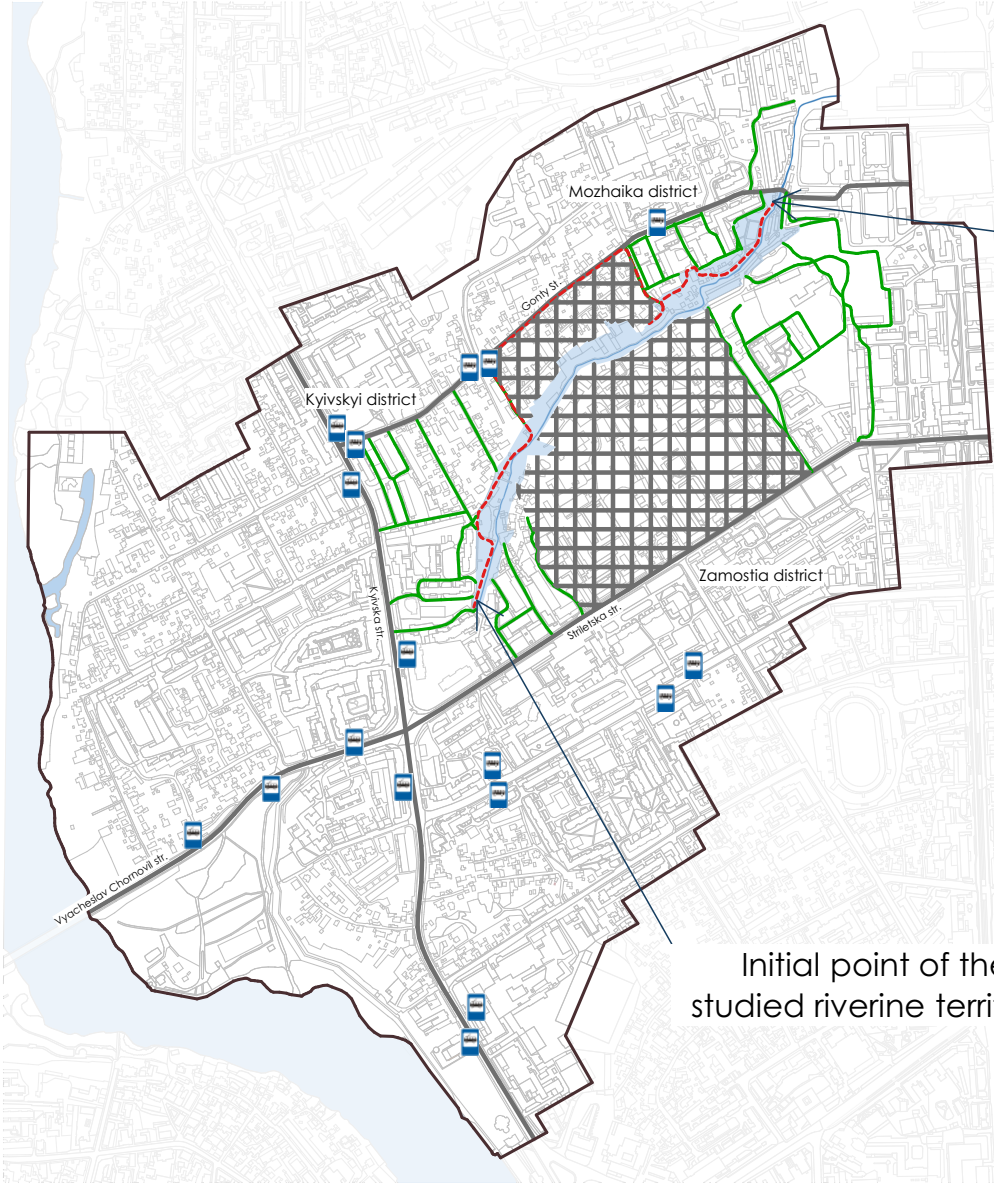
The project perimeter is formed based on existing land ownership and materials of the city's general plan of 2024

Within the project perimeter, an unauthorized parking lot, individual garages, unauthorized construction, and garage cooperatives were partially located

# Route map


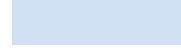








# Approaches to the river

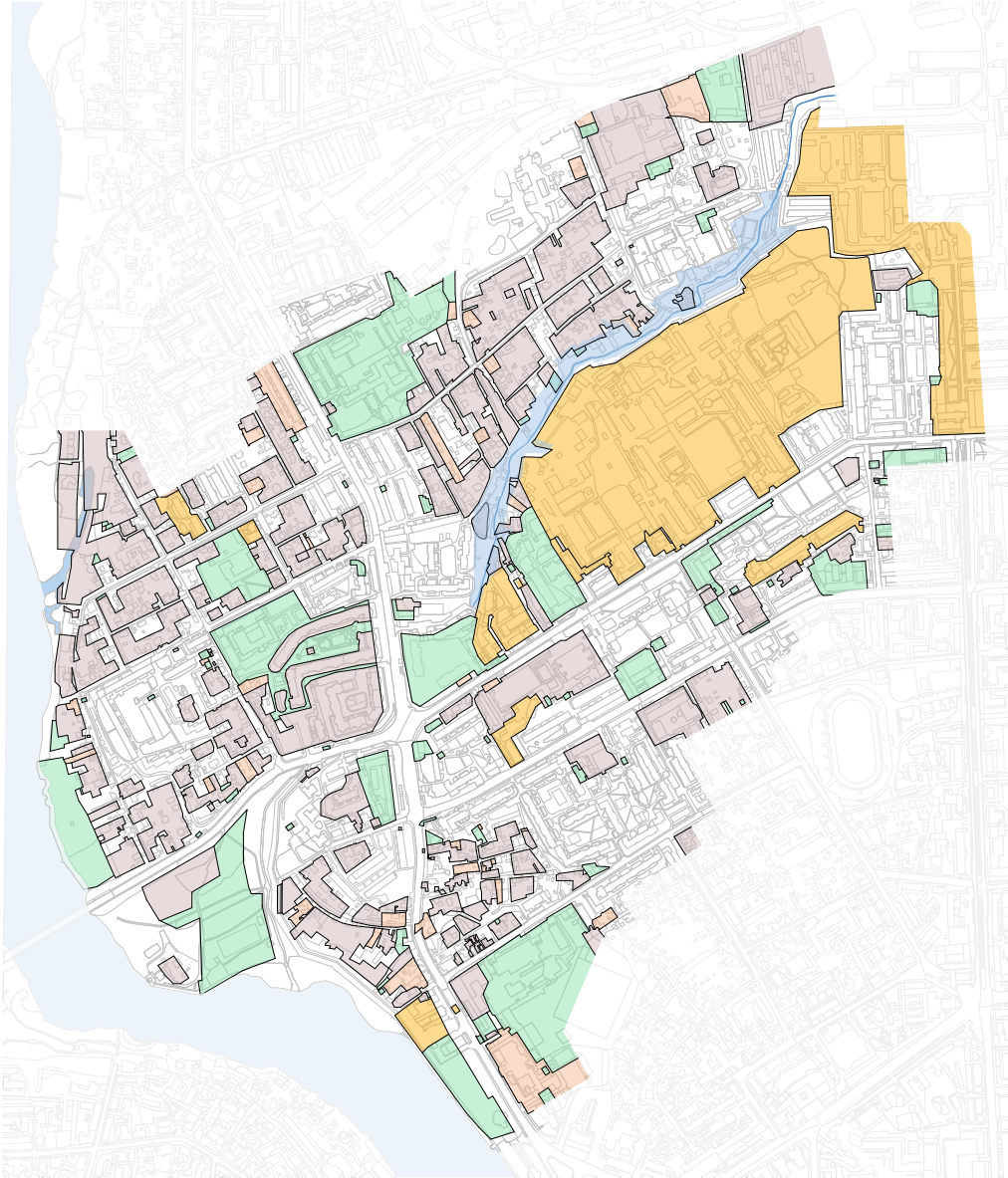


End point of the studied riverine territory

Initial point of the studied riverine territory

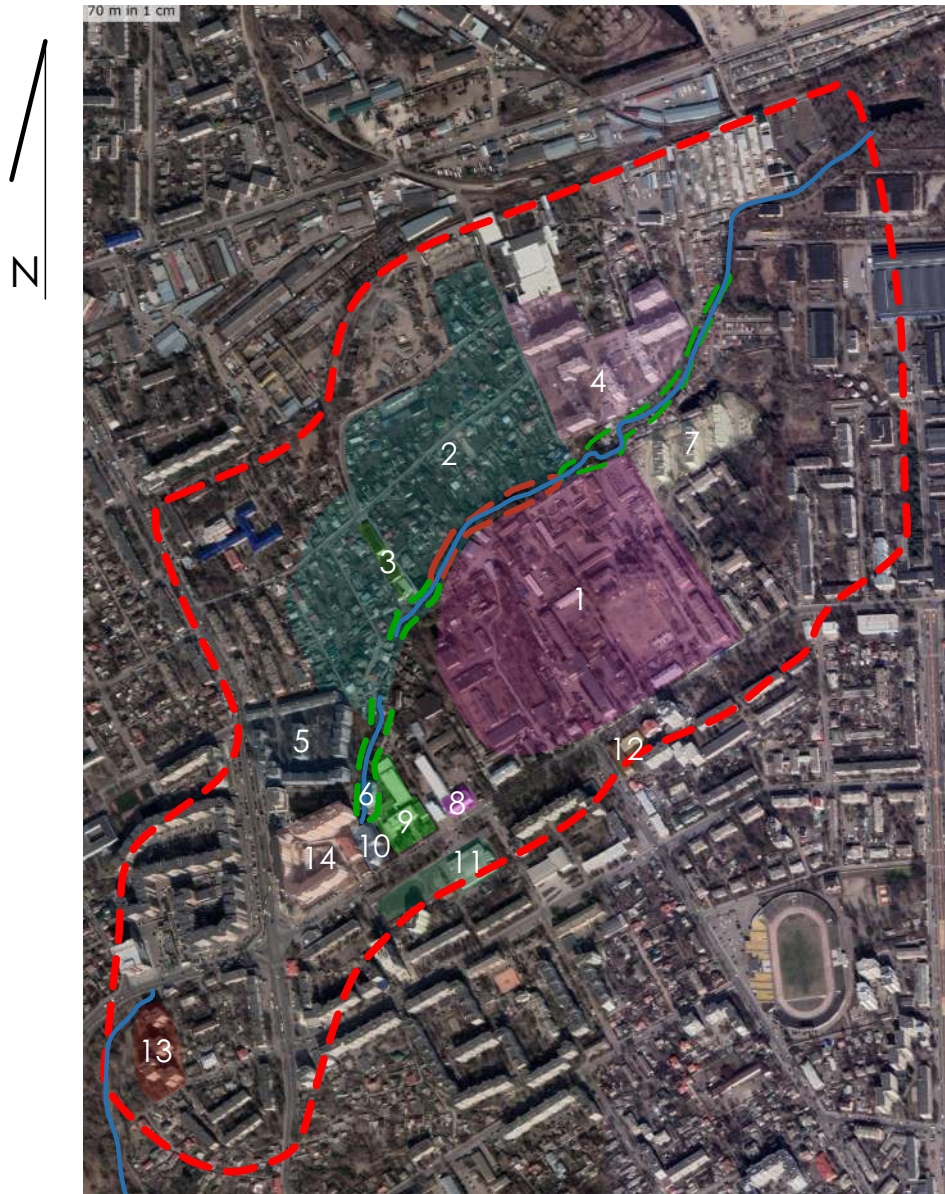
-  Trolleybus, bus stop
-  Boundary of the project perimeter
-  Impassable part
-  Pedestrian accessibility
-  Main streets
-  Route line (1300 m long)
-  the Tiazhylivka River
-  Boundaries based on 10-minute accessibility and functional land use

# Land ownership map



-  Boundary of the project perimeter
-  Private property
-  Municipal property
-  Government property
-  Undefined property
-  the Tiazhylivka River

# Stakeholder map



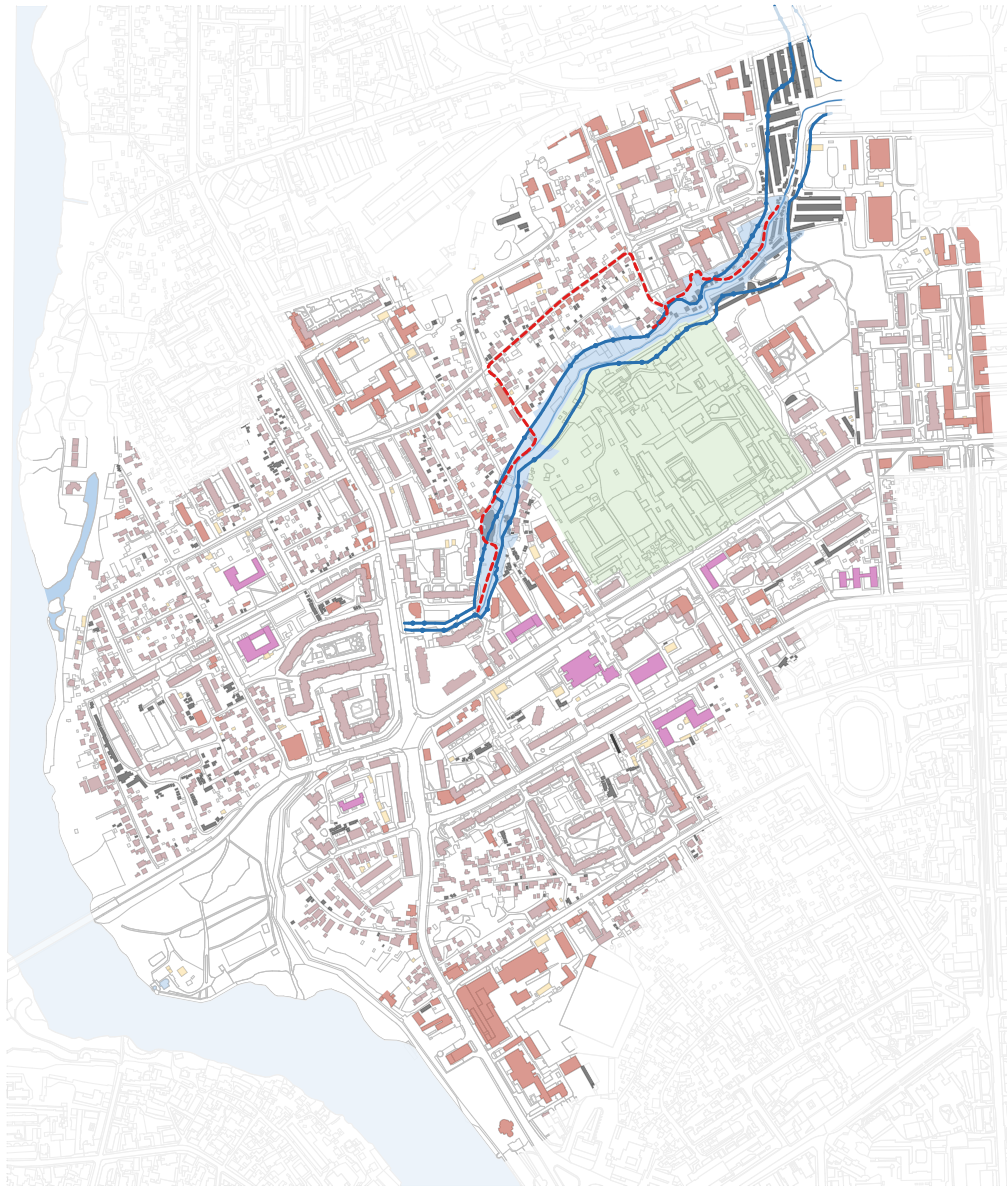
- the Tiazhylivka River
- - - boundaries of the approximate project coverage area
- - - accessible and promising areas of the river
- - - inaccessible areas of the river

- 1 - Military unit
- 2 - Private sector between Mozhaika and Kyivska street
- 3 - Trend House apartment
- 4 - Mozhaika
- 5 - Multi-storey houses on Kyivska street
- 6 - Regional employment centre
- 7 - New residential complex "Zorya-2"
- 8 - Maternity hospital of the private clinic Innomed
- 9 - Higher professional school
- 10 - College dormitories (IDPs live there?)
- 11 - Lyceum №6
- 12 - Music school №2
- 13 - Multi-storey houses nearby Brigantine Peninsula
- 14 - "Comfort" residential complex

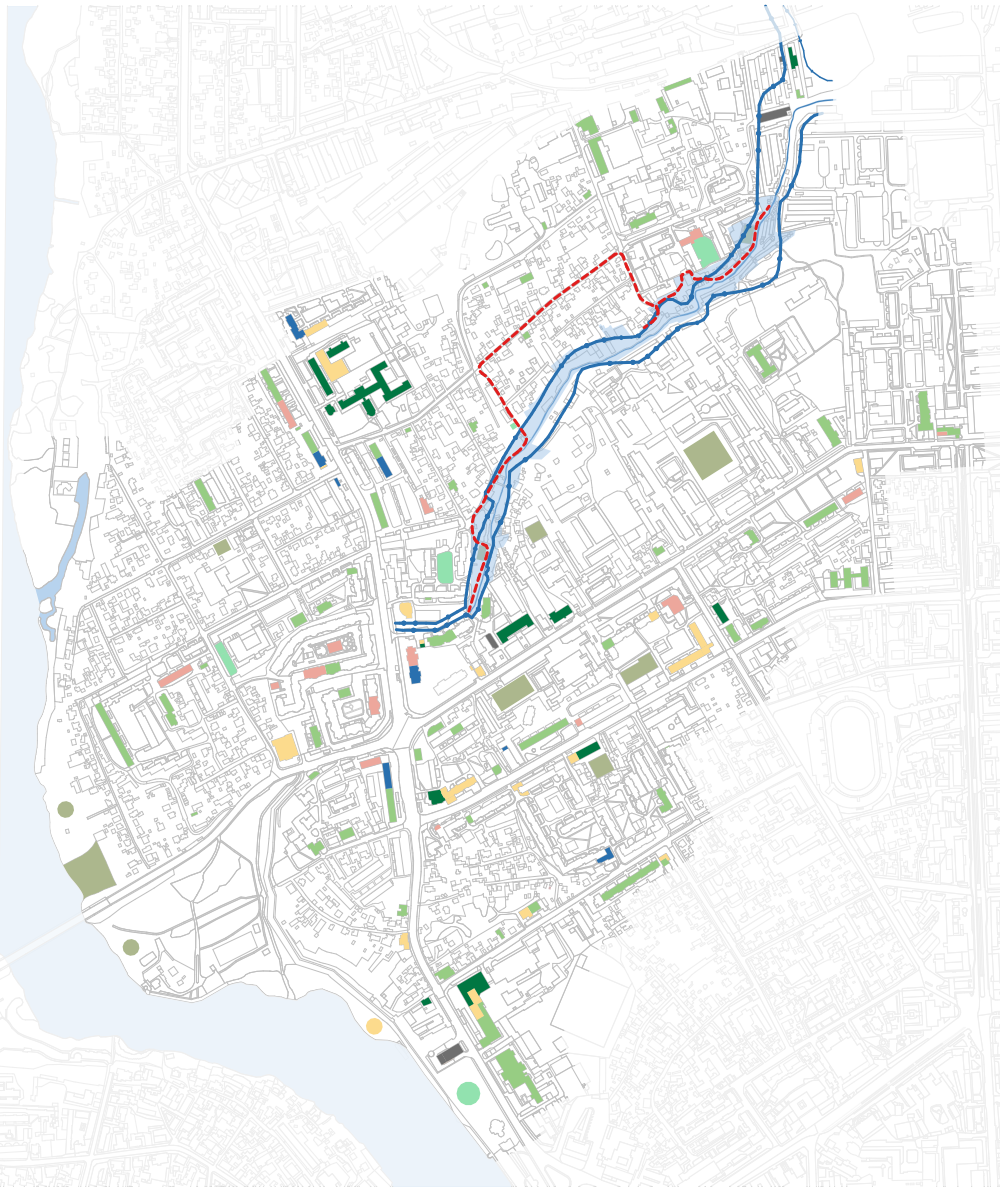


# Functional zoning

- Coastal protective strip
- - - Route line (1300 m long)
- Military unit
- Public buildings
- Residential development
- Educational institutions
- Technical structures
- Garage cooperatives and garages
- Boundary of the project perimeter
- ~ the Tiazhylivka River



# Commercial property map



- Athletic ground
- Children's playground
- Food stores
- Non-food stores
- Restaurants, cafes, and canteens
- Medical institutions
- Pharmacy
- Fuel stations and service stations
- Boundary of the project perimeter

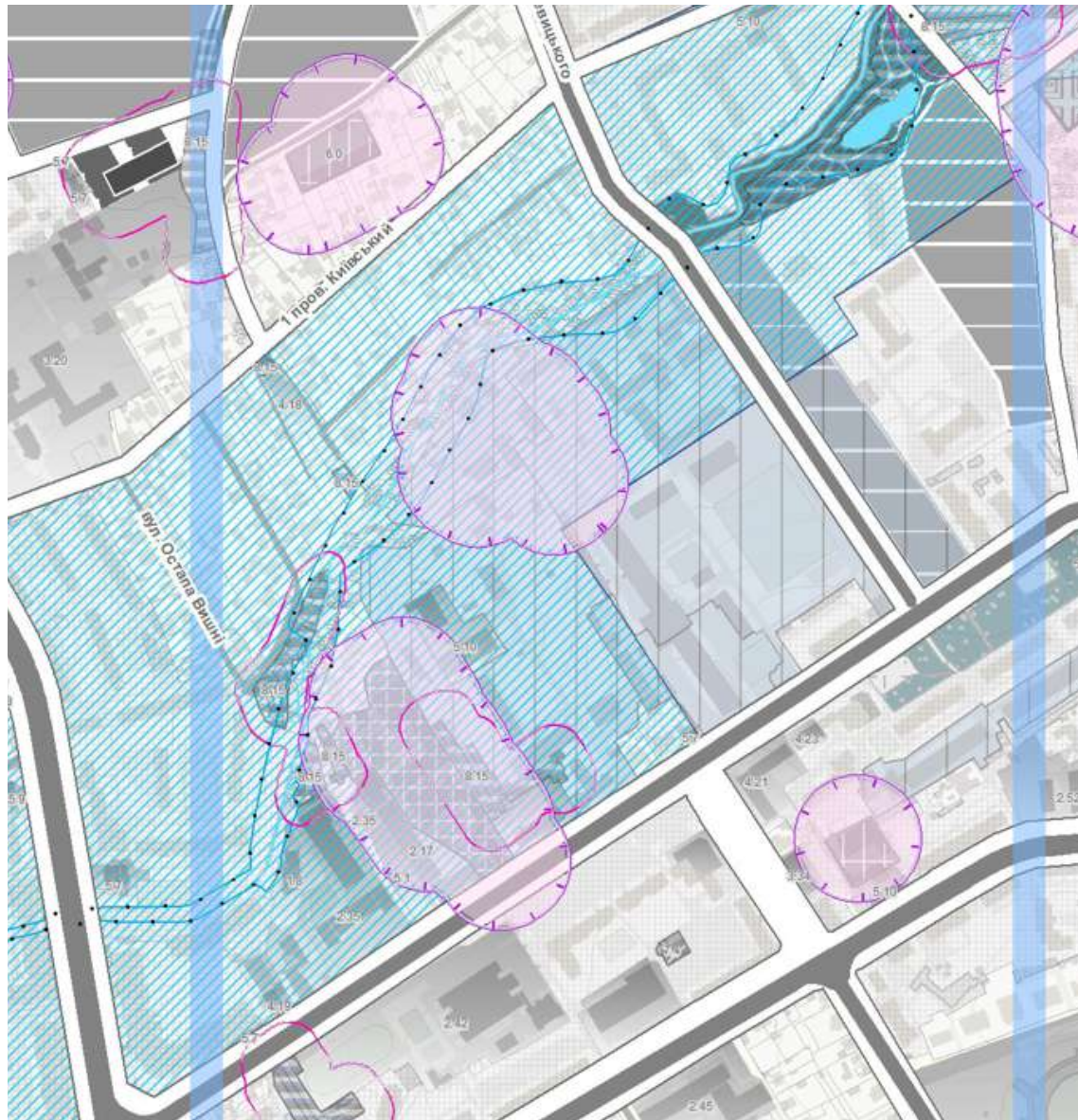
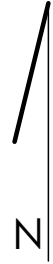
Route line (1300 m long)

Coastal protective strip












the Tiazhylivka River



# Project land use restrictions



## ENVIRONMENTAL PROTECTION ZONES:









-  EXISTING NATURE RESERVE FUND OBJECTS\*\*
-  PROSPECTIVE NATURAL AND RESERVE FUND OBJECTS\*\*\*
-  PROTECTION ZONE OF EXISTING NATURE AND RESERVE FUND OBJECTS\*\*
-  WATER PROTECTION ZONE
-  COASTAL PROTECTION STRIP
-  LAND ALLOCATION STRIPS FOR IRRIGATION CANALS
-  I - ZONES OF SANITARY PROTECTION OF UNDERGROUND SOURCES OF CENTRALIZED WATER SUPPLY
-  II - ZONES OF SANITARY PROTECTION OF UNDERGROUND SOURCES OF CENTRALIZED WATER SUPPLY
-  III - ZONES OF SANITARY PROTECTION OF UNDERGROUND SOURCES OF CENTRALIZED WATER SUPPLY
-  I - ZONES OF SANITARY PROTECTION OF SURFACE SOURCES OF CENTRALIZED WATER SUPPLY
-  I - ZONES OF SANITARY PROTECTION OF SURFACE SOURCES OF CENTRALIZED WATER SUPPLY

Note:

\*\* - Conditional boundaries of territories and objects of the natural reserve fund, which do not have boundaries established in nature according to the law, except for Central Park named after M. Leontovych;

\*\*\* - Boundaries of prospective objects of the natural reserve fund may be specified at the stage of their creation.

## SANITARY PROTECTION ZONES, SANITARY DISTANCES, AND PROTECTIVE ZONES:

-  SANITARY PROTECTION ZONE FOR INDUSTRIAL ENTERPRISES AND COMMUNAL FACILITIES OF HAZARD CLASSES I, II, AND III
-  SANITARY PROTECTION ZONE FOR INDUSTRIAL ENTERPRISES AND COMMUNAL FACILITIES OF HAZARD CLASSES IV AND V
-  SANITARY PROTECTION ZONE FOR CEMETERIES (300M FOR ACTIVE CEMETERIES; 100M AND 50M FOR CLOSED CEMETERIES AFTER THE END OF THEIR OPERATIONAL PERIOD)
-  DISTANCE FROM TRANSPORT SERVICE FACILITIES (GARAGES, PARKING LOTS, SERVICE STATIONS)
-  Distance from Highways of Categories I, II, and III to Residential Areas, Garden Societies, Provided that Environmental Measures are Implemented (according to the requirements of Note 10.1.6, DBN B.2.2-12:2019)
-  Protection Zone of Main Pipelines
-  Protection Zone of Hydrometeorological Facilities
-  Protective Zone of a Collector

# Biodiversity

The river floodplain areas are characterized by willow and alder forests, wet meadows on sandy loam soils.

The upper and middle parts of the valley (locations 3 and 4) are somewhat swampy and covered with wetland vegetation.

It can be noted that all species are divided into natural (those that should exist in this environment and fit in harmoniously) and anthropogenic (those that appeared here due to human influence).

Biodiversity: predominantly ash, maple, weeping willow, wild five-leafed grape, partially present - yellow cherry plum, wild cherry, cattail, willow, alder, fern, meadow plant associations.

Also, there are plants planted by people - birch, walnut, common hosta, jasmine, bird cherry, tree peony.

There are representatives of ichthyofauna, reptiles, invertebrates, insects, birds (mallard ducks, turtledoves, etc.)



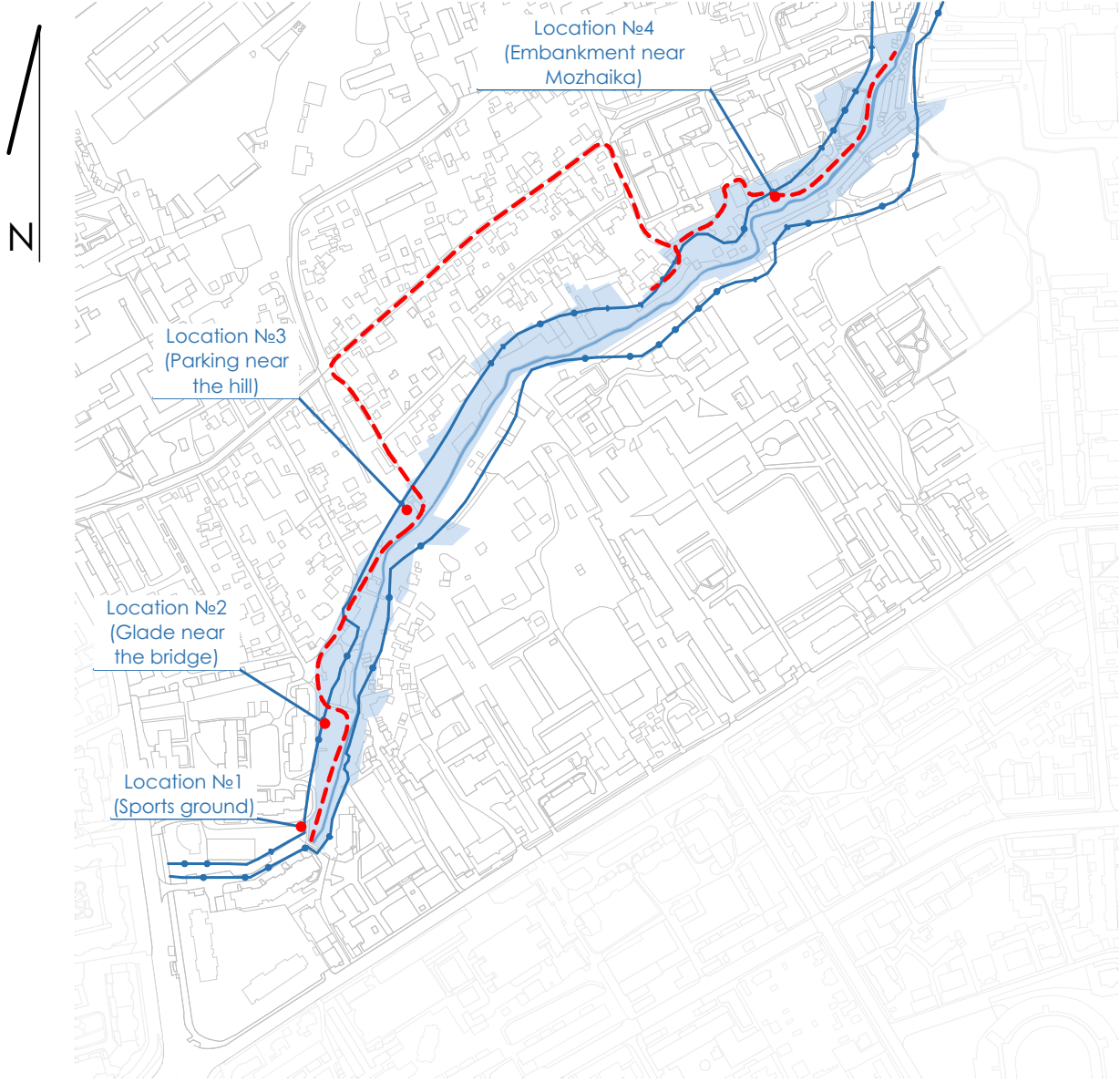


# Map of locations

In the study area between the starting point (location №1) and the ending point (location №4), 2 more locations were found (№2 and №3).

From the 3rd to the 4th location it was impossible to walk along the river (local residents blocked the passage with branches).

The route on the other side of the river is mostly impassable due to the steep slope of the bank and the proximity of a long fence enclosing the neighboring territories (restricted area).



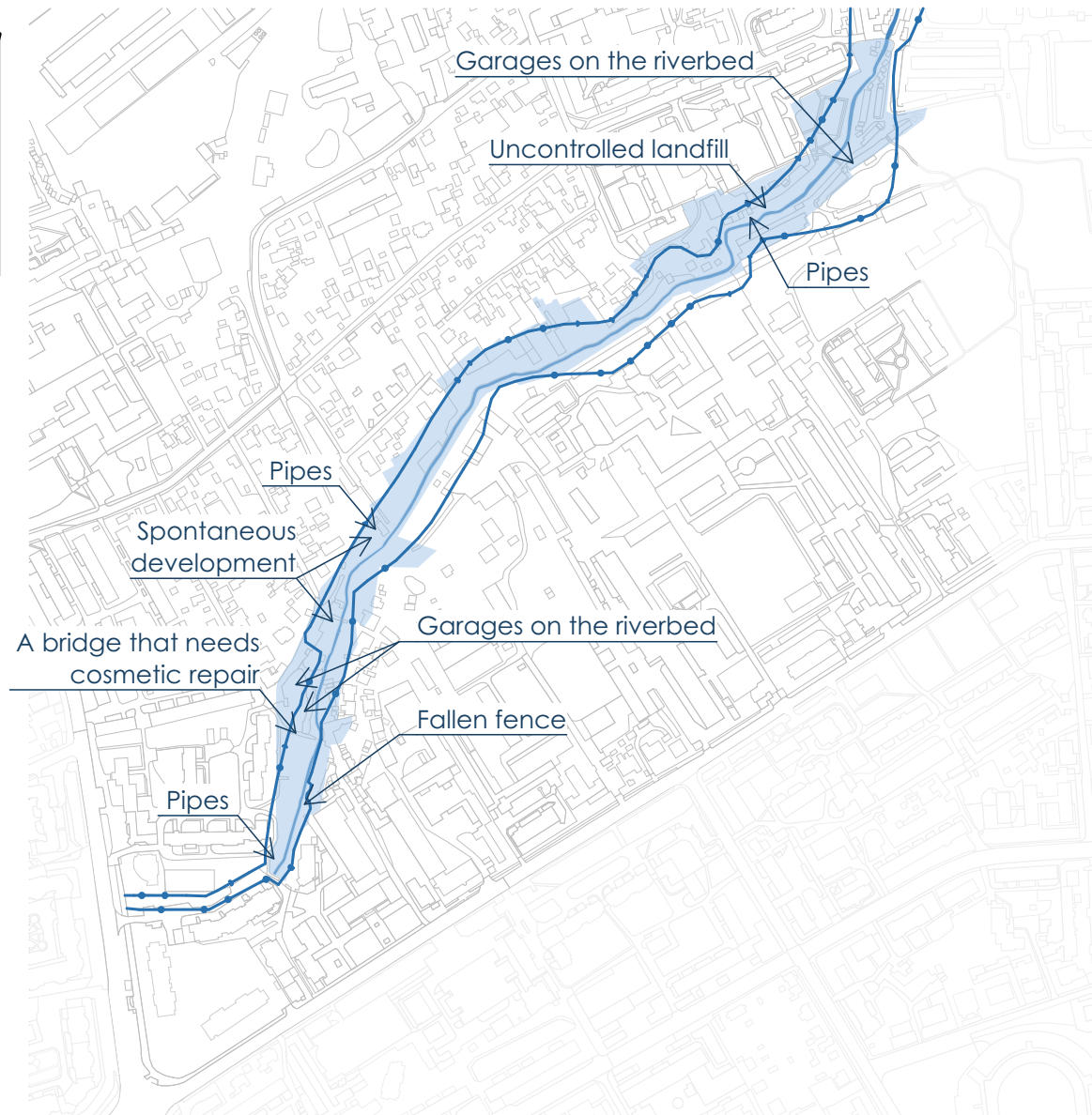
- Route line (1300 m long)
- Coastal protective strip
- Boundary of the project perimeter
- the Tiazhylivka River

# Problems

- Littering
- Creating an artificial channel
- Artificial change of relief
- Creation of artificial reservoirs
- Closure in underground collectors
- Seeds of invasives spread rapidly with the current

Within the project perimeter:

- Littering (household and construction waste)
- Spontaneous landfill
- Pipes of engineering networks laid directly in the riverbed
- Unaesthetic view of the opposite bank: a fallen fence
- Garages and garage cooperatives located on the riverbed or within the CPS
- Bridge (location №2) requires cosmetic repairs
- Spontaneous construction (private housing) on the riverbed



Coastal protective strip



Boundary of the project perimeter



the Tiazhylivka River

## Location №1 (Sports ground)

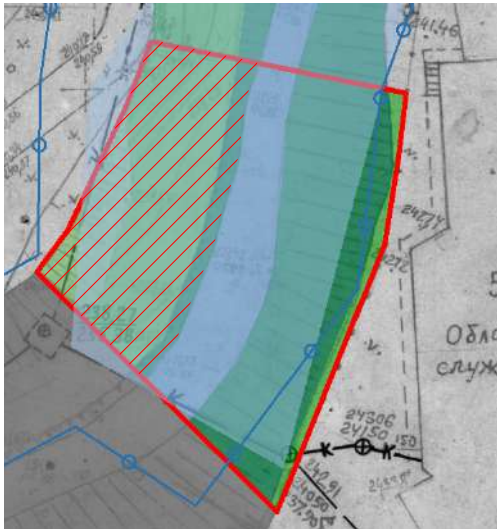
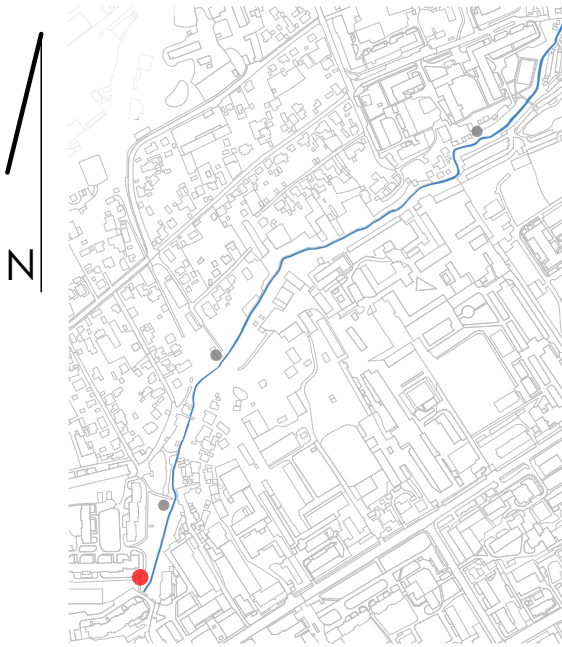
Total area of the location - 617 m<sup>2</sup>

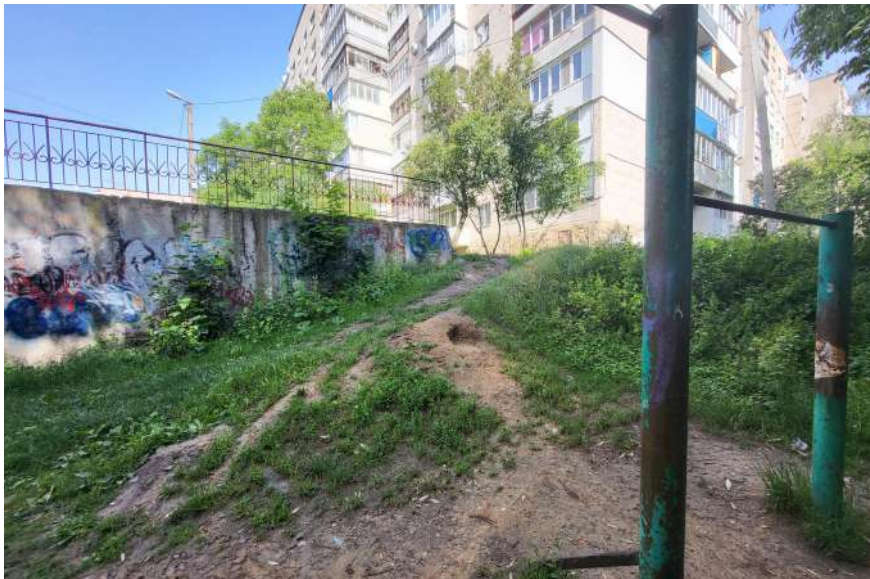
Actual area of the site at the location - 207 m<sup>2</sup>

Characteristics of the space:

- the location is used for sports (pull-up bar, workout equipment, etc.);
- the location is located in a lowered position relative to the surrounding area;
- the banks directly next to the river are steep, the descent is sharp without steps;
- both paved and dirt paths;
- the space is limited by a retaining wall across the riverbed in the south with the river directed into a collector, in the east by a retaining wall and an unreinforced slope, a group of shrubs in the north, and a fence in the west;
- the left bank is steep, with an old, high concrete fence at the top of the slope, making it impossible to move along the opposite bank;
- surroundings - multi-apartment buildings with parking in yards and driveways, Vinnytsia Regional Employment Center, parking lots, technical facilities and utility yards nearby;
- there are single trees and shrubs, free access to the river.

Landscaping: adult ash maple - 2 pcs, Nesian blackberry, weeping willow - 1 pc, algae, sedge.





## Location №2 (Glade near the bridge)

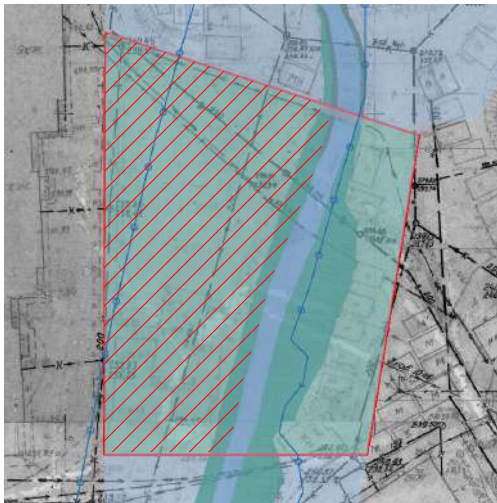
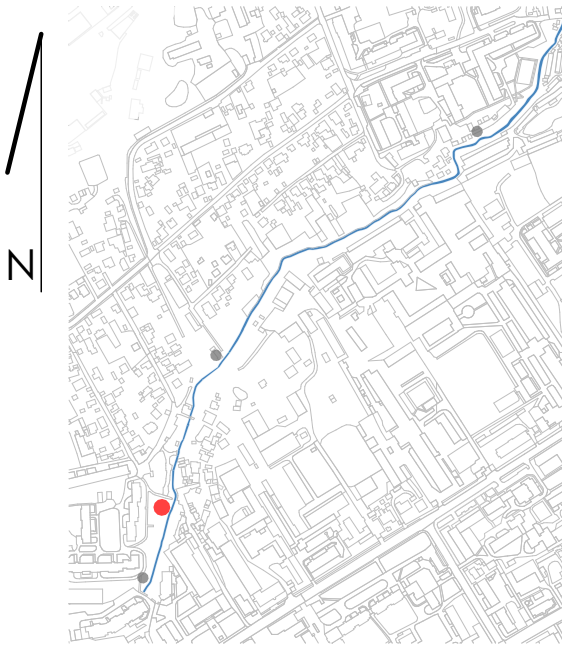
Total area of the location - 2832 m<sup>2</sup>

Actual area of the site at the location - 1637 m<sup>2</sup>

Characteristics of the space:

- on the right bank of the river to the east of the channel, there is a large sunny, flat lawn, which is located on an elevation relative to the watercourse, the contours of the lawn are formed by paths on three sides;
  - the sunny lawn is used for active sports recreation, as well as for drying after washing and beating out carpets;
  - the banks directly next to the river are steep;
  - asphalt and dirt paths;
  - to the east of the clearing is a 9-storey apartment building;
  - on the left bank there are several garages, behind which there is a dirt road leading to a pedestrian bridge over the river (in the north of the location);
  - there are some trees and shrubs, free access to the river;
  - a sunny lawn area is separated by a slope with large trees, but there is visibility.
- Landscaping: adult chestnut - 3 pcs, adult sweet cherry - 1 pc, adult ash maple - 1 pc, shrubs, algae, sedge.

The potential of the site is recreation for adults and children (reading books, picnics). Locations 1 and 2, and the area between them can be developed as a single integral space.





## Location №3 (Parking near the hill)

Total area of the location - 1827 m<sup>2</sup>

Actual area of the site at the location - 856 m<sup>2</sup>

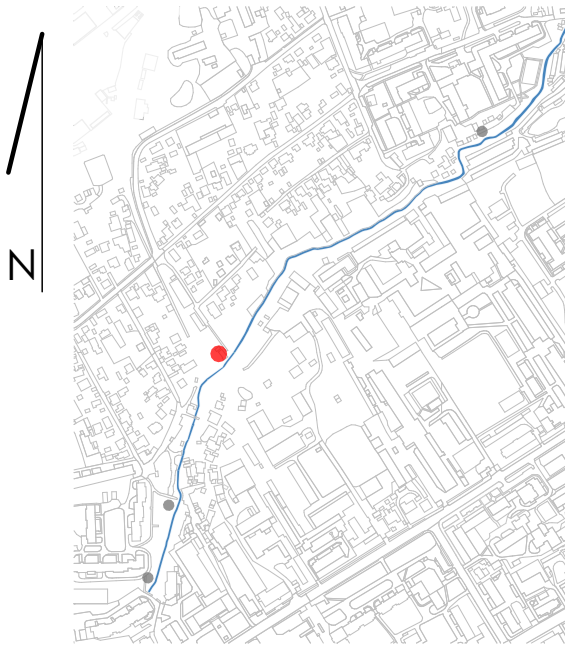
Characteristics of the space:

- the location combines three different interconnected spaces: 1 - a small area between the river and private fences, 2 - a high artificial hill in the middle of the riverbed (about 3 m high), 3 - an asphalted natural parking lot with a concrete retaining wall fortifying the bank;
- the descent from the embankment is steep without steps;
- near the unauthorized parking lot there is an apartment building;
- moving northward, the area along the river is blocked by branches along private estate plots and is not used;
- utility pipes run across the river;
- the space is bordered on the N-E by a fence and a hotel;
- the river is in a collector under the hill.

The opposite (left) bank is steep, with an old high concrete fence (fallen down) at the top of the slope, making it impossible to move along the opposite bank.

There are single trees and shrubs, including 6 mature ash maples.

The location is used as a transit point. If the program of use is changed, it may be interesting as a location for staying due to the relief differences.





## Location №4 (Embankment near Mozhayka)

Total area of the location - 14220 m<sup>2</sup>

Actual area of the site at the location - 6655 m<sup>2</sup>

### Characteristics of the space:

- two combined spaces can be distinguished on the site: in the northern part there is a house territory with a sports ground adjacent to the path along the shore, in the southern part there is an unimproved featureless territory;

- the adjacent territory in the north has a triangle shape due to the L-shaped layout of the apartment building, there is a sports ground enclosed by a high mesh fence (damaged so that you can climb through it to the path along the river), and a playground. There is also a pedestrian bridge to the other side;

- on the left bank, close to the river, there are private metal garages. The new (2024) comprehensive plan for the city's spatial development envisages turning the territory on the left bank into a park;

- the unimproved part of the territory is not legally registered and is not taken care of; there is a heating station nearby and a dump. There are signs of a homeless person living on the left bank; the left bank is quite narrow and steep, with an old concrete fence (partially collapsed) at the top of the slope. In some places, there is an approach to the river in the form of stairs. There are many garages;

- the banks gradually steepen from south to north, the left bank is traditionally steeper than the right;

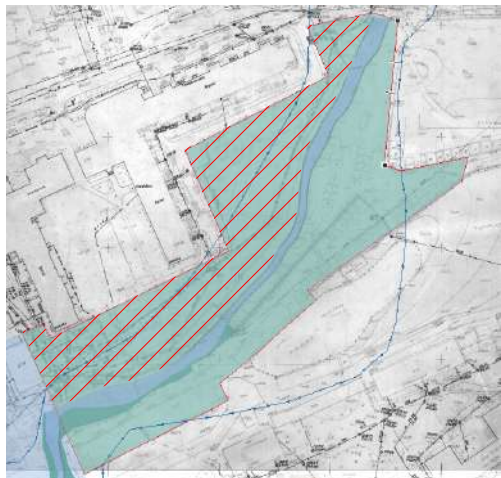
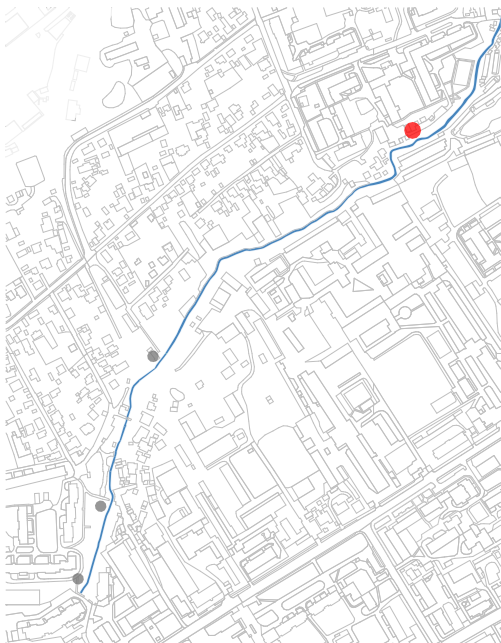
- the right bank is reinforced with low concrete retaining walls, partly with an old metal sight fence, forming a kind of embankment (space in the north), while limiting the approach directly to the water;

- sewage and heating pipes run across and along the river;

- there are accesses to the location by paths, there is a driveway;

Surrounding area - apartment buildings with parking in yards and driveways, garages.

The location has some trees and shrubs. There are adult ash maple, wild five-leafed grapes, sedge. The river is not deep, near the bridge it forms an incredibly picturesque green floodplain within the banks. There is a good potential for recreation.





# SWOT-analysis

## Strengths

- ~ high level of greenery;
- ~ coolness, shade, silence, clean air;
- ~ soothing sounds of nature;
- ~ length of the territory;
- ~ landscaping of the territory;
- ~ biodiversity;
- ~ open riverbed;
- ~ the location in the center of the urbanized area increases the value of this green area;
- ~ serves as a natural collection of rainwater;
- ~ connects Kyivska and Mozhaika districts.

## Weaknesses

- ~ no equipped places for recreation;
- ~ littering of the coastal zone;
- ~ passage of municipal utilities;
- ~ inaccessibility of certain areas;
- ~ complexity of the relief;
- ~ some localized irritants: noise, unpleasant odor, pollution with garbage and domestic sewage;
- ~ danger at some sites (metal rods sticking out of the ground at location №2; metal wire at location №4; people drinking alcohol at location №4; bridge in need of cosmetic repair at location №2)
- ~ soil erosion;
- ~ invasive plant species;
- ~ coastal protection strip (CPS) are not established in the field;
- ~ garages on the riverbed and within the CPS;
- ~ the territory has no official status, no legally fixed boundaries, and is not on the balance sheet of any utility company;
- ~ the left bank is inaccessible.

# SWOT-analysis

## Opportunities

- ~ a large number of different stakeholders who may be interested in and support the creation of a coherent recreational area;
- ~ 1 Kyivskiy lane leading to Mozhaika is a narrow, hot street, so a parallel pedestrian route along the river could be valuable for local residents;
- ~ the city has a Concept for the Development of Small Rivers, developed by the scientific report "Local Scheme of the Vinnytsia Ecological Network", as well as the relevance of environmental topics in the world (channel renaturalization, rainwater management and adaptation to climate change, etc.) increases the possibility of implementing the case of transforming a small river and giving impetus to other similar projects and initiatives in the city
- ~ the creation of an open green space on a small river can be reputationally interesting for local authorities, which will support and implement certain phases of the project
- ~ the demand of citizens for safety, cleanliness, and well-equipped recreational facilities may lead to active support and involvement of local residents in the development of the riverine area;
- ~ the park on the left bank near location 4, envisaged by the Comprehensive Plan, can "launch" the process of transforming the riverside area of Tiazhylivka along the entire length of the project perimeter.

## Threats

- ~ further misuse of the territory and chaotic development;
- ~ progressive neglect of the territory and degradation of the ecosystem;
- ~ work with the coastal areas is not a priority for the authorities and citizens in the context of war and reconstruction;
- ~ lack of funding for the maintenance and development of the territory;
- ~ the new Comprehensive Plan does not provide for the transformation of the riverside territory of Tiazhylivka along its entire length into a continuous riverside park;
- ~ artificial regulation of the riverbed;
- ~ difficulty of dialog with individual stakeholders, which may stop the process (e.g., a military unit, owners of plots, houses and garages located near and directly on the riverbed and within the river's CPS).

# Conclusions

## Current situation

1. The riverside area of Tiazhylivka within the study area **is a valuable landscape natural area of about 5 hectares** with mature trees and shrubs, diverse flora and fauna. There is a pleasant shade, coolness and freshness in hot weather, silence and clean air necessary for rest in the city, and soothing sounds of nature.

2. The vicinity of the Tiazhylivka River in the area from Kyivska Street to Mozhaika District includes estate buildings, multi-storey residential buildings of neighborhood type, public and military facilities. The neighborhood is characterized by **a small number of green areas, children's and sports grounds, shops and catering establishments**, which are mostly located remotely - on Kyivska and Akademika Yanhelia streets.

3. At present, the riverfront area is **poorly adapted for comfortable and safe movement and stay of people and is not perceived as a coherent object**, but rather as separate locations near the water. Private garages located close to or within the CPS, the lack of convenient descents, and deliberately created dumps of branches in certain areas **make it difficult to move along the riverbed and to the riverbed**. Often, the river's riparian area is sandwiched between privately or publicly owned plots behind blank fences.

## Threats.

Ignoring the existing problems and trends (development, littering, lack of lighting and paths, maintenance, dead ends and fences, gradual degradation of the ecosystem) will lead to the loss of the river and green coastal areas.

## River park

The coastal area of the Tiazhylivka River within the perimeter of the study area from Kyivska Street to Mozhaika District has the potential to create a holistic green zone along the riverbed that would provide vital environmental services:

- benefits for the physical and mental health and well-being of local residents in recreation and contact with nature on the water;
- necessary habitat for wildlife and support for biodiversity;
- temperature regulation of the urban environment (combating heat islands);
- management of treated surface water wastewater;
- creating conditions for investment, neighborhood development, and revitalization of neighborhood interaction.

### Recommendations

The following steps are necessary for further work with the territory:

- conduct a professional **biodiversity study** with the development of appropriate recommendations;
- **involve local residents** in the process of forming the concept of development of this territory by conducting a public opinion poll on the specifics of the use of this territory and identifying the needs of local residents;
- **to seek funding** from various sources for the successful implementation of the project;
- to conduct **educational work** among the townspeople on the issues of ecological outlook and ecosystem services.



The following materials were used in the study:

1. Concept for the development of small rivers in Vinnytsia 2035, Municipal Enterprise "The Institute for Urban Development", 2023
2. Urban planning documentation - topographic survey (needs to be updated)
3. Master plan of Vinnytsia city, 2014. Vinnytsia, 2024

The research was carried out by: VNTU students during their internship at the Municipal Enterprise "The Institute for Urban Development":

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- ~ Rostyslav Pryporov
- ~ Dmytro Gordeev

Together with representatives of the IRM:

- ~ Kateryna Pisotska
- ~ Tetiana Voloshyna

Made a presentation: Suren Pohosian



Facebook page of the  
Small Rivers of Vinnytsia  
project



Facebook page of the  
"The Institute for Urban  
Development"

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