



Saint Petersburg State University,  
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# COMPREHENSIVE LANDSCAPE IMPROVEMENT OF AITEKE BI STREET IN ASTANA INCORPORATING ELEMENTS OF A GREEN-BLUE INFRASTRUCTURE NETWORK

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# LOCATION



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# IMAGE OF THE CITY

Astana is a dynamic metropolis that grew at the intersection of cultures and eras, where traditional mosques coexist with world-class avant-garde architecture.

Today, the city is actively reconnecting with nature, transforming its harsh climate into a livable space.



# HISTORICAL CONTEXT OF THE CITY

## Aktas ancient human site about 50 – 30 thousand years ago

One of the earliest indications of human presence in these lands. This is where the initial butchering of hunted animals took place.



Bozok settlement



Lake Bozok

## The village of Akmola 1830 — 1832

By order of the Governor-General of Western Siberia I. A. Velyaminov, the Akmola district on the Ishim River was founded in 1830.



One of the first buildings

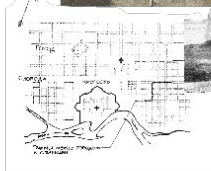
## Bozok settlement VII — XVI

The Bozok settlement developed from a Turkic sacred site into a Kipchak settlement with agriculture and trade. Since the 14th century, it has become the religious center of the Nur-Yesil region.

# HISTORICAL CONTEXT OF THE CITY

## Akmolinsk 1832 — 1961

At the end of the 19th century, it received city status and was named Akmola. It served as a fortress and a small trading post for the Russian Empire.



## Akmola 1991 — 1998

After Kazakhstan gained independence from the Soviet Union in 1991, the city was renamed Akmola, retaining its historical name. However, this did not lead to significant changes in the city's spatial development.



## Tselinograd 1961 — 1991

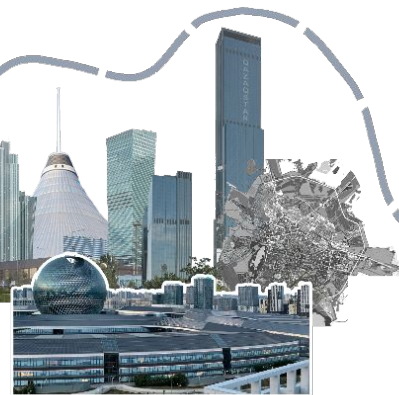
During the Soviet era, the city was renamed Tselinograd and developed significantly as a center of agricultural and administrative activity.



The city became the capital of Kazakhstan on December 10, 1997.

## Astana 1998 — present time

In 1998, the city was renamed Astana, marking a shift in Kazakhstan's priorities toward modernization. The city developed rapidly, acquiring futuristic architecture and ambitious planning projects.



# ASTANA STRATEGY 2030

According to the city's official development strategy, one of the main priorities is the formation of a "Green Belt" and the integration of the natural environment directly into the city's residential fabric.



# HISTORICAL CONTEXT OF WATER CONNECTION

**1970** Big Taldykol has been converted into a wastewater storage facility. The construction of protective dams has physically severed the lakes' connection to the river.

**2020 — 2026** Reclamation of the reservoir and exclusion of Maly Taldykol from the water fund. Preparation of sites for dense residential development.

The connection of the river and lakes

**Akmolinsk**



**Tselinograd**

**Akmola**



pink flamingos



**Astana**



**Until the 1960s**

The lakes are part of the natural floodplain of the Ishim River. The river fed them every spring, regulating the groundwater balance.

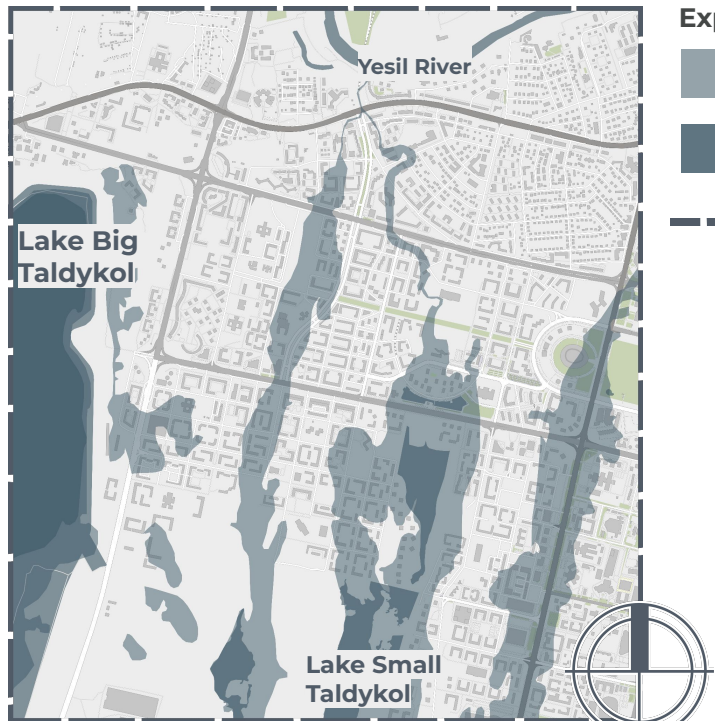
**1990 — 2010**

The Left Bank's highways have cut the water surface into fragments. Circulation has been disrupted, and the lakes have become dependent solely on precipitation.

**2019**




Active backfilling of reservoirs with soil. Replacement of open ecosystems with closed concrete sewers for stormwater discharge into the Ishim River.

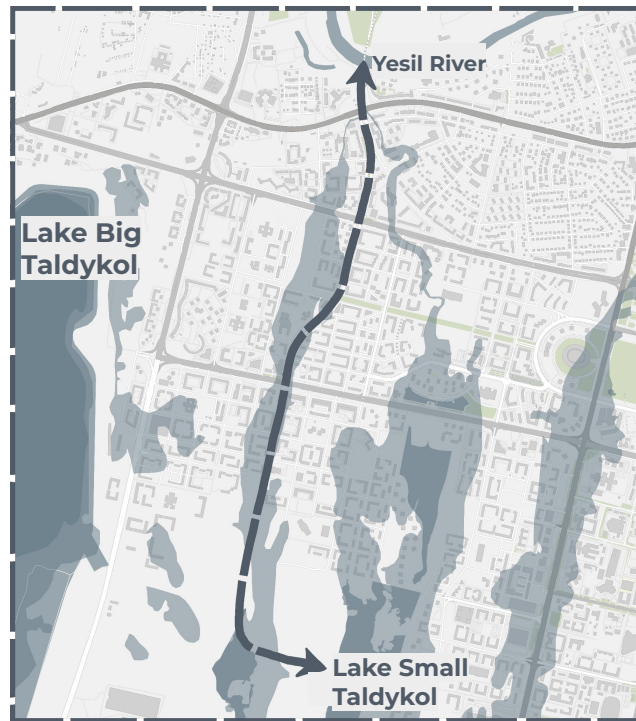
# HISTORICAL CONTEXT OF WATER CONNECTION



The boundaries of the historical Taldykol lake system on a modern map

## Explication:

-  The border of the lakes in the 1980s
-  The border of the lakes at present
-  The projected water channel













Restoring hydrological connectivity using a water channel running along Aiteke Bi Street

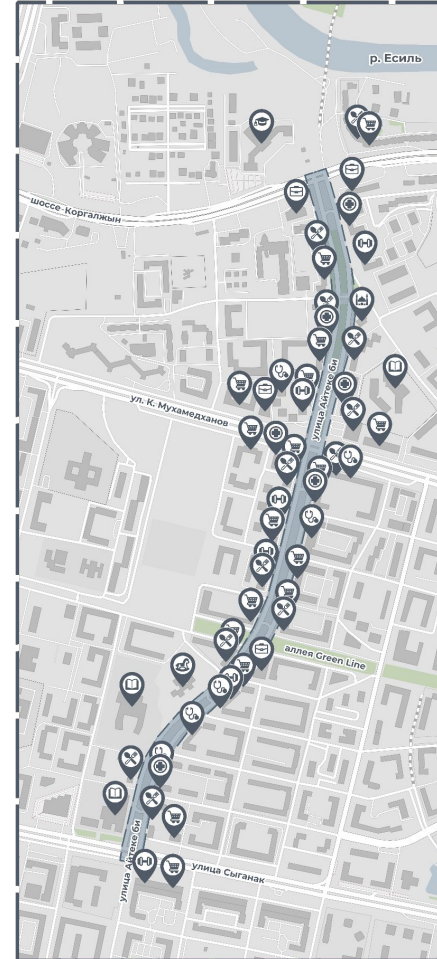
# STREET INFRASTRUCTURE ANALYSIS

Residential development with active facades: the lower floors are occupied by shops, pharmacies, cafes, and offices. The high density of services (schools, gyms, business centers) ensures the street's functional richness.

## Explication:

 Aiteke bi street project area




- |                                                                                                  |                                                                                                   |
|--------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|
|  School         |  University      |
|  Shop           |  Business center |
|  Medical center |  Restaurant/cafe |
|  Fitness center |  Pharmacy        |
|  Kindergarten  |  Mosque         |

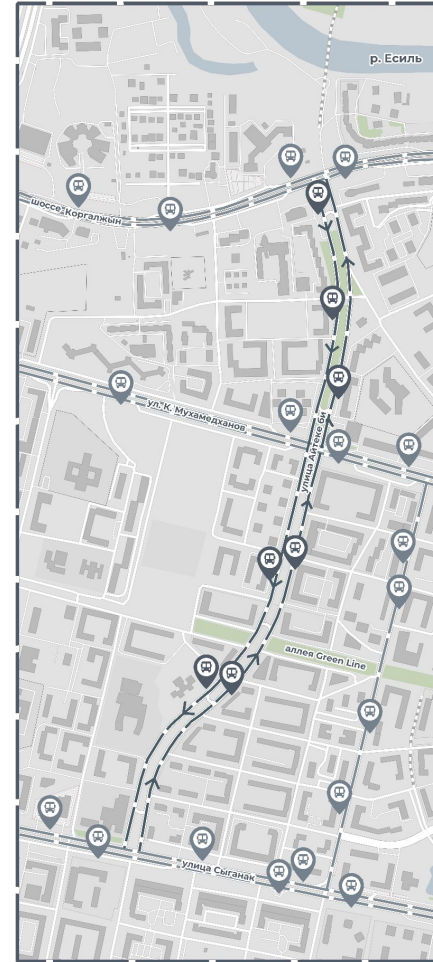


# PUBLIC TRANSPORTATION MAP

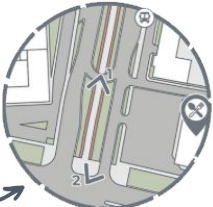
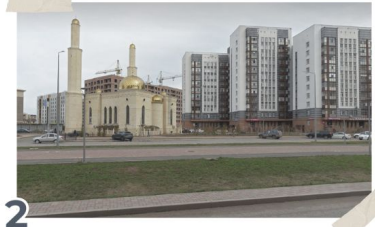
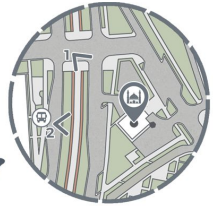
Aiteke Bi Street is used by buses. The street has two or three lanes in each direction, with one lane occupied by public transportation with stops.

## Explication:

-  Public transport lines
-  Public transport stops on Aiteke bi street
-  Public transport stops on nearby streets



# PHOTO MATERIALS



The photo shows that the street area is at different stages of improvement in different sections.

# KEY OBJECTS LOCATED ALONG THE STREET

Key social infrastructure nodes—educational centers, a mosque, and residential areas—act as the main functional “anchors” of the territory.

## Explication:

 Aiteke bi street project area



# RELEVANCE OF THE PROJECT

- **Astana 2030 Strategy:**  
Green Corridors as a Development Priority.
- **Request from the Astana Urbanism Center:**  
Street Reconstruction from a "Right to the City" Perspective.
- **Resuscitation of Drying Lakes:**  
Restoring the Water Balance and Protecting Lake Taldykol from Drying Up.
- **Favorable Location:**  
Aiteke Bi Street connects a key recreational hub—the Yesil River—with the emerging Taldykol Eco-Park, completing the main pedestrian route of the new city center.



# GOALS AND OBJECTIVES OF THE PROJECT

## Goal:

Transform Aiteke Bi Street from a transit artery into a key element of Astana's green and water framework, creating an ecologically sustainable, climate-adapted, and socially attractive public space.

## Objectives:

**01**

### **Analysis:**

Study the area, identify problems and potential.

**02**

### **Concept and Strategy:**

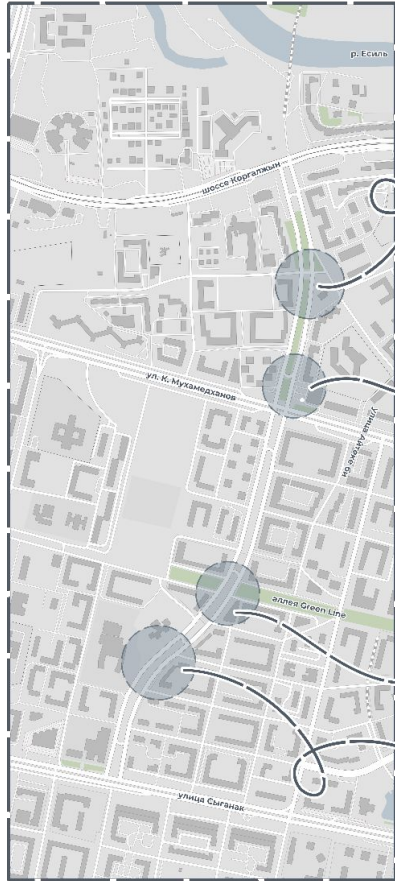
Develop an architectural and landscape design concept and principles that integrate sustainable drainage.

**03**

### **Design and detailing:**

- Design a boulevard profile with a water channel that links the street's most active nodes.
- Select a sustainable planting mix.
- Adapt the space to the winter scenario.

# KEY DESIGN POINTS



**Point 1 (Spiritual Center):** Meditative Space  
(zone of visual contemplation and peace)



**Point 2 (Taste Zone):** Gastronomic terrace  
(social hub with an active front)

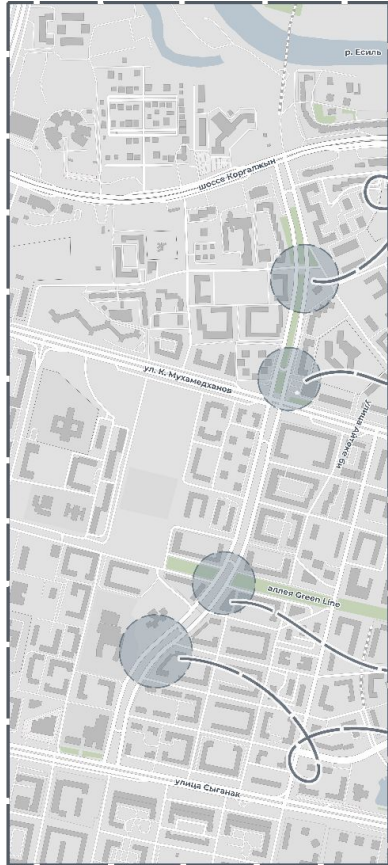


**Point 3 (Observation Garden):** Tourist recreational hub  
(intersection point with the linear park)



**Point 4 (Educational Cluster):** Inclusive Play Landscape  
(family leisure and education zone)

# TARGET AUDIENCE



**Local residents**

Believers of all ages

Elderly

**Young couples/friends**

Gourmets

Local residents

**Visitors to the business center**

Athletes

Local residents

Cyclists

Tourists

**Local residents**

Schoolchildren

Teenagers

Elderly

Families with children

## Needs:



Silence for reflection  
Family walks  
Places for relaxation



Alfresco Dining  
Good Lighting  
Evening Entertainment



Photo zones  
Sports areas  
Recreation areas



Children's play areas  
Parents' rest areas  
Interactive activities

## Boulevard's decision:

A quiet area with fountains  
Benches for conversation  
A rest pavilion

Waterway Illumination  
Food Courts  
Light Installations

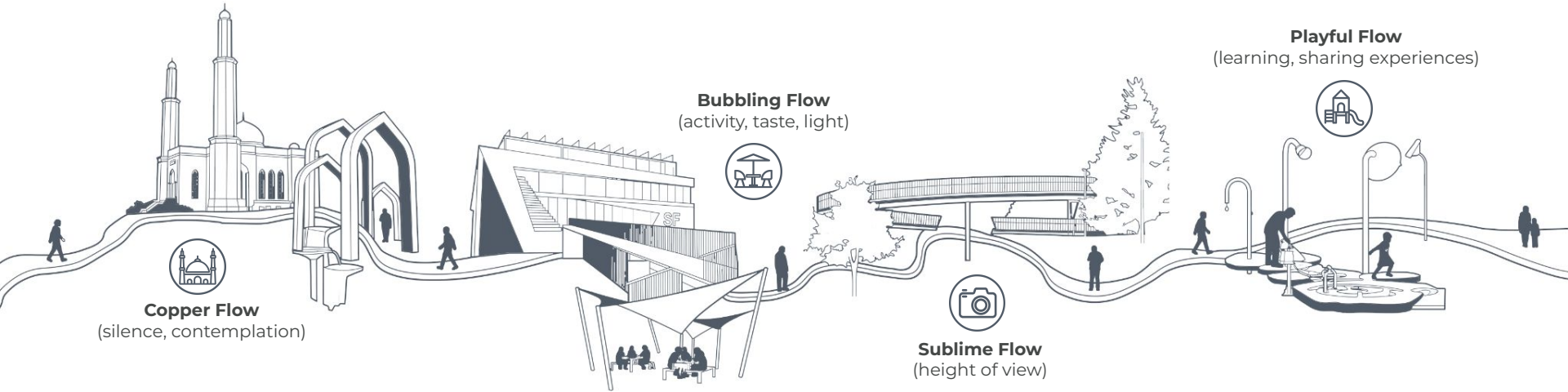
Observation deck  
Bike path  
Relaxing pavilions

Interactive fountains  
Play areas  
Small garden

# PROJECT CONCEPT

## «Flow of Life»

The water channel is the material carrier of the metaphor: the width, speed and character change from a narrow mirror-like channel to a wide stretch of water and small channels.



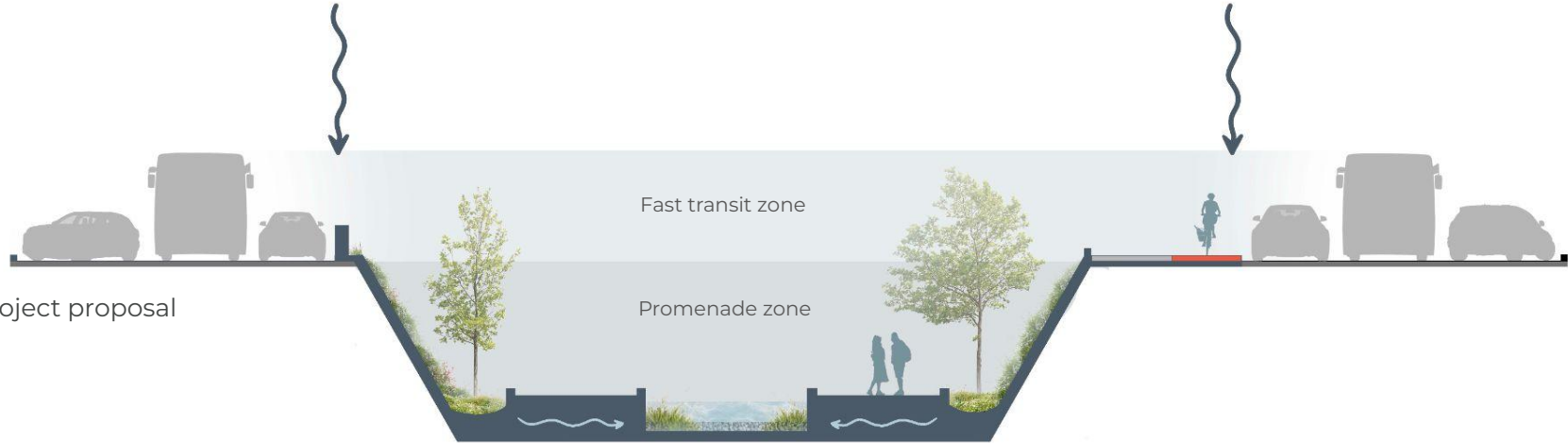
Route = symbolic movement along the flow of life.

# STREET TRANSFORMATION

Original street section



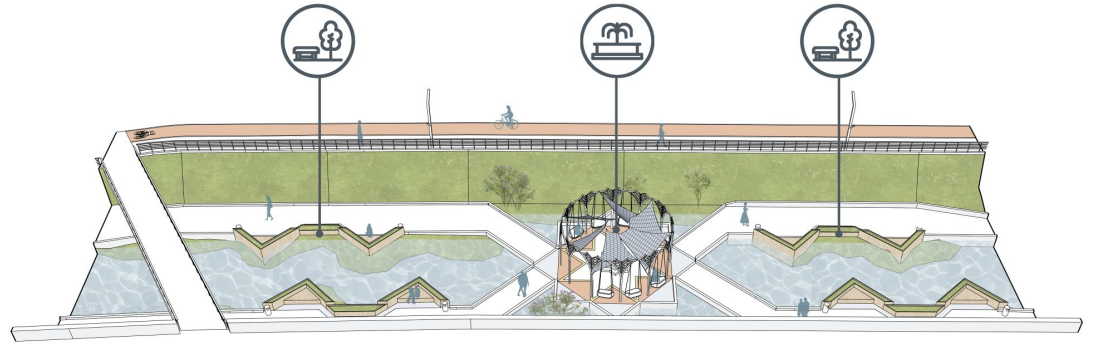
Project proposal



# PROJECT PROPOSAL



## Point 1: Spiritual Center



An area with a circular gazebo and fountains in the center



Recreation area with benches

An octagonal platform with a fountain and garden creates a quiet area for contemplation and meditation.



Street section

# PROJECT PROPOSAL



## Point 1: Spiritual Center



# PROJECT PROPOSAL



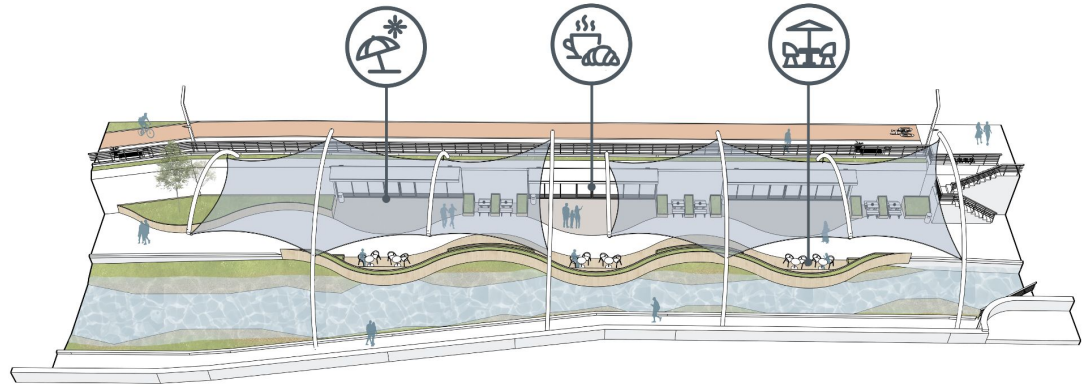
Point 1: Spiritual Center



# PROJECT PROPOSAL



## Point 2: Taste Zone



An undulating wooden terrace by the water with a café and awning is a place for dining, meeting, and relaxing in the evening.



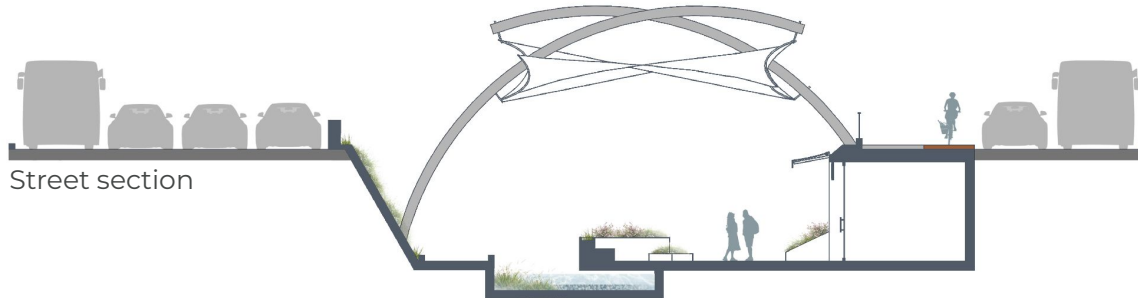
Awning made of light-transmitting mesh fabric



Gastro points are built into the wall of the channel recess



Wooden terrace with tables



Street section

# PROJECT PROPOSAL



Point 2: Taste Zone



# PROJECT PROPOSAL



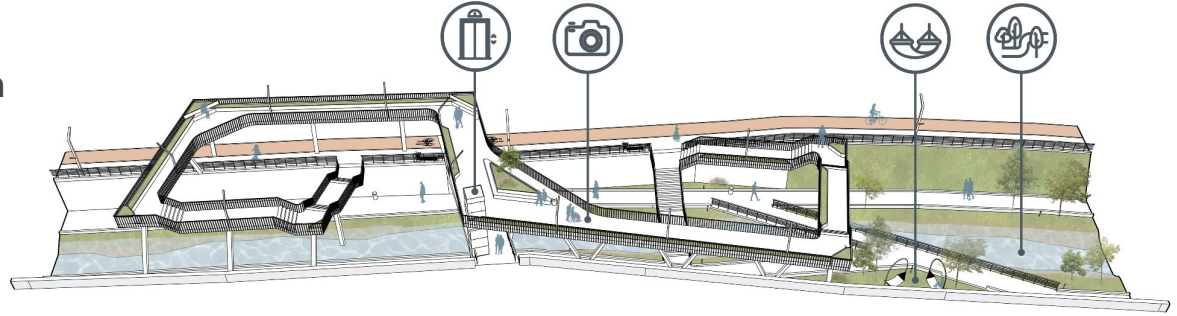
Point 2: Taste Zone



# PROJECT PROPOSAL



## Point 3: Observation Garden



Elevator for people with disabilities



An observation deck overlooking Khan Shatyr

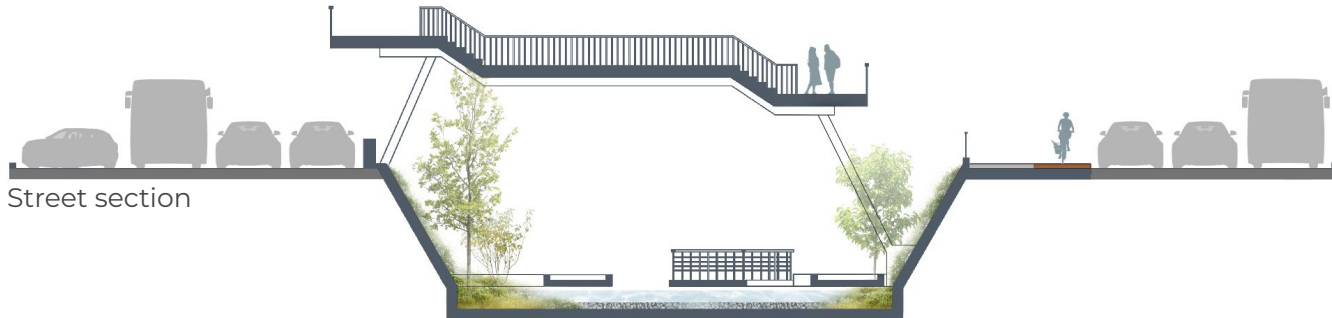


Relaxation area with hammocks



Green zone

The observation deck, shaped like a Kazakh ornament, allows you to admire the city's landmark, Khan Shatyr.



Street section

# PROJECT PROPOSAL



Point 3: Observation Garden



# PROJECT PROPOSAL



## Point 3: Observation Garden



# PROJECT PROPOSAL



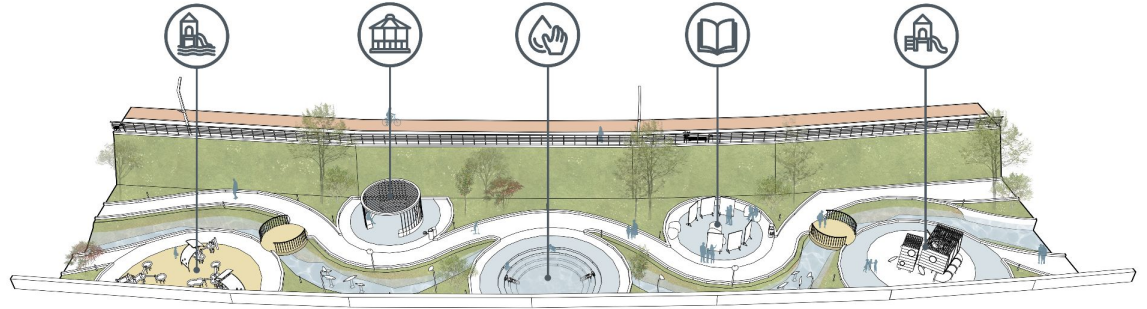
Point 3: Observation Garden



# PROJECT PROPOSAL



## Point 4: Educational Cluster



Children's playground with water interaction



Wooden gazebo



Children's pool



Educational area with stands



Children's playground

Five zones: Children control the water, splash in a shallow pool, and explore the ecosystem using educational displays.



# PROJECT PROPOSAL



## Point 4: Educational Cluster



# PROJECT PROPOSAL



## Point 4: Educational Cluster



