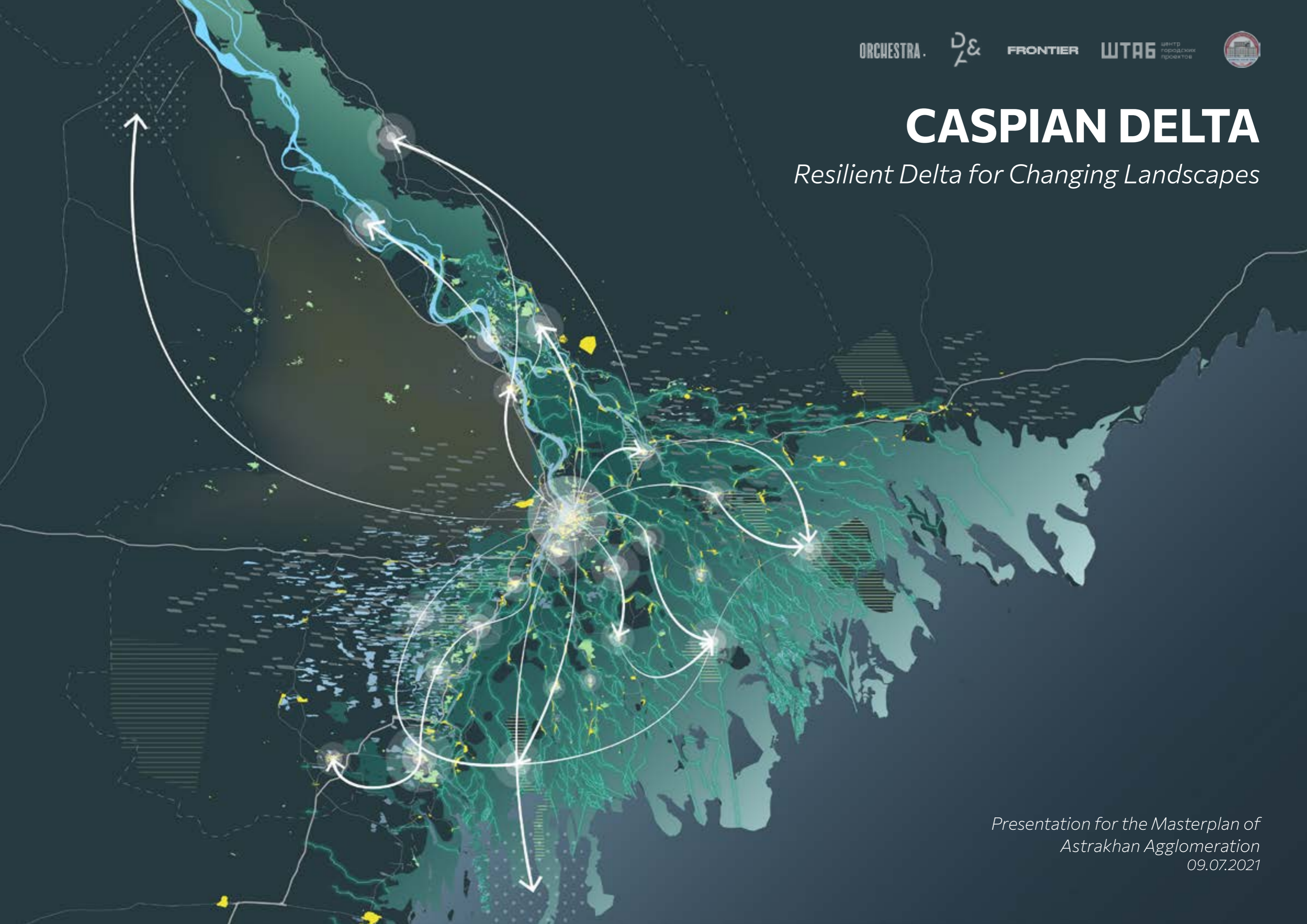


CASPIAN DELTA

Resilient Delta for Changing Landscapes



*Presentation for the Masterplan of
Astrakhan Agglomeration
09.07.2021*

PROJECT MISSION

A RESILIENT DELTA FOR CHANGING LANDSCAPES

Astrakhan’s history has been characterised by a high adaptation need to its complex and rich environment. The region’s geography, with its delta and surrounding desert steppe, is by nature a changing landscape. Climate change and the intensive exploitation of natural resources have in the last decades further accelerated these changes.

Deep and complex interconnections between human activities and the environment are particularly visible in the Astrakhan agglomeration and region.

These changing landscapes are therefore not only environmental, but also economic, social and cultural. These complex interactions cannot be answered by one single solution, urban project or a single economic industry. It requires a multi-disciplinary and multi scale resilient strategy around a coordinated set of key initiatives aimed at building up resilience.

A changing environment is both a risk factor that needs to be mitigated, but also a source of opportunities for the development of a diverse and sustainable delta economy that benefits all citizens.

We propose not to stop changing landscapes, but to create the necessary infrastructure for better adaptation to their change.

Astrakhan can become the leading resilient region in Russia. A leading role which will put back Astrakhan on the map, mobilize energy, attract public and private investments, create new job opportunities and inspire the youth.

1
UNIQUE CASPIAN DELTA BRAND WITH A MANAGEMENT STRUCTURE

5
SUPPORTED DELTA ECONOMIES

13
ECONOMICAL PRIORITY HUBS IN THE DELTA

35
DELTA INFRASTRUCTURE PROJECTS

7
KEY GREEN INFRASTRUCTURE PROJECTS FOR ASTRAKHAN

7
COMPLEX TERRITORIAL DEVELOPMENT HUBS IN THE CENTER

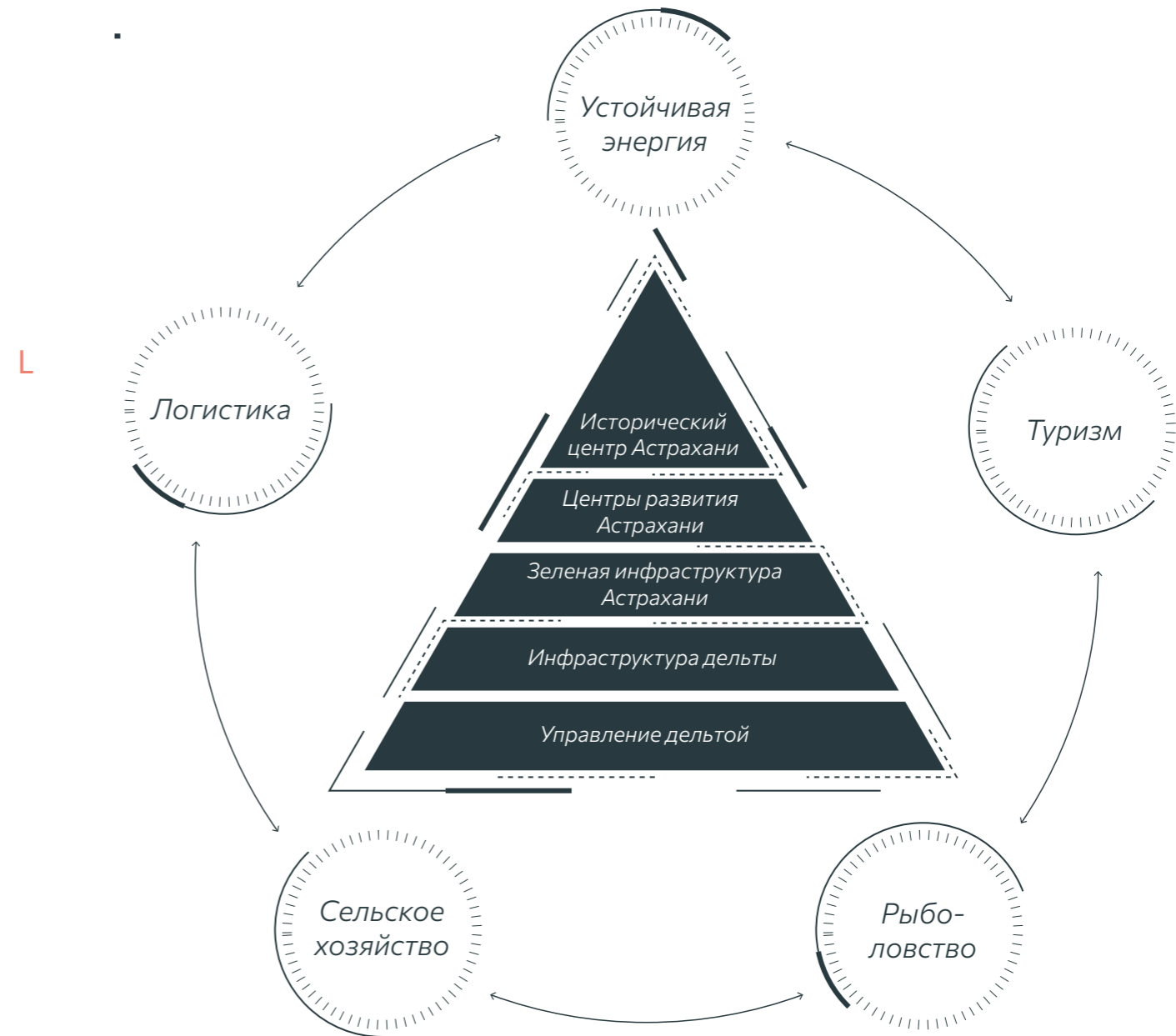
5
STRATEGIES TO RENOVATE THE HISTORICAL CENTER

PRINCIPLES OF SUSTAINABLE DELTA

5 main vectors of development will help support the delta economies:

- **DELTA management:** To coordinate research, foster innovation and attract agglomeration-wide investment.
- **DELTA infrastructure:** Designed to stimulate the development of economic foundations through a dual approach - “big infrastructure” and decentralized flexible infrastructure.
- **City green infrastructure:** Will help improve the quality of life, work and education needed to retain and attract youth.
- **ASTRAKHAN hubs:** complex territorial developments, with development anchor and a mixed-use program to create both destinations and place to live, work and play.
- **Astrakhan historic centre:** Will create an attractive historic city where culture is a tool to attract investment and make a loud statement about Astrakhan.

This multi-scale strategy allows to create synergies between Astrakhan and the agglomeration. For example, an environmental monitoring system (Delta Infrastructure) will be piloted and analysed by the proposed Caspian Delta Research Center as part of a city campus (City Hub), will informed decisions at the (Delta Management)

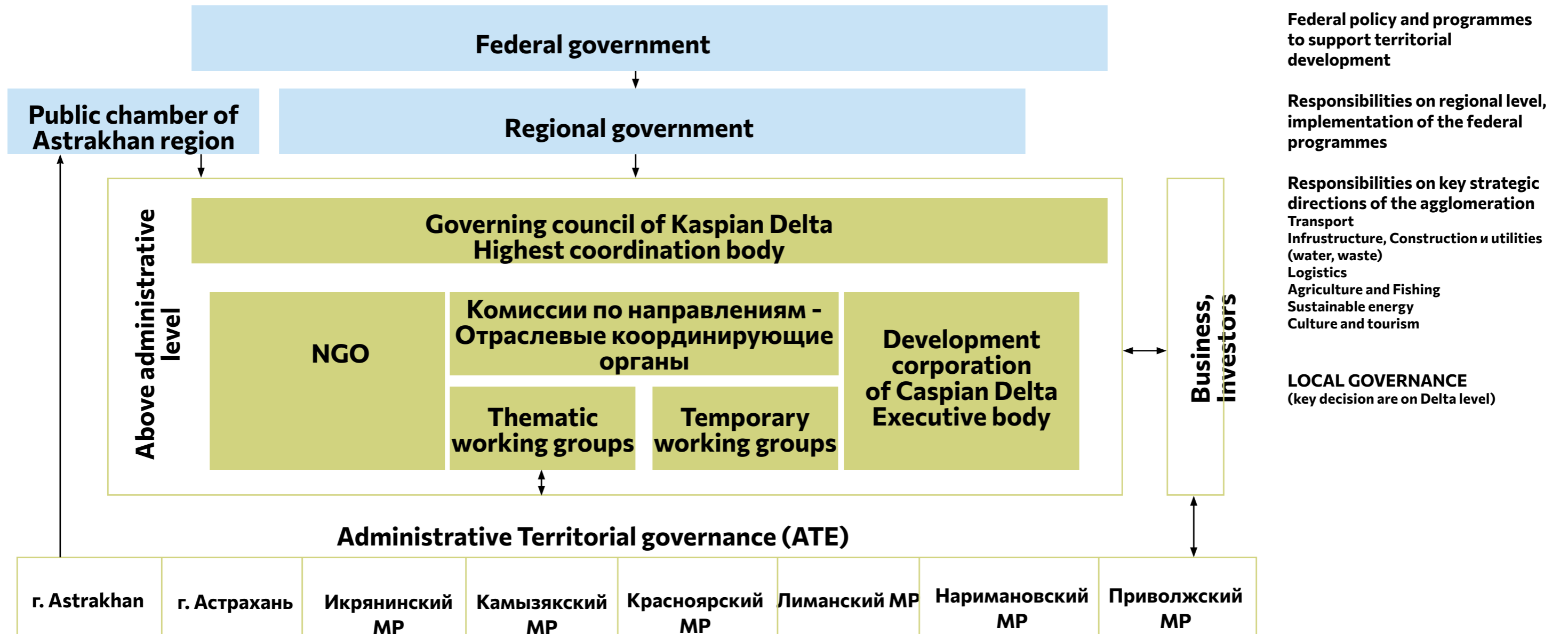




01.

DELTA
MANAGEMENT

TWO-LEVEL WITH ELEMENTS OF A CONTRACTUAL MODEL



Federal policy and programmes to support territorial development

Responsibilities on regional level, implementation of the federal programmes

Responsibilities on key strategic directions of the agglomeration
 Transport
 Infrastructure, Construction и utilities (water, waste)
 Logistics
 Agriculture and Fishing
 Sustainable energy
 Culture and tourism

LOCAL GOVERNANCE
 (key decision are on Delta level)

MAIN ELEMENTS OF THE MANAGEMENT MODEL OF THE CASPIAN DELTA

MAIN TASKS AND POWERS

AHO

- Develops and updates the Agglomeration strategy
- Develops projects for the implementation of the strategy, monitors their implementation
- Takes into account agglomeration resources
- Collects information from MR (ATE), tracks key indicators, manages information and knowledge
- Interacts with commissions and working groups in the areas of development
- Engages external independent experts in various fields

Governing Council of the Caspian Delta

- The supreme coordinating body, responsible for the adaptive and sustainable development of the Caspian Delta

Caspian Delta Development Corporation

- Approves and accepts the development strategy of the Caspian Delta, is responsible for its implementation
- Coordinates Commissions and working groups in areas

Commissions and working groups by areas

- State Regional Development Institution
- Implements investment projects in the region
- Makes decisions on attracting investors, including foreign
- Responsible for the formation of a favorable investment climate
- Responsible for the implementation of strategic projects for the development of the Caspian Delta
- Implements and promotes public-private partnership (PPP) mechanisms
- Forms and promotes the image of Delta among investors (Russian and foreign)
- Responsible for SMP support and business support

Temporary working groups by areas

- Forms a strategy for the development of the Agglomeration in a given direction
- Proposes projects for the implementation of such strategies
- Interacts with other management bodies of the Agglomeration and related commissions to agree on strategies

STRUCTURE

New structure (10-12 people) with the functionality of the agglomeration «think-tank»

Federal representative (s)

Governor of the Astrakhan region

Representatives of the government of the Astrakhan region

ATE chapters

Can be allocated within the framework of the Investment Development Agency of the Astrakhan Region (focus on Agglomeration development)

It is necessary to «recruit» specialists in socio-economic development, urban planning and development of territories

Representatives of sectoral ministries

Representatives of ATE authorities

External experts

Business representatives

Representatives of sectoral ministries

Representatives of ATE authorities



02.

DELTA
INFRASTRUCTURE

DEVELOPMENT POLES

ECOSYSTEM AND TOURISM

Poles of development are large information and structural points that are able to receive tourists, local residents and experts and offer them various types of activities.

A system of shuttles and seasonal buses, recreation centers, summer camps and educational research centers has been developed for each of the centers.

1 ILMENO-BUGROVY RESERVE

The Center for Environmental Education, where the main role is assigned to the study of the Baer Hills and Ilmenei, as well as the semi-desert zone. Regional hiking trails in the hillocks and desert.

2 DAMCHINSKY RESERVE

Center for Environmental Education, where the main role is assigned to the preservation and study of the Volga Delta ecosystem. Tourist route along the canals with lotuses.

3 TREKHIZBINSKY RESERVE

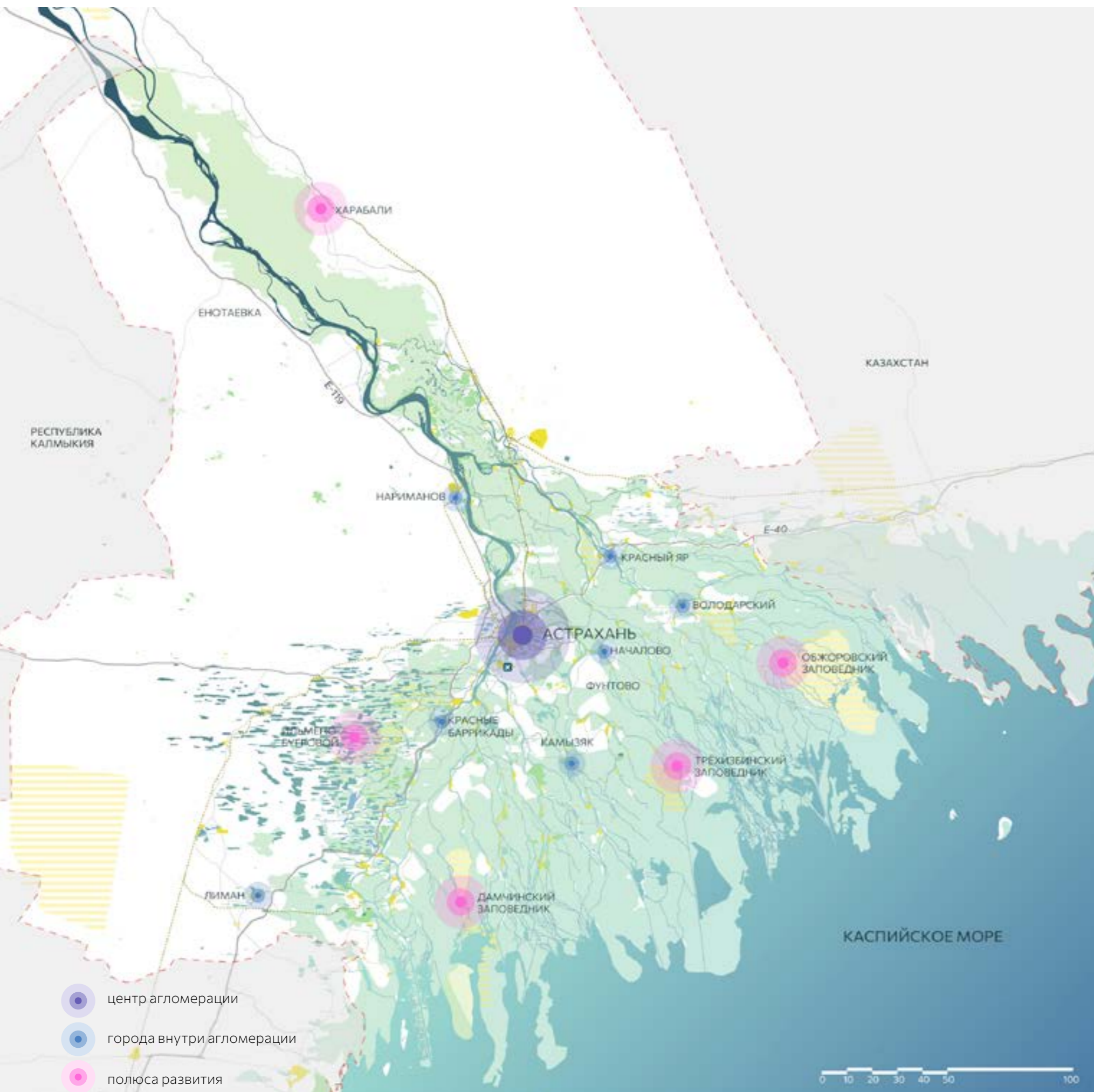
Center for Environmental Education, where the main role is assigned to the preservation and study of the Volga Delta ecosystem. Tourist route through protected biotopes with gallery forests and reed supports.

4 GLUTTON RESERVE

Center for Environmental Education, where the main role is assigned to the preservation and study of the Volga Delta ecosystem. Tourist route through the floodplains - habitats of migratory birds.

5 ХАРАБАЛИ

Center for Environmental Education, where the main role is assigned to the conservation and study of the ecosystem of golden sands. Tourist route along the Volga floodplain and the desert zone.



DEVELOPMENT POLES

AGRICULTURE

Agricultural development centers are large farming centers with a developed tourist infrastructure (sale of local products, master classes and excursions, recreation centers) and provide themselves with energy from renewable sources and biogas production.

The centers are provided with shuttle buses and seasonal buses.

- 6** ДОСАНГ
- 7** ФУНТОВО
- 8** ЧЕРТОВО ГОРОДИЩЕ

FISHING

The fishing centers have an educational and research laboratory (Ikryanoe) and tourist services with the possibility of sustainable fishing.

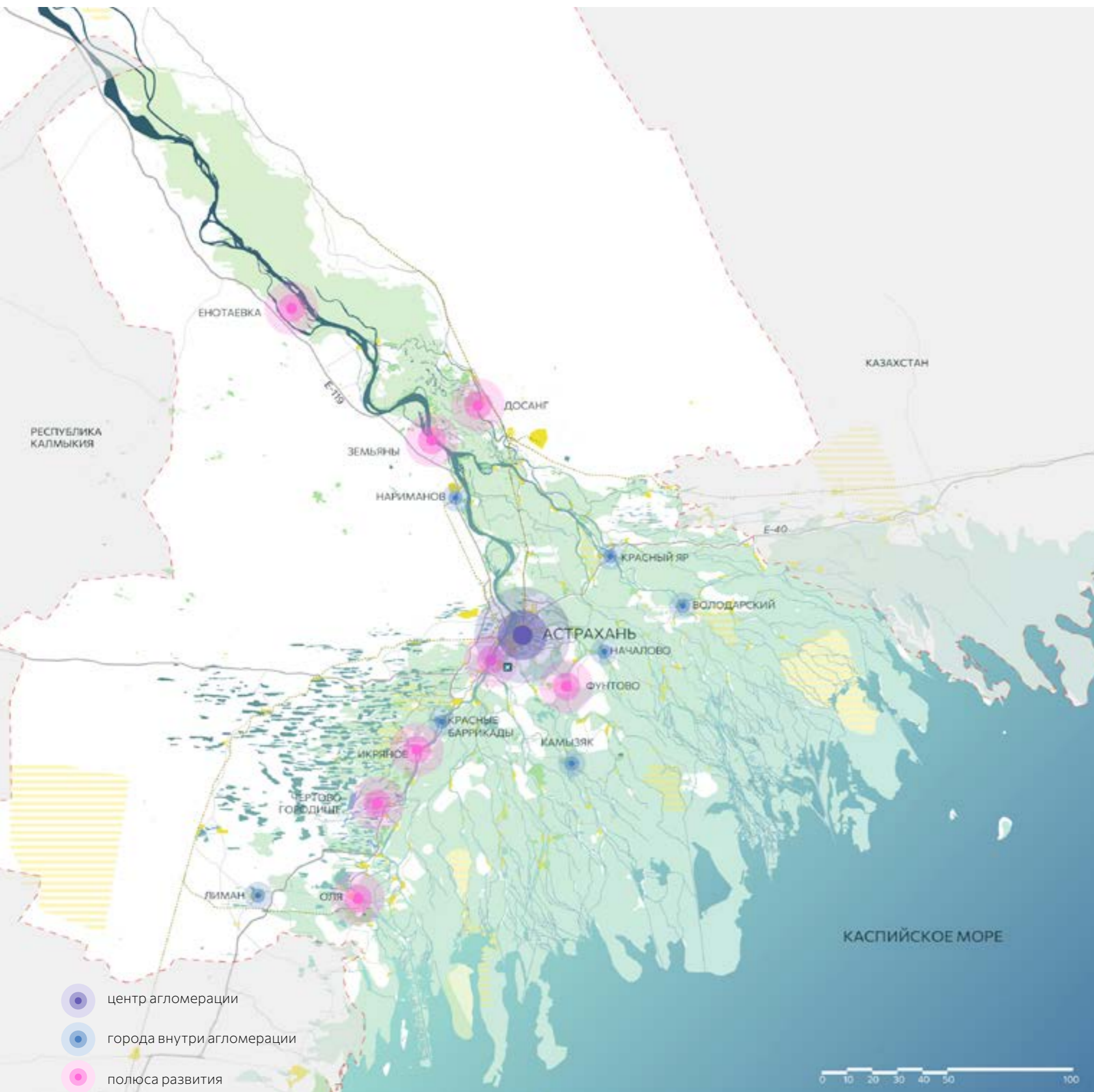
The centers are provided with shuttle buses and seasonal

- 9** ЕНОТАЕВКА
- 10** ЗЕМЬЯНЫ
- 11** ИКРЯНОЕ

LOGISTICS AND ECONOMICS

Logistics centers are large transport and cargo points, which include the airport, cargo and passenger ports.

- 12** OLYA
- 13** SOUTH ASTRAKHAN CENTER



DELTA INFRASTRUCTURE PRINCIPLES



MAJOR INFRASTRUCTURE

Large infrastructure represents the development of major economic and logistics centers, as well as the implementation of long-term strategies to improve urban infrastructure, the creation of research and museum centers and the conclusion of important Caspian commonwealths.

The development of large infrastructure will create the basis for the sustainability and resilience of the region and enable flexible solutions.



AGILE INFRASTRUCTURE

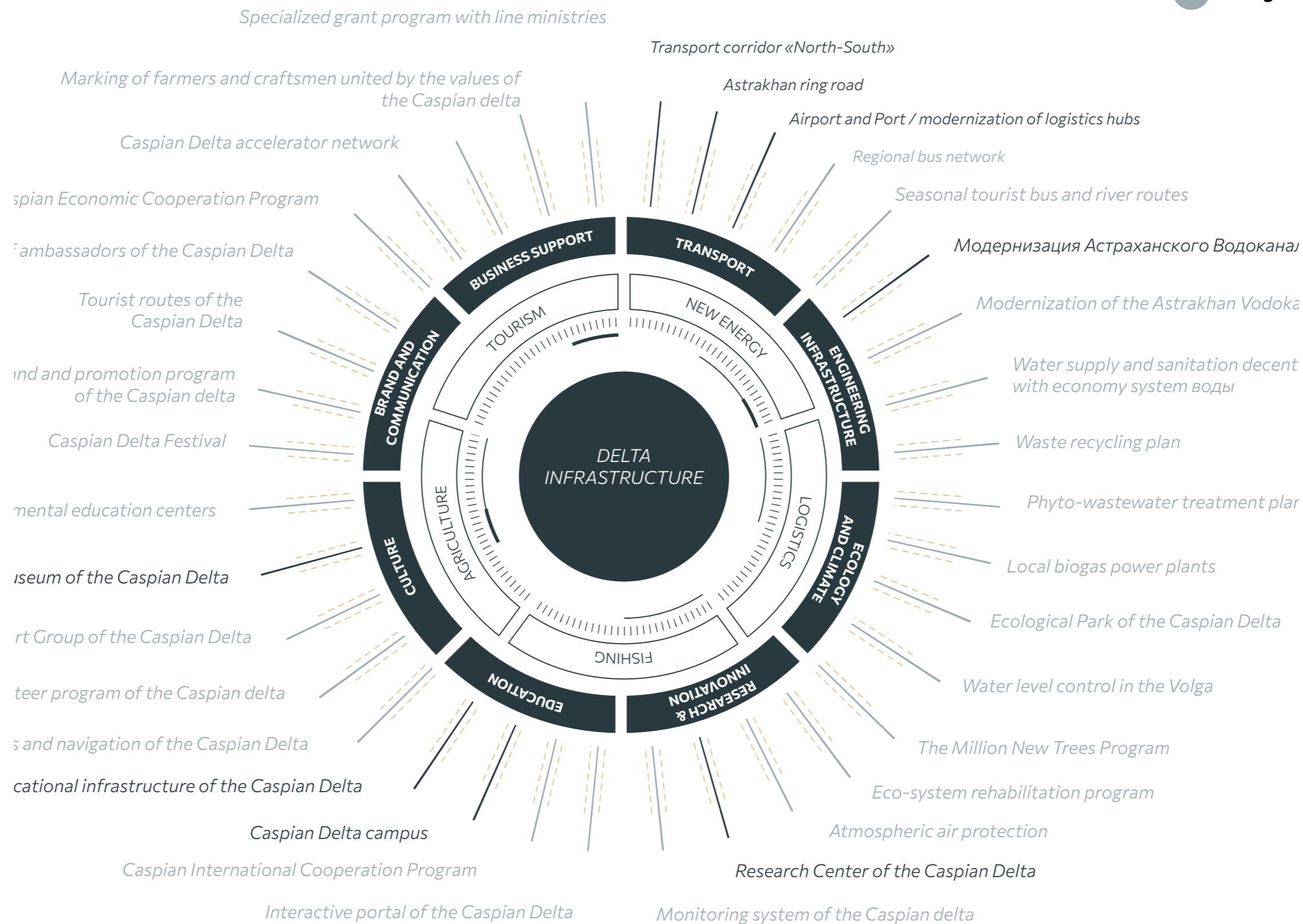
Flexible infrastructure is a decentralized solution that can be adjusted to a specific territory and needs. Small and large infrastructure solutions are interconnected, for example, monitoring stations are supervised by a large research center.

These include renewable energy sources, environmental education centers, monitoring stations, ecosystem restoration strategies and local transport links.

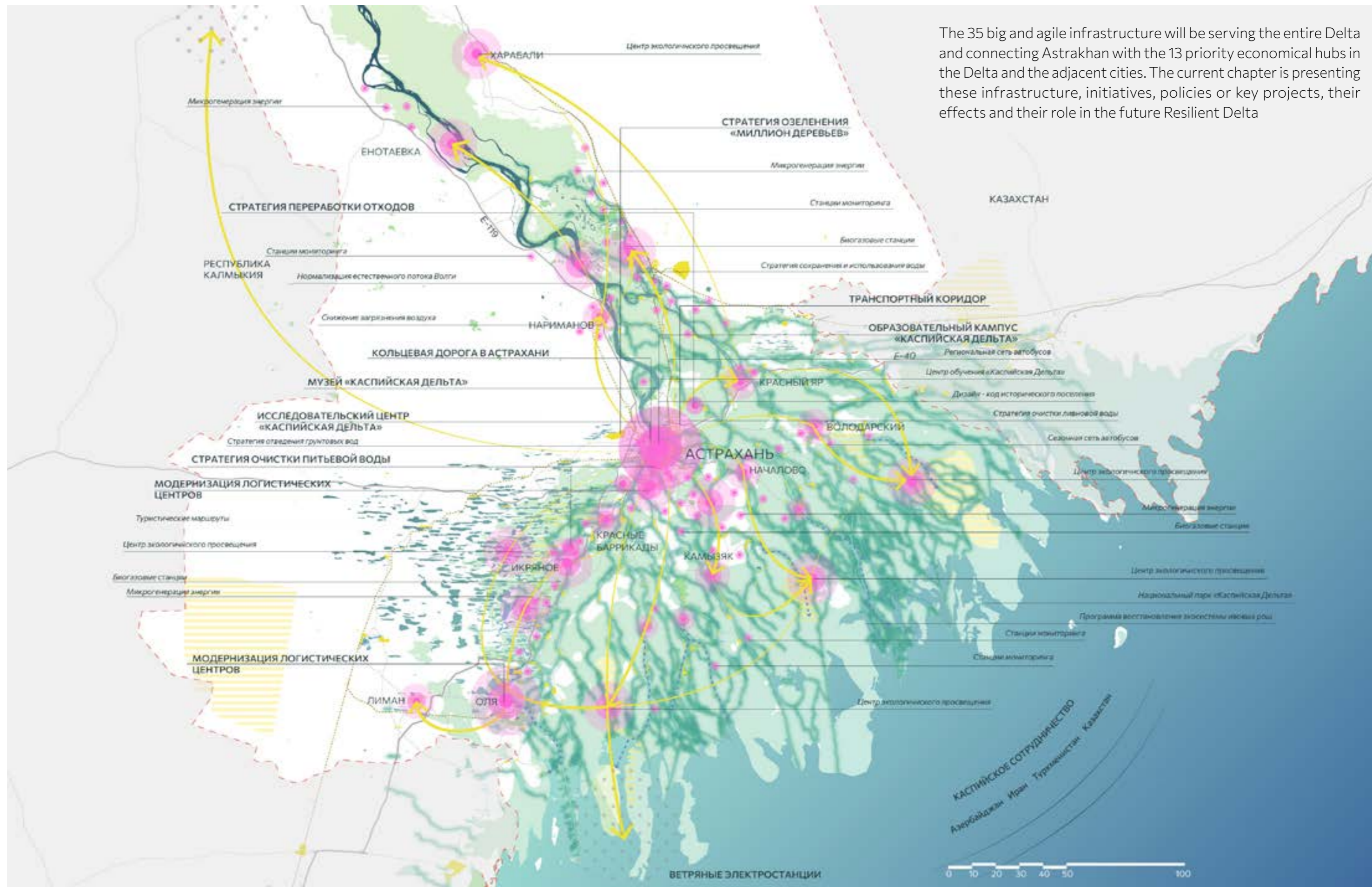
DELTA INFRASTRUCTURE PRINCIPLE

35 proposed infrastructure projects, about 8 infrastructure support units that will support the development of the regional economy. It is a hybrid approach that combines large infrastructure projects with co-financing from federal funds and private investment, as well as flexible, decentralized

- Major infrastructure**
- Agile infrastructure**



DELTA INFRASTRUCTURE



The 35 big and agile infrastructure will be serving the entire Delta and connecting Astrakhan with the 13 priority economical hubs in the Delta and the adjacent cities. The current chapter is presenting these infrastructure, initiatives, policies or key projects, their effects and their role in the future Resilient Delta

REGIONAL TRANSPORT NETWORK

The priority goal is to develop the connectivity of the road network.

1. Construction of the Northern and Eastern bypasses, as well as the Southern bridge across the Volga in the airport area will create the Outer Ring Road. Its appearance will speed up trips between settlements of the agglomeration by 20-40 minutes, save Astrakhan from transit traffic, reducing environmental costs and the number of serious accidents.
2. Reconstruction of the main road to the border with Kazakhstan will increase the availability of settlements in the Krasnoyarsk region and international communication.
3. The construction of six new bridges across the Delta rivers will improve the mobility of thousands of residents in the region, increase the tourist attraction of the area and contribute to the development of economic activity in the Delta.

EFFECTS:

improving the comfort of the urban environment

increasing the comfort of tourists' stay in the region, forming an attractive destination brand

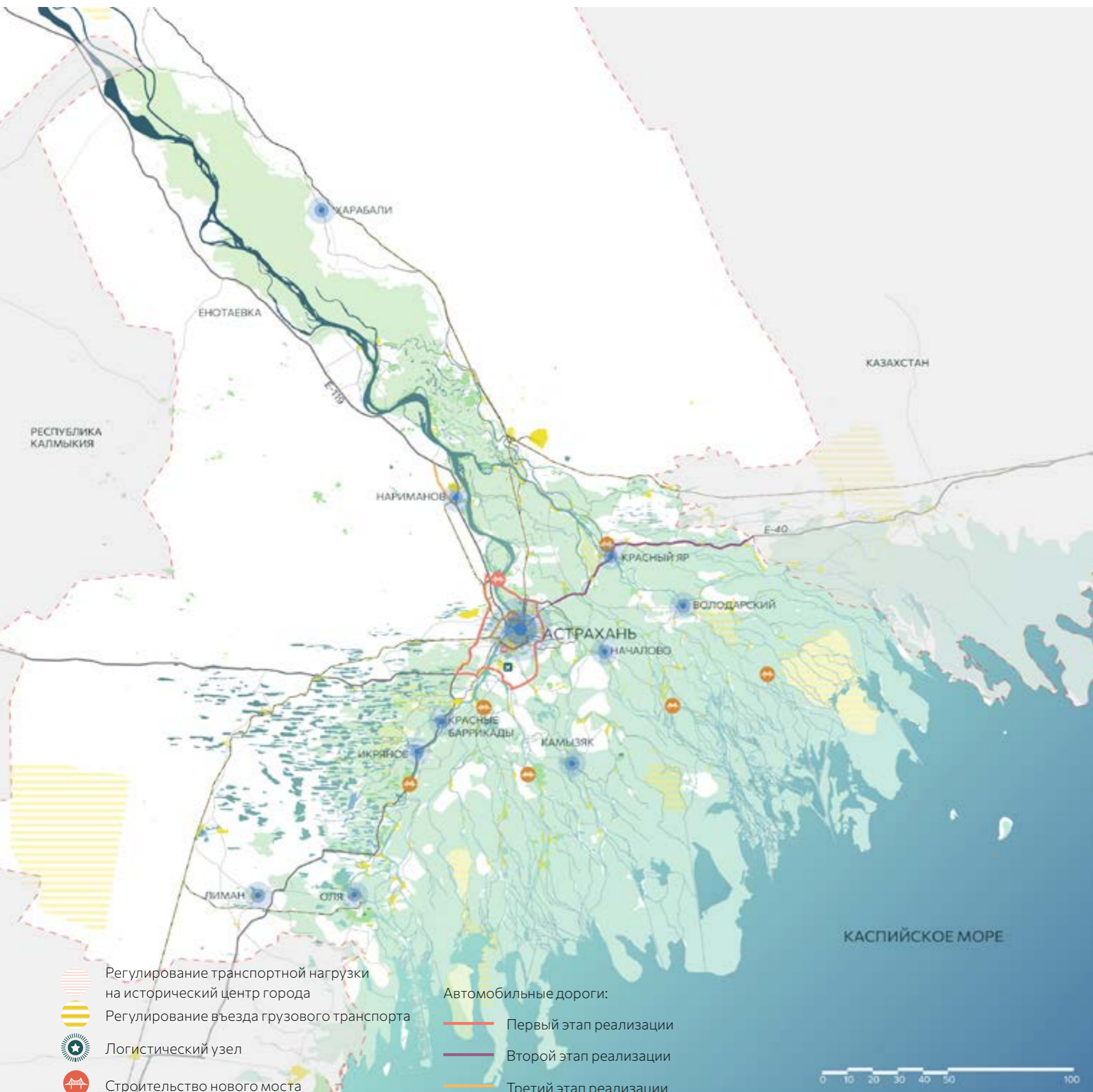
increasing mobility and economic activity of the population

37 200

Mln. RUB.

3-5 YEARS










PERIOD OF



REGIONAL BUS NETWORK

The updated network of suburban buses with modern rolling stock and optimal timetables will connect settlements with the regional center and with each other through two passenger hubs - Privokzalnaya Square and the Airport.

From the Airport, routes will depart in the most demanded directions:

-  The airport
-  Камызяк
-  Икряное – Лиман
-  Три Протока – Началово
-  Красный Яр
-  Володарский
-  Старокучергановка – Солянка – Тинаки 2-е
-  Нариманов – Енотаевка
-  Харабали

Routes will be organized from the bus station in the city center to all settlements of the region, except for the least populated ones.



Bus station



Directions of routes from the bus station

Highly comfortable branded shuttles will depart to popular destinations from two tourist hubs - from the Delta Tourist Quarter in the center of Astrakhan and from the Airport. Traffic intensity and timetable will be flexible according to seasonal demand.

 Seasonal Teristic Shuttle Routes

650

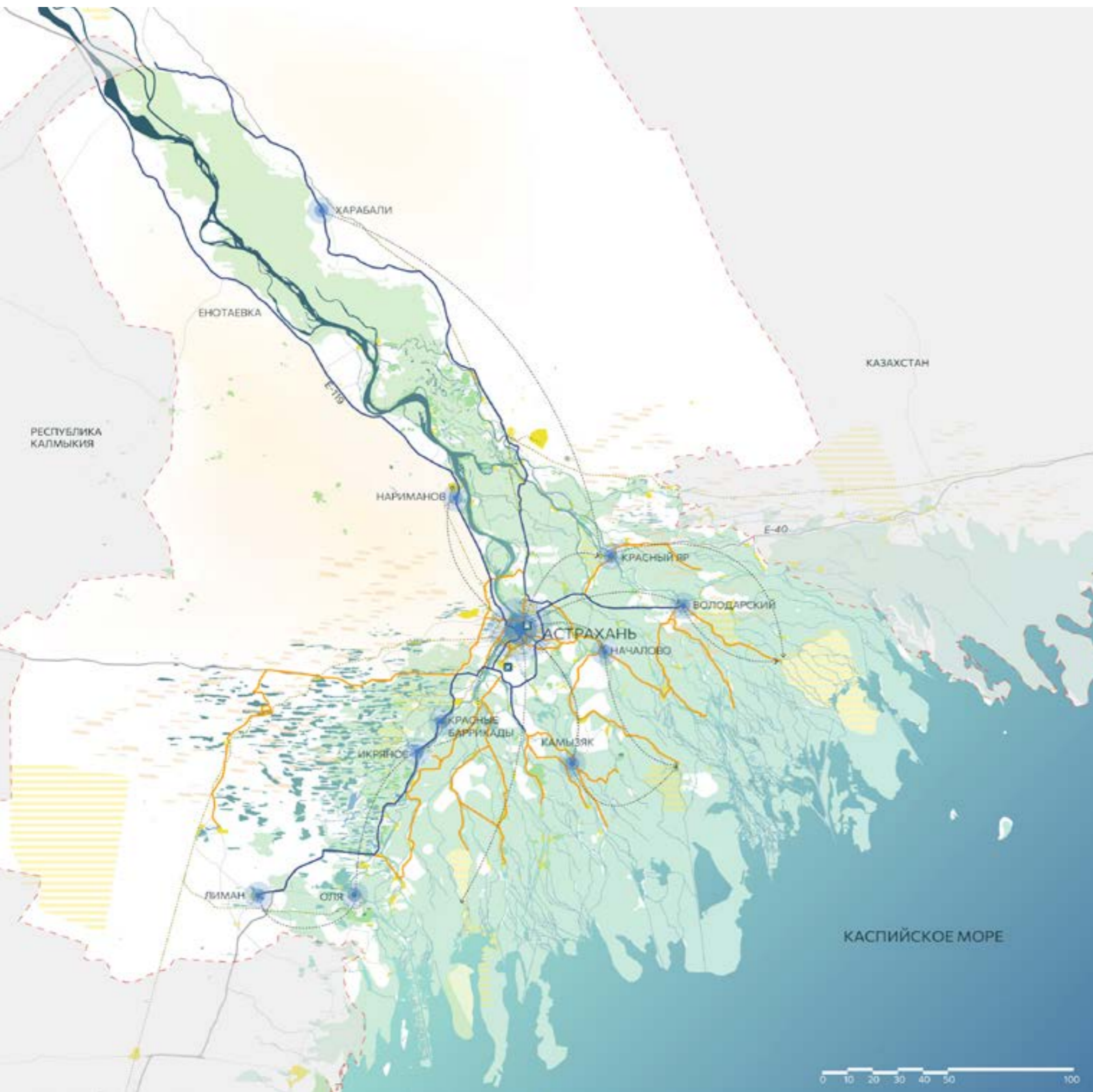
Mln. RUB.

EFFECTS:

improvement of social infrastructure at the regional level

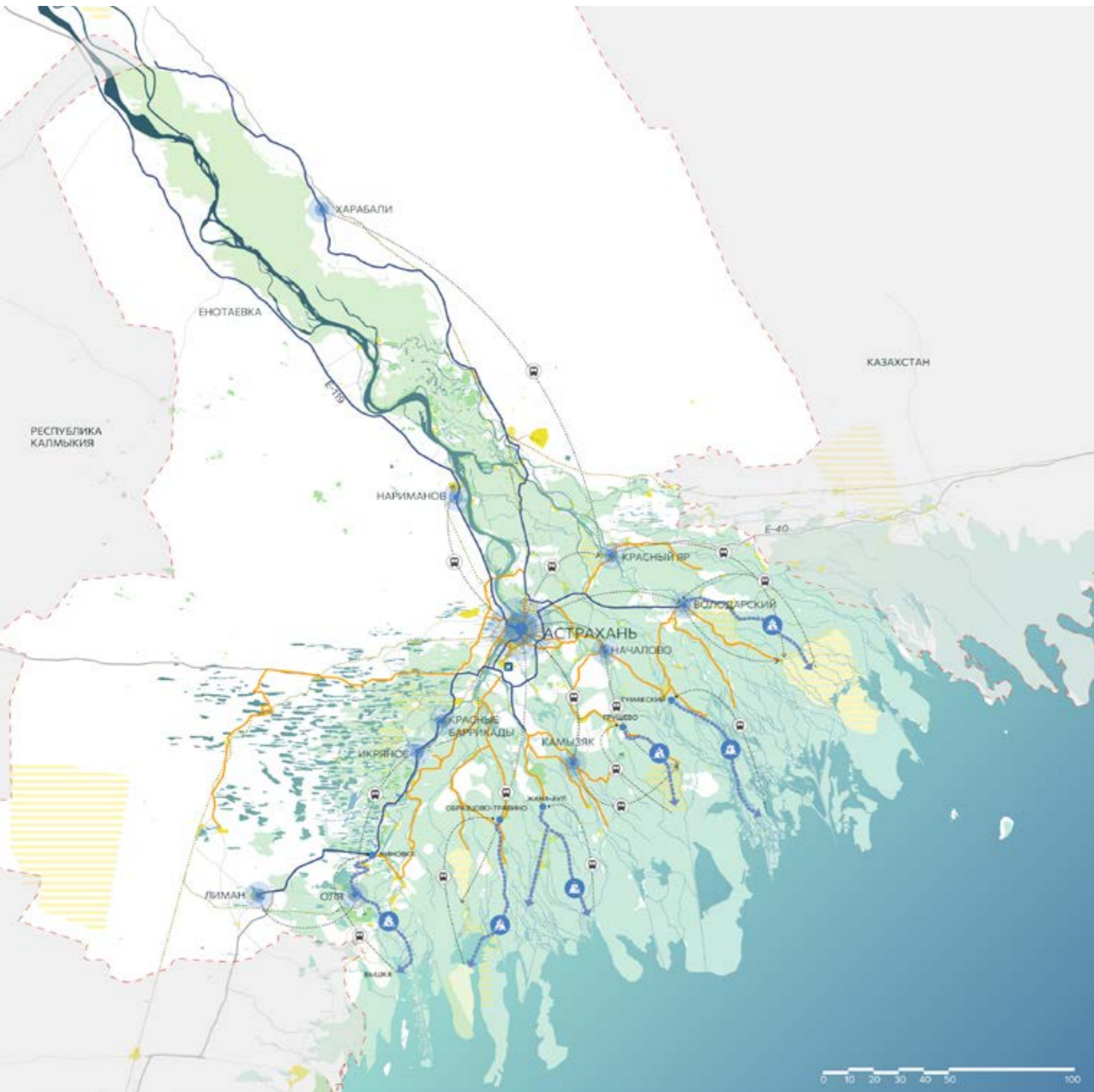
improving the quality of tourism infrastructure, promoting regional tourism products

creation of new jobs for the population



SEASONAL TOURIST BUS AND RIVER ROUTES

Hard-to-reach places in the Delta, including nature reserves and recreation centers, will be provided with river passenger traffic on Meteor-class vessels. Together with the bus service, they will form multimodal routes.



Partners

- Ministry of Economic Development
- Astrakhan Regional Innovation Center
- Municipal District Administrations

Financing

- ПЛК "Каспий"
- НП безопасне и качественные дороги
- ФП Коммуникации между центрами экономического

770

Mln. RUB.

3 - 10 YEARS

PERIOD OF IMPLEMENTATION

EFFECTS:

creating new tourist routes, attracting tourists and increasing the income of the destination

disclosure of the tourist potential of the region as an attractive natural and recreational cluster

stimulating the creation of new jobs and the economic development of the region

- tourist routes
- Delta river routes
- - - transportation by shuttle to the starting point of the tourist route

INFRASTRUCTURE DEVELOPMENT STRATEGIES

Improving the engineering infrastructure on the Delta scale poses many challenges, such as significant investment costs, low profitability and low accessibility of some localities. Environmental impacts such as lower water levels in sources can also increase stress in existing systems.

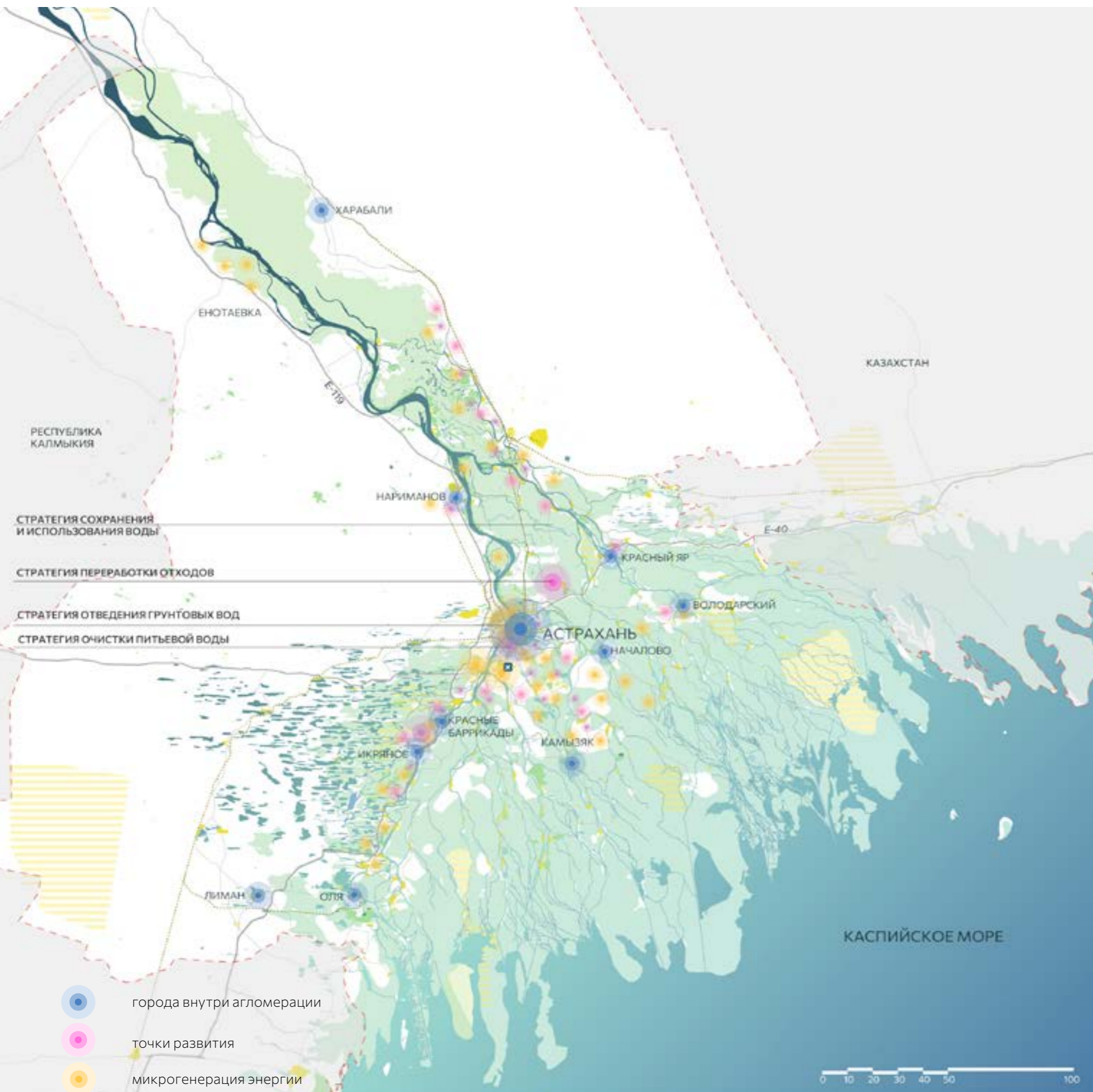
WATER SUPPLY AND SANITATION DECENTRALIZATION PLAN WITH WATER SAVING SYSTEM

WASTE RECYCLING PLAN

PHYTO-WASTEWATER TREATMENT PLAN

MINI POWER PLANTS

LOCAL BIOGAS POWER PLANTS



MICRO ENERGY GENERATION

A mini power grid is an autonomous distribution network that includes small power generation. The generated electricity is not returned to the main grid, but is used locally using a battery.

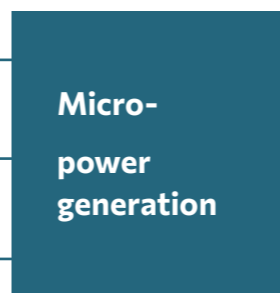
Mini-grids can be used in more remote areas to support, in particular, priority economic centers: campgrounds, information centers, monitoring stations, etc.

The hybrid energy system includes wind, solar and diesel energy with storage. When combined with the Smart Mini-Grid system, the hybrid power system can work to best connect, store and distribute different energy sources.

The effectiveness of mini-grids is driven by effective business models to support their operations. Support can be provided through government loans and incentives for private operators.

Partners

- City administration
- Астраханский ЦНТИ
- Nevel, Рязанский ЗМКП, Краснодарский «Сатурн»



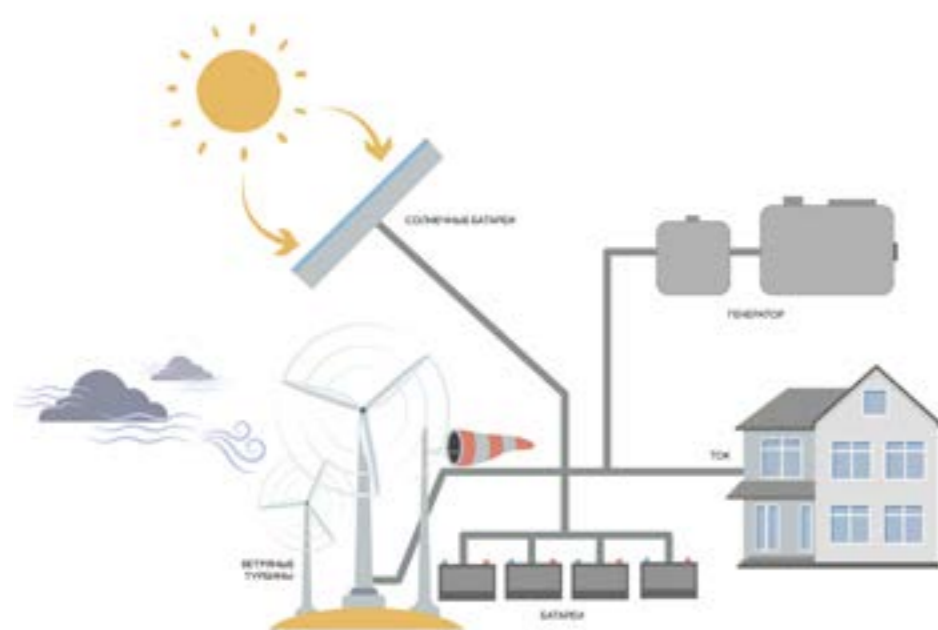
Financing

- ФП «Внедрение наилучших доступных технологий»
- Грант «Агростартап»

30 Mln. RUB.
1 - 6 YEARS
 PERIOD OF IMPLEMENTATION

EFFECTS:

- development of renewable energy and development of a green economy
- reduction of water consumption in agriculture
- improvement of the ecological situation and the well-being of the population



WATER SUPPLY AND SANITATION DECENTRALIZATION PLAN WITH ECONOMY SYSTEM ВОДЫ

Decentralized water treatment is the practice of locating wastewater treatment plants in the supply and demand area. It is a flexible and sustainable alternative to large wastewater treatment plants that require a large amount of expensive supply and delivery infrastructure. It is a solution for both individual construction and communities. The exact choice of technology depends on the availability of suppliers.

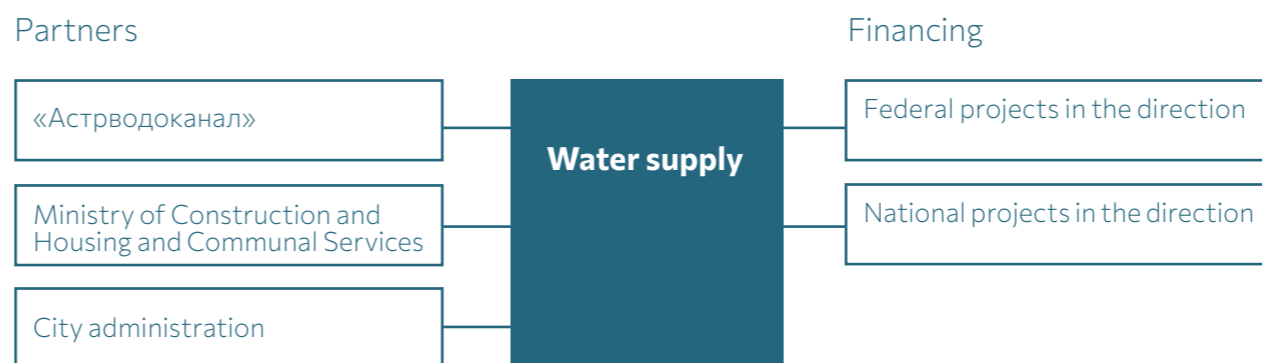
To control the use of decentralized units in networks, it is necessary to create an appropriate monitoring system.

The widespread availability of fresh water from the Delta enables a decentralized treatment infrastructure to be implemented, subject to a demand reduction strategy through a “water saving plan” to raise public awareness of the importance of water conservation.

Other water conservation policies aimed at reducing impacts on water sources include widespread drip irrigation.

The supply of water for non-potable purposes can be arranged through constructed wetland systems (see dedicated page) to treat waste water, recycled water or irrigation water.

Decentralized water treatment plants can be combined with mini-grids to provide the most remote areas with the required electricity.



EFFECTS:

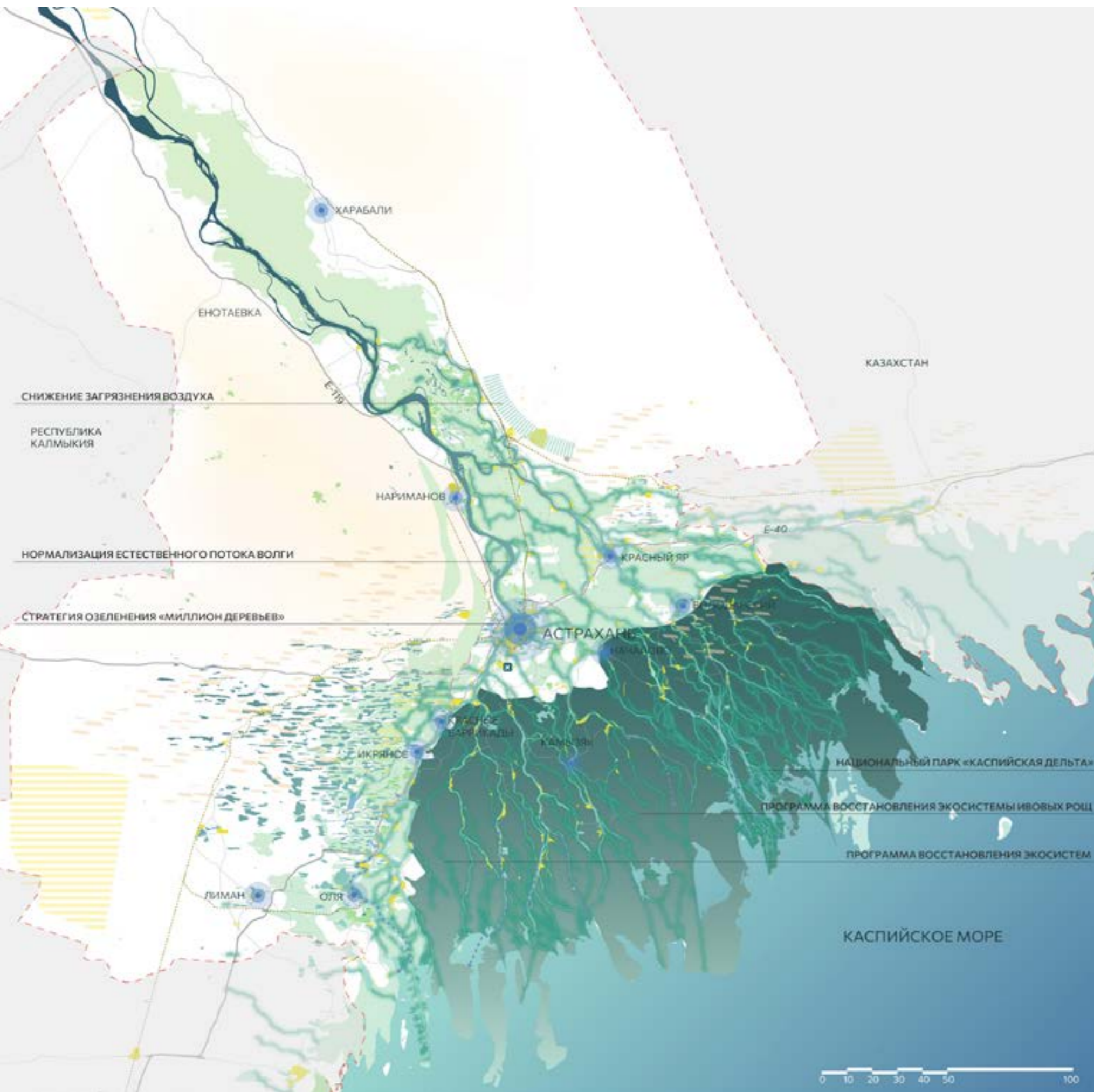
introduction of new life support technologies and improvement of the ecological situation

improving the quality of life of the population of villages and villages

development of small settlements

100 Mln. RUB.
1 - 3 YEARS
PERIOD OF IMPLEMENTATION





ENVIRONMENT AND ECOLOGY

CASPIAN DELTA NATIONAL PARK

protection and restoration of ecosystems of the Volga delta by establishing a conservation status, designation of the international significance of the territory, comparable to the significance of the ecosystem of Lake Baikal and the park «Land of the Leopard».

WATER LEVEL CONTROL IN THE VOLGA

bringing the river flow as close to natural as possible, managing the cascade of Volga reservoirs and working with small rivers

MILLION NEW TREES PROGRAM

large-scale landscaping of the region, planting trees to restore the ecosystem, planting the White Willow to restore gallery forests in the Volga delta.

MICRO ENERGY GENERATION

creation of off-grid RES solutions for specific enterprises - local solar panels and wind turbines.

LOCAL BIOGAS STATIONS

production of biogas and energy for farming enterprises by burning agricultural waste.

ECOSYSTEM REHABILITATION PROGRAM

the delta contains unique ecosystems that are comparable to the mangroves and forests of the Amazon, but they need protection and rehabilitation. For this, a set of measures has been developed to support and restore ecosystems.

REDUCTION OF AIR POLLUTION

reducing the emission of harmful substances into the atmosphere through open monitoring of industrial enterprises and the creation of green buffer zones around them.

ECO-SYSTEM REHABILITATION PROGRAM

The Volga Delta is the largest river delta in Europe and the 8th in the world. It begins at the point where the Buzan branch separates from the Volga channel (46 km north of Astrakhan) and has up to 500 branches, channels and small rivers. Due to a decrease in the level of the Caspian Sea, the area of the delta has increased nine times over the past 130 years.

The unique flora and fauna of the delta are protected by the state as the Astrakhan reserve, and in 1976 it was included in the list of wetlands of international importance. The Volga Delta is a transfer hub for migratory birds; about 20 million individuals are «transplanted» here every year.

Environmental restoration contributes to protecting biodiversity, improving human health and well-being, economic prosperity, climate change mitigation, resilience and adaptation. It is an approach based on engaging communities, scientists and policymakers to address environmental damage and restore a healthier relationship between humans and nature. Combined with conservation and sustainable use, environmental remediation is the nexus needed to move environmental conditions from a state of constant degradation to a state of positive improvement.

The role of environmental restoration is important in achieving social, social, production goals and sustainable development goals.

Now the Astrakhan Biosphere Reserve is engaged in the restoration of ecosystems, which has allocated three reference zones in the river delta. In this example, we can see successful steps to restore the lotus and fish plantations.



1 000 000 ha

(approximate size)

1 - 10 YEARS

PERIOD OF IMPLEMENTATION

EFFECTS:

preservation and restoration of the ecosystem of the region

improving the quality of the environment for the local population

creating conditions for sustainable development of the region



DECREASE
anthropogenic
impact

IMPROVEMENT
ecosystem
management

CORRECTION
ecosystem functioning
recovery
ecosystems

PARTIAL
restoration of natural
ecosystem

COMPLETE
restoration of natural
ecosystem

reducing impact

correction

gradual recovery

“The depth there is shallow, the vegetation is quietly sticking out above the water, in places where you can still distinguish the branches - a bunch of islets and something similar, and below it all gradually passes into the Caspian Sea. Convergent things can be seen in the Mekong Delta and in the mangroves of the Micronesia islands. «

Sergey Abdulmanov,
researcher

RESEARCH AND INNOVATION

CASPIAN DELTA RESEARCH CENTER

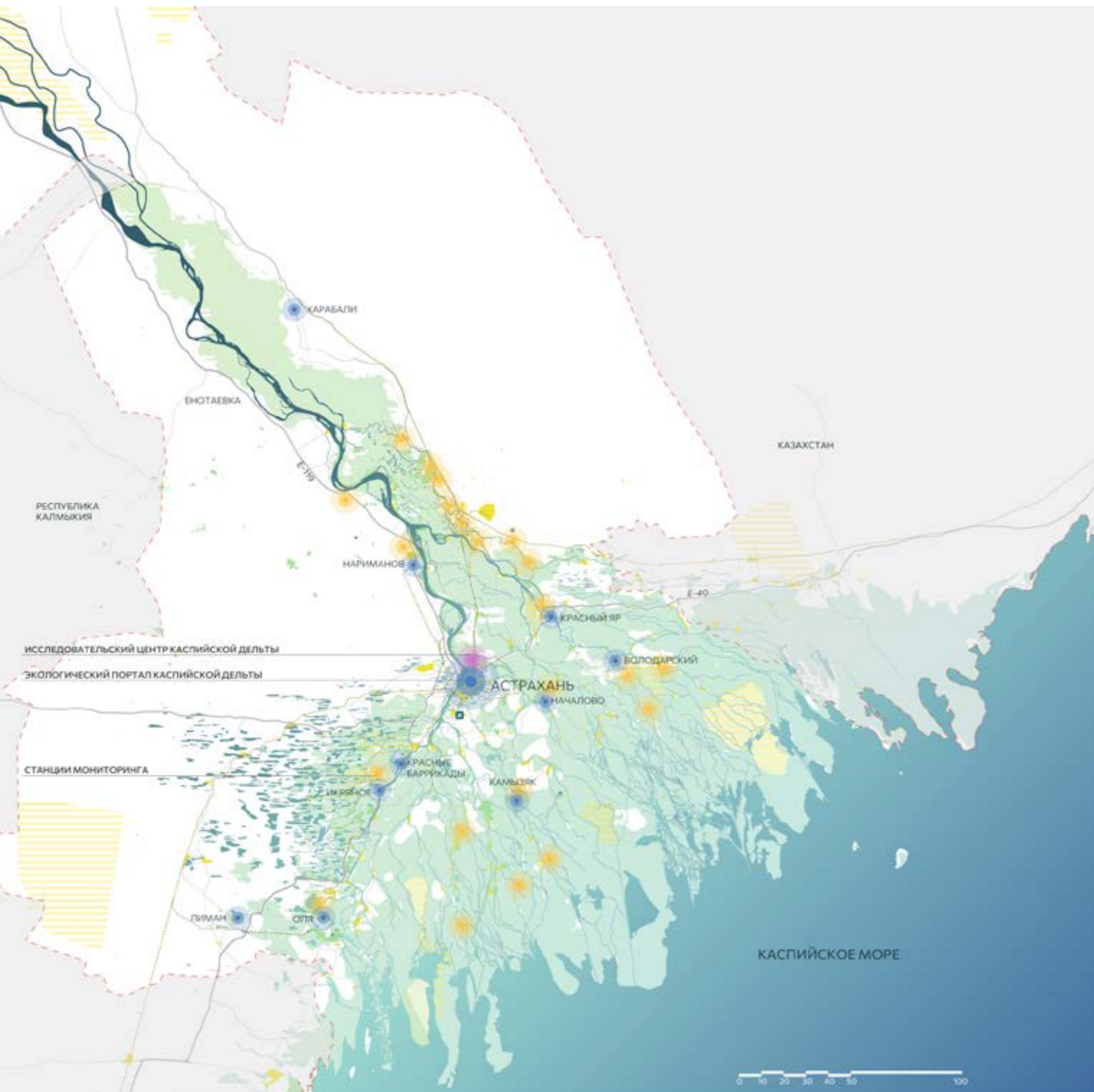
the research center is located in Astrakhan and serves as the main headquarters for the study of the Volga delta and its changes. This is an important cultural and educational point of attraction.

CASPIAN DELTA MONITORING SYSTEM

local monitoring centers are distributed throughout the delta and are subordinate to the main research center. Monitoring centers monitor the state of the ecosystem in specific areas.

CASPIAN DELTA INTERNATIONAL COOPERATION PROGRAM

cooperation between the Caspian countries to address economic issues and climate change within the natural zone of the Caspian



- cities within the agglomeration
- development points
- monitoring stations



RESEARCH CENTER

The research center will become the largest center for the study and conservation of the Volga River and the Caspian region.

MISSION OF THE CENTER:

STUDY AND PRESERVATION OF THE UNIQUE NATURAL AND HISTORICAL HERITAGE OF THE CASPIAN REGION AND ECOSYSTEMS WITHIN THE VOLGA RIVER BASIN AND ADJACENT TERRITORIES.

THE MAIN ACTIVITIES OF THE CENTER:

- Wildlife protection: study and protection of endangered plant and animal species, conservation of biological diversity of the Caspian Delta;
- Specially protected natural areas: participation in the creation, planning and operation of the National Park of the Caspian Delta;
- International cooperation: cooperation with leading international research centers and environmental organizations, implementation of joint research, organization of international conferences;
- Environmental monitoring: collection of data on the results of monitoring the quality of water, air, soil, state environmental supervision, the results of industrial control and the results of scientific research, obtaining, storing and processing data on the state of the Volga River and the Caspian environment, predicting changes and developing a proposal to prevent negative impacts for public authorities;
- Environmental education: publishing a research journal, organizing scientific seminars and conferences, coordinating all-Russian and international environmental organizations in the Caspian region.



Partners

- Astrakhan reserve
- Astrakhan University
- Regional branch of the Russian Geographical

Delta Research Center

Financing

- ФП «Развитие научной и научно-производственной кооперации»
- ФП «Развитие передовой инфраструктуры для проведения исследований и разработок В РФ»
- ФП «Развитие кадрового потенциала в сфере исследований и разработок»

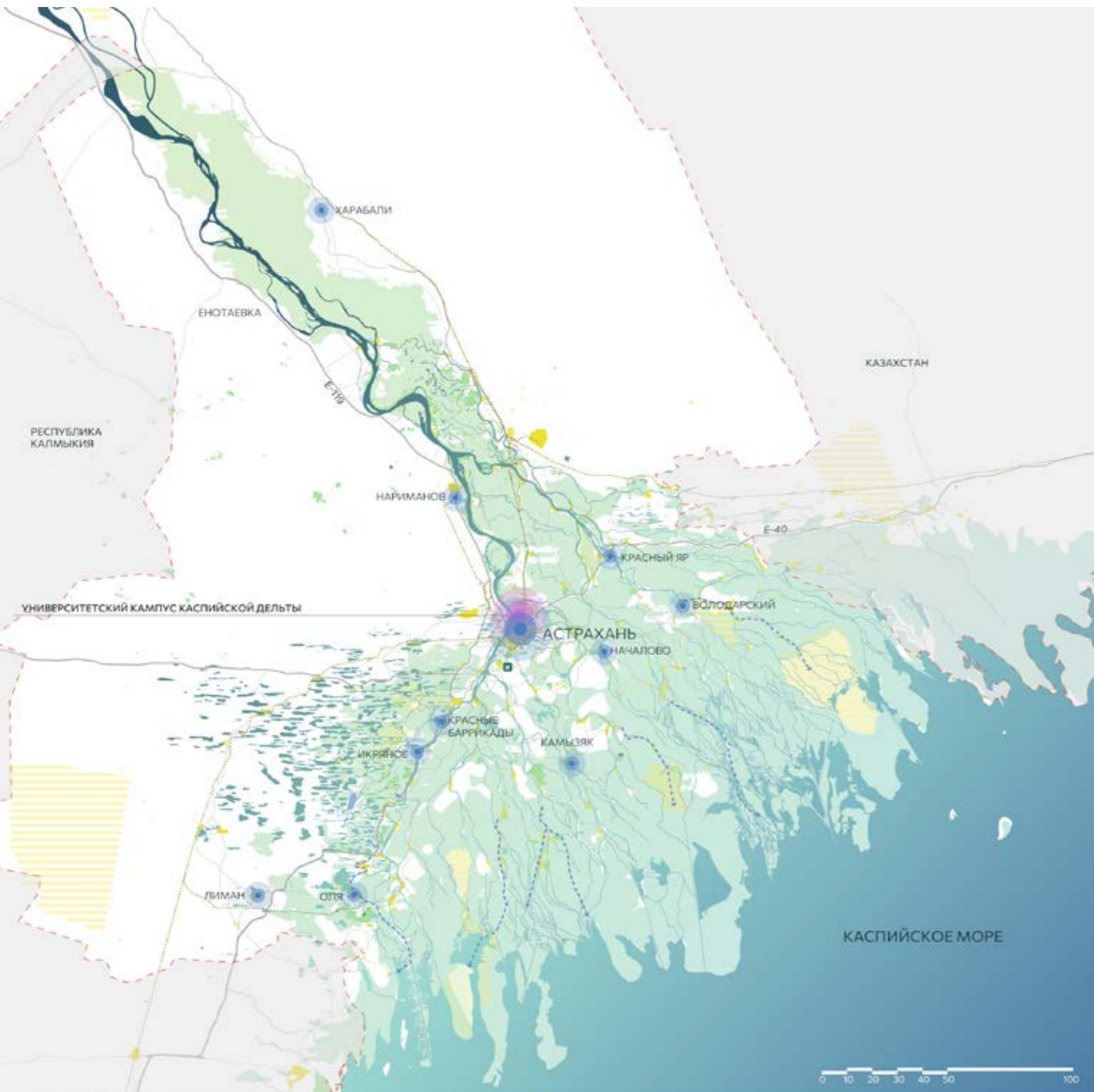
8 000 m2

(approximate size)

200-400 1-2 YEARS

Mln. RUB.

PERIOD OF IMPLEMENTATION



EDUCATION

educational and research center of the Caspian region, which will unite the advanced faculties and research centers of higher educational institutions of the Astrakhan and Caspian regions.

EDUCATIONAL PROGRAM OF THE CASPIAN DELTA

the program will be based on the University Campus for residents of Astrakhan and at the Hospitality Centers for residents of the Astrakhan region.

ECO-TRAILS AND NAVIGATION OF THE CASPIAN DELTA




basic infrastructure for the creation of a network of regional tourist routes with a delicate introduction into natural areas.

VOLUNTEER PROGRAM OF THE CASPIAN DELTA

will be carried out in close cooperation with environmental organizations and environmental movements to study and preserve the river / Волги и экосистемы Каспийского региона.

EXPERT GROUP OF THE CASPIAN DELTA

development of a model for sustainable development of the Caspian Delta in the context of modern economic, political and social changes.

-  cities within the agglomeration
-  development points
-  eco-trails

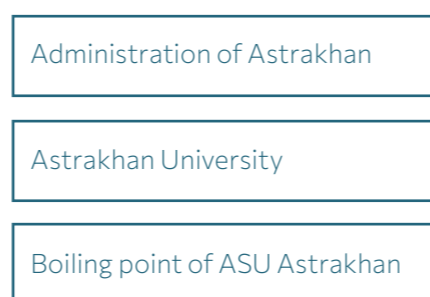
UNIVERSITY CAMPUS OF THE CASPIAN DELTA



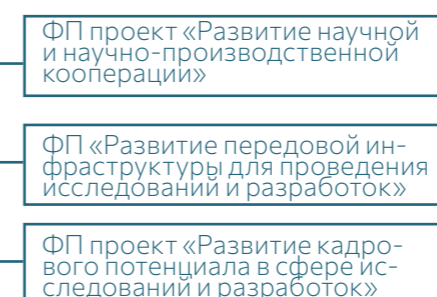
UNIQUE ADVANTAGES:

- 1** Cooperation: international and regional cooperation in the field of natural and exact sciences, international research projects and events, academic mobility programs;
- 2** Education: unique educational programs in partnership with leading universities and high-tech companies, double degree programs, international grants and scholarship programs;
- 3** Science: the advanced research center of the Caspian Delta, the largest center for the study and conservation of the Volga River and the Caspian region;
- 4** Infrastructure: a single platform for education and leisure, a wide range of accommodation and food options, modern scientific laboratories and classrooms, the presence of gyms and facilities.
- 5** Social interaction and professional opportunities: a close-knit scientific community, a rich program of events, interaction with international experts, representatives of business and government.

Partners



Financing



10 ha
(approximate size) 38 900 Mln. RUB.
3 -5 YEARS

PERIOD OF IMPLEMENTATION

EFFECTS:

- development and support of young talents
- creation of new jobs for highly qualified specialists
- development of international cooperation of the region in research and educational activities

CULTURE

Culture can be a powerful tool for supporting tourism, stimulating new development and improving the image of a city. We propose to focus on three key projects to achieve the image of the «cultural capital» with its unique identity:

MUSEUM OF THE CASPIAN DELTA

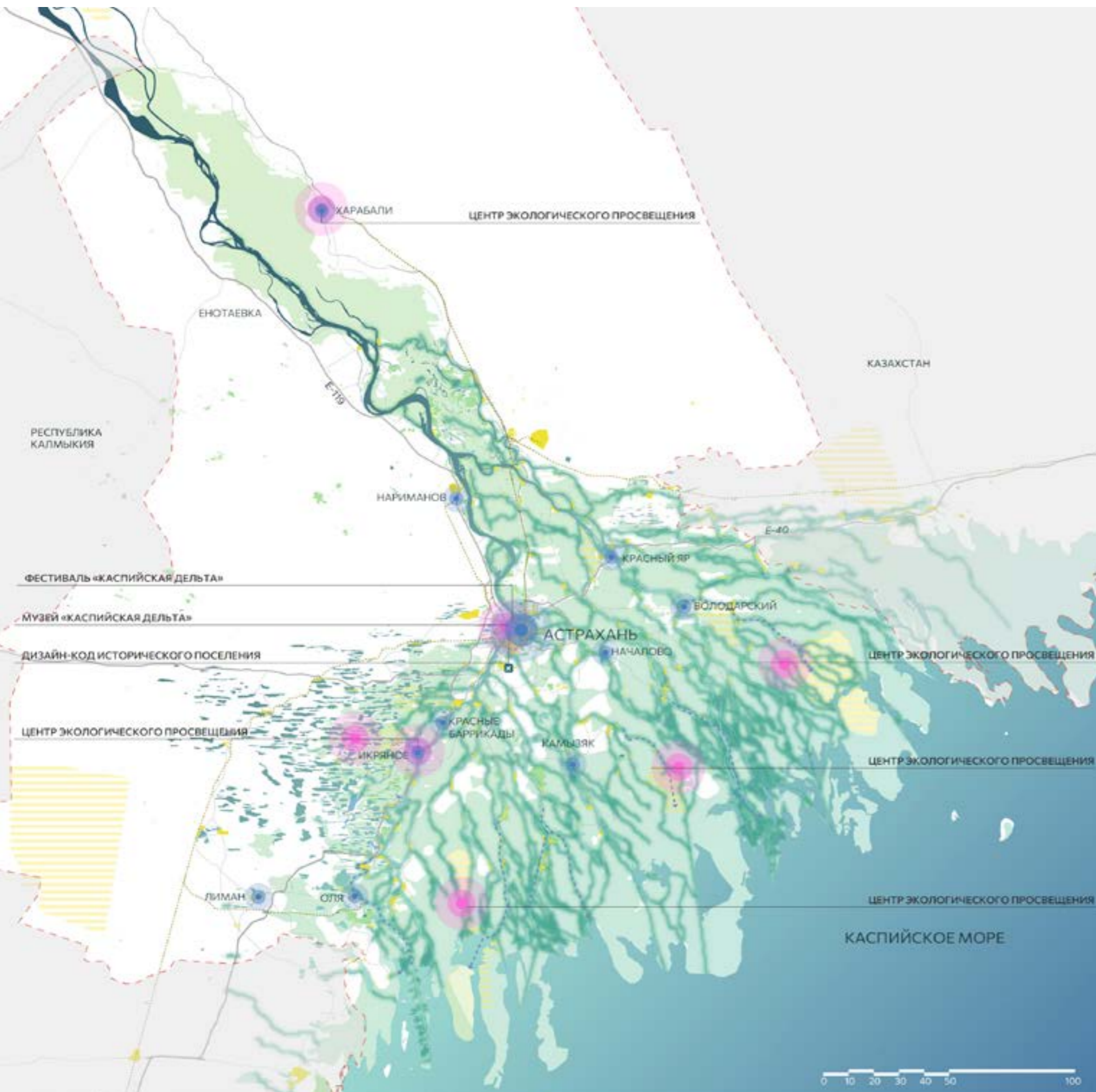
a major cultural focus will help promote the uniqueness of the region and raise environmental awareness

ENVIRONMENTAL EDUCATION CENTERS

will unleash the research and educational potential of the Caspian Delta for visitors and school groups

CASPIAN DELTA FESTIVAL

will help to loudly announce Astrakhan and support the economy.



CASPIAN DELTA MUSEUM



Partners

Ministry of Culture and Tourism

Astrakhan University

Tourist Information Center

Eco-system rehabilitation program

Financing

Ministry of Culture of the Russian Federation

FP project «Cultural environment»

FP «Conservation of biological diversity and development of ecological tourism»

14 500 m²
(approximate size)
2 BLN. RUB.
3 - 10 YEARS

PERIOD OF IMPLEMENTATION

EFFECTS:

unlocking the tourism potential of the region

variety of cultural activities for townspeople and tourists

creation of new jobs for highly qualified specialists

MUSEUM PROGRAMS:

- 1** Guided tours of the permanent exhibition of the museum with ecologists, researchers and volunteers;
- 2** Audio and video tours in partnership with technology companies (MTS, IZI Travel);
- 3** Thematic exhibitions dedicated to environmental problems of the Caspian region, partnership projects with international museums and research centers;
- 4** Art and Science - projects at the intersection of natural sciences and arts, drawing attention to the environmental problems of the Caspian region;
- 5** Ecological quests and quizzes for adults and children;
- 6** Educational lecture hall and cinema for schoolchildren and students;
- 7** Interactive programs - immersion in the history of the Caspian Delta (5D cinema), interactive walks and excursions around the museum (Google Arts & Culture, Google Street View-tool)

MISSION OF THE MUSEUM

Collect, preserve and pass on to future generations materials and knowledge on the study of the Caspian Delta.

ORGANIZATION OF SPACE

The exposition space of the museum will be built in accordance with the key areas of the museum's activities - the department of history and local history, the department of geography and tourism, the department of biology, flora and fauna, the department of ecology and nature protection, the department of renewable energy sources, the «Museum of Water», lecture halls, open scientifically -research laboratories and conference rooms.




ENVIRONMENTAL EDUCATION CENTERS

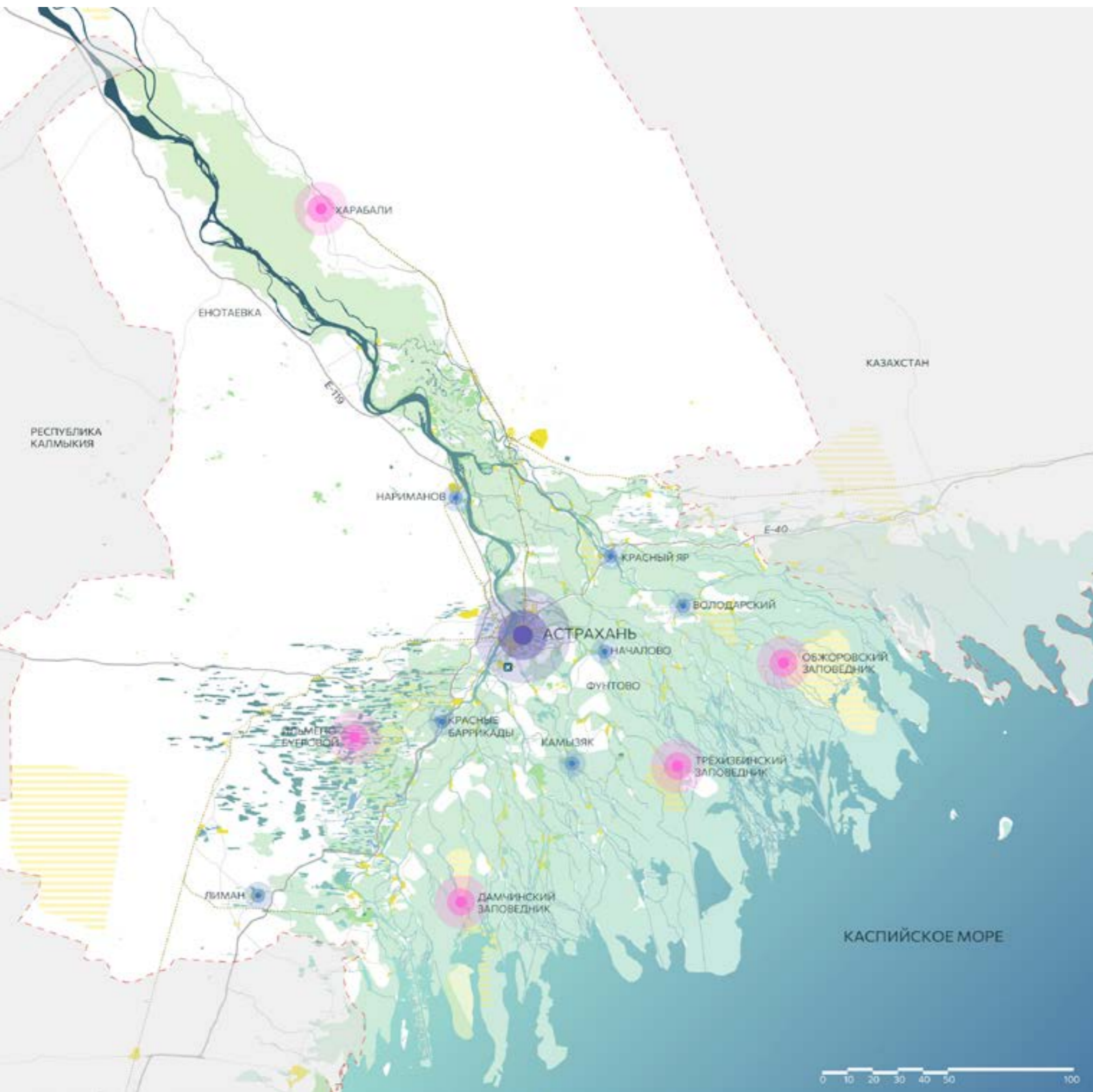
Interpretation centers are created to disseminate knowledge and information about the unique historical, cultural and natural heritage of the Caspian delta. Such centers can become new points of attraction for citizens and tourists, and unleash the potential of remote areas of the Astrakhan region. The centers will be located in the Astrakhan region next to iconic objects or landmarks reflecting the historical, geographic or emotional identity of the region.

Unlike traditional local history or natural science museums, interpretation centers are platforms for telling about the region's heritage using non-standard educational and excursion formats and modern technologies.

PROGRAMS AND SERVICES:

- 1** permanent and temporary exhibitions about the history, geography and nature of the region;
- 2** lectures and educational workshops on the ecological development of the region, preservation of cultural heritage and sustainable agriculture;
- 3** screenings of documentary entertaining and educational films about the history of the region for children and adults;
- 4** creative activities for children and schoolchildren;
- 5** «Days of the Delta»: festival programs dedicated to the history and heritage of the Caspian delta.

-  agglomeration center
-  cities within the agglomeration
-  development poles



DELTA FEST

PURPOSE:

Promotion of the Volga River Delta as a key water, economic, tourist and creative resource of the Astrakhan region, disclosing its potential for citizens and tourists.

Mission:

The festival aims to rediscover the significance of the Volga River Delta for townspeople and tourists.

FORMAT:

The annual festival will take place in September - the most pleasant season for visiting Astrakhan due to the comfortable temperature and colorful nature (lotus bloom, golden trees).

The duration of the festival will be 21 days, during which cultural and entertainment, cultural, educational and social events will be held. The events of the program are planned in such a way as to maximize the activation of the historical center of Astrakhan, the Volga embankment and launch tourist routes to the settlements of the Volga River Delta.

**80 Mln.
RUB.**

70% sponsor
money(Lukoil.

Gazpromneft)

**3 - 10
YEARS**

PERIOD OF
IMPLEMENTATION



IDEAS:

- 1** Delta and Volga River as a place for recreation and tourism;
- 2** Delta and Volga River as a natural resource that needs to be taken care of;
- 3** The Volga River and its branches as key transport arteries linking Astrakhanский ре-
- 4** Delta and Volga River as a source of water and creative energy;
- 5** Delta and Volga River as a Determinant Factor in the Development of Agriculture and

EFFECTS:

formation and promotion of an attractive Delta brand

a variety of leisure activities for citizens and tourists, saturation of the eventful life of the city

development of festival and youth tourism, attracting a new segment of tourists

THE PRINCIPLES OF FORMING A CULTURAL PROGRAM:

- 1 Environmental safety and education**
The program of activities is developed in accordance with the criteria of environmental safety, the implementation of activities should not threaten the preservation of the biological diversity of the region, its ecosystem. Each event should contribute to
- 2 Benefits for the local community**
Each event should leave useful infrastructure or tourism facilities for the local community.
- 3 Longevity and scalability**
The festival program is designed for a long-term perspective with the subsequent scaling of events in the Astrakhan region, reflecting the ongoing changes in the Volga River Delta and its branches.
- 4 Multi-format**
The program assumes a combination of classic and modern event formats, offline and online events.



RECOGNIZABLE BRAND AND PROMOTION PROGRAM OF THE CASPIAN DELTA



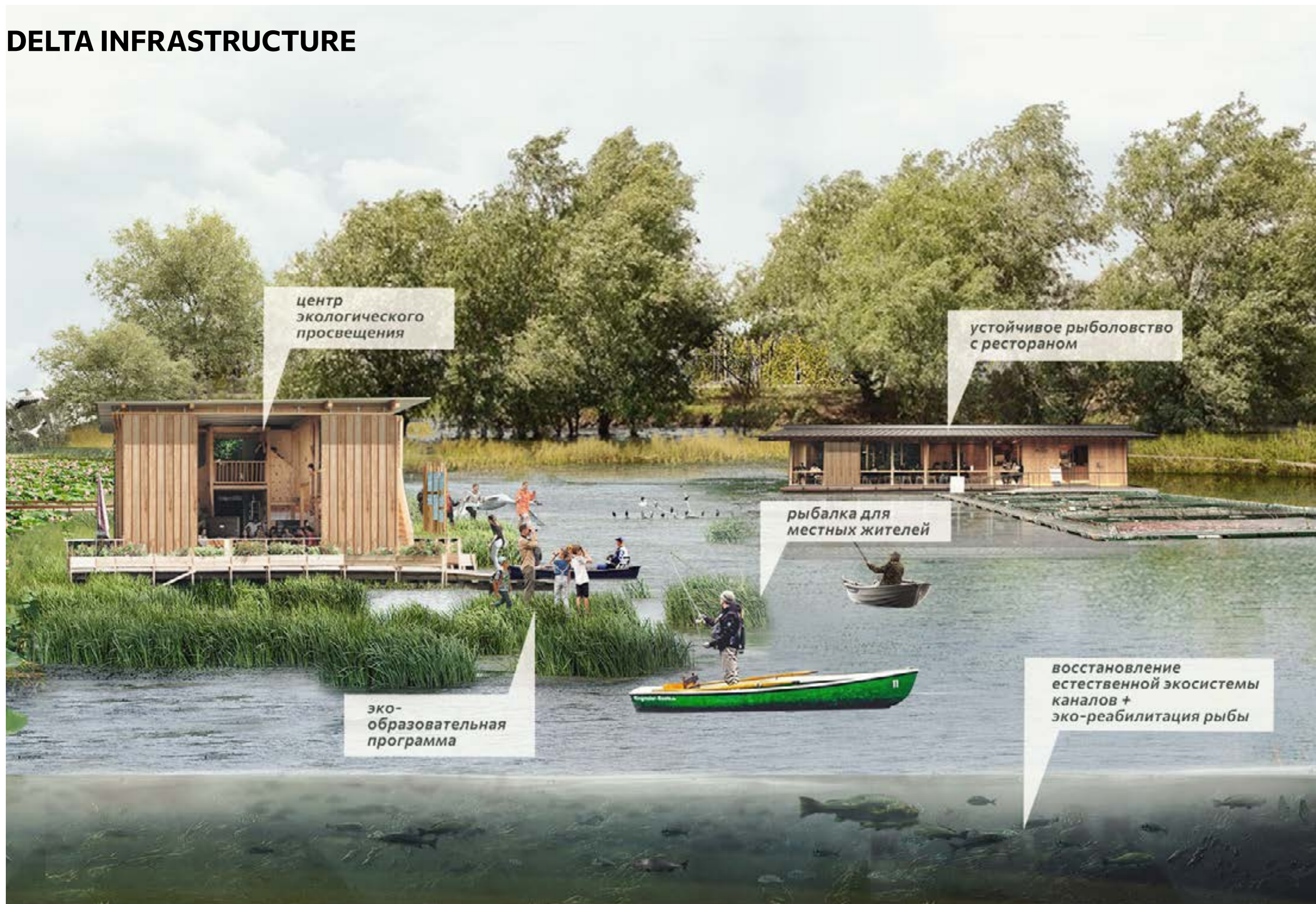
КАСПИЙСКАЯ ДЕЛЬТА
CASPIAN DELTA



DELTA INFRASTRUCTURE



DELTA INFRASTRUCTURE



DELTA INFRASTRUCTURE



видовой пирс

башня для бердвотчинга

эко-туризм

туристический лодочный шаттл

DELTA INFRASTRUCTURE





03.

GREEN
INFRASTRUCTURE
OF THE CITY

SEVEN PROJECTS CREATING AN ADAPTIVE GREEN CITY

The strategy consists of the creation of seven complex projects, each of which will help create an adaptive urban environment and use natural processes for the development of the urban economy.

We propose to form a «green» infrastructure of the city, which will allow Astrakhan to adapt to climate change:

- additional landscaping of existing green areas
- control over the expansion of the boundaries of the city of Astrakhan
- using the potential of small rivers
- increasing the efficiency of the use of agricultural land
- reduced car traffic through the city center

PROJECT 1
VOLGA EMBANKMENT

PROJECT 2
GREEN CANALS

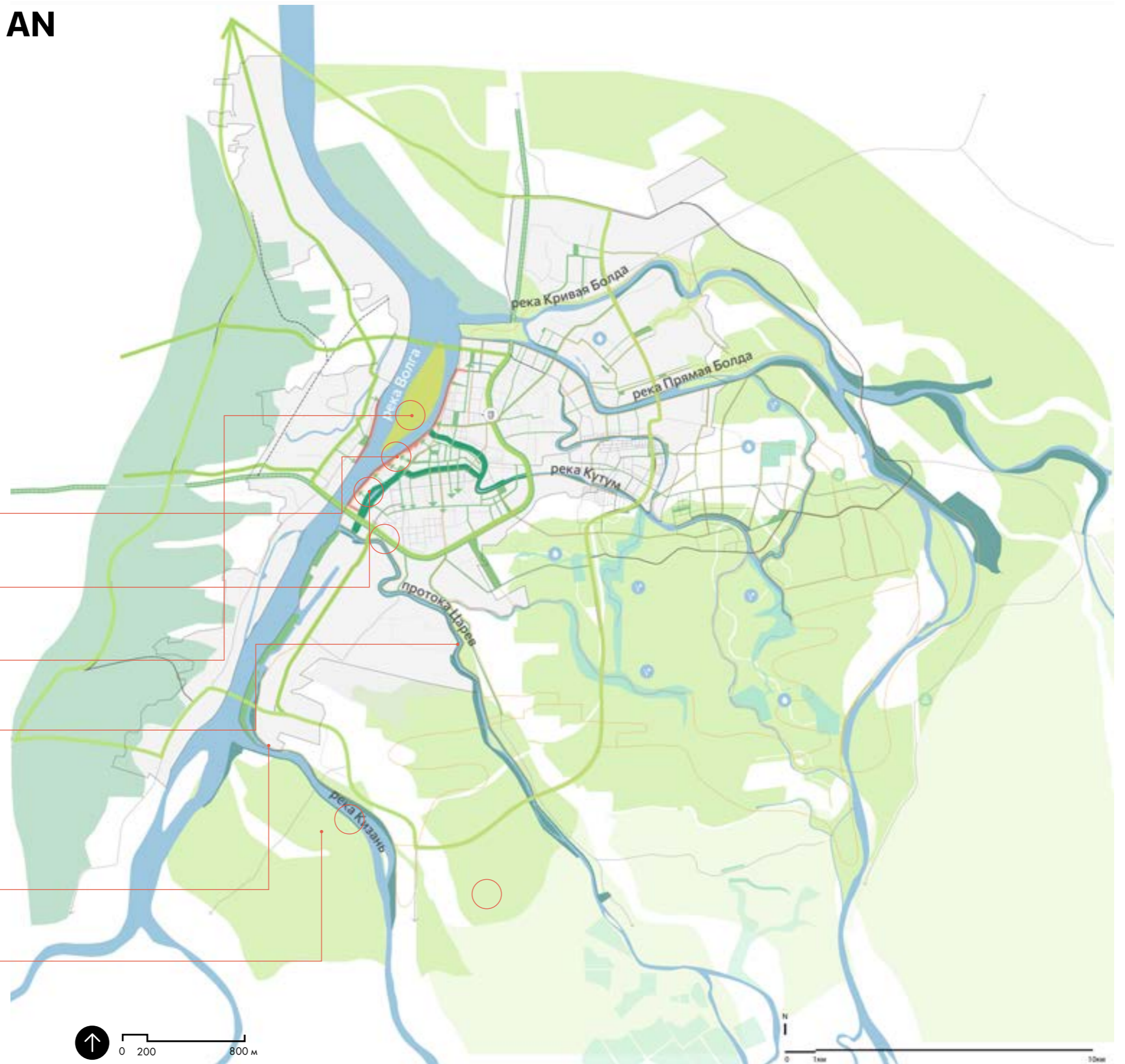
PROJECT 3
ECO-ISLAND

PROJECT 4
TACTICAL GREENING

PROJECT 5
CENTRAL RING ROAD

PROJECT 6
RIVER ARMS

PROJECT 7
PRODUCTIVE GREEN BELT

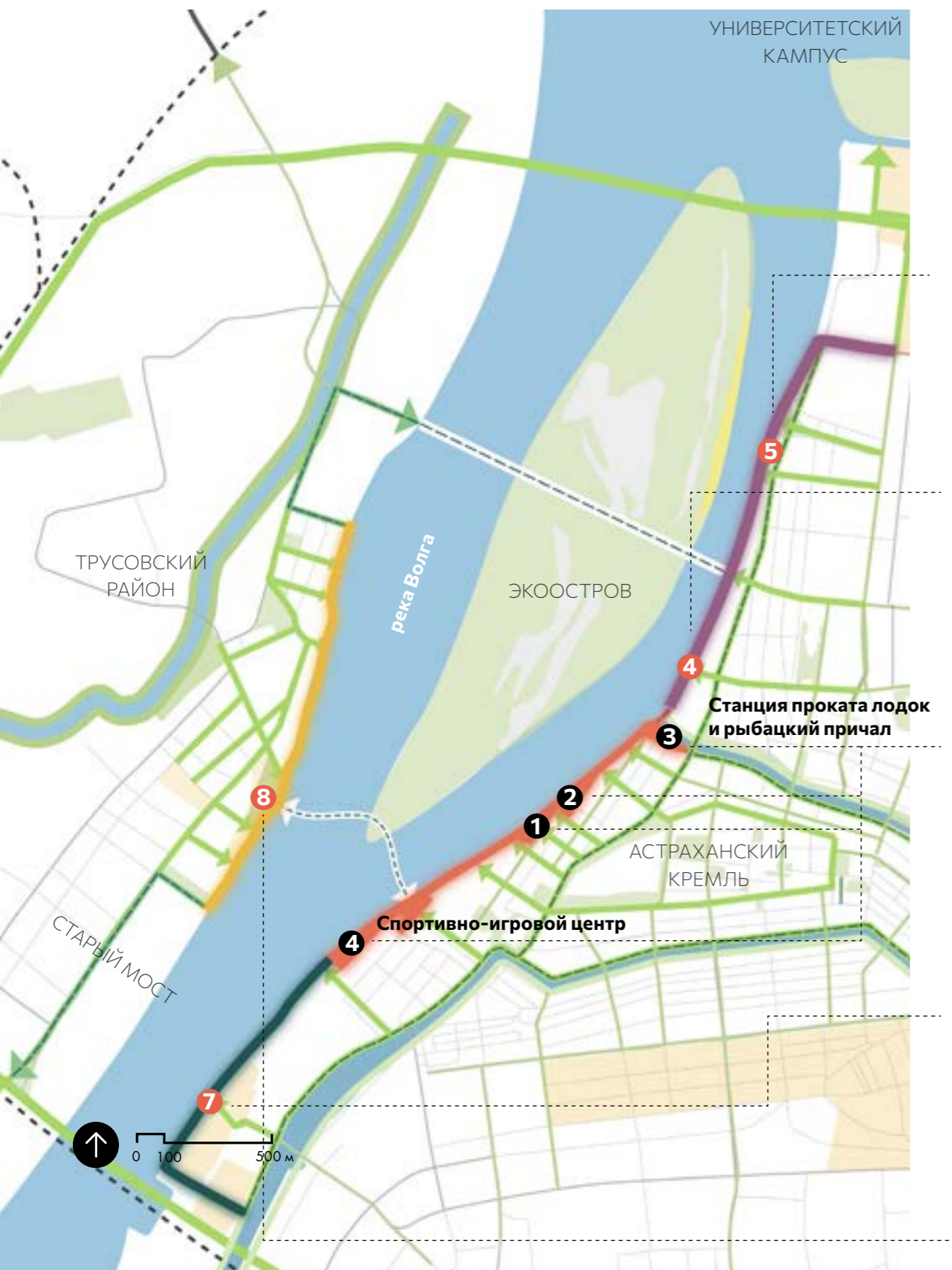


ACTIVATED CENTERS OF THE VOLGA EMBANKMENT

Eight key points stand out along the entire length of the embankment, each of which is an active center of attraction with a specific function.

3 km
length of the
existing Petrovskaya
embankment

9,5 km
total length of
embankments by 2032



Sports park

On the territory closest to the University campus of the Caspian delta, it is proposed to organize a sports park with skate grounds, boat stations and floating pools



Tourist quarter of the Delta

On the embankment of the tourist quarter of the Caspian Delta, it is proposed to create large event venues with a stage and amphitheaters for holding city concerts and forums.



Historical Petrovskaya embankment

The existing section of Petrovskaya Embankment is being reactivated due to the new cultural program of the embankment and the annual Delta Fest festival, for which Petrovskaya Embankment will become the launching pad. In addition, the embankment will be saturated due to additional multi-level landscaping, the creation of awnings, terraces of Easter cake cafes, as well as a pavilion в котором могут



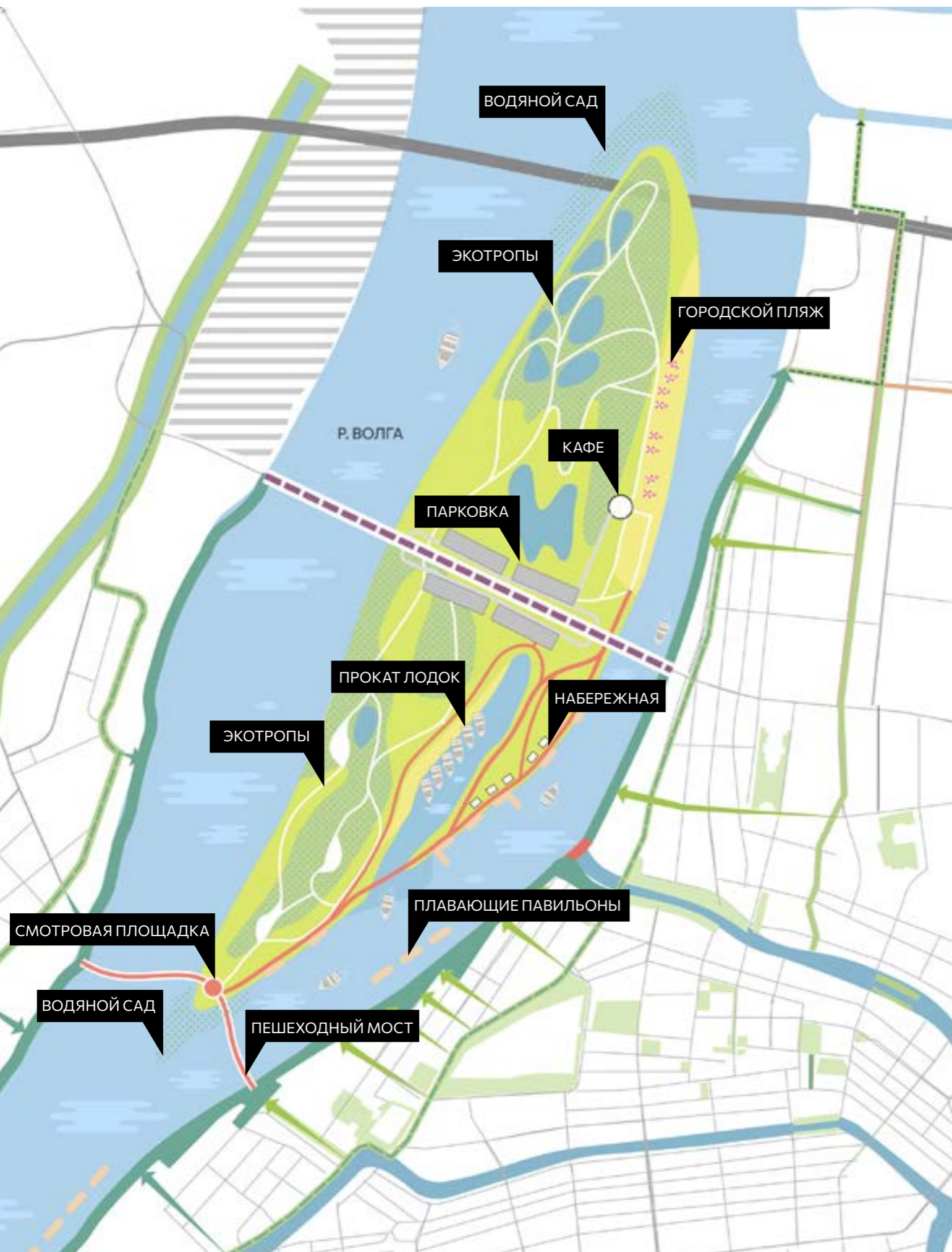
Viewpoint

On the extreme southern section, as a final element, a cantilever observation deck will be made with a view of the Old Bridge and the eco-island



Парк культурного центра в Трусовской водонапорной башне

На месте Астраханского Водоканала в Трусовской водонапорной башне предлагается открыть культурный центр с прилегающим к нему парком и набережной, которая свяжет культурный центр с образовательными учреждениями (школами и университетами) с помощью линейного зеленого пространства



ECO-ISLAND

3 га

the area of the existing beach



85 га

urban eco-park improvement area



160 га

ecological zone of the island with reduced anthropogenic load, closed for permanent access



245 ГА

total area of the ecopark



TERRITORY DEVELOPMENT PRINCIPLES:

1. Improving the walking and cycling accessibility of the island for the townspeople
2. Creation of a model of the research site
3. Access by water to the island (historical value)

городской пляж

экотропы

водяной сад

плавающие павильоны

смотровая площадка



Существующие объекты:

- аптека
- памятник
- магазин
- кафе
- ресторан
- объект культурного наследия
- художественная галерея

Проектные решения:

- информационный центр
- пирс
- велопарковка
- кафе

- территория «зеленых каналов»
- центры развития Астрахани
- открытие свободного протока между Волгой, каналом Варвазия и рекой Кутум

GREEN CANALS

MAIN RECREATIONAL AREA OF THE HISTORIC CENTER

The greening of the existing canals on May 1 and the Kutum River is designed to create the main recreational zone in the historical center of the city, which will encircle the historical center (Posad, Kos) and at the same time connect it with the territories around it, including the development centers of Astrakhan (KRT). An important task is also the opening of locks and the restoration of the natural channel between the Volga and the Varvatsiya canal, in order to prevent stagnation of water and create an environmentally



400

new trees planted along the green canals



20,5 км

length of bike paths along the «green» canals



44,5 га

the total area of the recreational zone of «green channels», landscaped with various multi-tiered vegetation

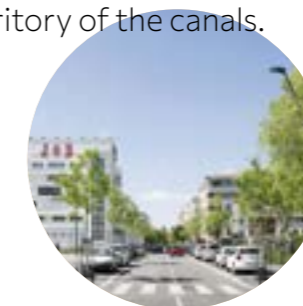
THREE KEY FUNCTIONAL CENTERS

Key functional centers with commercial functions are being created along the «green» canals - near the Lovers, Victory Bridge, and the Russia-Azerbaijan Friendship Bridge near the Volga Zaton. Also, additional parking spaces will be organized near them, which will reduce the traffic load on the territory of the canals.



7

new commercial outlets with cafes and tourist information center



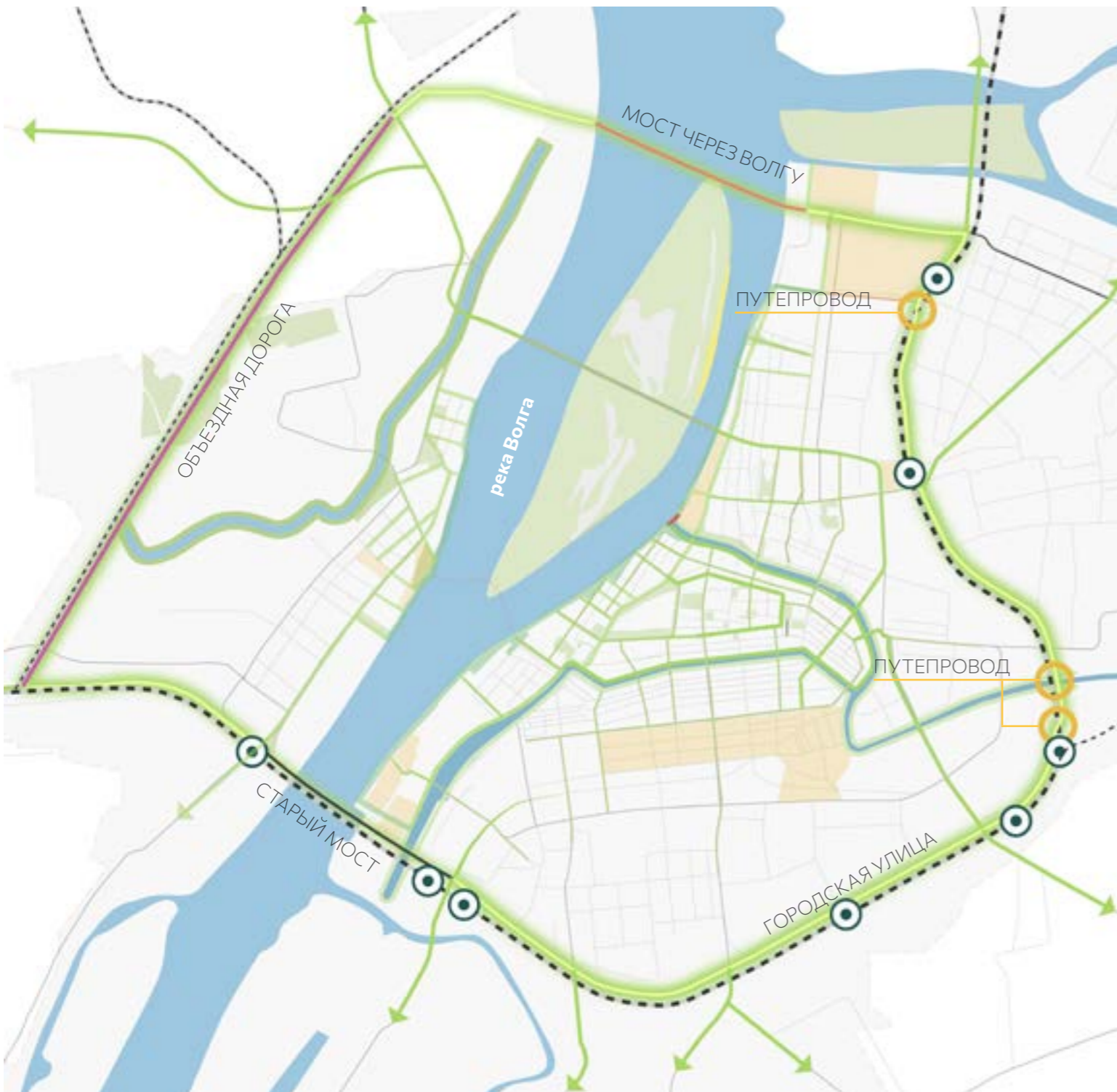
520

new parking spaces will appear near the canals due to multi-level parking lots



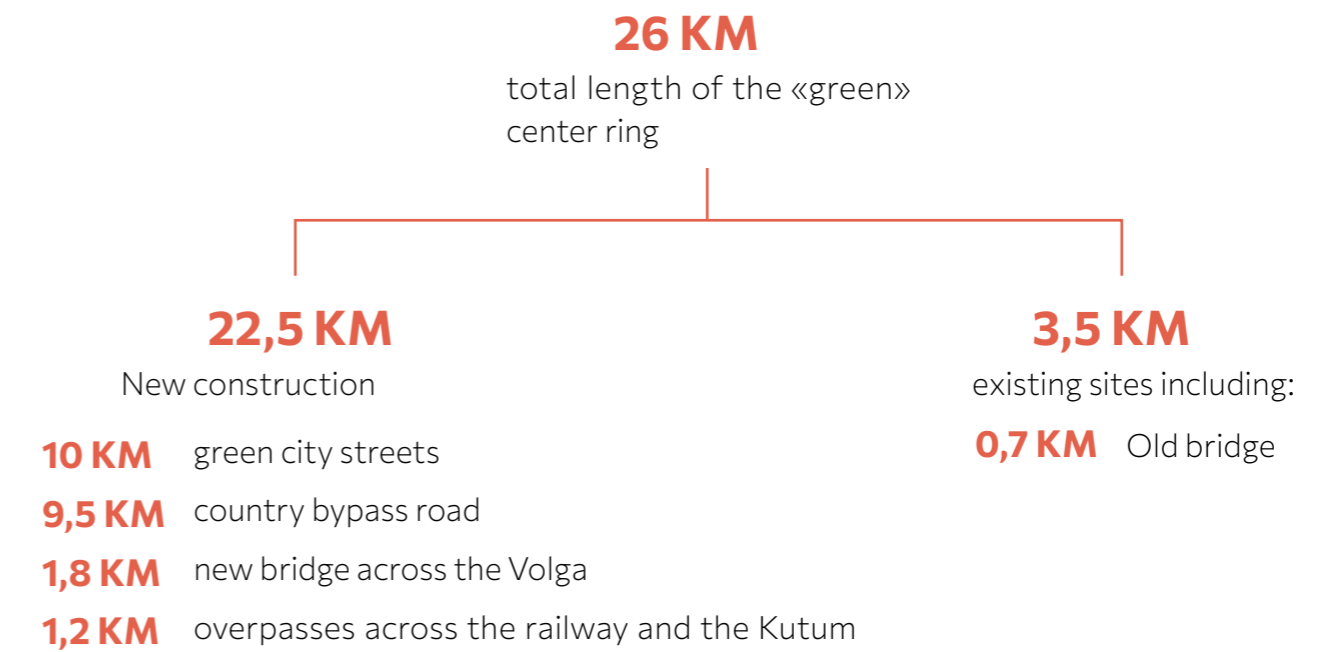
2

berths for boats with the possibility of renting



CENTRAL RING ROAD

The railway will connect the development centers of Astrakhan by passenger traffic between the stations Astrakhan-2 and Trusovo using seven existing, two new and one relocated passenger platform. Electric trains will run along the railway line with an interval of 20-30 minutes during peak hours. The trains will be integrated into the city's passenger transport system.



The ring road will consist of two sections: a boulevard-type city street within high-density urban development and a bypass road on the right bank of the Volga.

- территория «зеленых каналов»
- инфраструктурные центры города
- железная дорога

- Тип 1: городская улица
- существующий мост
- Тип 2: объездная дорога
- новый мост
- путепровод над железной дорогой
- пассажирские ж/д платформы



Городская улица



Объездная дорога на правом берегу

PRODUCTIVE GREEN BELT

Green links along rivers lead from the city center to its periphery, which is bounded by the Green Belt, in order to protect the city from sprawl and stimulate compact development within existing boundaries and redevelopment of industrial areas. The Green Ring includes parks, farmland and forests. All this is connected by pedestrian and bicycle paths, public transport lines.

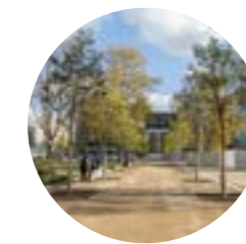


29 500 ГА

the area of the production green belt around Astrakhan

20 870 ГА

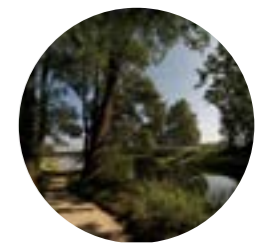
area of the city of Astrakhan



neighbor park



nature Park



river promenades



orchards



flooded areas



points of attraction (farmers markets)

2000 ГА

area of the territory for new development

19

points of attraction for tourists and city residents in the green belt

20.5 KM

radius of the green belt around the city

46% of the green belt is agricultural land. Thanks to high quality soils and favorable climatic conditions, Green Belt farms and businesses provide a variety of local food products, making the Green Belt cost effective.

- эко-остров
- затопляемые территории
- набережная Волги
- зеленые коридоры
- соседский парк
- туристические маршруты
- природный парк
- точки притяжения
- речные променады
- производительный зеленый пояс



ЗЕЛЕНЫЙ ПОЯС

РЕЧНОЙ РУКАВ

РЕЧНОЙ РУКАВ

РЕЧНОЙ РУКАВ

УНИВЕРСИТЕТСКИЙ
КАМПУС

ТУРИСТИЧЕСКИЙ
КВАРТАЛ

Ж/Д ВОКЗАЛ
«АСТРАХАНЬ-1»

ЖИЛАЯ ЗАСТРОЙКА
КРЕАТИВНЫЙ КЛАСТЕР

ЭКООСТРОВ

КОЛЬЦЕВАЯ
АВТОДОРОГА

КОЛЬЦЕВАЯ
АВТОДОРОГА

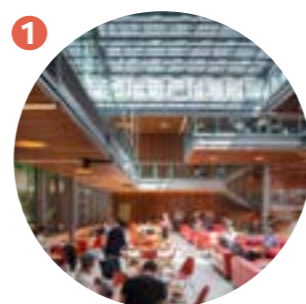


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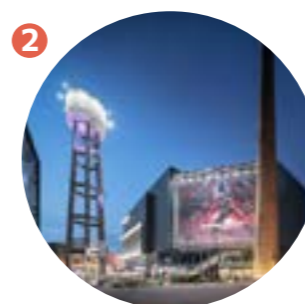
CITY HUBS

EIGHT DEVELOPMENT CENTERS OF ASTRAKHAN

The future development centers of Astrakhan (CDT) are located within the new central road ring and are linked by «green corridors», forming an integral urban structure.



Caspian Delta University Campus



Tourist quarter of the Caspian Delta



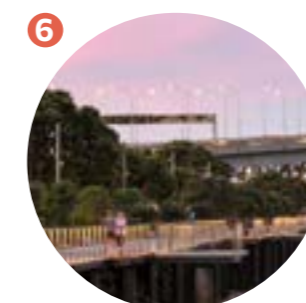
Redevelopment for residential development



Reconstruction of the square and the railway station «Astrakhan - 1»



Спортивно-развлекательный центр

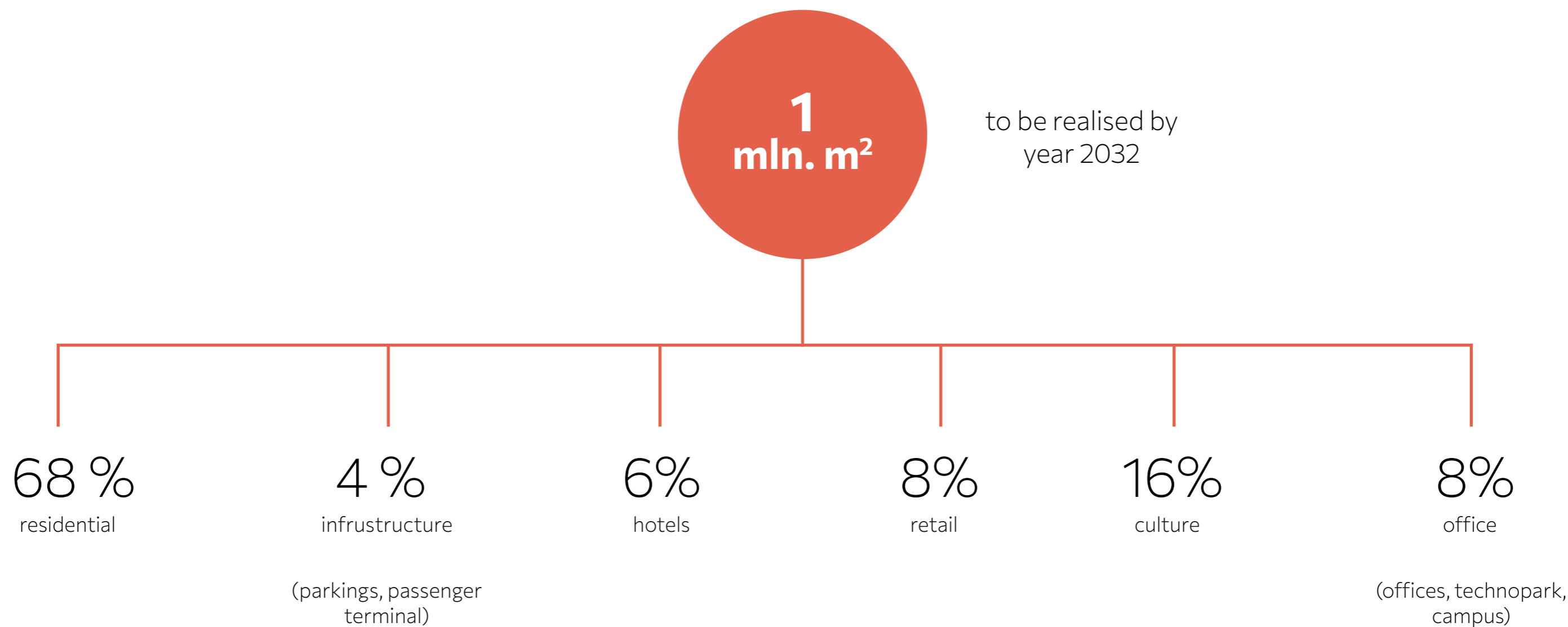


Sports and entertainment center



creative cluster Trusovsky quarter

EIGHT HUBS WITH ANCHOR PROJECTS



SCENARIOS FOR THE IMPLEMENTATION OF THE PROJECT OF THE UNIVERSITY CAMPUS OF THE CASPIAN DELTA

We propose to consider three spatial scenarios for the creation of an international Caspian Delta Campus. These scenarios answers the recommendations from the федеральный проект «Развитие инфраструктуры для научных исследований и подготовки кадров» национального проекта «Наука и университеты» for integrated campus effects.

- The first base scenario is the one currently envisioned project of out-of-center campus with a mixed of research facility, technopark, co-living and sports facilities.

- + ease of implementation (green field).
- lack of interactions with existing universities.
- lack of positive effects on the city development.

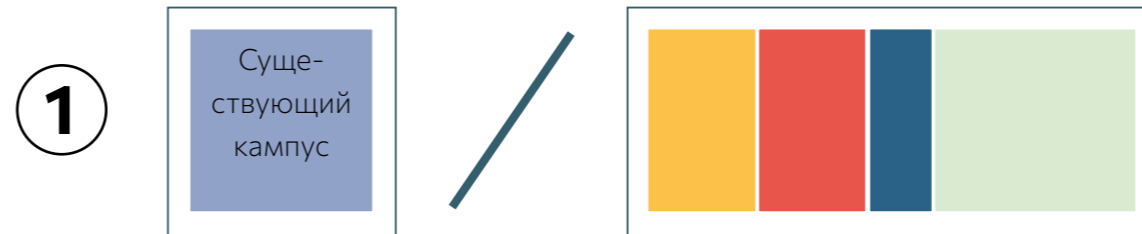
- The second scenario is a hybrid model, where under-utilised industrial land in the vicinity of the existing universities are redeveloped into a technopark with offices, co-living and retail functions. In addition, the island is made accessible and turned into an eco-park for outdoor sports in link with the existing stadium. The research and

- + more interaction with the university
- + campus participates in the improvement of the city
- medium difficulty of implementation

- The third scenario (recommended) is the most ambitious one, where the island is hosting an iconic research center and more industrial land are redeveloped to host additional leaning facilities, sports facilities and co-living

- + iconic development
- + campus participates in the improvement of the city
- + maximise the synergy between education and research by sharing the same district
- difficulty of implentation

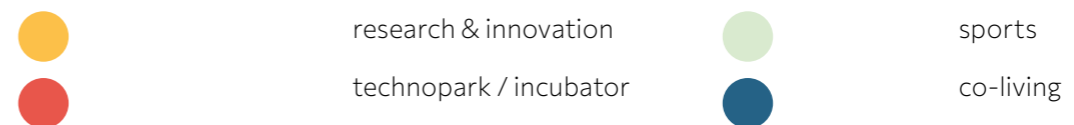
Base Scenario : Existing Campus + Out of Center Campus



Alternative scenario 1 : Hybrid City Campus + Out of Center Research Center



Alternative scenario 2 : Full City Campus (recommended)





UNIVERSITY CAMPUS CASPIAN DELTA



The recommended campus development center implies the integration of the campus into the existing urban environment in the immediate vicinity of universities (AGASU, AGTU, AKVT). The strategy proposes the reactivation of existing public spaces, the construction of a modern technopark, as well as an anchor project - a research center on the island. Oblivnaya, which will become the main recreational area of the district.

103 000 M²

University campus
(technopark + residential
development)

120,6 ГА

the area of the eco-park on the
island

UNIVERSITY CAMPUS RESEARCH CENTER



TOURIST QUARTER OF THE CASPIAN DELTA



Turisticheskiy kvartal Kaspiyskoy Del'ty stanet tsentrom, sovmeshchayushchim delovuyu, turisticheskuyu i kul'turnuyu zhizn' goroda na odnoy ploshchadke. Kvartal budet vdokhnovlyat' gorozhan na izucheniye prirody i kul'tury del'ty Volgi, povyshat' osvedomlennost' ob unikal'nykh vozmozhnostyakh regiona, provodit' krupnyye

kul'turnyye i delovyye meropriyatiya. Proektom predlagayetsya sokhranit' industrial'nuyu estetiku porta posredstvom sokhraneniya rechnykh kranov na territorii novogo Kvartala

Show more

82 050 м²

total area of development in the tourist area of the Caspian Delta

51,7 ГА

area of public spaces on the territory of the former cargo port with a view of the Volga



TOURIST QUARTER OF THE CASPIAN DELTA





05.

ASTRAKHAN
HISTORICAL CENTER

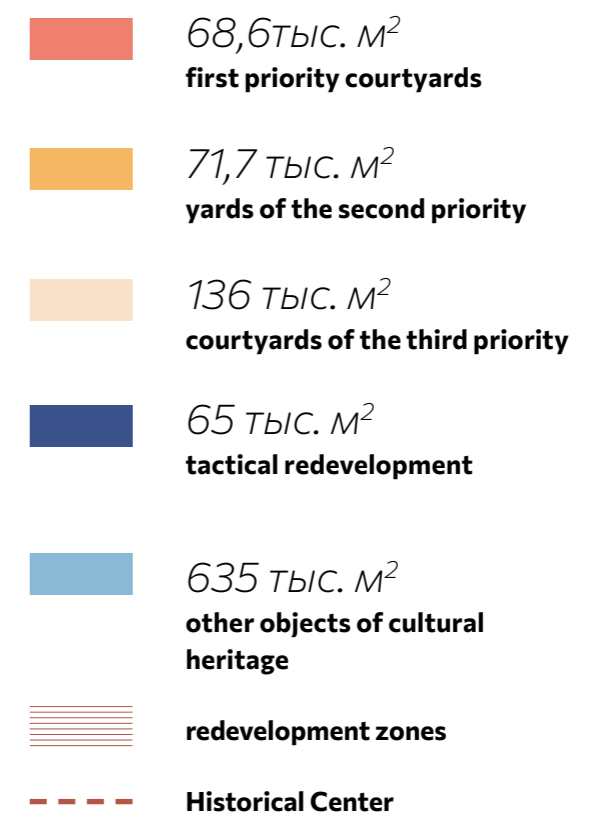
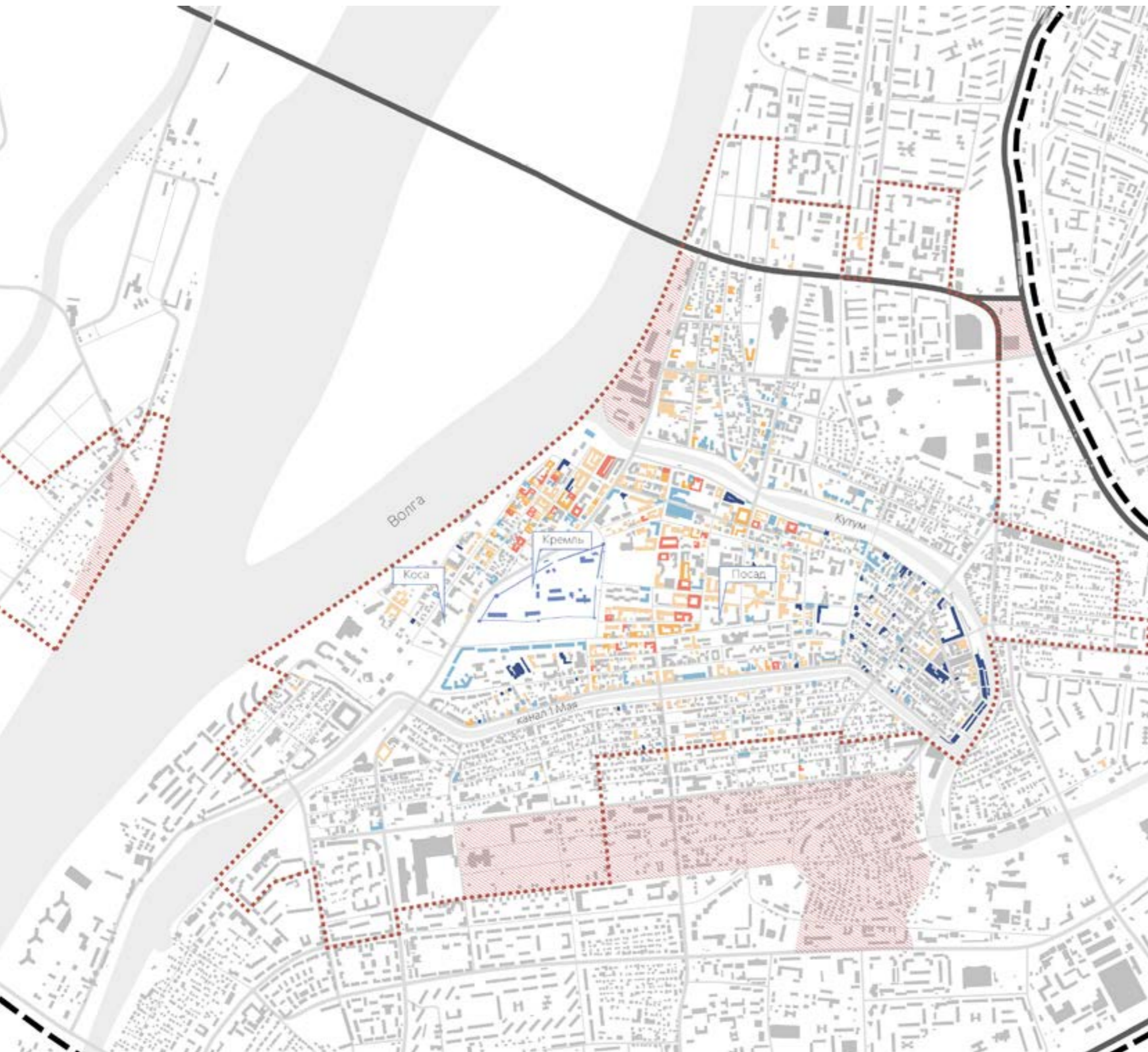
GENERAL STRATEGY

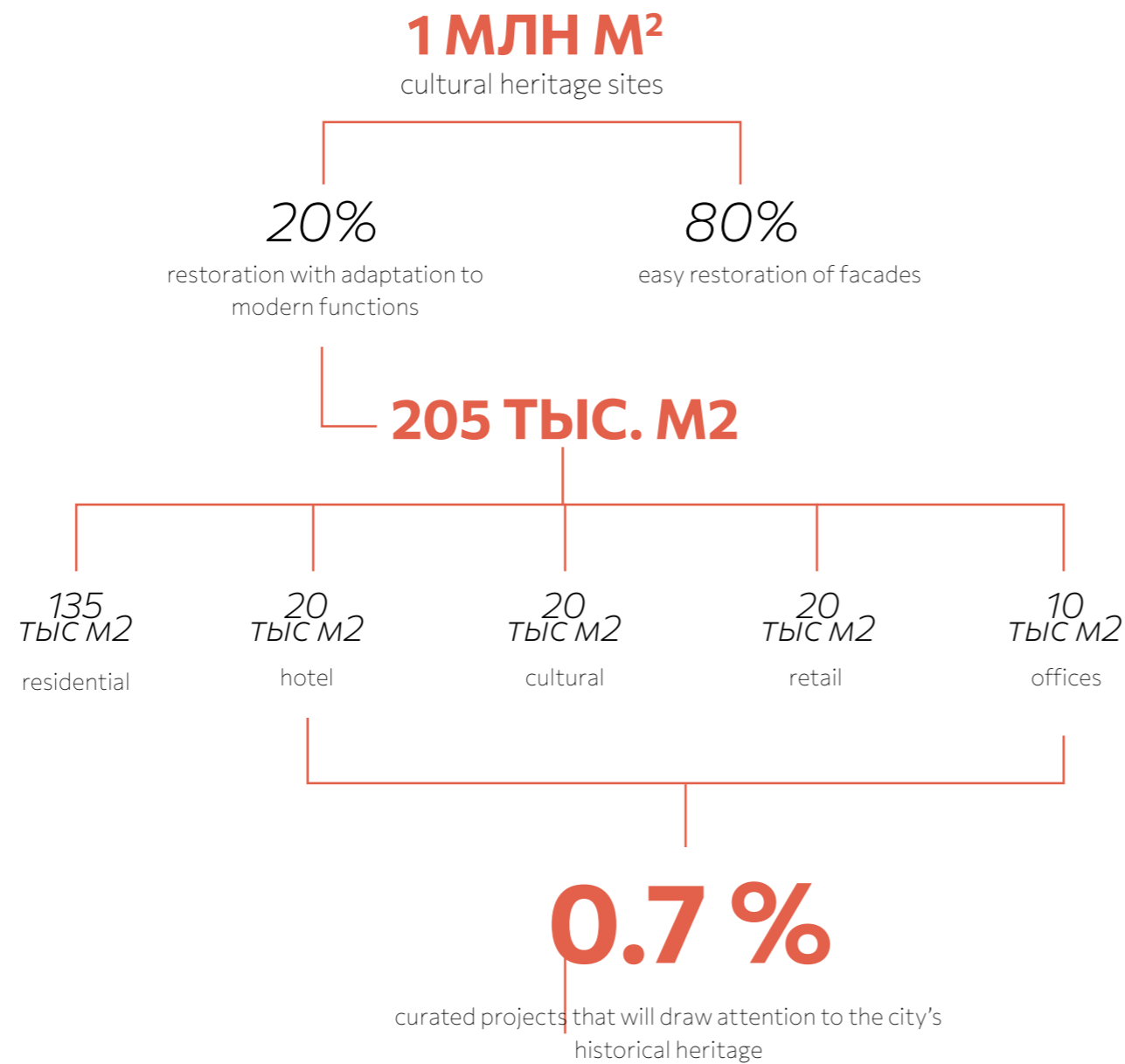
STEP-BY-STEP SAVE PLAN

The proposed plan for the preservation of the heritage of the historical center of Astrakhan is aimed at creating recognizability of Astrakhan at the national and international level.

Its task is to strengthen the cultural landscape and connections between individual sites; launch a cultural program and communication that will add value to the heritage in the eyes of residents; to develop models of activation and restoration of cultural heritage with adaptation to anchor cultural and social functions. All this will strengthen the role of Astrakhan as the cultural capital of the Caspian region.

- 1. Agency of the historical center of Astrakhan**
- 2. Program «Astrakhan courtyards»**
- 3. Tactical redevelopment**
- 4. Participation of residents in heritage preservation**
- 5. Design code of the historic center**





PRIORITY PROJECTS TO INCREASE RECOGNITION OF THE HISTORICAL CENTER OF ASTRAKHAN

In order for the historical center of Astrakhan to become a popular cultural brand, it is enough to implement iconic restoration projects with adaptation for modern use for 0.7% of the historical heritage.

The goal of these projects is to create new user experiences and to strengthen an emotional connection with heritage sites.



GASTRONOMY

Named woodchips projects, new food concepts, local products



CULTURE

Public art, temporary exhibitions, small museums related to heritage



CREATIVE TRADE

Showrooms of Astrakhan designers, concept stores, bookstores



HOSPITALITY

Personal approach, additional services (spa, coworking),



EVENT PROGRAM

The ability to spontaneously participate in interesting events,

PROJECT #1

AGENCY OF THE HISTORICAL CENTER OF ASTRAKHAN

To implement the plan for the preservation of the historical heritage, it is proposed to launch the Agency for the Historical Center of Astrakhan. This is a dedicated team for the implementation of pilot projects and support of investors until 2032 with annual performance indicators.

Agency goals

- to investigate the current situation, analyze the legal status of land, historical values of buildings, use potentials and risks in the implementation of the project
- promote heritage values and opportunities for investors, organize meetings and events, share best practices
- to facilitate discussions between investors and the city, provide legal advice
- supervise, assist in determining the content of future objects, residents, opinion leaders for the implementation of individual projects, the general concept of space development
- to ensure the quality of restoration and respect for the historical heritage.

The agency's project office can be located on the ground floor of a historic building (about 100 sq. M) to communicate the heritage conservation plan and its pilot projects



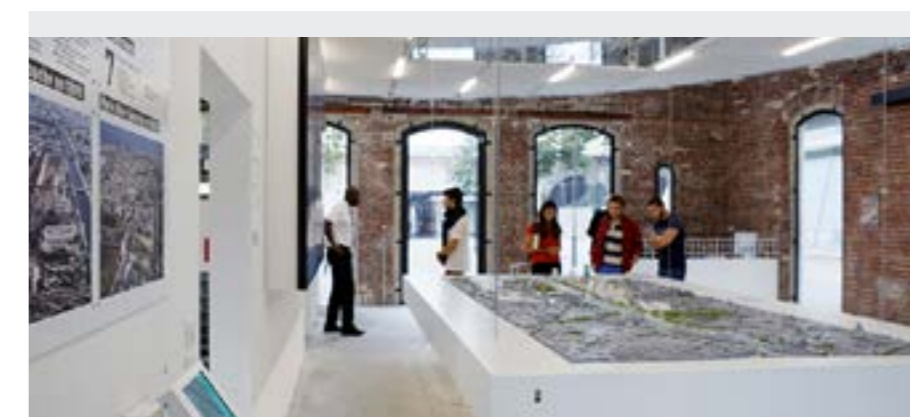
EXAMPLE FROM FRANCE: GOVERNING STRUCTURE: EPL

EPL (Local Public Organization) is the most commonly used type of organization for managing territorial development projects in France as well as in other European countries (Germany, Italy, ...).

They are intermediaries between public and private participants in the project. Such organizations have financial results and their effectiveness is assessed simultaneously by their profit and the implementation of public interests. The public sector owns 34% to 100% of the company, and its president is always an elected official.

The main principles of work are:

- The ultimate goal is public interest
- The spirit of commercial entrepreneurship as a mode of action
- Long-term perspective
- Transparency of management and decisions
- The project area as a focus of attention



Example: Paris Rive Gauche, Paris, piloted by SEMAPA, the specialist site renovation agency. Project office to introduce residents to the project

HISTORICAL CENTER OF ASTRAKHAN



HISTORICAL CENTER OF ASTRAKHAN



HISTORICAL CENTER OF ASTRAKHAN

