MASTER PLAN OF ASTRAKHAN AGGLOMERATION

ИНСТИТУТ ГЕНПЛАНА МОСКВЫ

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Album

July 9, 2021

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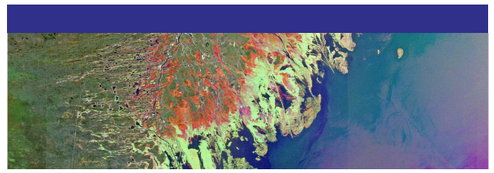
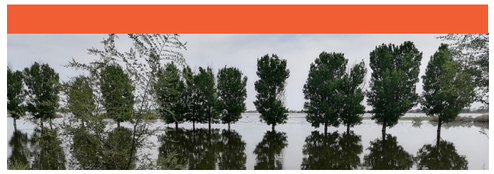
PART 1. Principal model of development 8

Astrakhan agglomeration based on the specified potential of agglomeration development



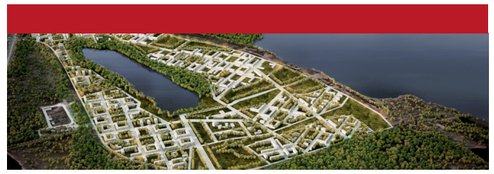
PART 2. Spatial development scenario 68

of Astrakhan agglomeration for the period 2021–2032



PART 3. Activities of territorial development, ... 132

ensuring the implementation of the proposed scenario for the spatial development of the Astrakhan agglomeration for the period 2021–2032



PART 4. Detailed solutions 191

Proposals for the architectural and planning organization of key development areas and objects of interregional and regional significance. Fundamental approaches to the organization of the environment in settlements of the agglomeration (typical situations)

PART 5. Financial and economic model 265

agglomeration development, ensuring the sustainable development of the territory using effective financing mechanisms, contributing to the further creation of a multiplier effect in various sectors of the economy

Astrakhan agglomeration master plan

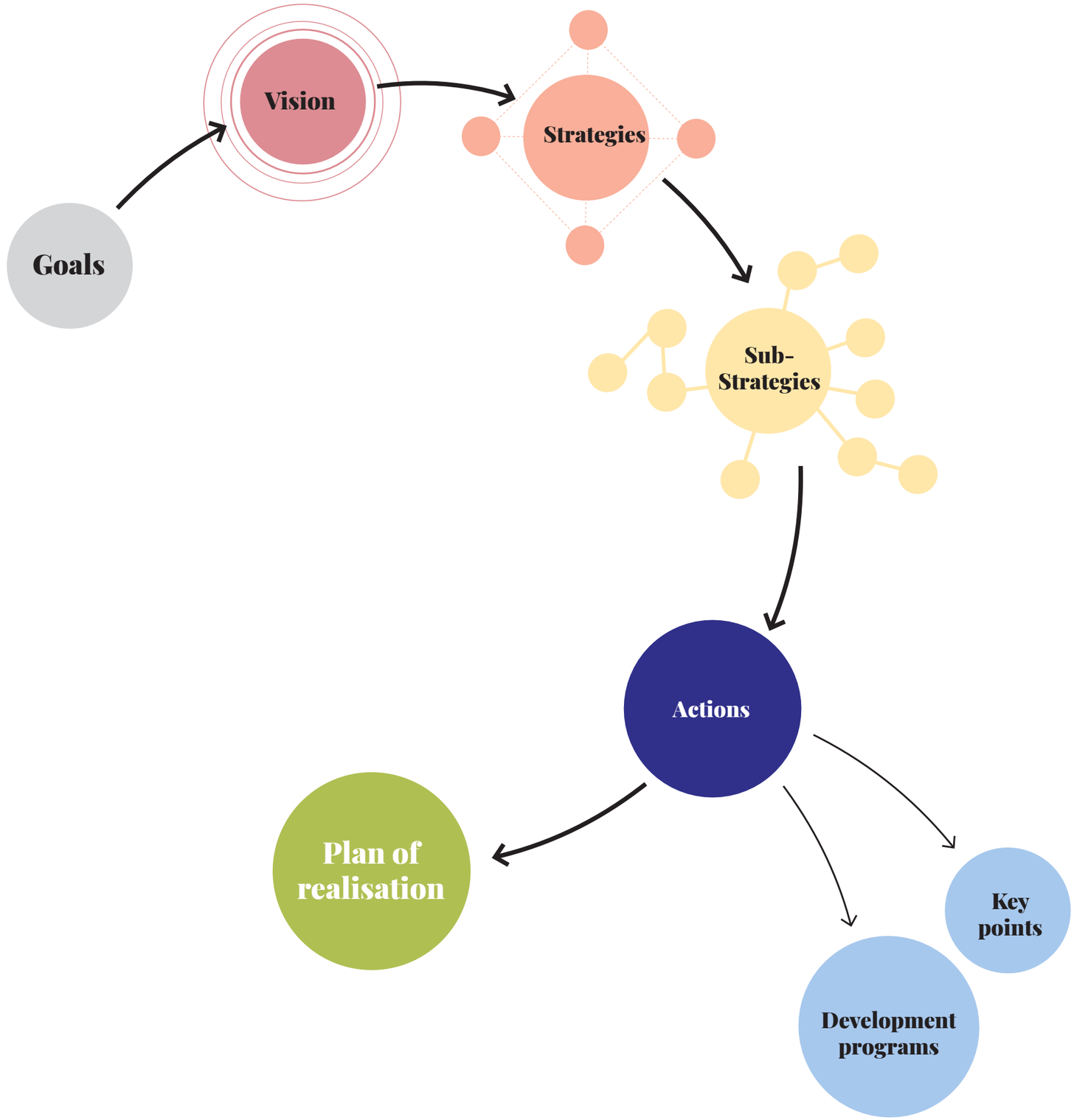
The structure of the master plan is subordinated to the general goals and vision of the territory of the Astrakhan agglomeration, which, among other things, were designated as the initial data for the development of the project. In fact, these sections are reflected in the part of the Principal Model for the Development of the Astrakhan Agglomeration.

At the stage of determining the scenarios for the development of the agglomeration in the structure of the master plan, strategies and sub-strategies for the development of the territory are outlined. Strategies and sub-strategies determine key and priority tasks for the areas of development of the territory selected by the master plan.

At the stage of determining the scenarios for the development of the agglomeration in the structure of the master plan, strategies and sub-strategies for the development of the territory are outlined. Strategies and sub-strategies determine key and priority tasks for the areas of development of the territory selected by the master plan.

The financial and other socio-economic effects of the implementation of the proposed master plan are reflected in the implementation plan - the final structural part of the master plan.

The scale of consideration of the master plan is subordinated to the general hierarchy from large to private: agglomeration-centers of districts-Astrakhan-separate territories.



For ease of navigation in the most important aspects of the developed master plan, developers use three categories of semantic markers:

Essential theses

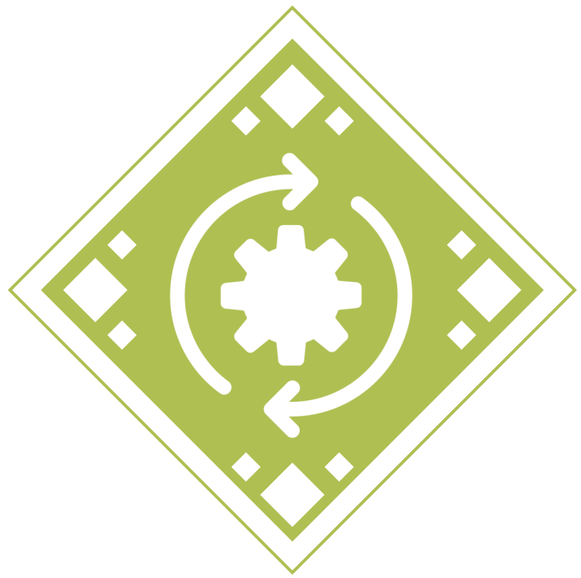
The most important information that is necessary for all persons interested in the development of the Astrakhan agglomeration. Includes the main most fundamental provisions of the master plan of the Astrakhan agglomeration.

This information is marked with a red marker.

Abstracts describing a brief essence

Some aspects of the master plan are based on complex, complex analysis that is sometimes difficult to quickly learn.

In such cases, the essence of the work done is taken out in the abstracts marked with a blue marker.



Methodological foundations of the master plan

Often, developers offer not only design solutions, but also methods that are advisable to use for the development of the territory.

The description of the methodological approaches is marked with a green marker.

1 social sphere (identity)

human capital, education, society, relations, local communities

2 habitat (environment)

space, nature, infrastructure

3 economy (productivity)

resource extraction, production and processing of resources, tertiary sector of the economy (goods and services)

4 intangible capital (connectivity)

culture, historical capital, systematic approach, technology? management? coordination

It is proposed to consider the fundamental model of agglomeration in the context of four aspects of sustainable development.

Sustainable development is based on improving human competencies so that they create a new environment around themselves and a promising economy economy. We control space so that it defines a person.

We create the necessary and sufficient conditions for the economy: we develop people, territorial, infrastructural and other resources, we apply planning and best practices. The market economy interacts with the created conditions.

We consider the intangible aspect of sustainable development as a potential for the harmonious development of man, environment and economy. And also as one of the tools that contribute to the implementation of design solutions.

1

Sustainability of the design solution - We understand that any design solution cannot be fully implemented. The structure of the Master - plan makes it easy to exclude or add project elements (even other teams) to it.

2

We use and adapt successful practices of other regions

3

We give answers to the burning questions of the region

4

«Rating AA +» We analyze and improve the ratings and indices where the elements of the agglomeration are assessed.

5

Suggestions «Strategy +». We adjust and optimize the activities of the Strategy 2027.

6

Attention to existing practices and mechanisms. We do not design from scratch.

7

We optimize for the criteria of federal financing - Comprehensive analysis of National Projects and State Programs and the terms of their financing

8

We form a ready-made set of Applications necessary for the implementation of the Master Plan: templates, technical specifications for the implementation of individual activities, forms, requirements and other materials.

9

We immediately offer organizational and legal mechanisms for project activities

10

We set ambitious SMART goals in the Master Plan for the development of the Agglomeration

1

PRINCIPAL MODEL OF THE DEVELOPMENT OF ASTRAKHAN AGGLOMERATION

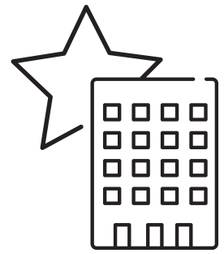
BASED ON THE REFINED POTENTIAL OF AGGLOMERATION DEVELOPMENT

economic trends

- desktop virtualization
- growth of the experience economy (gamification of the sphere of culture and education, new formats)
- work automation
- growing demand for general social competencies (soft skills)
- academic and corporate campuses (technology parks, scientific clusters)
- personalization of work / increase in the share of free time / reduction of the standard work week
- deepening of labor specialization
- eco-offices / coworking spaces / city-
- corporation

economic challenges

- investment portal
- industrial parks and industrial complexes
- blockchain technology
- unmanned technologies
- sharing economy
- online reporting
- robotization of business processes,
- low-skilled labor and typical operations
- additive manufacturing
- technology platforms and digital ecosystems
- digital mobility (high speed wireless
- communication networks, mobile applications for services and services,
- carsharing, unmanned vehicles, electric vehicles, teleworking, virtual meetings, remote individual lessons)
- creating conditions for remote work
- new office formats



urban planning trends

- investment portal
- industrial parks and industrial complexes
- blockchain technology
- unmanned technologies
- sharing economy
- online reporting
- robotization of business processes,
- low-skilled labor and typical operations
- additive manufacturing
- technology platforms and digital ecosystems
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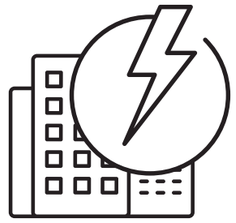


urban planning challenges

- implementation of BIM technologies
- electronic services in the field
- urban planning
- automated collection of metering device indicators
- unified dispatch center and urban transport monitoring system
- portal «our city»
- planning based on BIG DATA using automated predictive analytics
- electronic cards and record
- on-line
- unified electronic educational environment
- electronic paperwork and application submission
- citywide wi-fi network in cultural and leisure centers
- unified digital housing and communal services platform
- transparency of supply and consumption management
- infrastructure projects
- increasing capital intensity
- territory
- ecotechnology

trends / external factors

- digital passport of a citizen / rating / personal data - public
- population aging
- growing subjectivity of communities (home government, electronic home)
- political representation of local communities
- participatory design / participatory planning
- the growing importance of the volunteer movement
- transformation of culture for new technological formats (immersive theater, drone show)

challenges

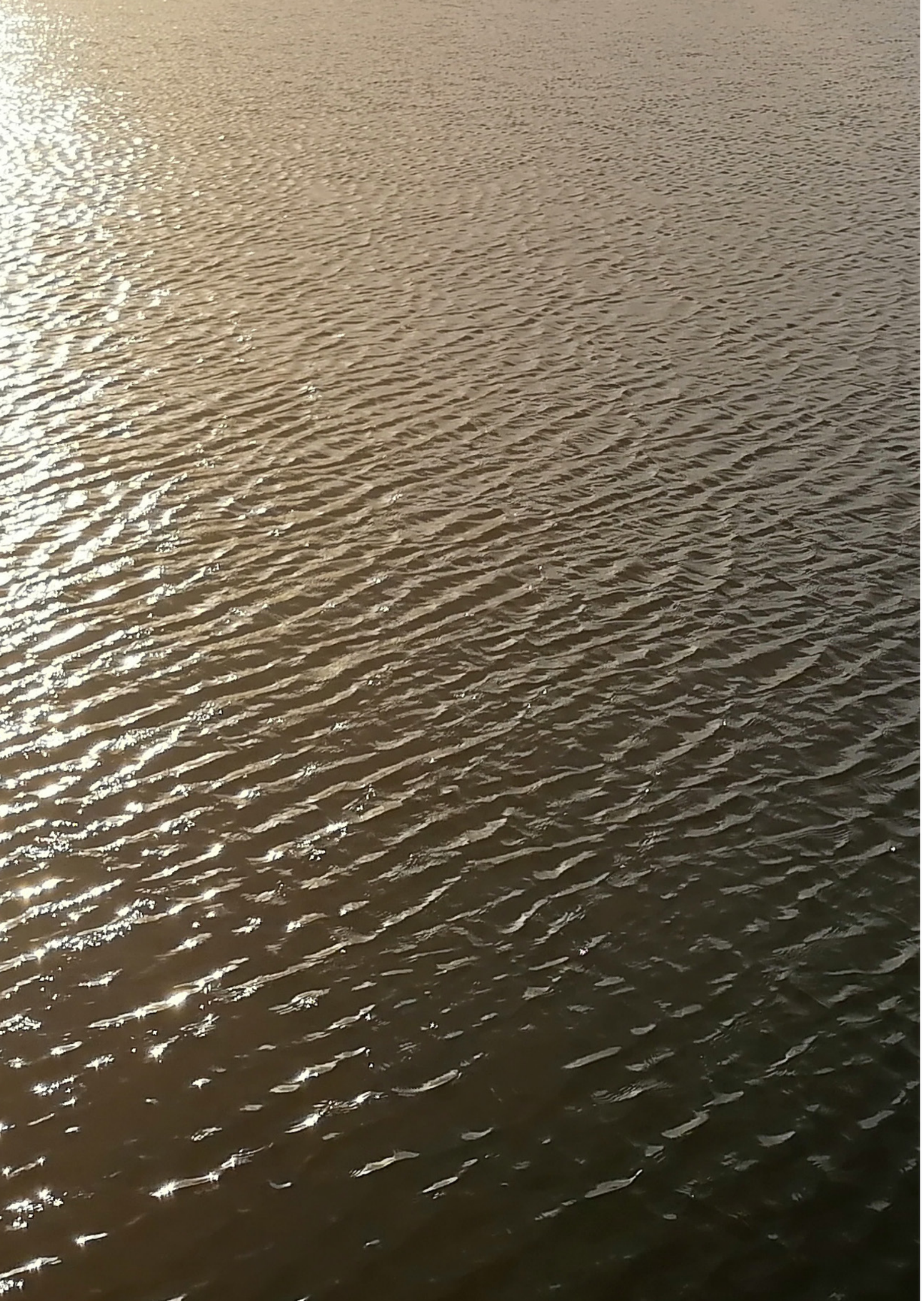
- travel platform
- digital security systems
- community electronic platforms
- smart House
- public participation in the design

social trends

- lease / share paradigm
- translucency / openness to the external environment / social media / messengers
- differentiation of social groups according to the principle of activity / involvement
- social rating / civic engagement / integration
- individual mobility / person-office (EgoOffice) / autonomy / remote work
- autonomization of households of passive population / («peace in an apartment / house»)
- changing the form and structure of leisure / consumption (wake park, wind tunnel / experience industry (not trade) / waste sorting / real-virtual city)
- request for a healthy lifestyle and a healthy environment (request for social support and medicine / healthy habits / waste-free production / eco-technologies)

social challenges

- a unified information landscape and resource management in the field of social services, including health
- electronic cards and record
- on-line
- unified electronic educational environment
- individual trajectory of training and services for continuous improvement of competencies
- electronic paperwork and application submission
- personalized social services and targeted support
- virtual portal «Know your land»
- interactive excursions and virtual trips
- quality and coverage of the Internet



Main resource Astrakhan region - water

Water: Blessing or Curse? How to use this resource more efficiently?

Astrakhan is the end point of one of the best water routes in Russia. One point - the Northern River Station in Moscow - has received a new development. Synchronous Development Needed in Astrakhan.

Suggested routes:

- option number 1 - 18 days of travel along the Volga from Moscow to Astrakhan + 3 days in Astrakhan.
- option number 2 - a direct route for 2-3 days in Astrakhan.

Cooperation with other cities of the Volga to organize 7, 14 day programs (with two flights).

The territory is permeated by a dense water network of the Volga delta, which is connected with numerous canals, lakes and swamps.

canals (non-navigable)

rivers

main shipping route

Volga-Caspian Canal

lakes, ponds

Narimanov

Krasny Yar

Astrakhan'

Astrakhan sea port

Kamyzyak

Sea trade Olya port

Lyman

Caspian Sea

Green network

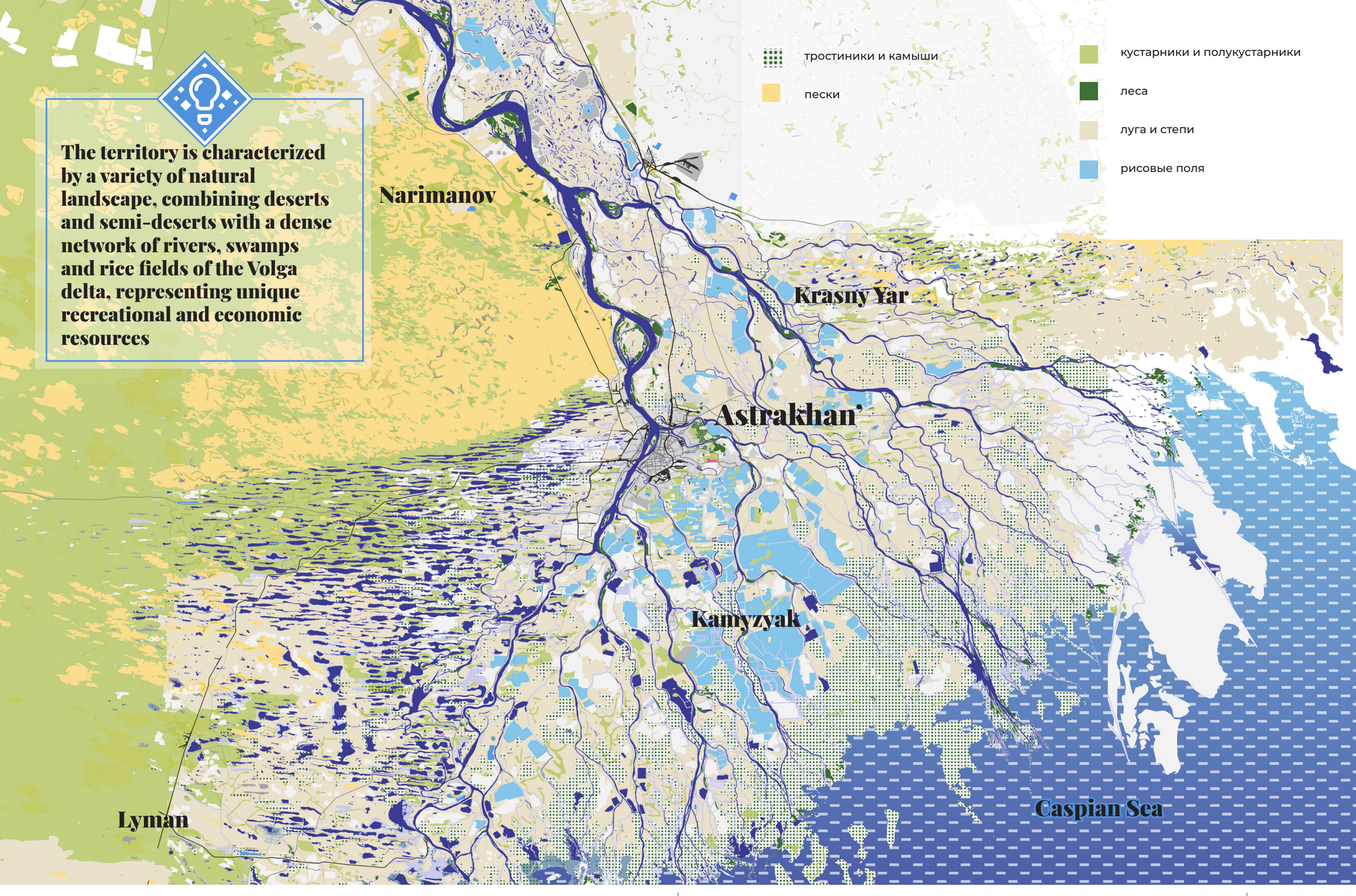
Nature: An important resource that is currently lacking. Existing urban spaces require significant maintenance costs

New forest parks of the agglomeration - as a resource for the development of individual settlements, created with the help of federal investment (FKGS)

Landscaping: is it always expensive? Finding flexible solutions and competent planning, how
both as part of the arboretum and in the management of the content.

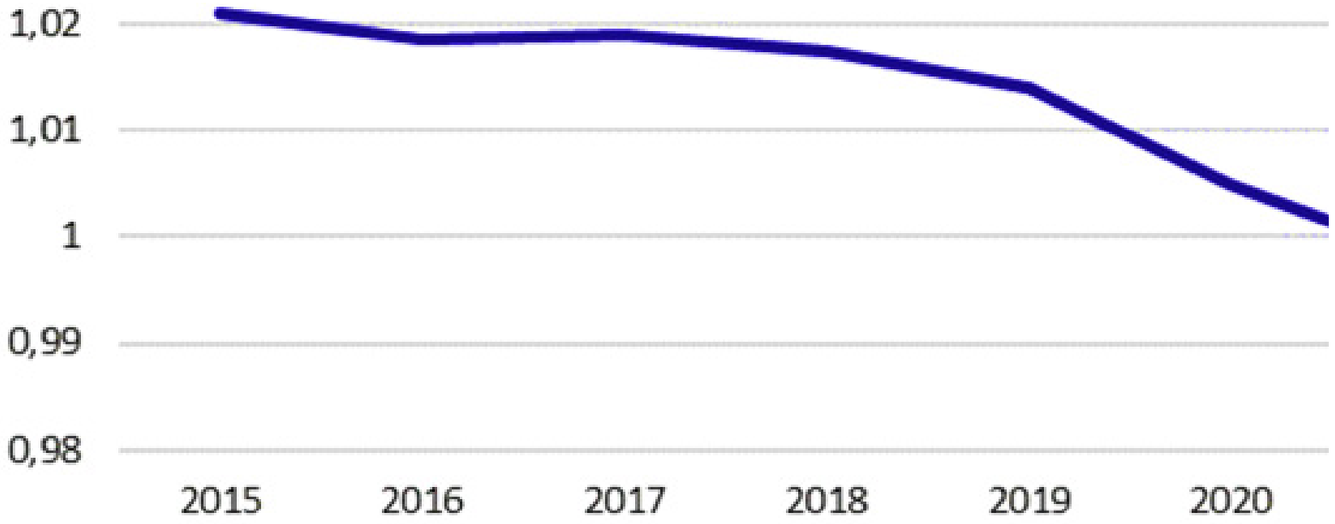
Subprogramme proposed: Greening Companion. Formation of a national greening plan:
Allocation of areas for landscaping;
Attraction of participants: schoolchildren, students, organizations («Astrakhan Green»), local communities.

Development of urban gardens and vegetable gardens. Creation of urban greenhouses - incubators of bio-technologies, urban agriculture.



The territory is characterized by a variety of natural landscape, combining deserts and semi-deserts with a dense network of rivers, swamps and rice fields of the Volga delta, representing unique recreational and economic resources

Resources	Privoljsky	Nariman-ovsky	Limanovsky	Krasno-yarsky	Kamyzyaksky	Ikryaninsky	Volodarsky	Astrakhan
Total area, sq. km	791,28	6797,30	4951,68	2022,45	3409,67	1946,72	4077,40	208,70
Agricultural fields, ha	23 326,05	11 243,25	201 713,67	405 435,44	12 402,79	62 569,53	95 566,31	—
Livestock	16 007,00	28 273,00	29 532,00	30 443,00	31 178,00	21 443,00	42 255,00	—
Extraction (catch) of aquatic bioresources), tons	172,80	605,30	3207,40	508,30	9482,70	3521,00	21 090,30	—
Fish production (aquaculture), tons	1780,50	1873,80	4107,60	68,50	7982,90	3283,90	446,30	—
Total population, people	52779	47547	29192	36641	46096	46443	46234	529800
Unemployment rate, %	1,00	0,80	1,20	2,00	2,7	1,40	3,3	0,70
Residential development in total, thousand sq. m	1658,90	1067,50	808,30	780,20	1184,80	1069,10	1046,90	13 798,30
incl. Emergency, thousand sq. m	—	4,40	—	1,60	—	0,60	—	103,60
Living area per person, sq. m / person	31,43	22,45	27,69	21,29	25,70	23,02	22,64	26,04
Number of comfortable public spaces (urban + rural)	28	22	25	9	30	23	15	41



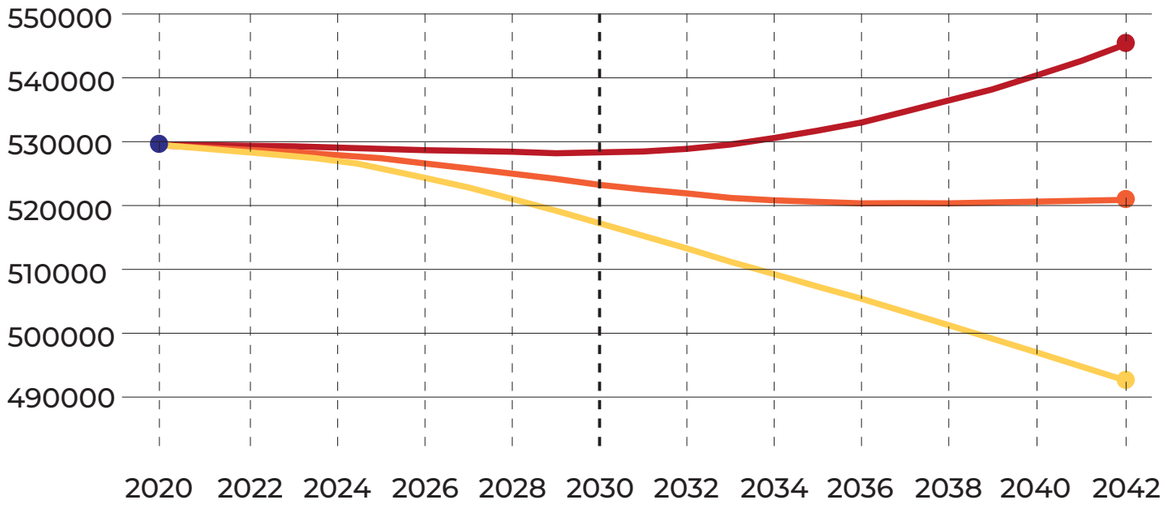
The graph of change in the population of the Astrakhan region 2015-2020, million people

Nations and cities are currently in geopolitical re-positioning, according to their potential in economy, technology, sustainability, creativity and quality of life.

It is vital to be part of the most innovative and responsible urban networks.

Decrease population – this is the most important problem that we have to decide

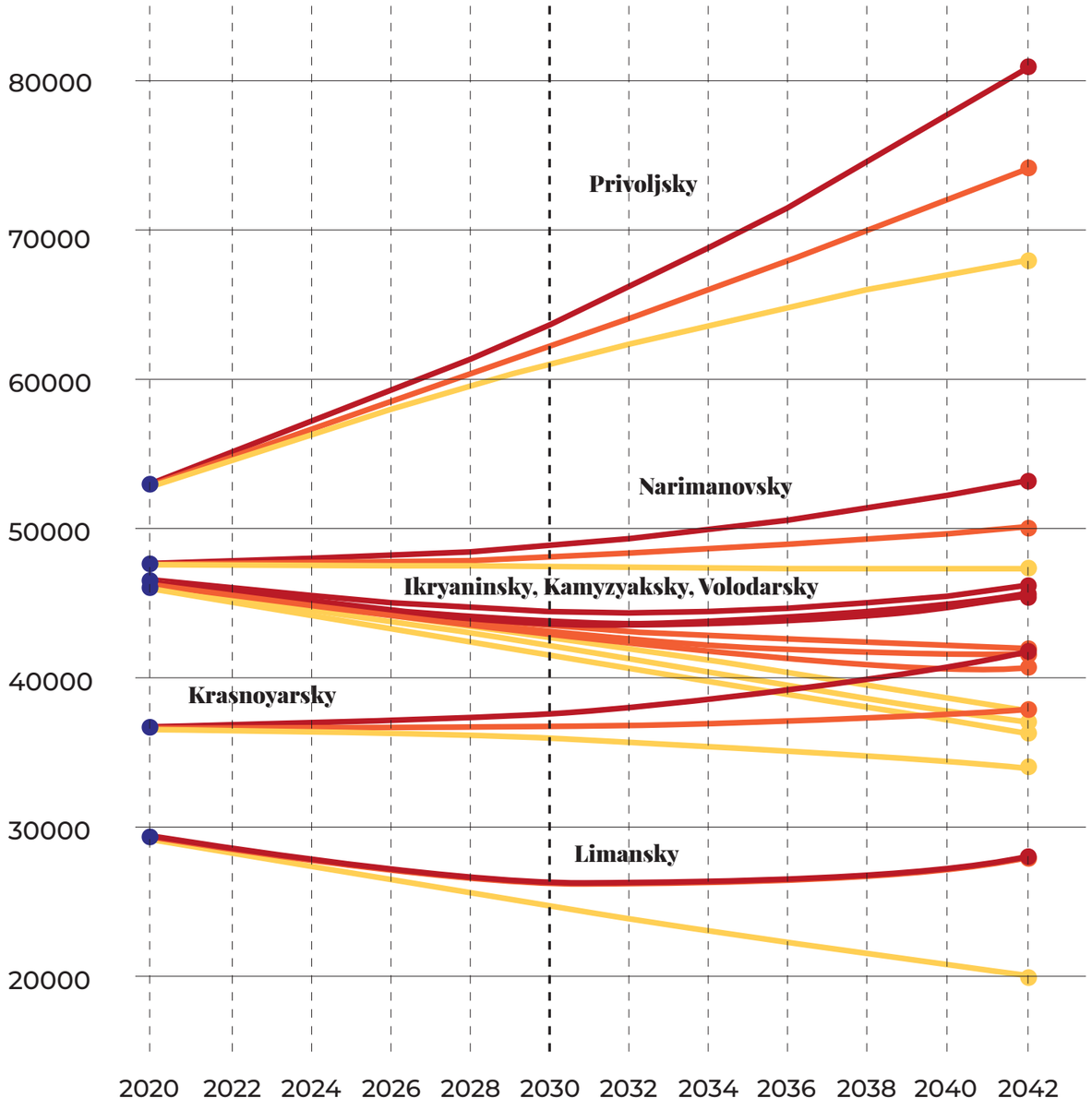
Forecast of the population of Astrakhan, people



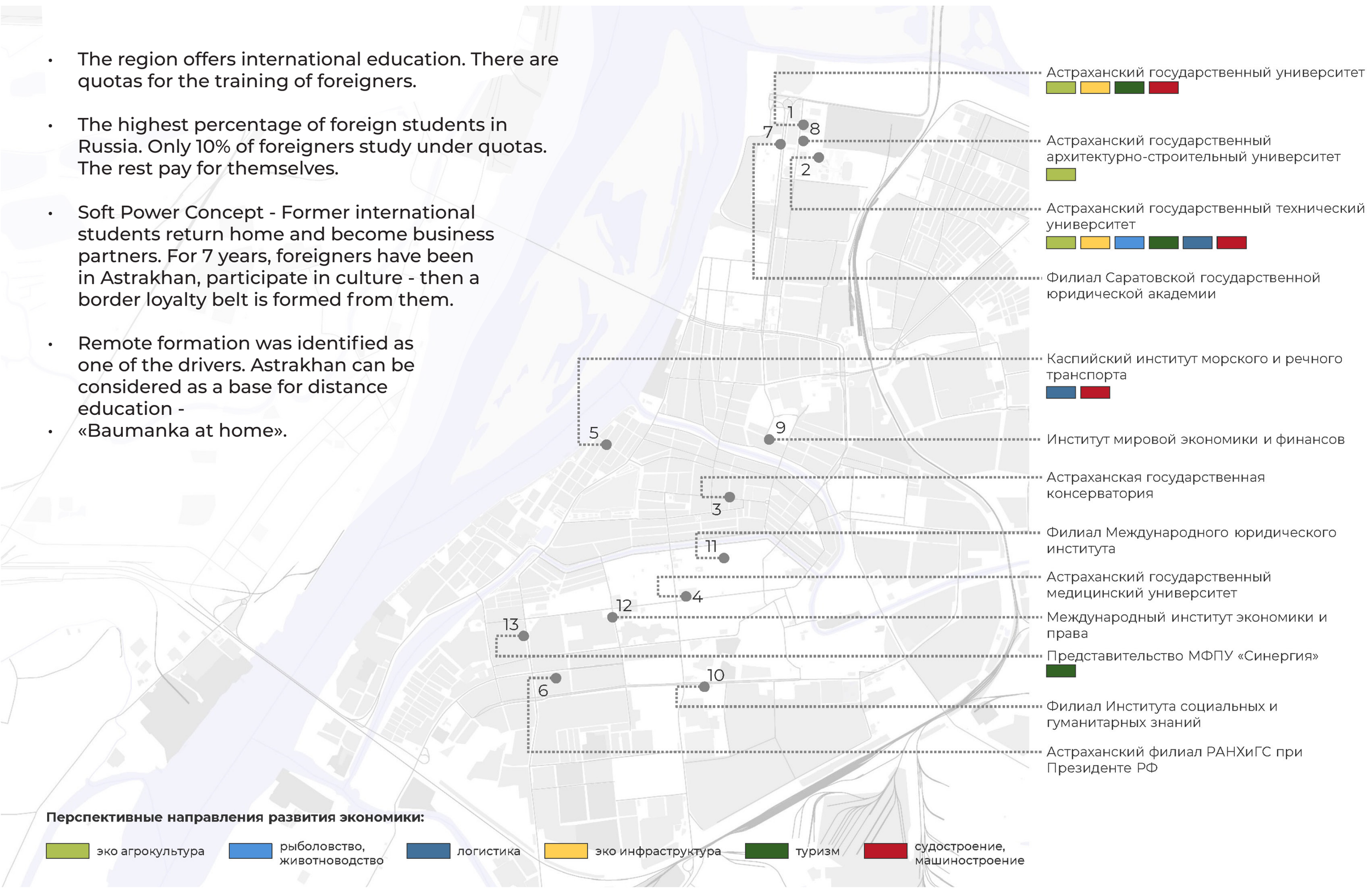
The main conditions for achieving the inherent high indicators of demographic development are:

- favorable socio-economic situation in the region
- and in the Russian Federation;
- growth of interregional and international migration to the municipalities of the Astrakhan agglomeration by increasing investment attractiveness and the implementation of planned investment projects, including those with a high innovative component;
- improving the quality of life of the population through the formation of socially oriented programs, including increased costs
- for health care and social support of the population;
- implementation of current and future measures to reduce mortality of the population;
- updating and expanding the range of measures aimed at strengthening the institution of the family, supporting young and large families.

Forecast of the population of municipal districts, people



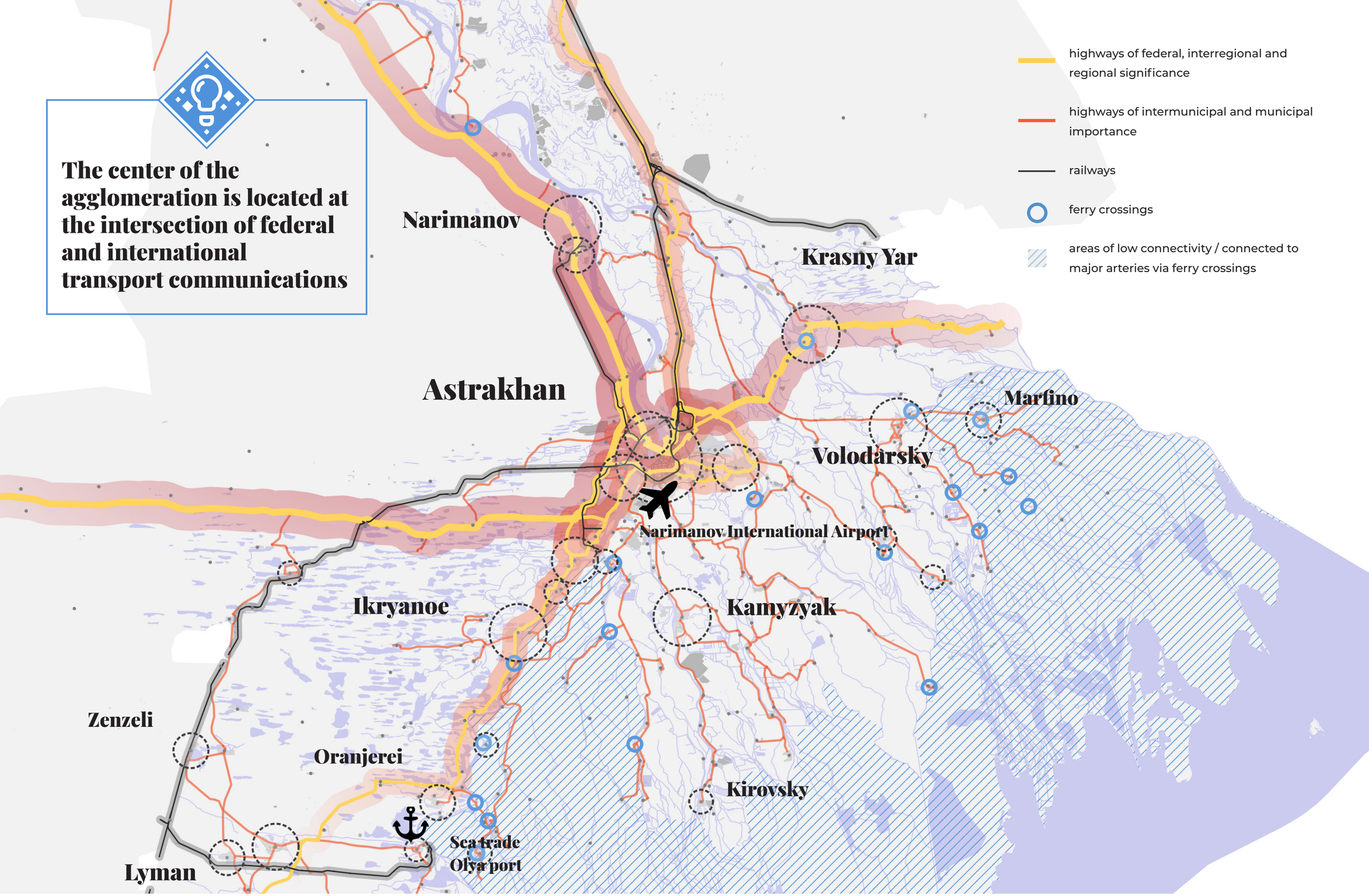
- The region offers international education. There are quotas for the training of foreigners.
- The highest percentage of foreign students in Russia. Only 10% of foreigners study under quotas. The rest pay for themselves.
- Soft Power Concept - Former international students return home and become business partners. For 7 years, foreigners have been in Astrakhan, participate in culture - then a border loyalty belt is formed from them.
- Remote formation was identified as one of the drivers. Astrakhan can be considered as a base for distance education -
- «Baumanka at home».



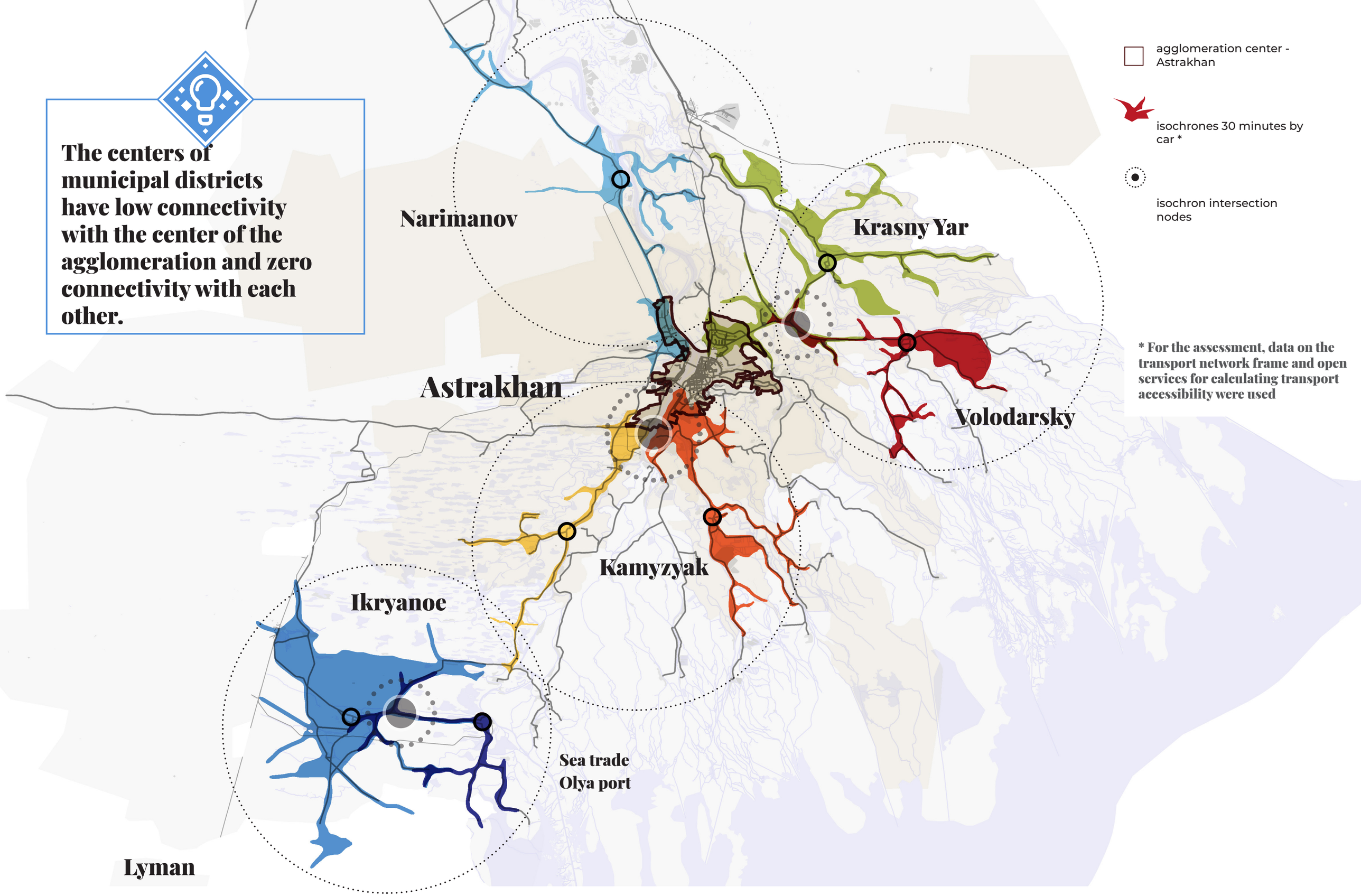
№	University name	Directions of training for promising industries the economy
Ecology agriculture		
1	Astrakhan State University (11263 students)	agronomy, agroengineering, soil science
2	Astrakhan State Technical University (7523 students)	aquatic biological resources and aquaculture
8	Astrakhan State University of Architecture and Civil Engineering (1371 students)	environmental management and water use
Ecology infrastructure		
1	Astrakhan State University (11263 students)	electronics, mechanical engineering, power engineering, information systems
2	Astrakhan State Technical University (7523 students)	electric power industry and electrical engineering, heat power engineering, information and communication technologies and communication systems
Fishing, animal husbandry		
2	Astrakhan State Technical University (7523 students)	industrial fishing
Tourism		
1	Astrakhan State University (11263 students)	technology and organization of tourist operator and agency services
2	Astrakhan State Technical University (7523 students)	innovative technologies of ecological tourism
13	Representative office of the Moscow Financial and Industrial University "Synergy"	design, linguistics, advertising and public relations
Logistics		
2	Astrakhan State Technical University (7523 students)	operation of ship equipment
5	Caspian Institute of Sea and River Transport (1443 students)	technology of transport processes, operation of ship power plants, water transport management and hydrographic support of navigation, ocean engineering and systems engineering of marine infrastructure facilities, navigation
Shipbuilding, mechanical engineering		
1	Astrakhan State University (11263 students)	electronics, mechanical engineering
2	Astrakhan State Technical University (7523 students)	shipbuilding
5	Caspian Institute of Sea and River Transport (1443 students)	shipbuilding

Resources	Privoljsky	Nariman-ovsky	Limanovsky	Krasno-yarsky	Kamyzyaksky	Ikryaninsky	Volodarsky	Astrakhan
Federal roads values, km	6,83	166,74	0	43,79	0	0	5,02	45,06
Class 1 roads, km	30,83	21,35	54,3	45,96	0	64,28	0	63,36
Class 2 roads, km	30,82	4,92	9,95	62,91	18,26	0	21,93	104,61
Class 3 roads, km	105,83	97,05	182,77	37,38	258,65	117,74	190,18	65,14
Availability of roads with hard coating,%	70	20	70	27	30	41	40	50
Length of water supply networks	110	—	210	200	85	67	55	890
water supply	45,00	60,00	39,00	38,00	34,00	58,00	53,00	83,40
Length of drainage networks	190	—	—	—	—	—	—	720
drainage supply	27,00	51,00	70,00	17,00	22,00	24,00	37,00	74,60
Length of power supply networks	240	1100	340	350	200	180	260	55
Length of gas supply networks	20	—	15	30	150	15	200	—
Heating supply	90,00	90,00	87,00	100,00	94,00	16,00	91,00	89,70
Percentage of network wear	71,75	77,75	83,25	61,75	83,50	83,25	65,50	73,00
Education (schools and kindergartens), shortage of places in 1 shift	-1399	3128	3155	46	3427	2 532	-73	-6112

The center of the agglomeration is located at the intersection of federal and international transport communications



The centers of municipal districts have low connectivity with the center of the agglomeration and zero connectivity with each other.



* For the assessment, data on the transport network frame and open services for calculating transport accessibility were used

Length of road network, km*:

Элемент агломерации	Federal roads	Roads 1 class	Roads 2 class	Roads 3 class
Astrakhan	45,06	63,36	104,61	65,14
Privoljsky district	6,83	30,83	30,82	105,83
Volodarsky district	5,02	0,00	21,93	190,18
Krasnoyarsky district	43,79	45,96	62,91	37,38
Kamyzyaksky district	0,00	0,00	18,26	258,65
Limansky district	0,00	54,30	9,95	182,77
Ikryaninsky district	0,00	64,28	0,00	117,74
Narimanovsky district	166,74	21,35	4,92	97,05

railways

main highways

Settlements:

connected by railroad

connected by the main roads of the agglomeration

connected by secondary roads of the agglomeration

connected via ferry service

Narimanov

Krasny Yar

Astrakhan

Volodarsky

Kamyzyak

Ikryanoe

Lyman

Sea trade
Olya port

This diagram reflects the key infrastructure problem - the low connectivity of the periphery of the agglomeration, which does not allow settlements to actively develop

* calculation is made according to open data

Length of communal infrastructure, km*:

Agglomeration element	Water	Sewage	Electricity	Gas
Astrakhan	890	720	55	-
Privoljsky district	110	190	240	20
Volodarsky district	55	-	260	200
Krasnoyarsky district	200	-	350	30
Kamyzyaksky district	85	-	200	150
Limansky district	210	-	340	15
Ikryaninsky district	67	-	180	15
Narimanovsky district	-	-	1100	-

* in accordance with the transmitted data sources (STP of districts, general plan of the urban district "City of Astrakhan")

Network engineering:

- water supply
- water disposal (household)
- power supply
- gas supply

Narimanov

Krasny Yar

Astrakhan

Volodarsky

Kamyzyak

Ikryanoe

Lyman

Sea trade
Olya port

Collected and analyzed data from the schemes of territorial planning of districts and the general plan of Astrakhan. All materials have been geocoded and estimated (length of networks).

Priority

Increase in the use of renewable energy sources and the formation of the necessary infrastructure networks in all settlements of the agglomeration

Settlements:

- 4 out of 4 categories of networks
- 3 out of 4 categories of networks
- 2 out of 4 categories of networks
- 1 of 4 categories of networks
- 0 out of 4 network categories

Narimanov

Krasny Yar

Astrakhan

Volodarsky

Kamyzyak

Ikryanoe

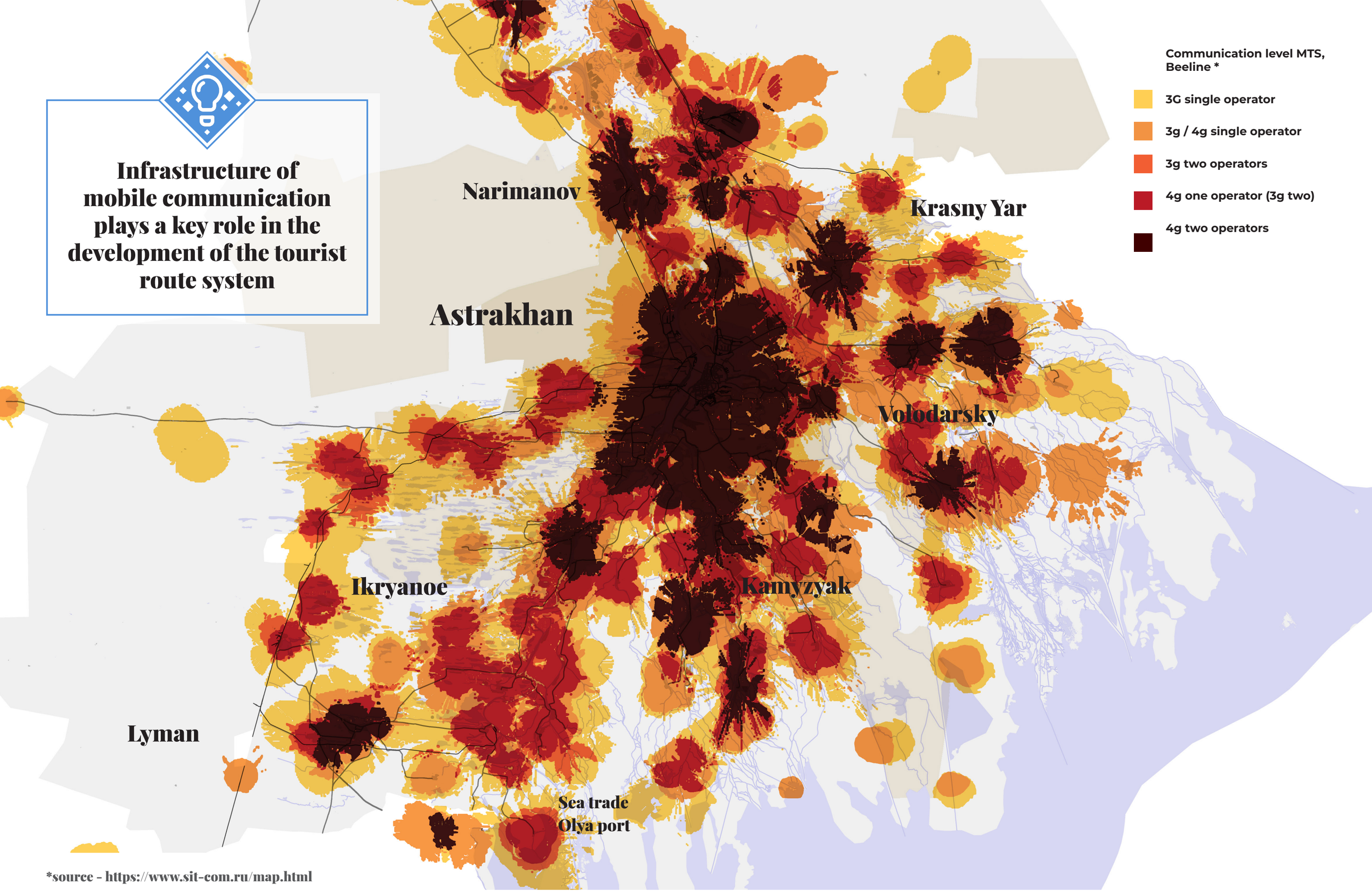
Lyman

Sea trade Olya port

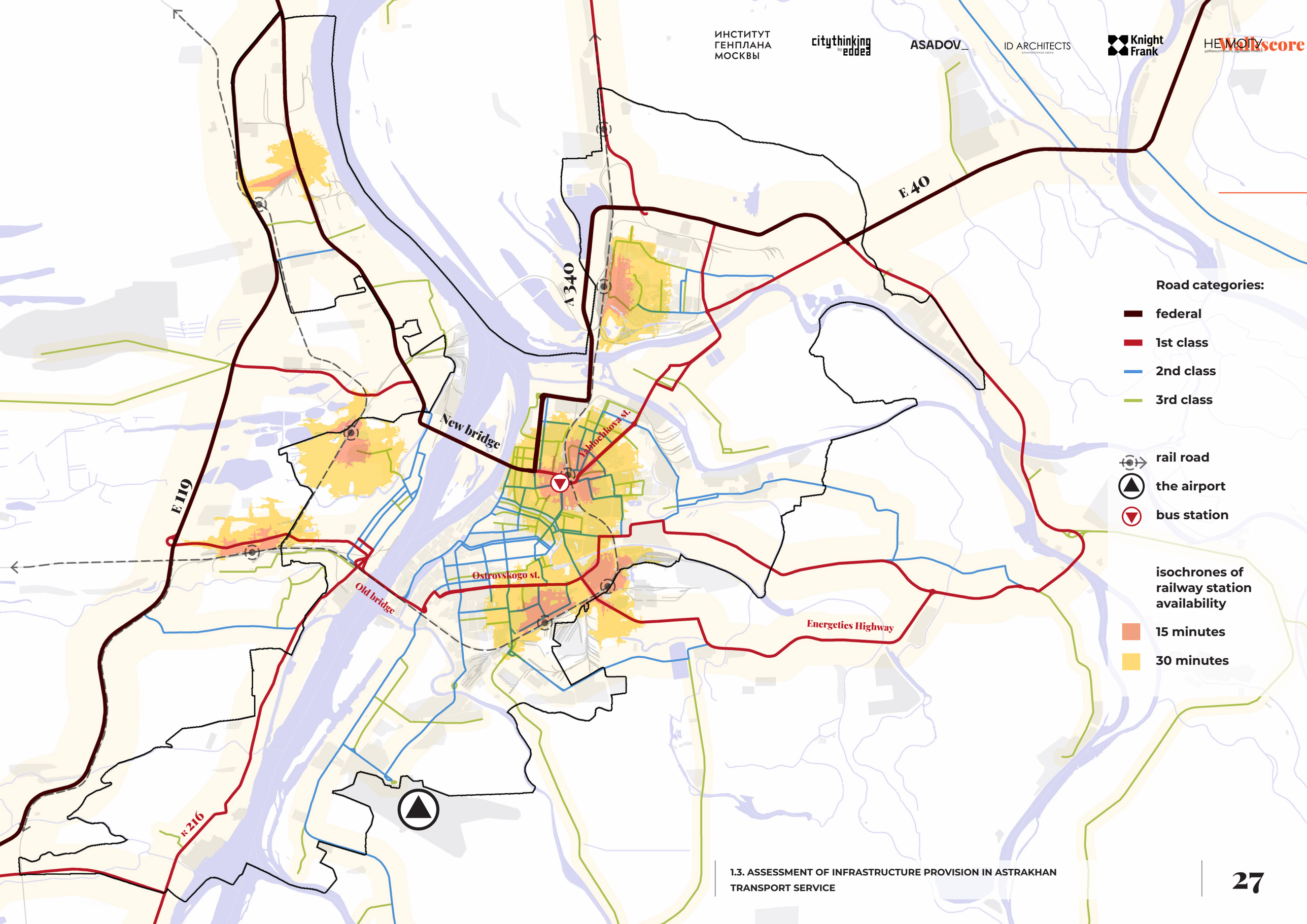
~600 billion. rub.

estimated costs on the development of engineering networks (according to the collected data)

Infrastructure of mobile communication plays a key role in the development of the tourist route system



*source - https://www.sit-com.ru/map.html


E 40
A 340
E 119
New bridge
Old bridge
Yablochkova st.
Ostrovskogo st.
Energetics Highway
R 216
Road categories:
federal
1st class
2nd class
3rd class
rail road
the airport
bus station
isochrones of railway station availability
15 minutes
30 minutes

Centre. Historic settlement

- Revitalization and reconstruction with a change of function - the creation of cultural and exhibition centers, creative clusters, office spaces in their place. Organization of a multifunctional space on the site of the former cargo port;
- Creation of parks in place of vacant territories;
- Creation of pedestrian streets (Akhmatovskaya, Nikolskaya and a section of Kirov street) and recreation areas near the water, incl. reconstruction of the Red Embankment.
- Development of unused and / or irrationally used, abandoned territories.
- It was proposed to create a local cultural center in the Tatar settlement area.
- In terms of the development of the sports infrastructure, residents expressed their wishes for the construction of a stadium and a sports ground near Vokzalnaya Square.
- Development of public transport (return of tram and trolleybus routes)
- Limiting the number of storeys during the construction of new buildings;
- Relocation of the correctional institution outside the central part;
- Development of a network of bike lanes to improve the cycling connectivity of the Volga Embankment and central streets
- Rational use of the width of the roads. Expansion of sidewalks by narrowing non-standard traffic lanes.

Soviet district

- Development of unused and / or irrationally used, abandoned territories.
- There is also a shortage of sports facilities. Of the proposed standard facilities - 2 sports and recreation centers, of the unique - an open water park, a new central stadium, an indoor ice rink next to the Zvezdny sports complex and a comfortable running route along the railway from the Kuban Bridge to Admiral Nakhimov Street.
- Among the wishes for public spaces - a public garden in the 1st South-East microdistrict, a promenade along the Kutum River and a pedestrian street.
- On the border with the historical settlement, it is proposed to develop the territory in the historical, cultural and tourist directions: placement of the House of Culture here, reconstruction of the boiler house on Menzhinsky Street with the placement of a local cultural center.
- Tsarevskaya Sloboda and Powder Warehouses on Nikolai Ostrovsky Street, according to residents, are the most attractive objects in terms of history and architecture.

Kirovsky district

- The development of unused and / or irrationally used, abandoned territories, most of which are concentrated along the railway lines.
- There was also a shortage of modern modern public spaces, incl. comfortable embankments.
- Among the unique ones are the proposal for the placement of a square on the roof of the Tri Kota shopping and entertainment center, the proposal for the placement of the House of Culture on Valeria Barsova Street.
- Yamgurchevu Sloboda and the plant them. Karl Marx was noted by residents as the most attractive in terms of history and architecture.

Trusovsky district

- Construction of sports and entertainment centers;
- Development of unused and / or irrationally used, abandoned territories;
- Construction of an embankment along the Solyanka River from the New Bridge to the Military Town, improvement of the beach on the Serebryanaya Volozhka channel;
- The main part of the wishes of the residents is the organization of new places of recreation;
- Placing a square in the central part of the island;
- Stadium on Vodnikova Street;
- Organization of 2 new public transport stops - in the village of Ordzhonikidze along Williams Street and in the central part of the island along Nikolai Vetoshnikov Street;
- Among the answers on unused and abandoned territories, 2 wishes related to the site and the building of the former House of Culture on Kapitan Krasnova Street, 1 - the territory of the former repair base of ships and 1 - the territory where the House of Culture of the Third International microdistrict was located earlier.

Leninsky district

- Development of unused and / or irrationally used, abandoned territories, most of which are concentrated in the southern part, on the border with the Kirov region.
- Construction of bridges: 2 overpasses across the railway tracks, 1 - for communication with the island. Urban, 2 - across the rivers Curve Bolda and Straight Bolda.
- Construction of a rowing base for residents of the Kazachiy Yerik microdistrict, in public spaces - reconstruction of the station square and improvement of the Timiryazev embankment
- Extension of the route number 19 of public transport to the beginning of Karagalinskaya street
- Relocation of the Central Stadium to the Sovetsky District, and the current building will be provided to ASU students for physical education and sports competitions.

Art residence

RESTORATION OF THE HISTORIC CENTER

Меньше маршруток

Participatory planning

Защита от солнца

Общественные туалеты

REGULAR LAND-SCAPING TREES

Центры развития, компетенций

Доступность отдыха на природе

Отсутсвие бездомных собак

Благоустройство дворов

PUBLIC TRANSPORT

Освещение улиц

Separate waste managment

IMPROVEMENT OF EMBANKMENTS, BEACHES

Fatory reconstruction

Sport facilities

Качественная архитектура

MORE FUNC-TIONS, LEISURE

PARKS, PUBLIC SPACES

Аквапарк

Хороший концертный зал

High quality roads

Militseisky bridge

Bycicle infrastructure

ASTRAKHAN:

attractiveness

Reasonable hotel prices.

Interest in the preserved historical part of Astrakhan.

Gastronomic delicacies.

Sufficient number of vacant places in hotels.

The Volga River, the Volga River embankment in the city.

Local kitchen.

Interest in the Astrakhan Kremlin.

City beaches.

unattractiveness

Risk of poor quality placements.

Risk of poor service at the accommodations.

Unfavorable security environment.

Risk of poor food in food service establishments.

Uncomfortable weather and natural conditions: heat, high humidity, small insects.

Poor ecology in the city.

Lack of a holistic and interesting image of the city, the impressions of which I would like to get (it is not clear to me why I should go to Astrakhan at all).

Yes

No

Uncertain

transport accessibility:

I would fly to Astrakhan by plane, as tickets there are usually cheaper than other popular destinations in Russia

Я не поеду на поезде, так как опасаюсь плохого сервиса.

It seems to me that the cost of tickets the train and the plane are almost the same.

I will not take the water route as I fear poor service.

The car route takes at least a day, but it is an exciting journey. It’s okay for me to go to Astrakhan by car.

If the plane ticket is more expensive than the train, then I will choose the train.

The water route takes at least 18 days. This is too long for me.

The car route takes at least a day. It’s too long and tedious.

The railway route takes almost 2 days. This is a very long time for me.

If a plane ticket is more expensive than a train ticket, I will still choose a plane.

The water route is interesting in itself. And I could choose it as a separate kind of travel.

ASTRAKHAN REGION:

attractiveness

Адекватные цены мест размещения.

Opportunity to stay in health centers or sanatoriums.

Ability to stop at camp sites; in separate houses close to nature.

Unique salt lake Baskunchak.

The unique Volga-Akhtuba floodplain: the place where the Volga River flows into the Caspian Sea.

Rest on the banks of the Volga and Akhtuba rivers.

Blooming wild lotuses.

Outdoor recreation - in places with a low level of urbanization of territories.

Astrakhan fishing.

Visit to fish markets and get acquainted with local delicacies.

Visit to fish markets and get acquainted with local delicacies.

unattractiveness

Risk of poor quality placements.

Risk of poor service at the accommodations.

The risk of noisy neighbors and too cheerful companies at camp sites (meeting a noisy resident).

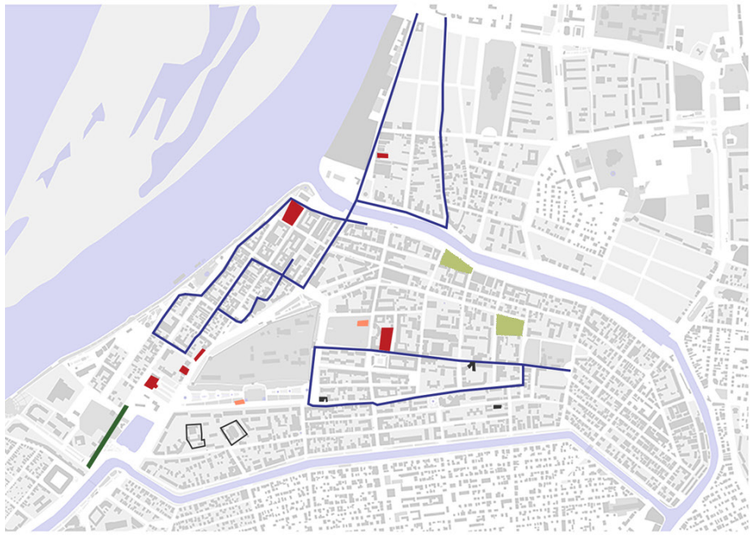
There are not enough options (scenarios) for family vacations and recreation with children.

Not enough places to visit.

Low quality catering.

Yes No Uncertain

First seminar - build analysis

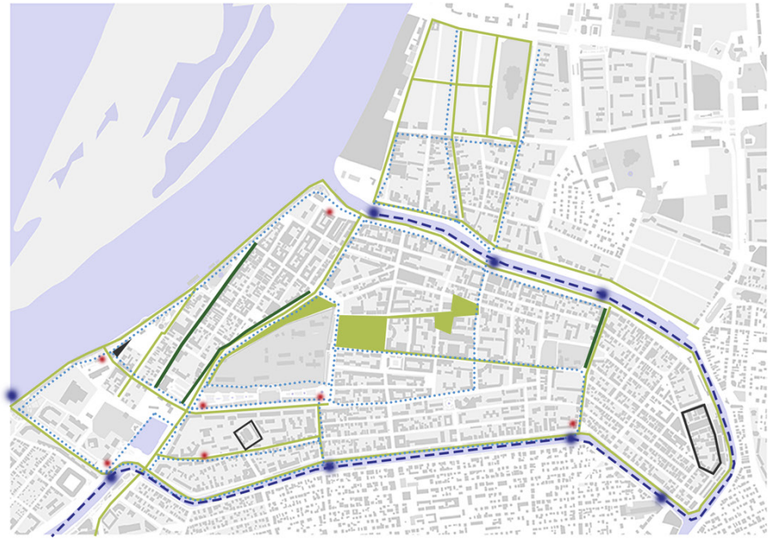


Group 1

- Facade restoration
- Renovation
- Public facilities
- Beautification
- Reorganizing objects

Group 2

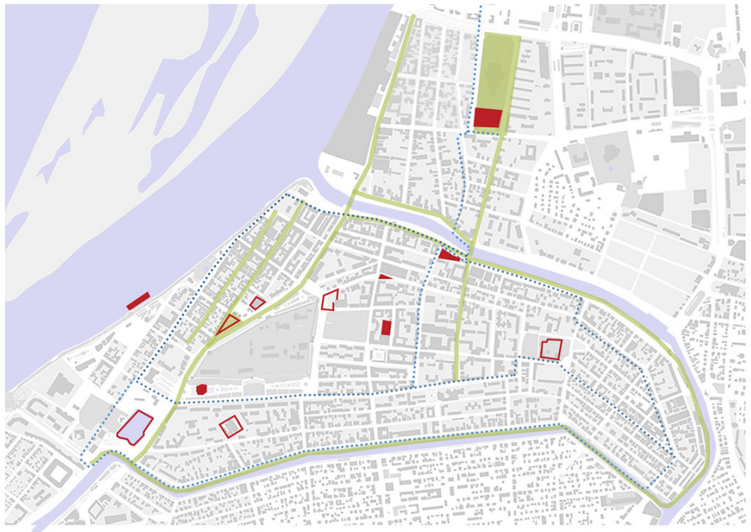
- Beautification
- Sun protection constructions
- Demolition



Group 3

- Beautification
- New hiking trails
- Cycling route
- Water transport route
- Stops of water transport
- Scooter stops

Second seminar - public space analysis

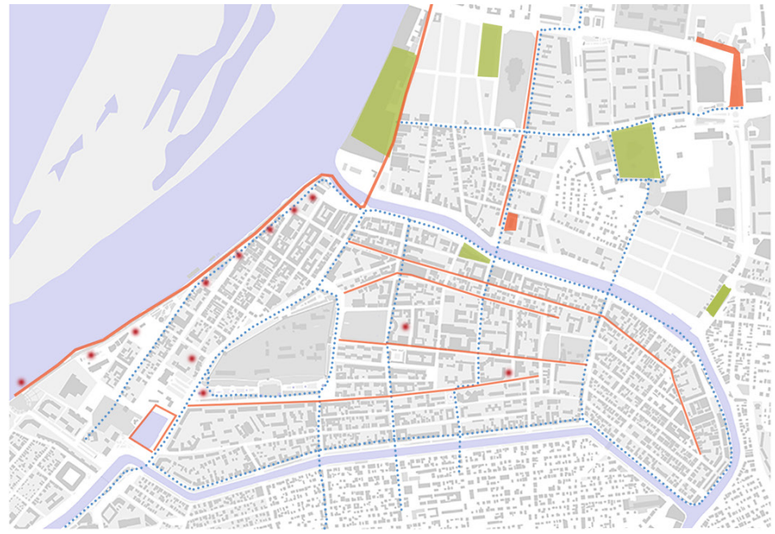


Group 1

- Beautification
- Public facilities
- Bike paths

Group 2

- Beautification
- Public facilities
- Bike paths
- Green spaces



Group 3

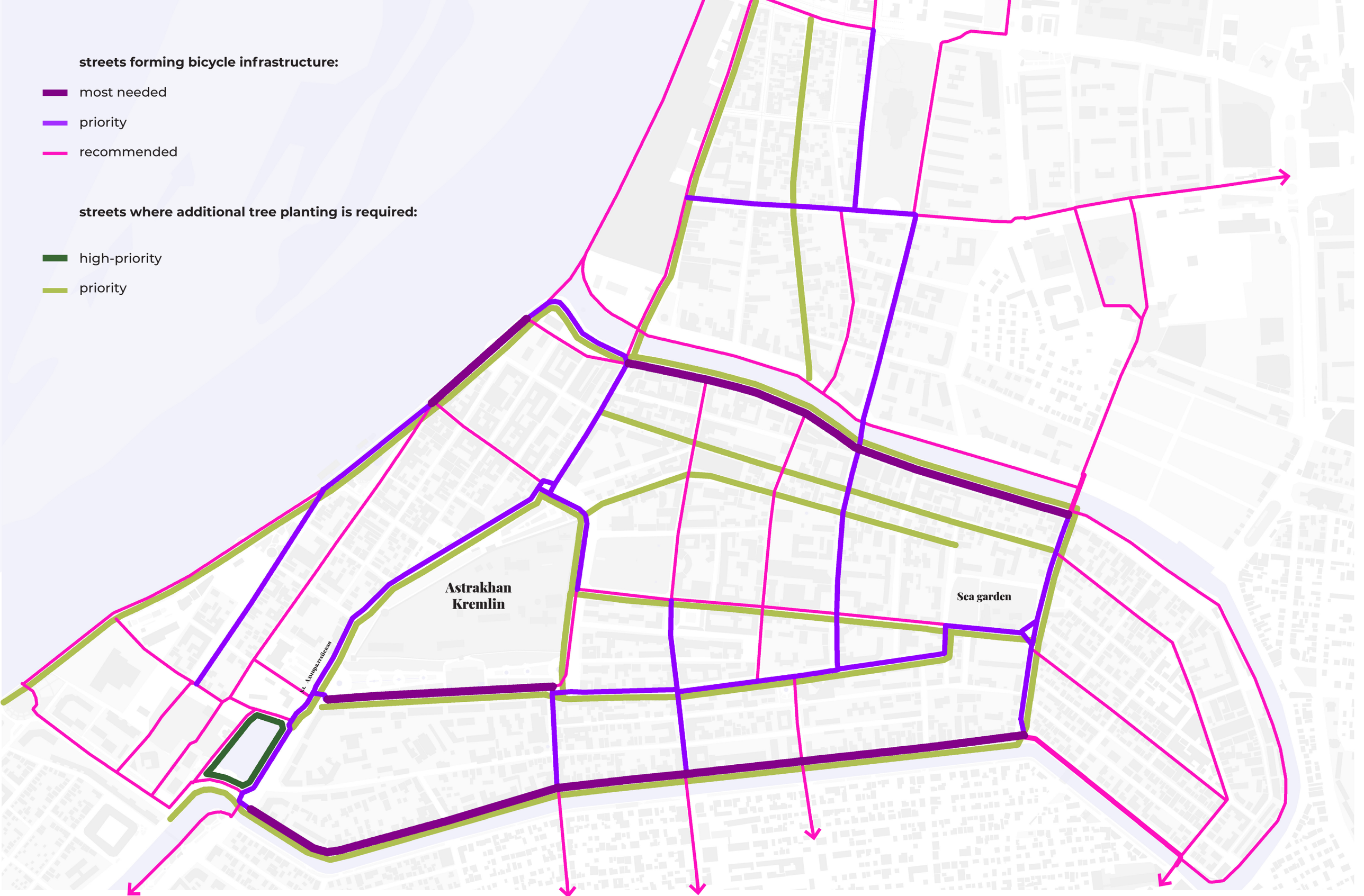
- Beautification
- Public facilities
- Bike paths
- Lack of greenery

streets forming bicycle infrastructure:

- most needed
- priority
- recommended

streets where additional tree planting is required:

- high-priority
- priority

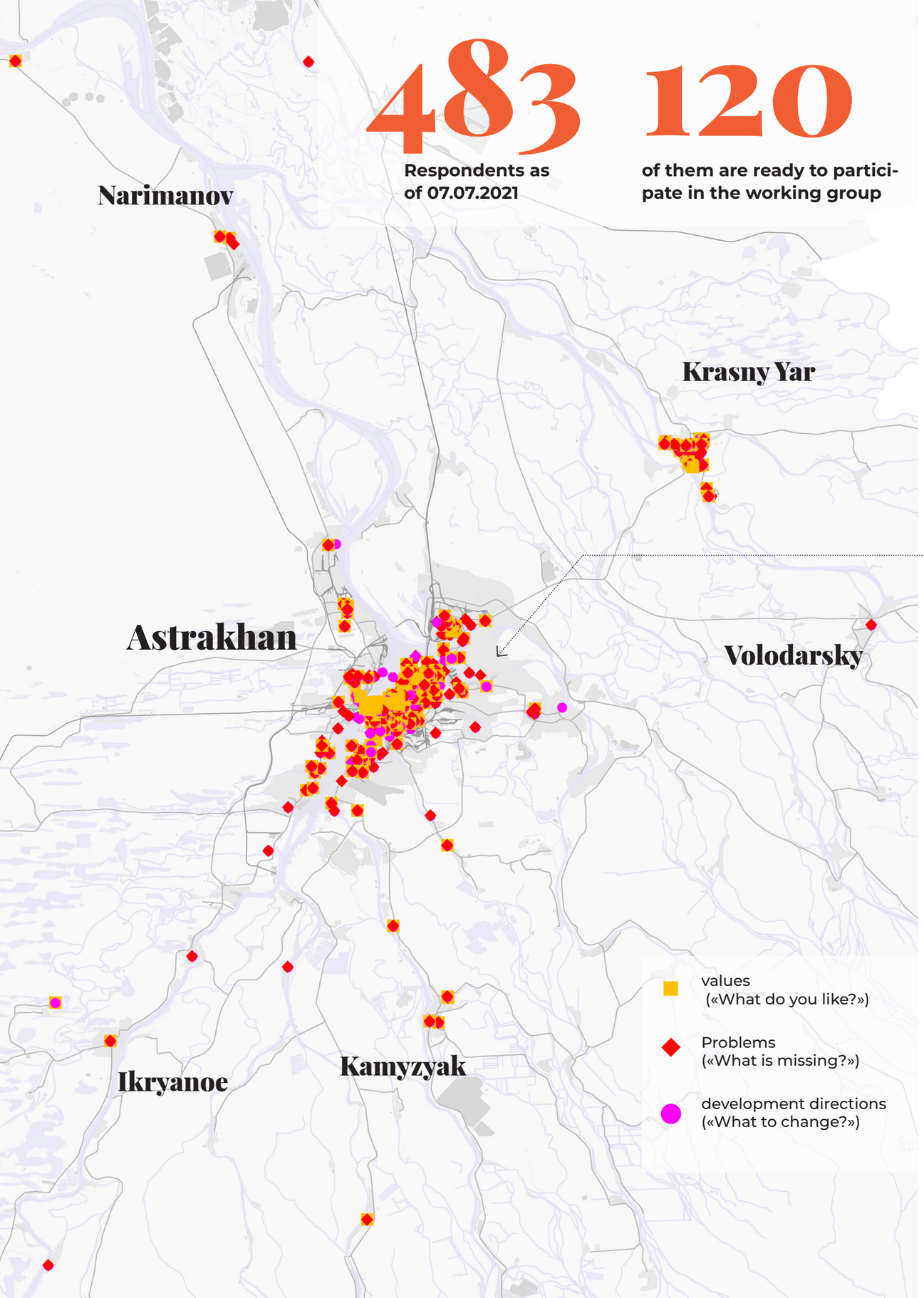


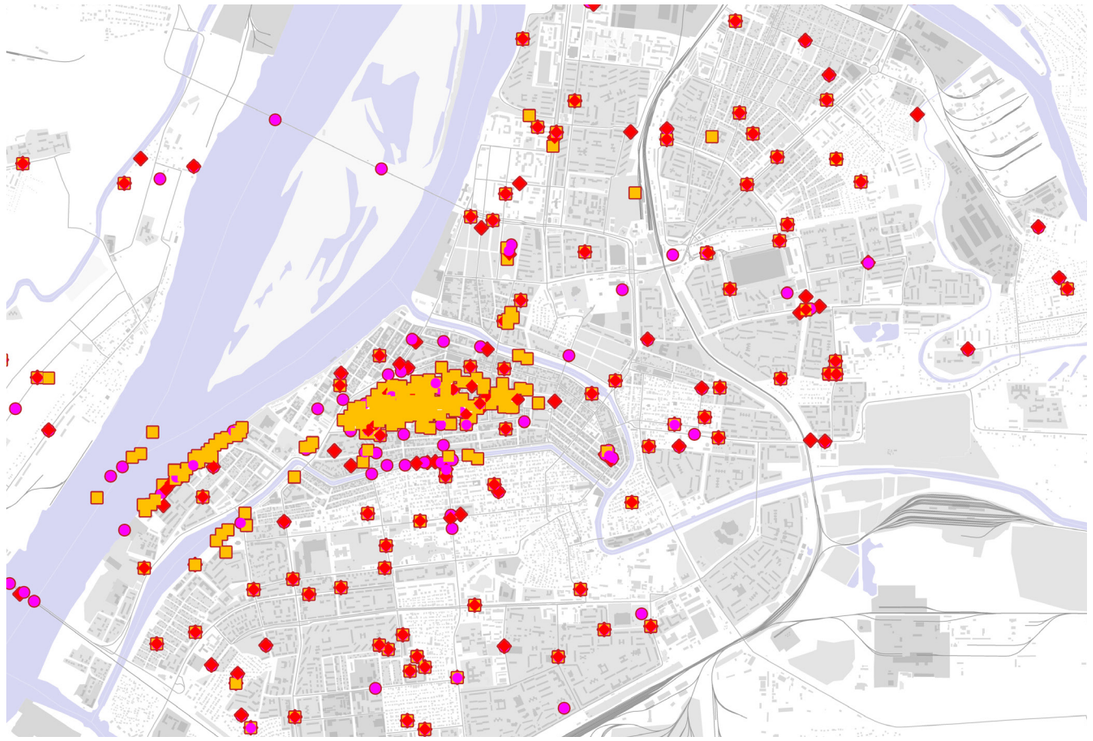
483

Respondents as of 07.07.2021

120

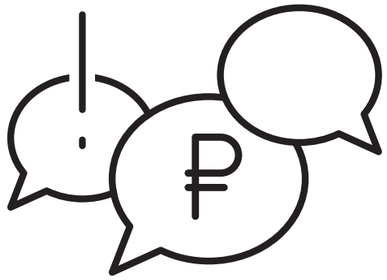
of them are ready to participate in the working group





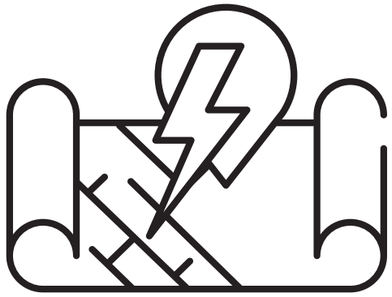
- repair of roads in general and especially bridges, most of all claims are against the Militseysky bridge
- increase the number of green areas
- to improve the embankments
- demolish old, abandoned, valuable ones, including restoration of the OKN
- wash the facades of houses, especially the Opera and Ballet Theater
- tidy up the Big Isis market
- need an amusement park
- remove garbage from the streets, sorting problem, not enough containers and bins.
- remove ads
- stray dog problem
- the need for bathing areas, beach
- people do not like modern shopping malls with cheap panel decoration

	Social sphere (human development)	Environment (habitat)	Economy (productivity)	Intangible capital (identity)
POPULATION	. Social infrastructure development - especially health care . opportunity for self-realization . wages adequate to the market pay	. public spaces . comfortable environment . landscaping . developed transport . and pedestrian infrastructure . safe environment	. jobs, opportunities . for professional growth, . new professions and directions, . opportunities for professional implementation for young personnel	. community building . participation in city decisions
GOVERNMENT	. improving the quality and maintaining the quantity of labor resources (including tax revenues)	. connectivity and accessibility . automation and digitalization of infrastructures . capitalization of the territory	. increasing investment . attractiveness of the territory . diversification of the economy . and budget revenues . cities	. formation of a positive image of the region . implementation and standardization . application of design code . digitalization of data . stable positioning at the federal and regional levels . big data and predicative . analytics
INVESTORS	. highly qualified specialists . willingness to learn	. infrastructural . security . free areas . state support . (PPP)	. thoughtful effective . projects, . new directions, synergy of urban development - education, science and production, . technoparks, campuses . increasing the availability, quantity and level of consumer income . special economic zones, TORs . one-stop shop / agent / industry representative	. branding . automation and digitalization of approval procedures



acute social economic issues

1. population outflow from the region due to low competitiveness
2. dependence of the region’s economy on extractive industries (oil and gas), dependence of the budget of municipalities on non-tax revenues
3. weak competitiveness of sectors of the economy, insufficient level of labor productivity and the introduction of new technologies
4. reduction in volumes or loss of industries and specializations traditional for the region. Lack of collaboration between science and business
5. poor quality of life and imbalance in development
6. insufficient use of the capabilities of relatively low-capital-intensive industries with a quick return on investment (tourism and transport and logistics industry)
7. lack of a regional brand formed and advanced in the international and domestic markets, including in the field of tourism (with the exception of fishing)
8.



acute territorial issues

1. monocentricity (including in terms of the formation of the transport framework and socio-cultural centers)
2. low and medium quality of the environment, a high degree of diversification of the quality of the environment of urban and rural settlements
3. low level of connectivity of the territory due to the need to organize bridges and crossings
4. with extensive land resources, a limited number of investment attractive building sites
5. the presence of spatial restrictions associated with zones with special conditions for the use of territories, especially valuable natural areas
6. a high degree of development of natural processes: flooding, abrasion, shallowing. Changes in the level of the Caspian Sea, lack of water from the upper part of the Volga
7. lack of a rational network of inter-municipal passenger transport
8. low level of engineering infrastructure support, a high percentage of wear and tear of engineering networks and head structures

Foreign economic integration, high competition of land transport	Low investment attractiveness of agricultural sectors (growing and processing) due to, inter alia, a high proportion of capital investments (land reclamation, irrigation, logistics)	Deterioration of the ecological situation due to the increased load on unique natural landscapes	Depletion of biological resources in case of failure to support the development of the artificial reproduction system	Unrealized potential of the port of Olya	Insufficient attention of the federal center and insufficient focusing of resources
Limansky	Volodarsky, Kamyzyaksky, Ikryaninsky, Limansky, Narimanovsky, Krasnoyarsky	Krasnoyarsky Narimanovsky, Ikryaninsky	Volodarsky, Kamyzyaksky, Ikryaninsky, Limansky	Limansky	All districts

Loss of potential and large investors due to the inertia of the implementation of changes	Shallowing waterways and changing water levels in the Caspian Sea	Unstable demand, dependence on large producers and consumers	Missing the opportunity to occupy industry niches in competition with neighboring regions	Lack of international integration and influence in the Caspian region	Maintaining poor transport accessibility of areas
All districts	Astrakhan, Narimanovsky, Volodarsky, Kamyzyaksky, Ikryaninsky, Limansky	All districts	All districts	Astrakhan, Limansky, Narimanovsky	All districts

Business enlargement and decrease in the share of SMEs	Lack of measures to optimize transport logistics and accessibility to the port of Olya in key areas for the development of agro-industrial sectors	Aggravation of intra-agglomeration imbalances in development	Missing the possibility of accumulating tourist flow	Unavailability of investment sites due to low infrastructure. security	Weak competitiveness
All districts	Ikryaninsky, Volodarsky, Kamyzyaksky	Volodarsky, Kamyzyaksky, Ikryaninsky, Limansky, Narimanovsky, Krasnoyarsky	Astrakhan, Kamyzyaksky, Volodarsky, Ikryaninsky	All districts	All districts

Outflow of intellectual capital	Weak inter-municipal communication
All districts	All districts

Astrakhan spatial Problems

- The city is located on two banks of the Volga, connected by two bridge crossings, operating at the limit of capacity
- The presence of water barriers other than the Volga
- Complex structure of the road network, non-standard cross-sections
- Multiple level crossings organized on one level
- Areas with special conditions of use, including noise and aerodrome areas of the airfield of the Ministry of Defense in the Volga region and the airport of Astrakhan (Narimanovo)
- High concentration of cultural heritage objects in the city center and its protective status as a deterrent to the implementation of investment projects of redevelopment and renovation of the environment
- The complex structure of owners and existing land and property relations in the territories of investment-attractive zones, including production zones as a factor in limiting the consolidation of land plots and launching unified redevelopment projects
- A significant proportion of dilapidated housing, including
- in the status of objects of cultural heritage
- High concentration in the historical center of urban infrastructure and places of employment, including administrative, public and business, retail and other facilities as a factor of maximum load in terms of transport and pedestrian flows and congestion of the road network

Demography. Reasons for migration:

- high unemployment
- labor market tensions
- low salary
- weak personnel policy

ГПЗ «Astrakhan»

Narimanov
10,7 ths. ppl

ОЭЗ Лотос

Krasniy Yar
12,2 ths. ppl

Astrakhan
526 ths. ppl

Volodarsky
10 ths. ppl

Ikryanoe
10 ths. ppl

Kamyzyak
15,7 ths. ppl

Liman
8 ths. ppl

Olya
1,5 ths. ppl

Портовая ОЭЗ Оля

agglomeration center - Astrakhan

second order centers agglomeration areas

other settlements

key links

perspective projects:

industry

public and business

tourist

The level of provision of MPT (share of the working-age population provided with jobs):

- high (more than 80%)
- medium (65-80%)
- low (less than 65%)

- potential pendulum migrations
- potential areas of gray employment (poaching, etc.)

Narimanov
Balance - 93%

Krasniy Yar
Balance - 87%

Volodarsky
Balance - 60%

Astrakhan
Balance 54%

Ikryanoe
Balance - 73%

Kamyzyak
Balance - 64%

Liman
Balance - 82%

Olya
Balance - 75%

Average number of employees of enterprises in the region, 2019

The agglomeration of territories with construction restrictions form a significant part of the agglomeration, which is of particular importance in the context of effective management of territories for development.

Narimanov

Krasniy Yar

Volodarsky

Astrakhan

Ikryanoe

Kamyzyak

Liman

specially protected natural areas

zones of minimum distances from main pipelines

aerodrome territories

water protection zones

border areas

ИНСТИТУТ ГЕНПЛАНА МОСКВЫ · citythinking by edea · ASADOV_ · ID ARCHITECTS · Knight Frank · НЕ МОГУ

CENTERS FOR DEVELOPMENT OF PUBLIC AND PRODUCTION FUNCTIONS

KRASNOYARSKY DISTRICT

NARIMANOV
(logistics hub, industrial production)

SEITOVKA

KRASNY YAR
(museum and exhibition complex)

ASTRAKHAN REGION

KARAOZEK
(logistics hub, sales of industrial products)

NARIMANOV DISTRICT

TINAKI
(health tourism)

ASTRAKHAN

VOLODARSKY
(sports and recreation complex)

KALININO

NACHALOVO

PRIVOLGA DISTRICT

YAKSATOVO
(active tourism)

TUMAK -BIG MOGOY
(ecotourism, educational tourism)

ZELENGA

BURUNY

RED BARRICADES

IKRYANOE
(food wholesale distribution center)

KAMYZYAK
(sports and recreation complex)

VOLODAR DISTRICT

KAMYZYAK DISTRICT

TRUDFRONT

IKRYANINSKY DISTRICT

LIMAN DISTRICTРАЙОН

KIROVSKY
(ecotourism, gastronomic tourism)

OLYA
(logistics hub, industrial production)

LIMAN
(sports and recreation complex)

Interregional Center
(1 order)

multifunctional center with unique city-forming functions

specialized center with unique city-forming functions

Interregional Center
(2 order)

multifunctional center with a dominant

specialized center

Interregional Center
(3 order)

Multifunctional Center

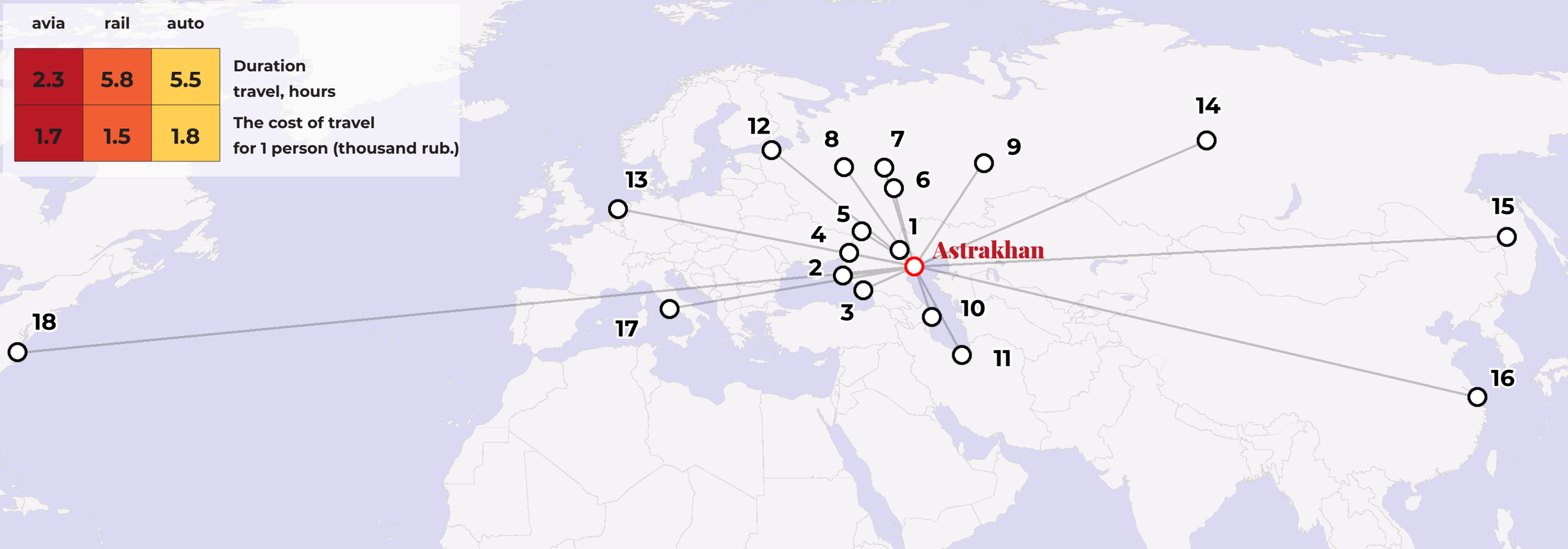
Biosphere reserves

Borders of municipal districts

Car roads

Railways

№№ п/п	Center value	Structure, ratio of social and production functions	Zone influence	Accessibility radius, km	Functional structure	Общая площадь, ths.sq.m	Ориен-тир. числ. насел. в зоне влияния	Перспек-тивное число Jobs
I	Interregional (1 order)	**A) MULTIFUNCTIONAL NAL CENTER WITH UNIQUE TOWN-FORMING FUNCTIONS**	agglomeration, Astrakhan region, regions of the Russian Federation, the Caspian states (Kazakhstan, Azerbaijan, Iran, etc.)	**75**	. transport and logistics centers (cargo hubs, sea terminal with a passenger terminal) . industrial production zones (electrical engineering, mechanical engineering, shipbuilding, medical products, household chemicals) . agricultural and fish processing . cultural and exhibition center . market «Astrakhan Isady» . food wholesale distribution center . sites for the sale of industrial goods . water entertainment complex . interuniversity scientific and educational complex . Competence Center for Emerging Industries . hotel and business complex with a congress center	**50,0–200,0 ths.sq.m**	—	**1700–4000 ppl**
		B) SPECIALIZED CENTER WITH UNIQUE TOWN-FORMING FUNCTIONS		**Более 75**				
II	Agglomeration (2 order)	**A) MULTIFUNCTIONAL ONLINE CENTER WITH A DOMINANT 65/35**	agglomeration	**50**	• Functional dominant: • sports and recreation (swimming pool, water park) • museum and exhibition • concert and festival • scientific and educational	**10,0–15,0 ths.sq.m**	**до 800,0 ths.ppl**	**250 ppl**
		B) SPECIALIZER BATH CENTER 100/0	agglomeration, Astrakhan region, regions of the Russian Federation, the Caspian states (Kazakhstan, Azerbaijan, Iran, etc.)	**Более 50**	. sanatorium and recreational facilities (Tinaki settlement) . tourist complexes incl. campings, fishing bases, campgrounds, gastronomic restaurants (Yaksatovo village, Tumak village) . ecological farms with accommodation facilities . tourists . agricultural complexes	**15,0–20,0 ths.sq.m**	—	**300 ppl**
III	District (3 order)	**MULTIFUNCTIONAL ONLINE CENTER 90/10**	Municipal District	**10**	. sport senctre . additional education . cinema hall . center for social support of the population . social rehabilitation center . intelligence center	**5,0–7,0 ths.sq.m**	**до 30,0–40,0 ths.ppl**	**150 ppl**



1. Volgograd

2.3	5.8	5.5
1.7	1.5	1.8

2. Sochi

2.1	33	16
2.4	3.1	4.9

3. Min Vodi

1.5	49	7
1.8	2.6	2.7

4. Krasnodar

1.4	27	9.5
1.3	3.8	3.4

5. Rostov-na_Donu

1.4	27	9.5
1.3	3.8	3.4

6. Kazan

5.5	28	19
6.8	4	6.4

7. N.-Novgorod

5	32	19
7	6.4	6.2

8. Moscow

2	25	18
3.4	5	6.1

9. Ekaterinburg

7	47	29
8	6	10

10. Baku

1.5	-	12
13	-	3.8

11. Tegeran

11	-	21
22	-	7.2

12. S.-Peterburg

3	36	27
3.9	7.6	9.2

13. Amsterdam

11	-	43
27	-	28

14. Krasnoyarsk

9	76	58
10	9.6	19

15. Khaborvsk

13	113	111
18	17	38

16. Shanghai

29	-	-
65	-	-

11. Rim

10	-	47
22	-	31

18. New-York

18	-	-
37	-	-

Cities with promising growth in tourist traffic to the Astrakhan region

Russian cities

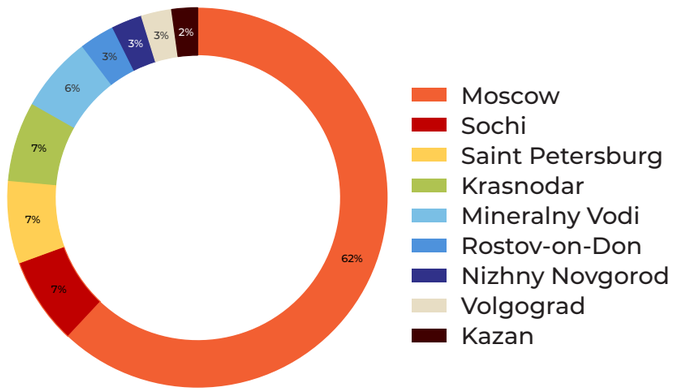
Moscow
Saint Petersburg
Yekaterinburg Kazan
Nizhny Novgorod
Rostov-on-Don
Krasnoyarsk
Volgograd
Krasnodar
Khabarovsk Sochi
Mineralny Vodi

Foreign cities

Shanghai
Tehran
New York
Rome
Baku
Nur-Sultan
Amsterdam

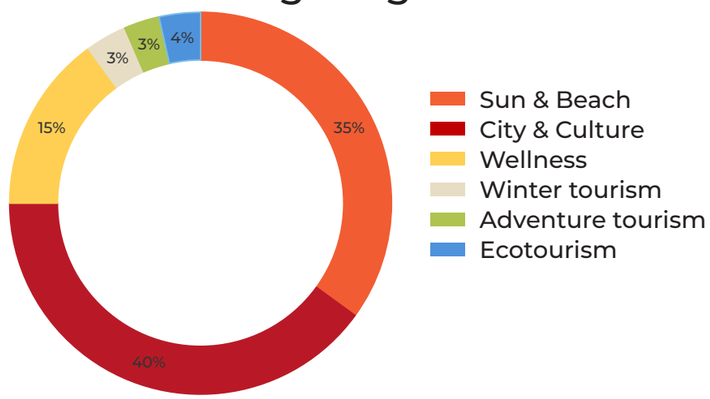
62%

Airport flights Astrakhan — Moscow



40%

Domestic tourism of the Russian Federation targeting culture

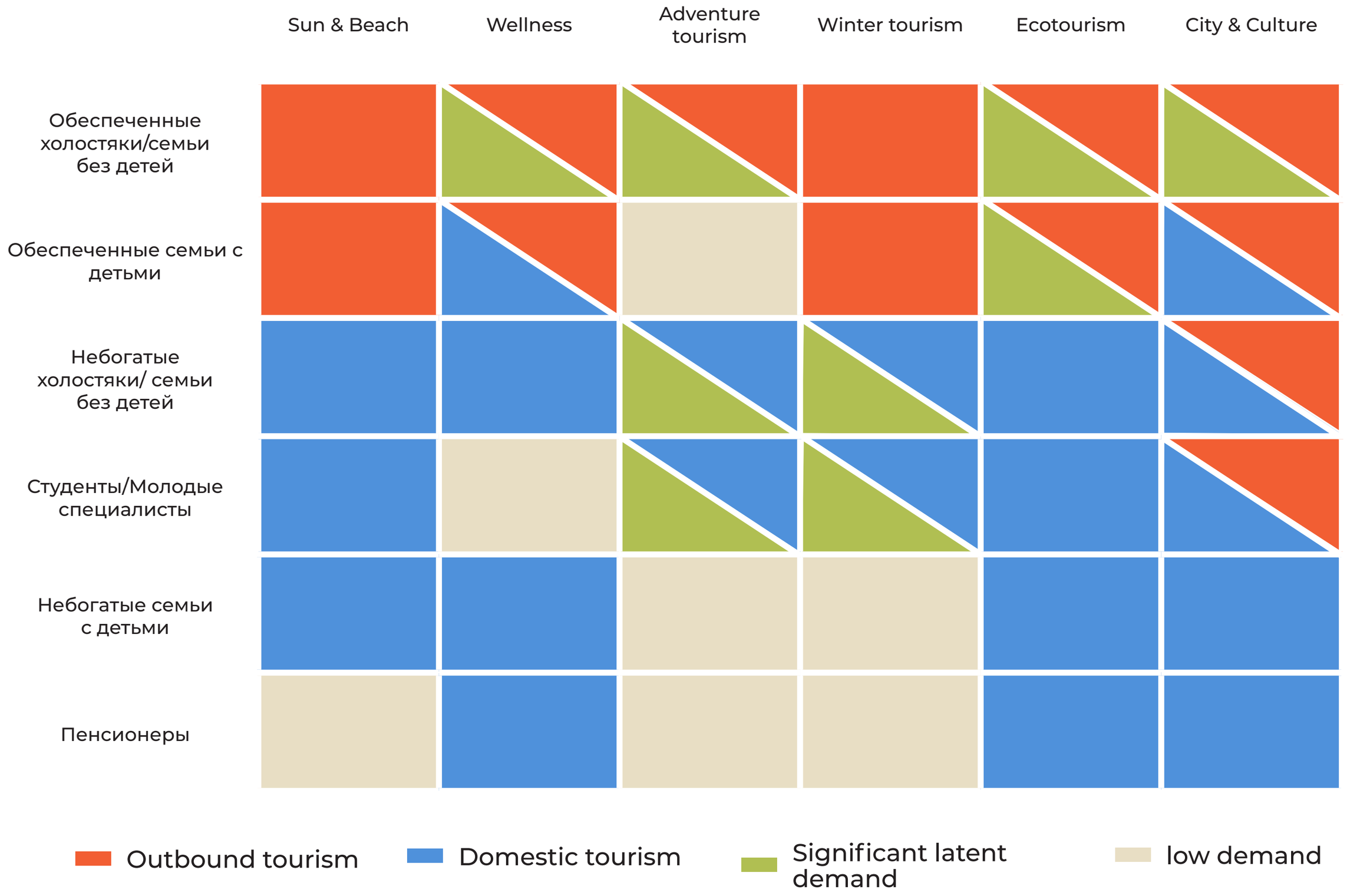


	Moscow	Saint Petersburg	Ekaterinburg	Kazan	Nizhny Novgorod	Rostov-on-Don	Красноярск	Volgograd	Krasnodar	Khabarovsk	Sochi	Mineralny Vodi
Sun & Beach	4 429 268	1 886 066	522 812	440 069	435 489	398 169	382 820	351 667	332 089	215 730	151 313	25 874
City & Culture	5 062 020	2 155 504	597 500	502 936	497 702	455 082	437 508	401 905	379 531	246 549	172 929	29 570
Wellness	1 898 258	808 314	224 062	188 601	186 638	170 656	164 066	150 714	142 324	92 456	64 848	11 089
Winter tourism	442 927	188 607	52 281	44 007	43 549	39 820	38 282	35 167	33 209	21 573	15 131	2587
Adventure tourism	379 652	161 663	44 812	37 720	37 328	34 813	32 813	30 143	28 465	18 491	12 970	2218
Ecotourism	442 927	188 607	52 281	44 007	43 549	39 820	38 282	35 167	33 209	21 573	15 131	2587

Source: Roland Berger Strategy Consultants, Федеральная служба государственной статистики

The total number of residents in this radius of accessibility is 12,043,250 ppl

Sun & Beach	4 215 138
City & Culture	4 817 300
Wellness	1 806 488
Winter tourism	421 514
Adventure tourism	361 298
Ecotourism	421 514


Sun & Beach
Wellness
Adventure tourism
Winter tourism
Ecotourism
City & Culture
Обеспеченные холостяки/семьи без детей
Обеспеченные семьи с детьми
Небогатые холостяки/ семьи без детей
Студенты/Молодые специалисты
Небогатые семьи с детьми
Пенсионеры
Outbound tourism
Domestic tourism
Significant latent demand
low demand

Number of collective accommodation facilities

	2010	2011	2012	2013	2014	2015	2016	2017	2018
SFD	2106	2024	2447	2484	2607	4133	5616	7480	8871
Astrakhan region	123	117	135	140	172	313	265	334	331

The structure of collective accommodation facilities in the Astrakhan region

	2015	2016	2017	2018	2019
Health resort organizations, units	3	4	4	3	3
in them places	711	713	713	711	711
Recreation centers, campings and other recreation organizations, units	31	81	112	102	108
in them places	1144	2062	6050	5218	5542
Tourist bases, units	18	26	52	52	52
in them places	815	1319	2208	2169	2201
Children's summer health-improving institutions, units	245	246	240	236	243
Hotels, (pcs)	112	153	163	169	158
Number of seats, units	5344	6756	6451	7115	7216

Source: Unified Interdepartmental Information and Statistical System (EMISS), Federal State Statistics Service for the Astrakhan Region

Astrakhan fishing

Volga-Akhtubinskaya floodplain is rich in fish

Hunting

A large number of hunting farms

Event tourism

Organization of theater and film festivals, gastronomic festivals, national festivals and holidays

Cultural and educational

Excursions to the Kremlin – a unique architectural ensemble of the 16th century, as well as to the Astrakhan State United Historical and Archival Museum, the Astrakhan State Art Gallery named after V.I. P.M. Dogadin, museum of the history of the development of medicine, memorial house-museum of the Ulyanovs, house-museum B.M. Kustodiev, V. Khlebnikov's house-museum

Ecological and hiking

A large number of wildlife sanctuaries and reserves in the Astrakhan region

Cruise tourism

River cruises on the Volga and Akhtuba, Lotus fields in the Volga delta

Medical and wellness

The largest in Russia curative salt lake Baskunchak is located here. And balneological resort with curative mud of lake-ilmen Tinaki

Archaeological tourism

On the territory of the Kamyzyaksky district of the region (Samosdelka village), an ancient city of the 9th century was found and excavated with a large number of surviving household items. Archaeological monuments «Selitrennoe settlement» and the tourist complex «Saray-Batu - the capital of the Golden Horde»

	Hunting and fishing	Culturally-educational tourism	Event toursim	Wellness toursim	Hiking tourism	Archeological tourism	Cruise tourism
Moscow	Significant demand	Significant demand	Low demand	Significant demand	Significant demand	Significant demand	Significant demand
St. Petersburg	Significant demand	Significant demand	Low demand	Significant demand	Significant demand	Significant demand	Significant demand
Sochi	Low demand	Average demand	Average demand	Low demand	Low demand	Average demand	Low demand
Krasnodar	Average demand	Significant demand	Average demand	Average demand	Low demand	Significant demand	Low demand
Mineralny Vodi	Significant demand	Significant demand	Low demand	Low demand	Average demand	Average demand	Average demand
Rostov-on-Don	Average demand	Significant demand	Average demand	Average demand	Low demand	Significant demand	Significant demand
Nizhny Novgorod	Low demand	Average demand	Low demand	Significant demand	Average demand	Significant demand	Significant demand
Volgograd	Significant demand	Significant demand	Average demand	Significant demand	Average demand	Significant demand	Significant demand
Kazan	Low demand	Average demand	Average demand	Significant demand	Average demand	Significant demand	Significant demand

Significant demand

Average demand

Low demand

tourist attractors

- cultural and historical tourism
- fishing and gastronomic tourism
- natural and ecological tourism
- health tourism
- cultural and entertainment tourism
- points provided with cellular communication
- main tourist routes

Narimanovsky

Krasnoyarsky

Astrakhan

Ikryaninsky

Kamyzyaksky

Volodarsky

Limansky

ОПИСАНИЕ НАИБОЛЕЕ ЗНАЧИМЫХ ДЛЯ ПОТРЕБИТЕЛЕЙ ХАРАКТЕРИСТИК ПОТЕНЦ

ТОВ ПОКАЗА

tourist attractors

- cultural and historical tourism
- fishing and gastronomic tourism
- natural and ecological tourism
- health tourism
- cultural and entertainment tourism

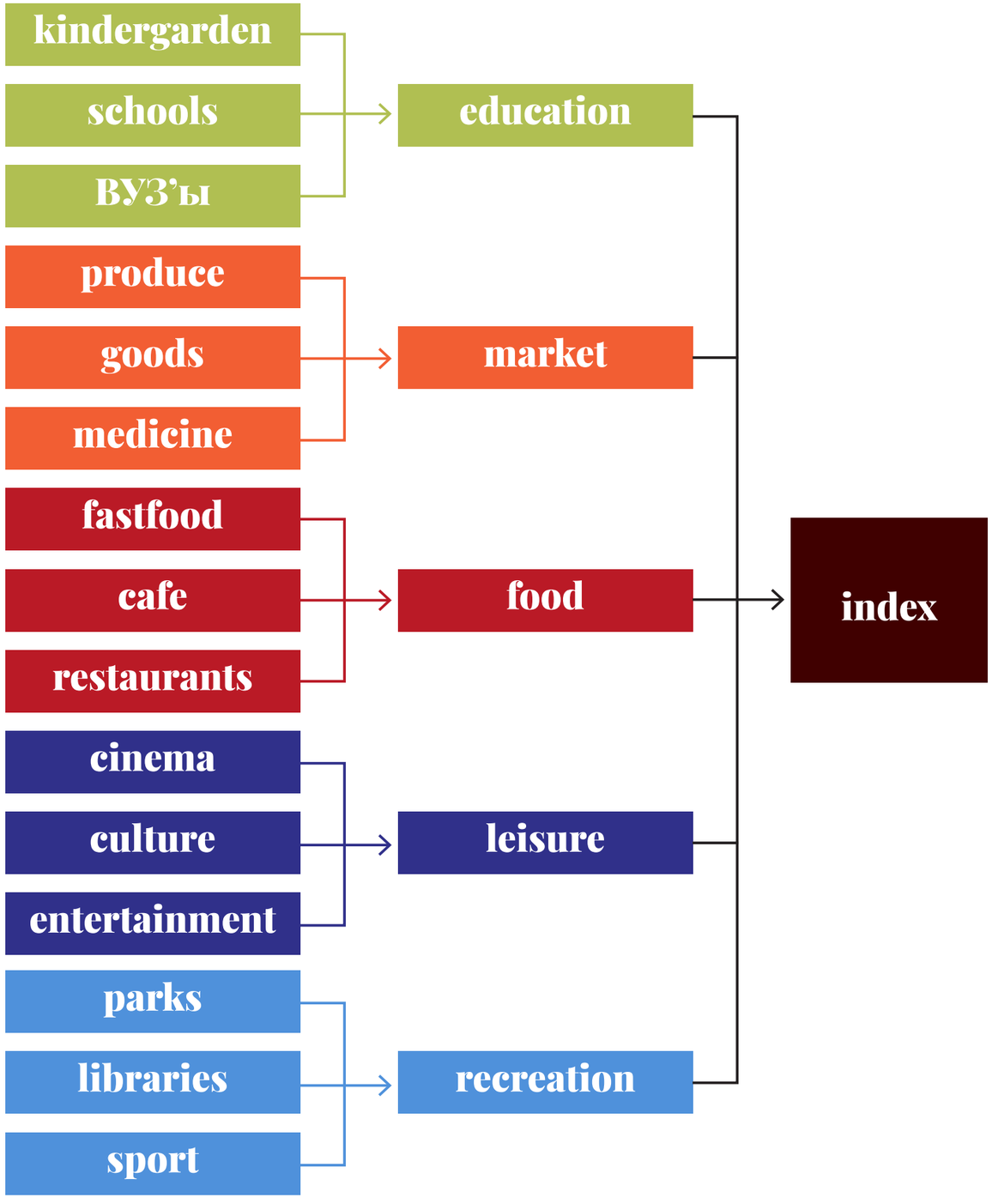
The comprehensive assessment of the territory of the “City of Astrakhan” MO is based on the method for determining the functional quality of the urban environment on the basis of the Walkscore analytical tool

The assessment of the presence of the main social functions necessary for the formation of a functionally high-quality urban environment from the standpoint of the daily and episodic needs of residents is carried out on the basis of the Walkscore analytical model.

The methodological provisions of the Walkscore methodology were clarified from the standpoint of the specifics of the development of Russian cities in terms of:

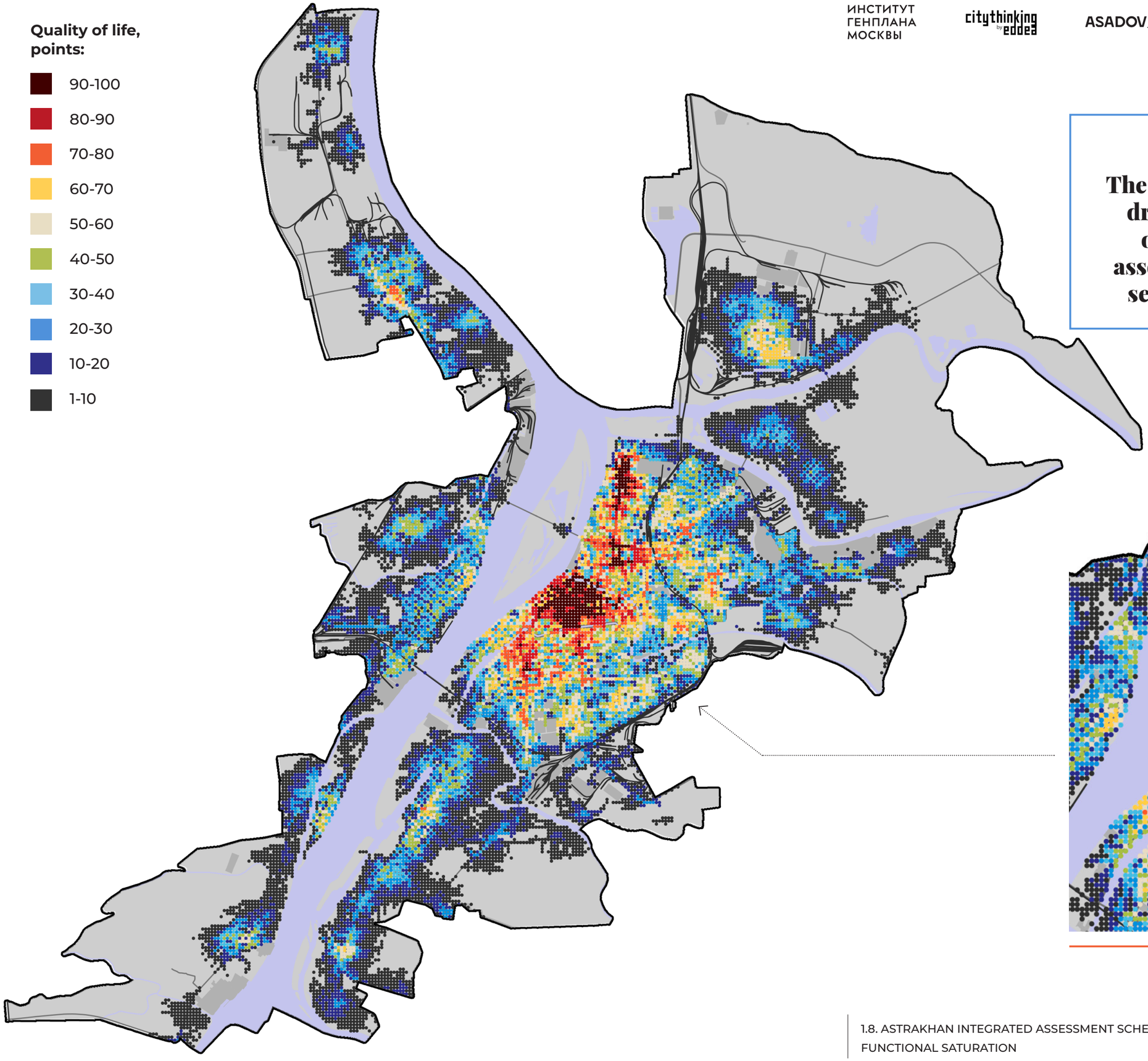
- lists of objects under consideration;
- the size of the zones of influence of objects (the formula for the extinction of influence)

This method allows us to qualitatively differentiate the agglomeration space and determine the hierarchy of territories in terms of the planning structure of centers and sub-centers.At the design stage, the model allows you to determine the lack of functions that are necessary to achieve a high quality environment..

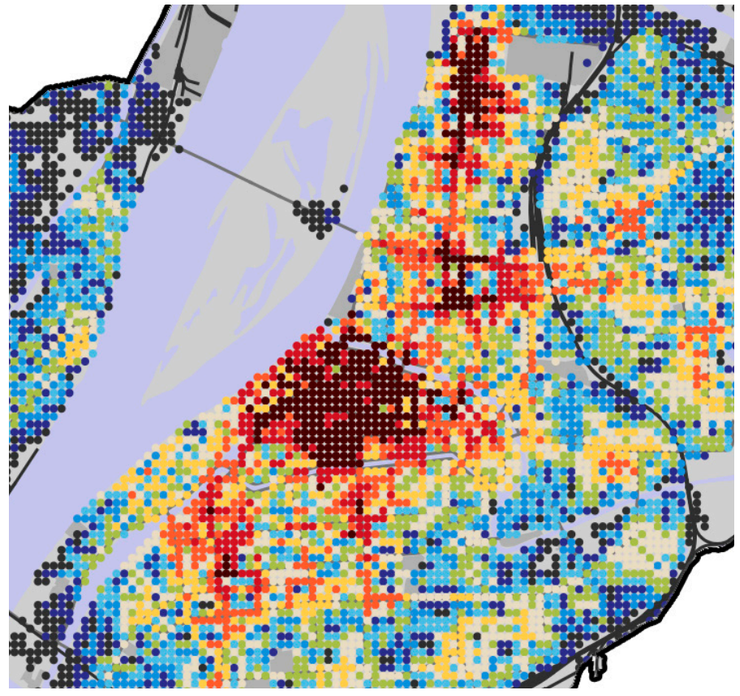


Quality of life, points:

- 90-100
- 80-90
- 70-80
- 60-70
- 50-60
- 40-50
- 30-40
- 20-30
- 10-20
- 1-10



The assessment shows a significant drop in the quality of life on the outskirts of the city, which is associated with the low functional self-sufficiency of the territory.



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Quality of life, points:

- 60-70
- 50-60
- 40-50
- 30-40
- 20-30
- 10-20
- 1-10

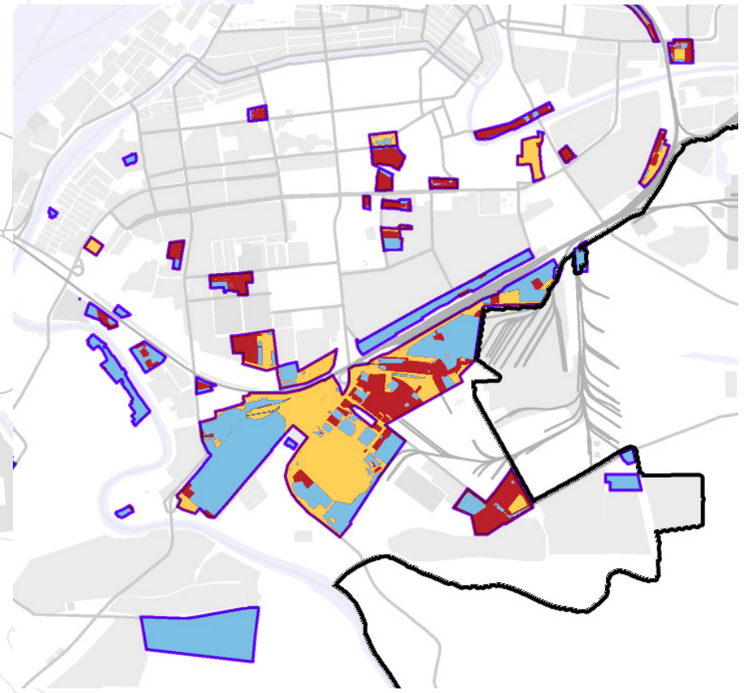
boundaries of multi-storey residential buildings

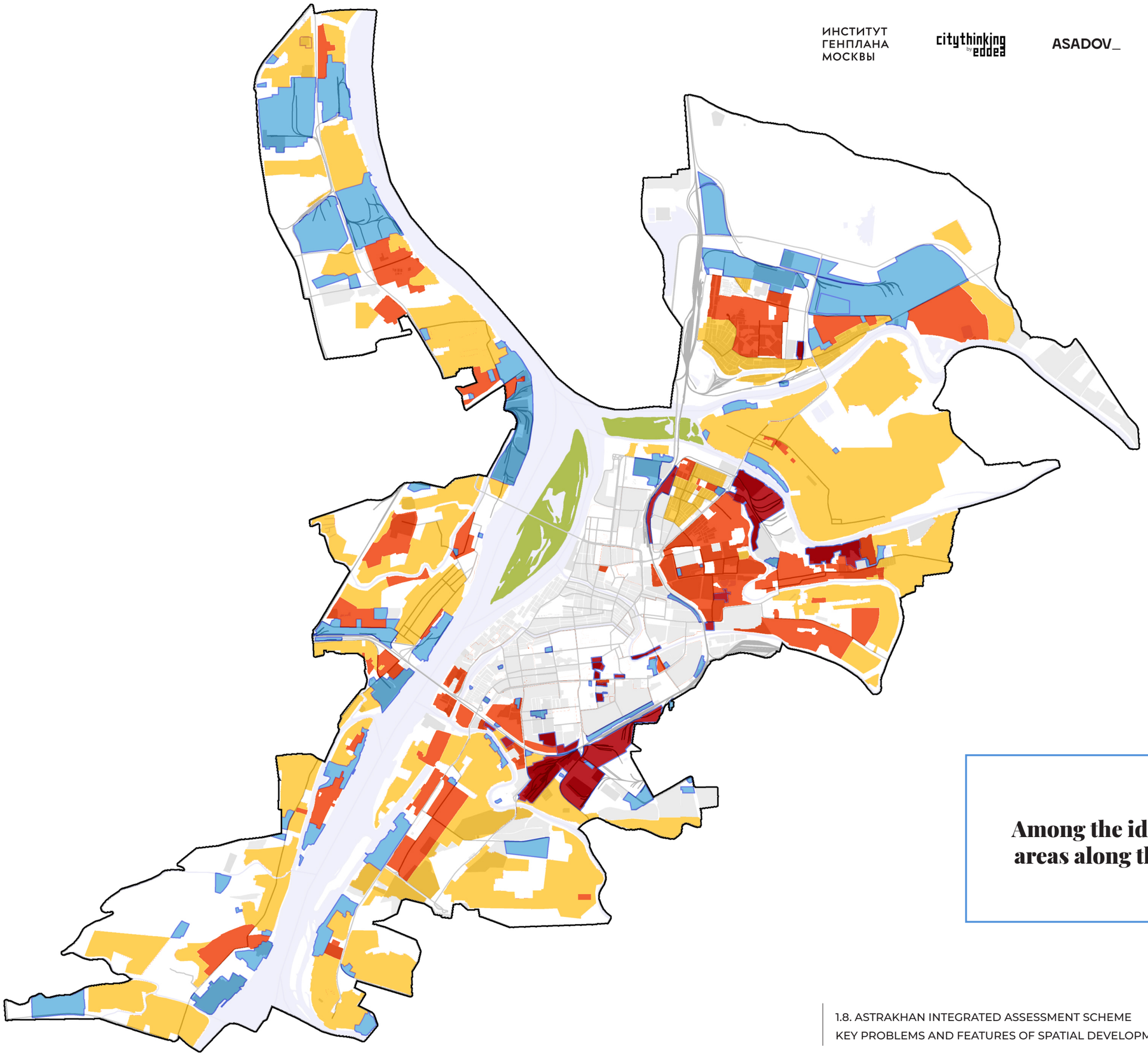
The average values of the index within the boundaries of residential areas are a guideline for determining the priority measures for the placement of public facilities

Density of non-production services within the boundaries of production areas, units / ha:

- more than 3
- 1-3
- 0

Based on open data, points have been collected that represent the services and services of the tertiary sector of the economy. The high density of such services within the boundaries of production areas indicates the potential for their qualitative reorganization.

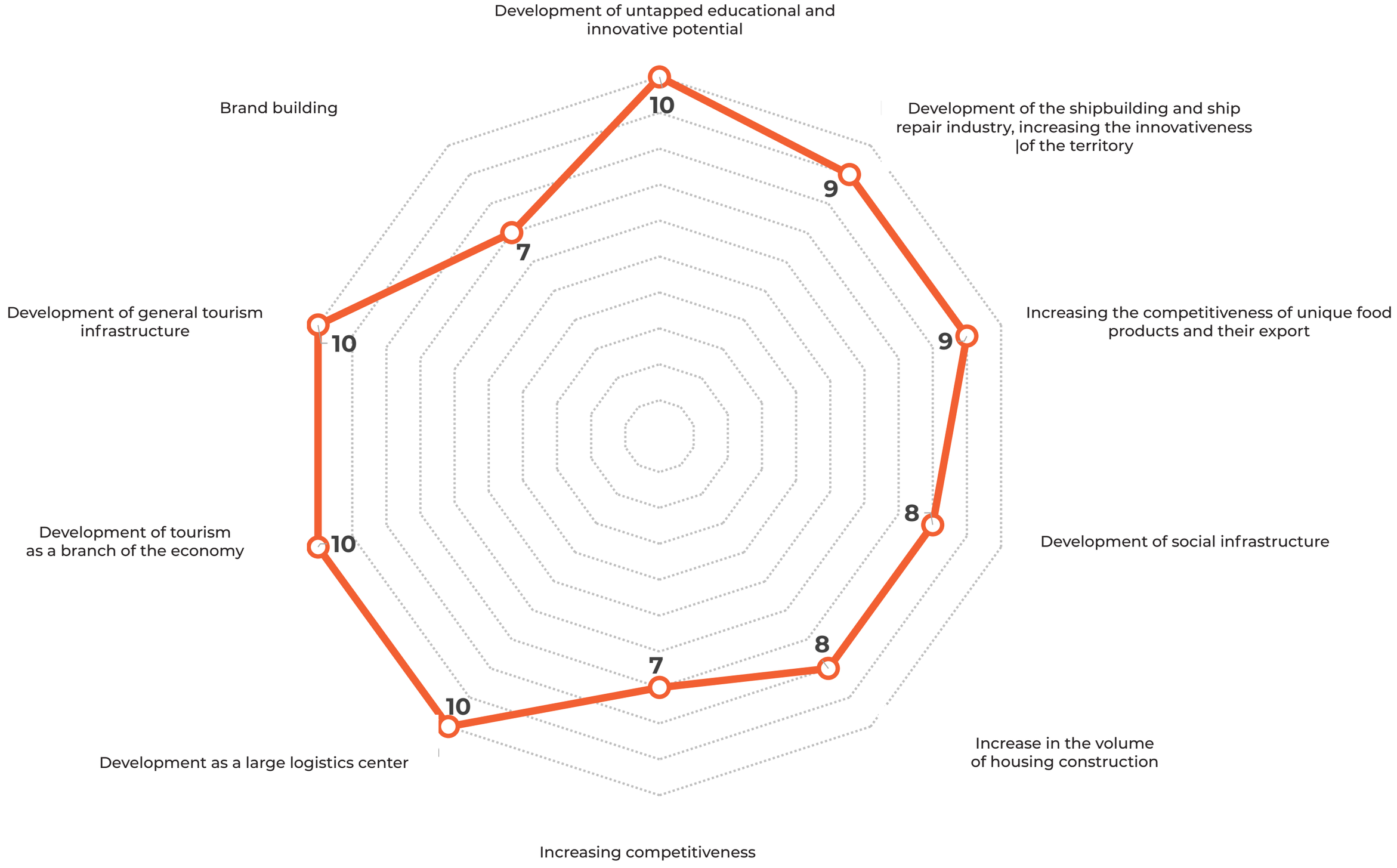




Territories of the city:

- multi-storey housing with a low functional saturation index
- individuals housing with a low index of functional saturation
- Low efficiency factories
- Manufactures continuing production activities
- Territories with high non-military natural and recreational potential

Among the identified problem areas, the areas along the railway have the highest potential.


Development of untapped educational and innovative potential
Brand building
Development of the shipbuilding and ship repair industry, increasing the innovativeness of the territory
Development of general tourism infrastructure
Increasing the competitiveness of unique food products and their export
Development of tourism as a branch of the economy
Development of social infrastructure
Development as a large logistics center
Increase in the volume of housing construction
Increasing competitiveness
10
7
9
9
8
8
7
10
10

Industrial and economic agglomeration ties:

- weak
- average
- strong

Socio-cultural agglomeration ties:

- weak
- average
- strong

Narimanov
Krasniy Yar
Astrakhan
Volodarsky
Nachalovo
Tri Protoka
Altindjar
Krasnie Barrikadi
Evpraksino
Tatarskay bashkamovka
Ikryanoe
Kamyzyak
Karalat
Liman
Olya

1.8. DIAGRAM ILLUSTRATING THE OPERATION OF THE SYSTEM OF INTRA-AGGLOMERATION LINKS

The list of enterprises was analyzed for each of the settlements under consideration. The enterprises of each settlement were correlated with all enterprises of the rest of the settlements for the degree of economic interaction by categories: weak connection, medium connection, strong connection, branch / subsidiary company.

Depending on the category, the link was assigned a numerical point (respectively 0.1, 0.4, 0.8, 1 point) and a total score was calculated for each pair-link.

From 10 analyzed settlements, 45 pairs of connections are formed. The calculated bond strength ranges from 1.9 to 265.1 points. A group of connections (9 pcs.) Is distinguished, in which enterprises of the regional center, Astrakhan, participate. The calculated strength of ties in this group varies from 191.2 to 265.1, while the maximum strength of ties in which enterprises from Astrakhan do not participate does not exceed 16.8 points.

In general, connections can be divided into 4 groups

- connections Astrakhan - agglomeration of the first order (7 units: Narimanov, Volodarsky, Liman, Ikryanoe, Kamyzyak, Krasniy Yar, Nachalovo) - 229.7 - 265.1 points;
- connections Astrakhan - agglomeration of the second order (2 units: Red Barricades, Olya) - 191.2 - 219.8 points;
- inter-peripheral connections of the first order (2 units: Volodarsky - Liman and Volodarsky - Kamyzyak) - 16.6-16.8;
- inter-peripheral connections of the second order (the remaining 34 connections) - 1.9 - 14 points.

	Astrakhan	Narimanov	Volodarsky	Liman	Ikryanoe	Kamyzyak	Krasniy Yar	Nachalovo	Krasnie Barrikadi	Olya
Astrakhan		265,1	251,4	248,7	246,8	246,5	240	229,7	219,8	191,2
Narimanov	265,1		13,5	12,6	8,8	13,3	9	8,8	4,1	5,4
Volodarsky	251,4	13,5		16,8	13,9	16,6	10,3	8,2	10,8	6,4
Liman	248,7	12,6	16,8		12,5	14	11,1	8,7	10,3	10,5
Ikryanoe	246,8	8,8	13,9	12,5		13,3	9,4	8,2	10,4	1,9
Kamyzyak	246,5	13,3	16,6	14	13,3		10,5	8,5	4,8	8,2
Krasniy Yar	240	9	10,3	11,1	9,4	10,5		7,6	7,4	5,2
Nachalovo	229,7	8,8	8,2	8,7	8,2	8,5	7,6		6,9	4,9
Krasnie Barrikadi	219,8	4,1	10,8	10,3	10,4	4,8	7,4	6,9		1,9
Olya	191,2	5,4	6,4	10,5	1,9	8,2	5,2	4,9	1,9	

Narimanov

Krasniy Yar

Astrakhan

Volodarsky

Ikryanoe

Kamyzyak

Liman

1.8. PRINCIPLE MODEL
UPPER LEVEL

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НЕ МОГУ
убожество и здравый смысл

Krasniy Yar

Narimanov

Astrakhan

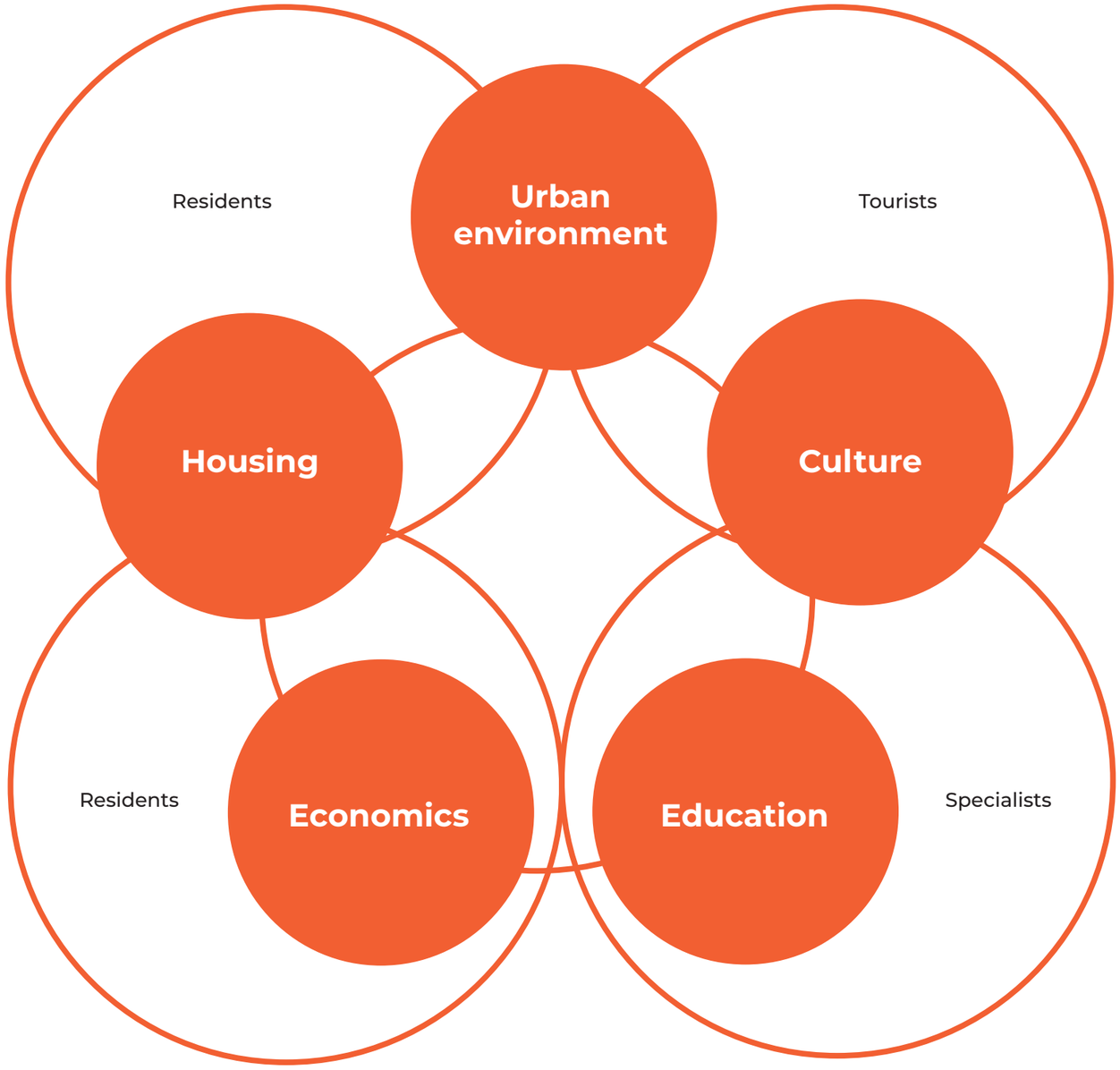
Volodarsky

Ikryanoe

Liman

Kamyzyak

Residents of Astrakhan represent the demand for the quality of services and the urban environment, opportunities for self-realization, and also support the diversity of the economy in the future



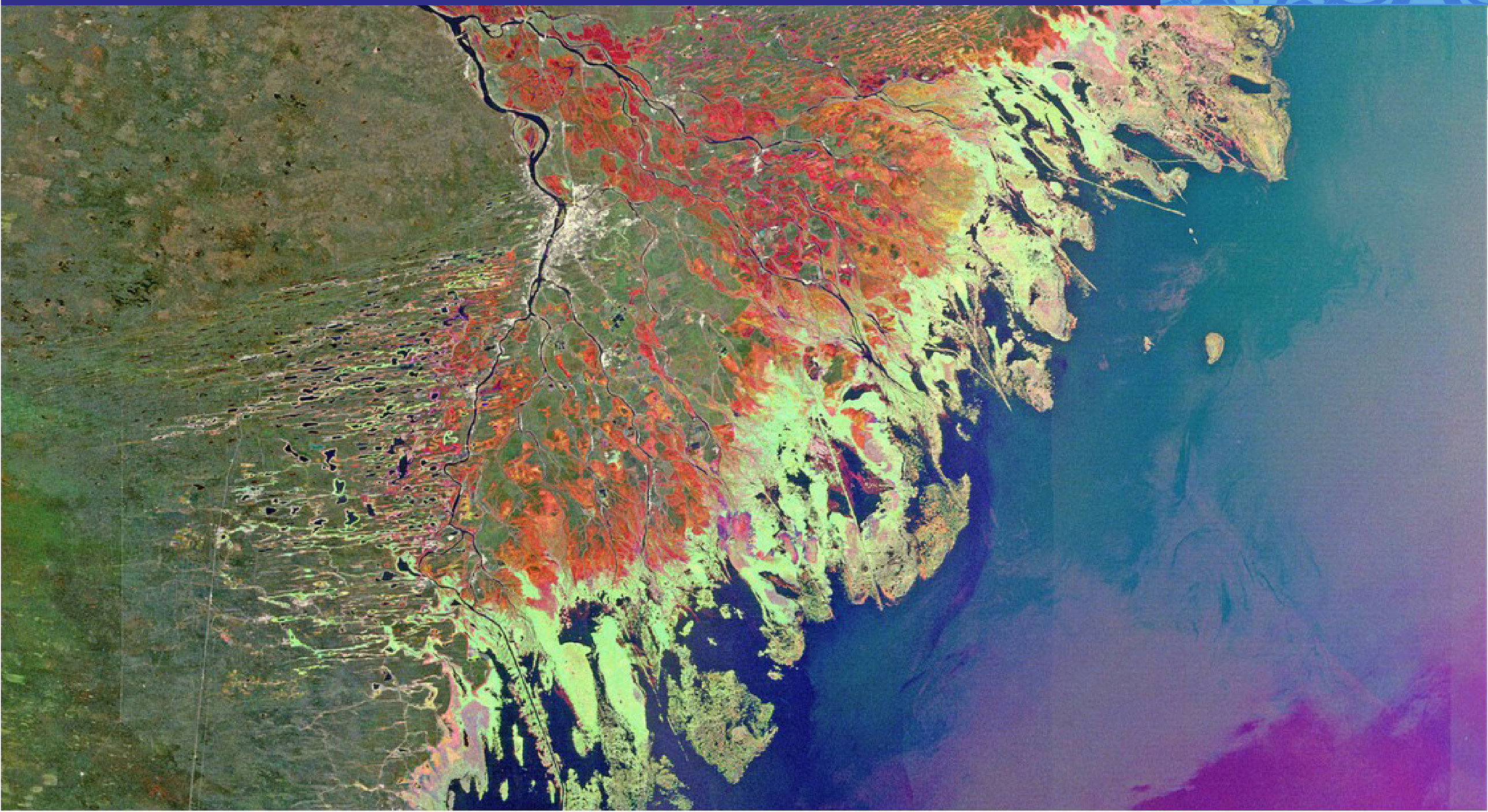
Guests of Astrakhan appreciate the quality of the urban environment and the variety of social and cultural opportunities

Residents of Astrakhan are interested in high-quality housing and urban economy, where they can realize themselves

Experts are in demand for opportunities for self-realization, but the quality of the environment and the possibility of leisure remain important

2

SCENARIO OF SPATIAL DEVELOPMENT OF THE AGGLOMERATION



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1 WE ARE PART OF THE VOLGA DELTA

The Astrakhan urban agglomeration is inserted within the boundaries of the Volga Delta, and its settlements and activities are deeply embedded in the estuary's landscapes

2 WE CONNECT THIS PART OF THE WORLD

Astrakhan is a historical border region with a tradition of trade and cultural mix, strategically located between the Caspian Sea, Russia and Western Europe

3 WE ARE THE GATEWAY TO A BLUE-GREEN ENVIRONMENT

Astrakhan plays a fundamental role in giving access to the Volga estuary's landscapes, habitats and natural resources from the main strategic networks

A unique plan to create a multifunctional living territory in the Astrakhan region

Using the originality of this the border region with its unique blue-green natural frame of rivers and vegetation through the blue-green Masterplan Strategy

Creating an exemplar of how urban growth can be intrinsically linked with – and enriched by – nature

its natural assets are being seamlessly integrated to raise the attractiveness of the Astrakhan agglomeration

The main objective of the Astrakhan Delta-City Concept Plan is to create an

INCLUSIVE ECOSYSTEM ,

capable of attracting and retaining skilled and talented individuals within the Astrakhan agglomeration.

The main goal of the Astrakhan Delta City Master Plan is to create an INCLUSIVE ECOSYSTEM capable of attracting and retaining qualified and talented people in the Astrakhan agglomeration.

The objectives of the master plan relate to three levels of development:

1 agglomeration 2 Metropolitan area 3 intermunicipal

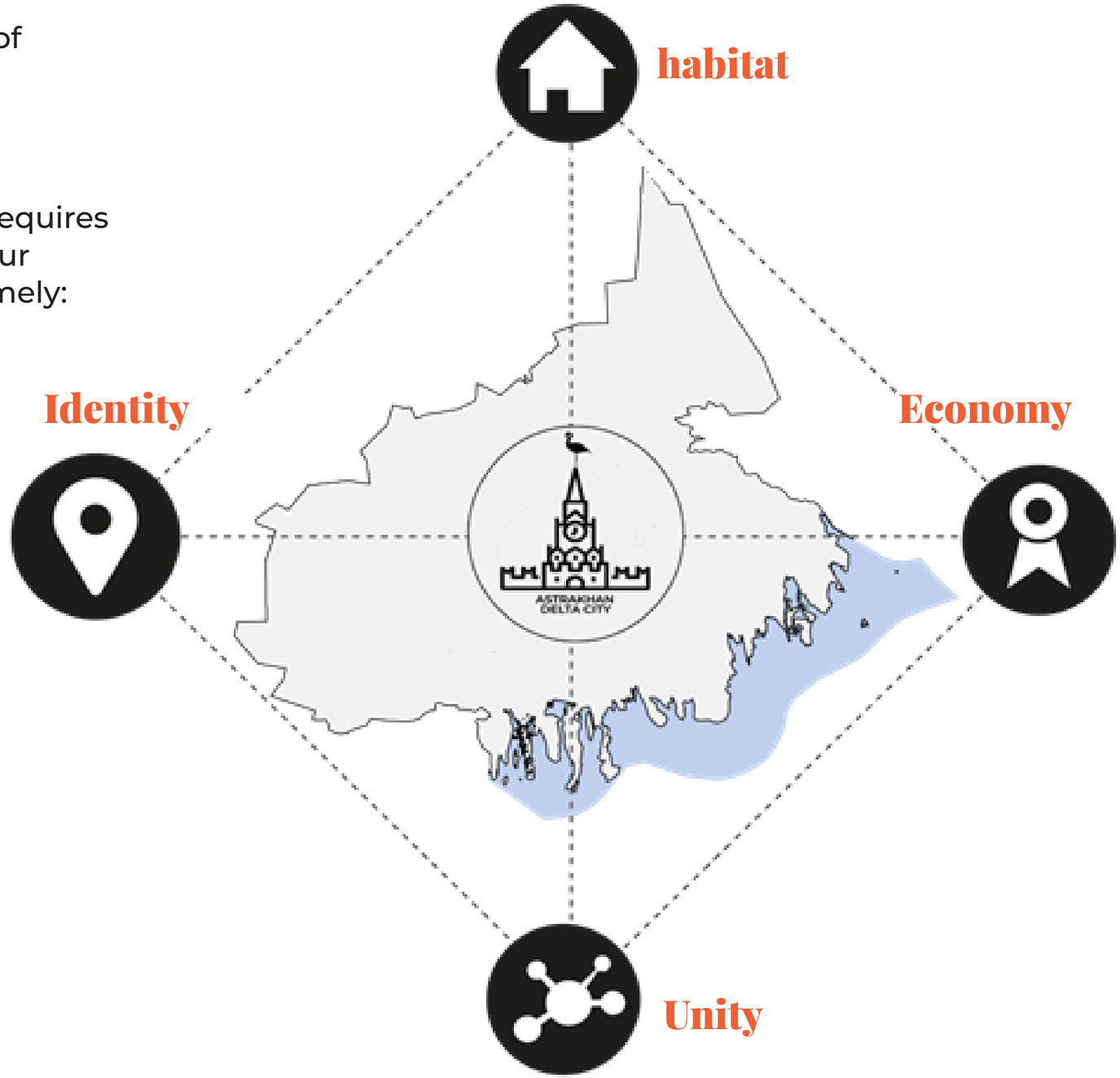
Achieving this goal in a territory as large as Astrakhan requires defining a set of strategies and key actions based on four overarching principles of sustainable development, namely:

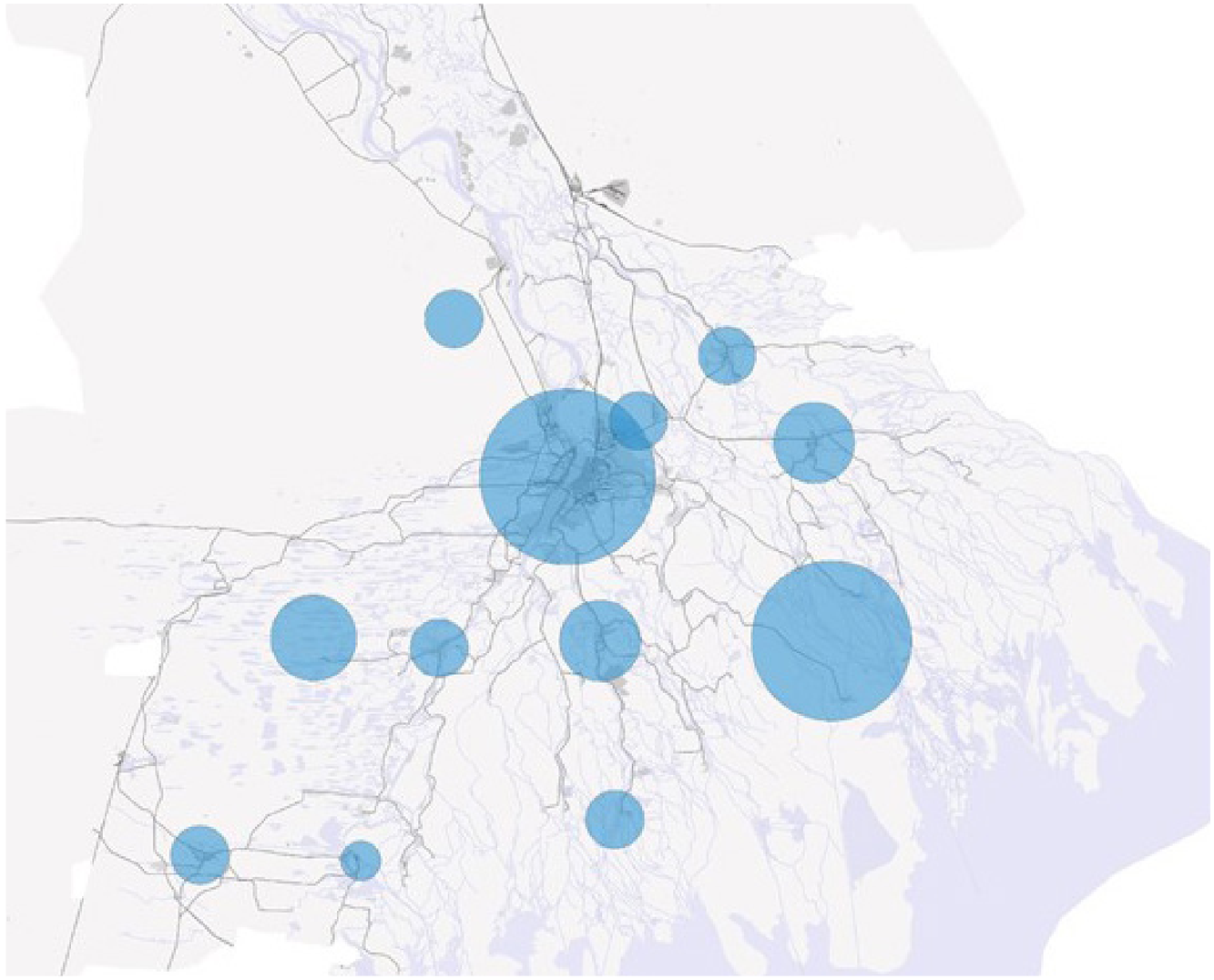
1 **Strategy “Strong Identity”**

2 **Strategy “New habitat”**

3 **Strategy “Unity of blue-green frame “**

4 **Strategy ”Economy natural frameworks “**





Strengthen the unique local identity of the Volga Delta

as a place of natural beauty, rich biodiversity and diverse cultural heritage within the local communities

We will build its new image based on its ideal location and its rich history and cultural assets, generating a strong sense of pride and belonging

1 Preserve the region's natural and cultural heritage

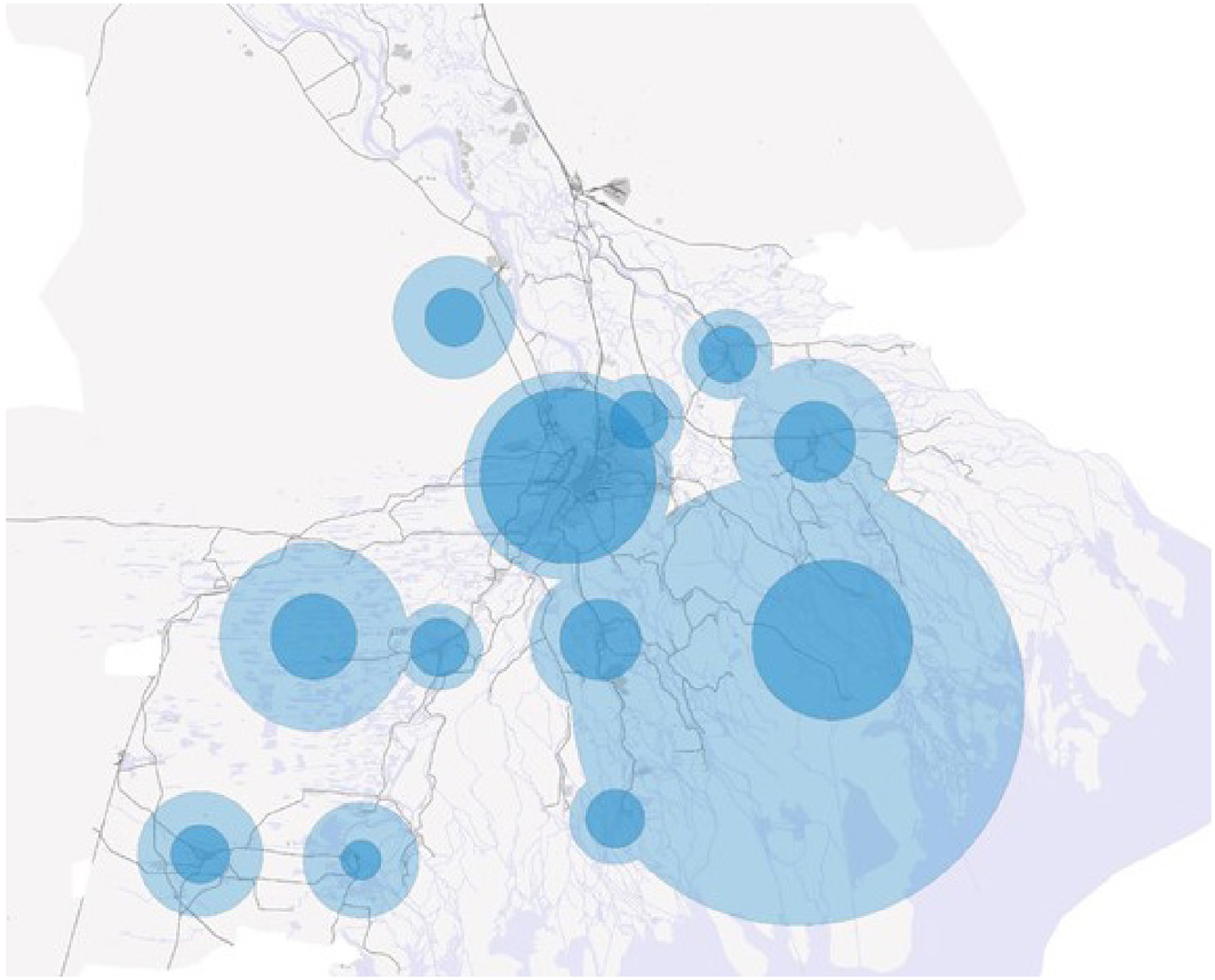
that create Astrakhan´s distinctive natural character and environmental quality, becoming its competitive advantage and asset

2 Create and project a new image of Astrakhan and the Volga Delta

as a leader region in sustainable management of the natural environment

3 Strengthen social cohesion ownership, identification and sense of belonging

in the territory by means of community building and local participation in city decisions

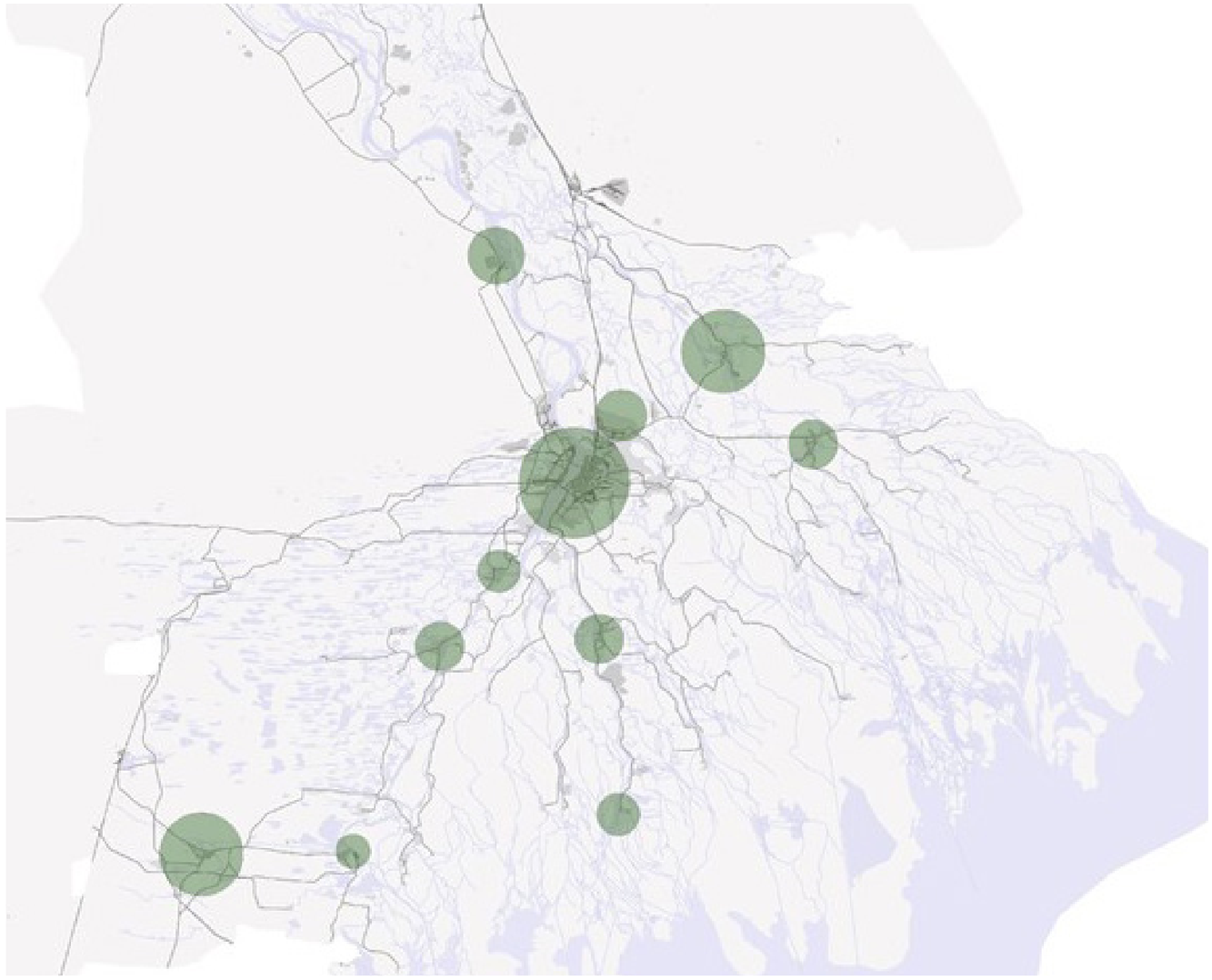


The objectives of the master plan relate to three levels of development:

1 agglomeration

2 Metropolitan area

3 intermunicipal



Create a greener and bluer settlement network

We will integrate spaces and buildings with the natural environment, achieving inclusive and net zero balance neighbourhoods

through the adoption of a sustainable urban ecosystem model, providing a foundation for a better quality of life

4.12 Develop a Regional Affordable Housing Strategy and Plan

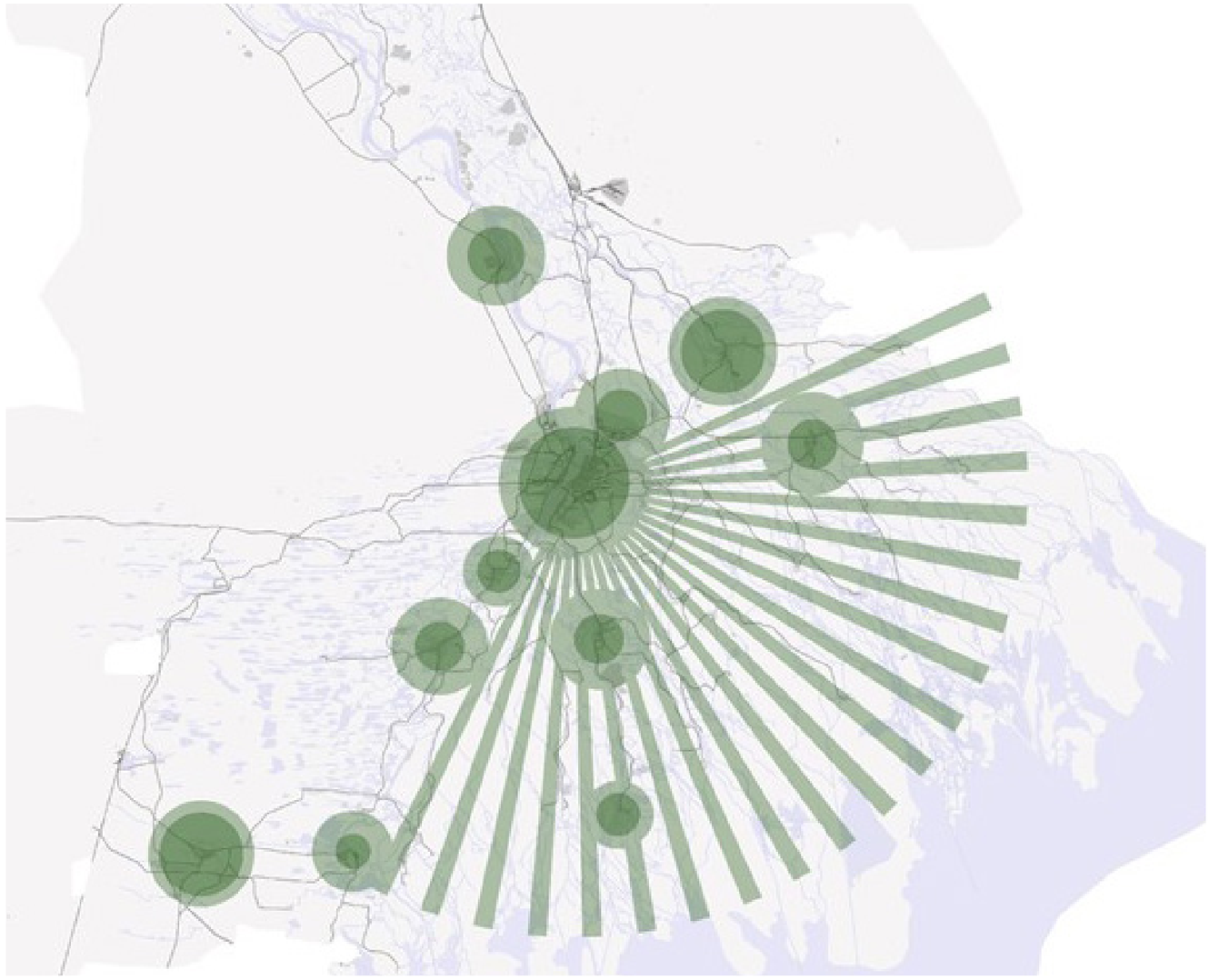
to provide affordable and high-quality housing both by creating a new stock and renovating existing dwellings

5.12 Transition to Green and Blue infrastructures

fostering the synergies between the natural and the built environments to create a pleasant and attractive living environment for all

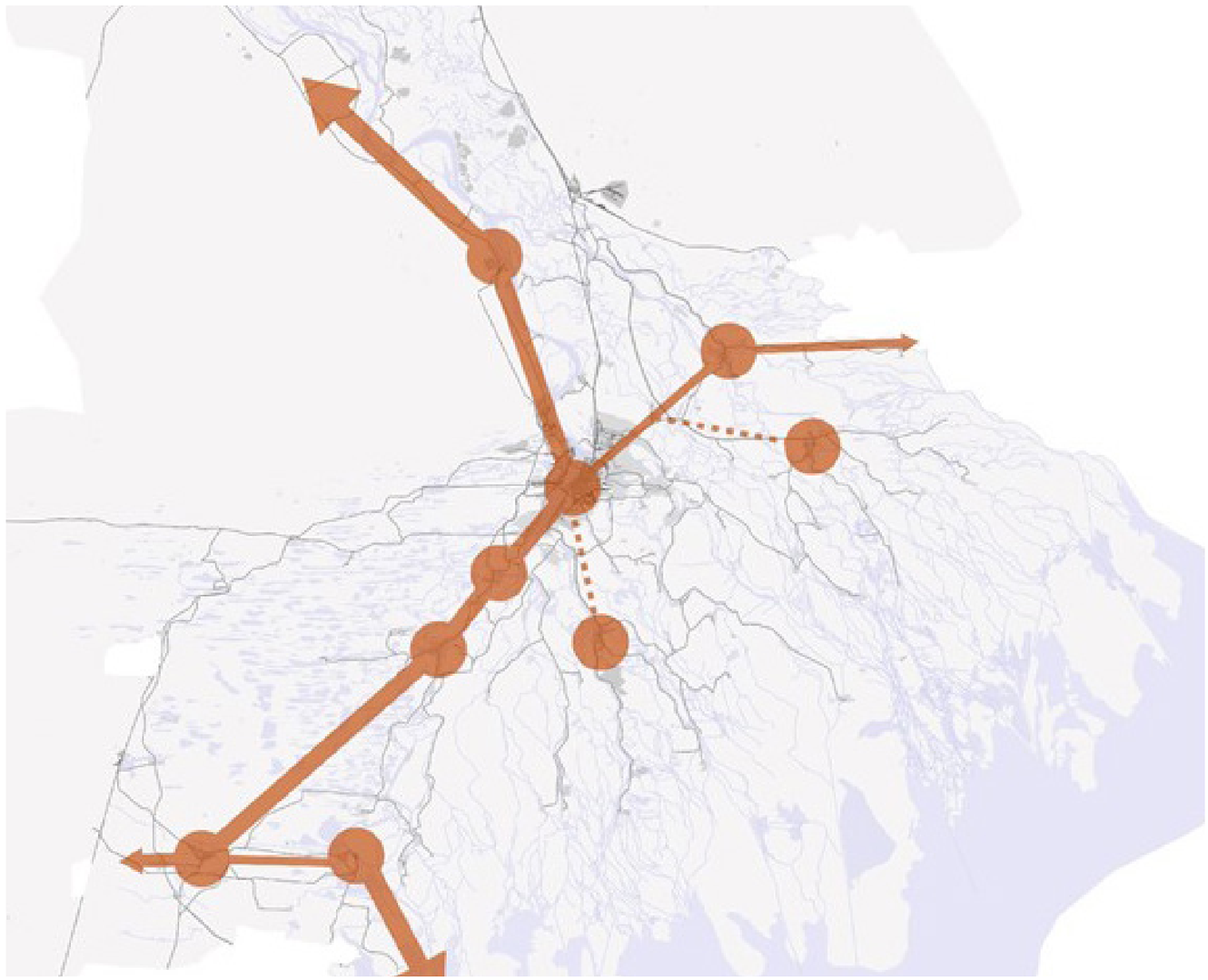
6.1 Implementation of renewable energies

as a leading region in the Russian Federation of its implementation, optimising solar as well as wind sources, both in the urban and rural landscapes



The objectives of the master plan relate to three levels of development:

1. agglomeration
2. Metropolitan area
3. intermunicipal



Form a well-connected territory of multiple district centres

Capitalizing the region’s strategic geopolitical location between land and sea as well as its unique natural resources

We will open the agglomerated district centres through reconnecting them to the main strategic routes that will facilitate the flow of citizens and goods

7 · 1 · 3 Enhance the main transport corridors to the North, South and East that connect Astrakhan to other national and international centres

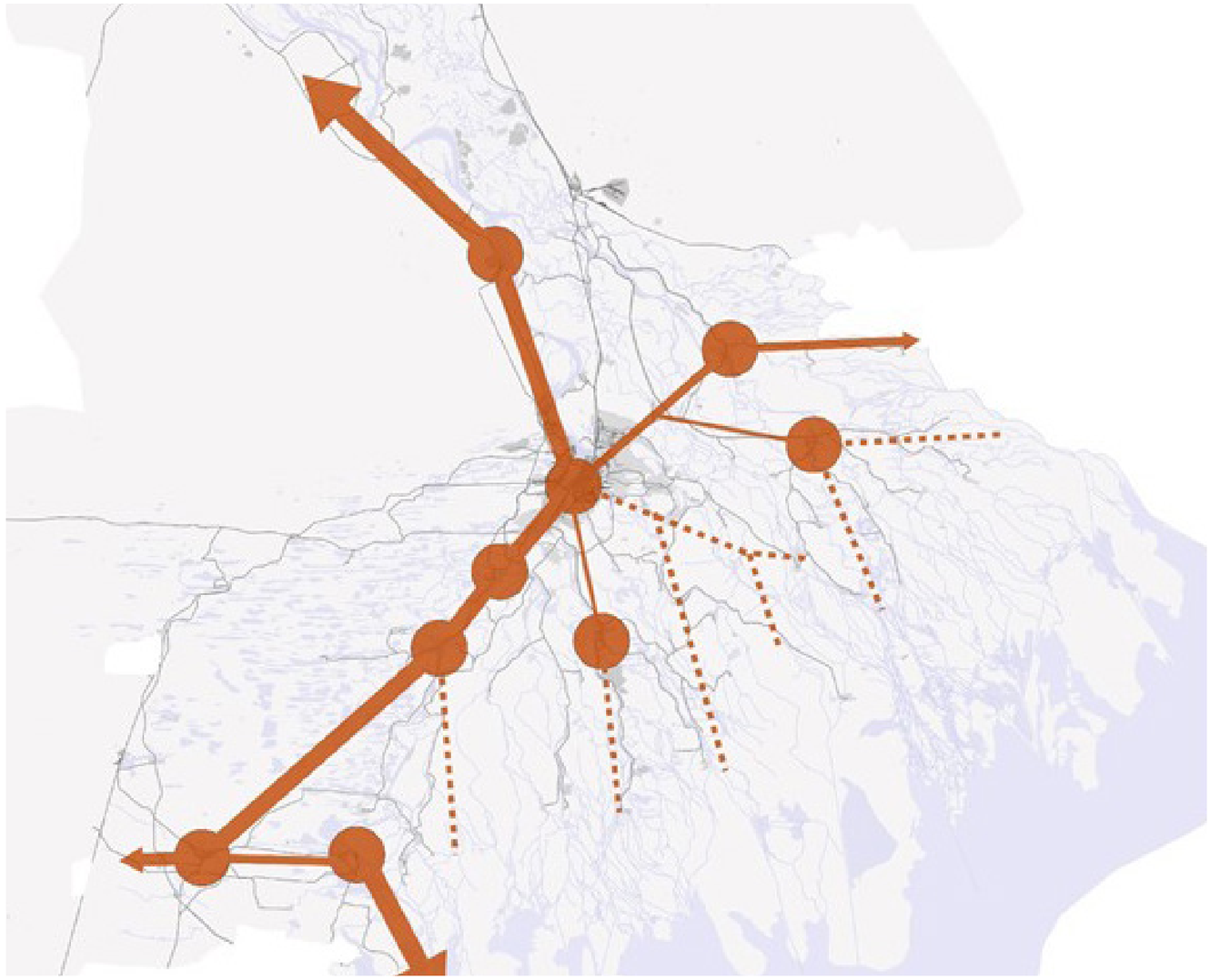
by improving the infrastructures – roads, railway, ports and airport – and locating logistics nodes along it

8 · 1 · 2 · 3 Strengthen the intermunicipalities connections between agglomeration centres

forming a more coherent and integrated territory

9 · 2 · 3 Establish an efficient public transport network

within each district that encourage the use of sustainable modes of transport

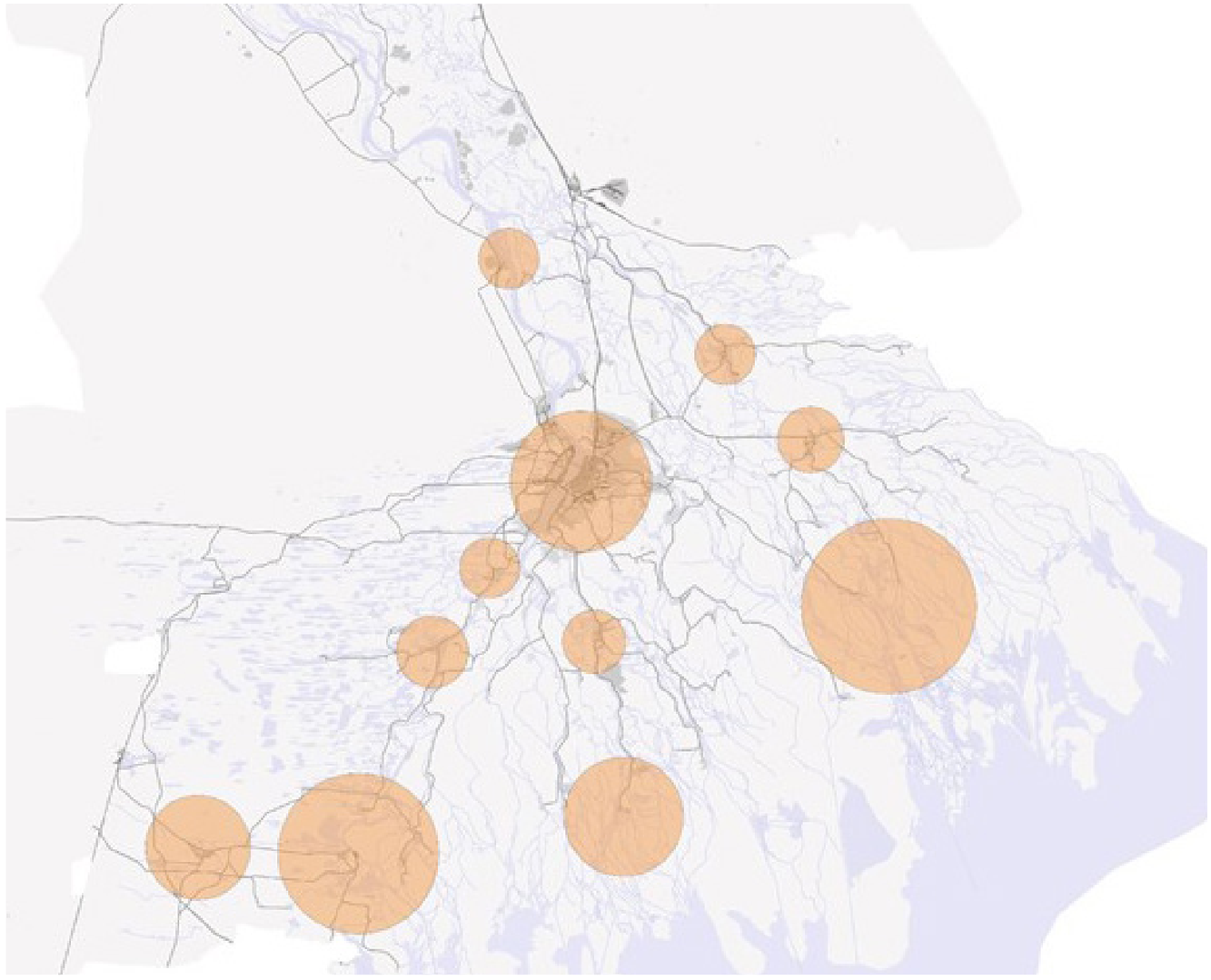


The objectives of the master plan relate to three levels of development:

1 agglomeration

2 Metropolitan area

3 intermunicipal



Drive innovations as well as attract new sustainable business

opportunities, companies and people to make the most of the region’s Green and Blue assets, through establishing a thriving eco-incubator in the region.

We will provide a variety of open, productive spaces that are accesible to all social classes, offering its natural assets as a competitive advantage.

10

Maximizing the value of the distinctive products and services that distinguish Astrakhan

in the domestic and foreign markets under the new brand

11

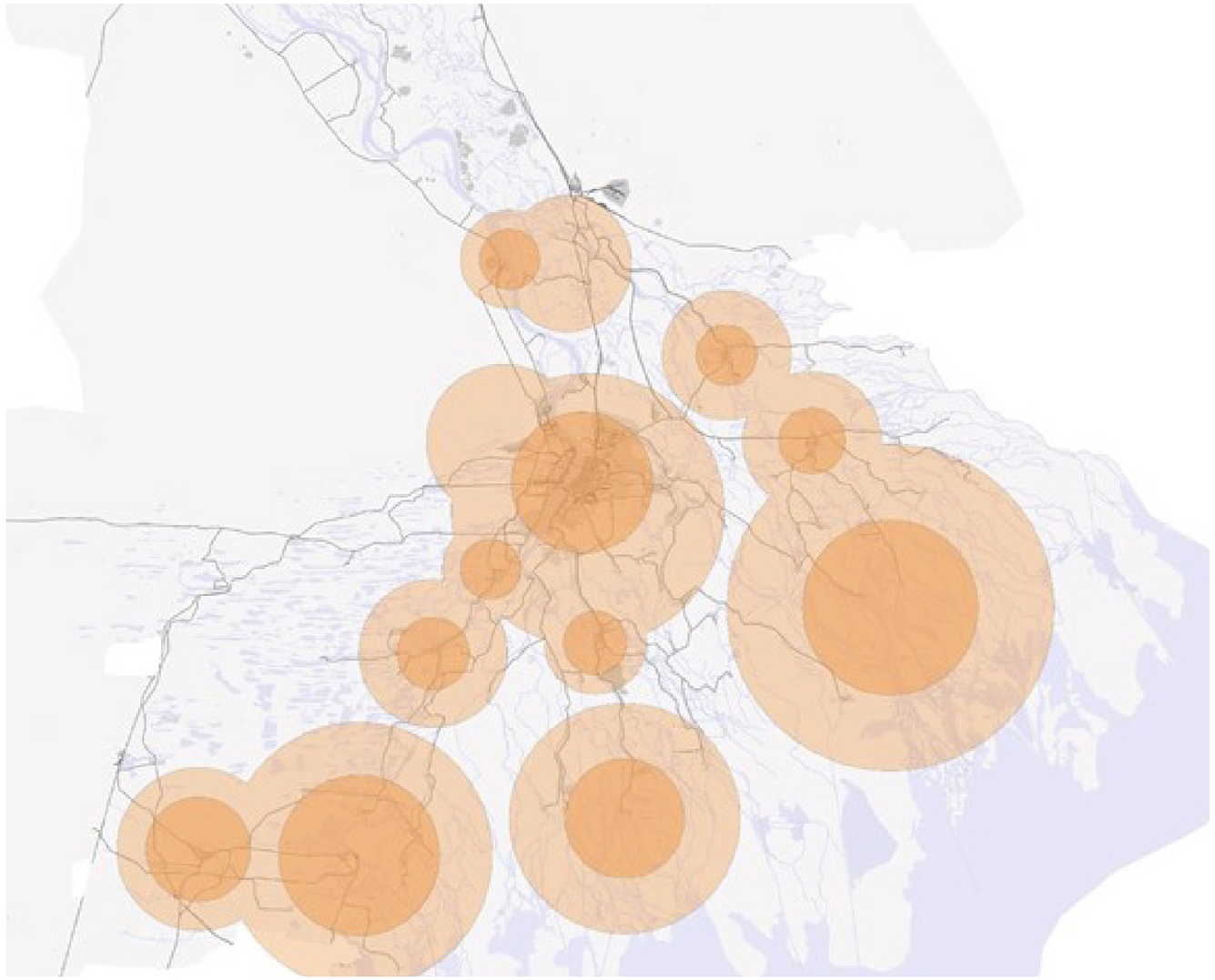
Building a new green blue-green innovation and knowledge economy

by strengthening cooperation between educational
and research institutions and regional enterprises, relying as much as possible on the natural resources of the region, its strategic location and settlement system

12

Increasing the attractiveness of the territory for investors and business

including young entrepreneurs through increased collaboration, inclusive governance and accessible markets



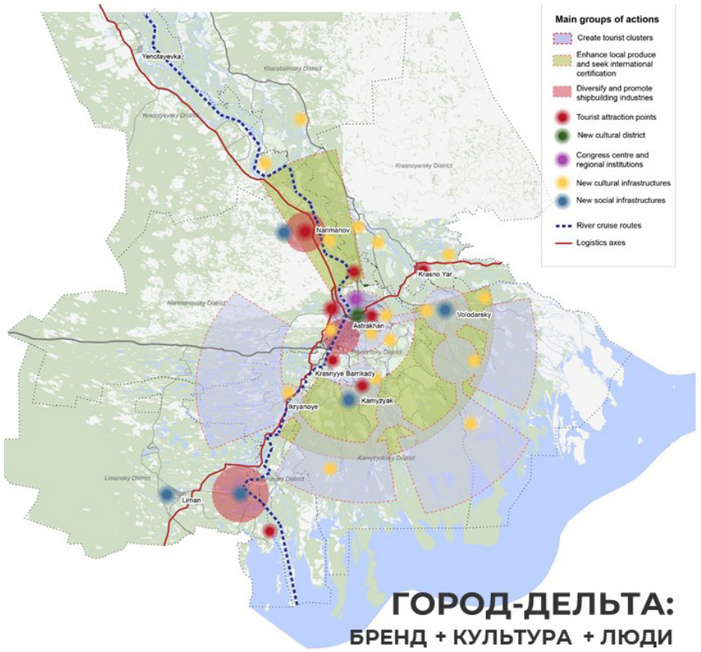
The objectives of the master plan relate to three levels of development:

1 agglomeration

2 Metropolitan area

3 intermunicipal

1 Strategy “Strong Identity”



2 Strategy “New habitat”

3 Strategy “Unity of green-blue frame“

4 Strategy ”Economy natural frameworks“

The integrated outcome of the combined set of strategies and actions is the creation of a

MULTIFUNCTIONAL LIVING TERRITORY

where educational and work opportunities are abundant, attractive neighborhoods are formed, and local residents feel a sense of pride and belonging to stay as part of the community in the Astrakhan agglomerations.

The share of Astrakhan in the main socio-economic indicators of the Astrakhan region in 2019 *

* based on the materials of the statistics collection Regions of Russia. The main socio-economic indicators of cities. R32 2020: Stat. Sat. / Rosstat. - M., 2020 .-- 456 p.

Indicators	Astrakhan share, %
Population (estimate as of January 1, 2020)	**52,7**
Average annual number of employees of organizations	**61,5**
Fixed capital investments	**77,1**
Availability of fixed assets of organizations (at the end of the year)	**58,2**
The volume of shipped goods of own production, performed works and services on its own by type of economic activity:	**93,4**
mining	**44,4**
manufacturing industries	**80,8**
provision of electricity, gas and steam;	**53,3**
air conditioning	**43,4**
water supply; sewerage, organization of collection and disposal	**37,3**
waste, activities to eliminate pollution	**77,9**

1 Development the economy

Active center of influence in the Caspian region

The activities of the Master Plan should strengthen the geostrategic potential of the agglomeration through the development of the North-South spatial corridor.

Moreover, development at all levels: from culture and tourism to economy and transport.

2 Development habitat

Astrakhan agglomeration territory of dynamic development

Provide high dynamics of development agglomeration through the formation of special requirements for the level of study and readiness activities of the Master Plan. As well as - readiness of authorities and residents agglomeration to their implementation.

3 Development human capital

Astrakhan - a city of opportunities, an active multifunctional center

We develop a person so that he develops the environment
and the economy.

We form the environment so that it defines a person. We create the necessary and sufficient conditions for the economy: we develop territorial and infrastructural resources, we apply planning and best practices.

4 Development intangible capital

Demonstration area technologies of ecosystem interactions

Formation in the Astrakhan agglomeration of a number of ecosystems within which the development of modern technologies and solutions is possible. Including - as a justification for attracting federal funding.

1. Trust in the authorities (trust in the President of the Russian Federation, top officials (heads of the highest executive bodies of state power) of the constituent entities of the Russian Federation, the level of which is determined, among other things, by assessing public opinion regarding the achievement of the national development goals of the Russian Federation in the constituent entities of the Russian Federation) ...

2. The population of the constituent entity of the Russian Federation.

3. Life expectancy at birth.

4. Poverty rate.

5. The share of citizens who systematically go in for physical culture and sports.

6. Level of education.

7. The effectiveness of the system of identification, support

and the development of abilities and talents in children and youth.

8. The proportion of citizens engaged in volunteer (volunteer) activities.

9. Conditions for the upbringing of a harmoniously developed

and a socially responsible person.

10. Number of visits to cultural events.

11. The number of families who have improved their living conditions.

12. The volume of housing construction.

13. The quality of the urban environment.

14. The proportion of the road network in the largest urban agglomerations that meets the standards.

15. Quality of the environment.

16. Growth rate (growth index) of real average monthly wages.

17. Growth rate (growth index) of the real per capita money income of the population.

18. The growth rate (growth index) of the physical volume of investments in fixed assets, excluding investments by infrastructure monopolies (federal projects) and budgetary allocations from the federal

budget.

19. The number of people employed in small and medium-sized businesses, including individual entrepreneurs and self-employed.

20. «Digital maturity» of state authorities of the constituent entities of the Russian Federation, local governments and organizations in the field of health care, education, urban economy and construction, public transport, implying their use of domestic information technology solutions.

Центры развития (точки роста)

- public and residential
- production and logistics
- tourist
- international significance (hotel and business cluster

- directions for strengthening centrifugal, centripetal and intermunicipal agglomeration ties

Narimanov
Krasniy Yar
Astrakhan
Volodarsky
Nachalovo
Tri Protoka
Krasnie Barrikadi
Altindjar
Evpraksino
Tatarskay bashkamovka
Ikryanoe
Kamyzyak
Tishkovo
Karalat
Liman
Olya

1. It is necessary to take into account the trajectory of the sun when designing new buildings to create maximum shade. Buildings of complex configuration create more shadow. Optimal building blocks with a closed or semi-closed courtyard.

2. The proportions of the streets should tend to the ratio c-y 2/1, b-z 1/2 (vertical to horizontal).

3. In an urban environment, there should be a minimum number and area of open spaces, fields, squares. Even if it is necessary to create entrance zones, parterres, squares, it is necessary to border their ribbons of tall trees, buildings of buildings, covered small architectural forms.

4. For public spaces, it is necessary to constantly alternate indoor and outdoor spaces (pergolas, gazebos, galleries, etc.)

5. Any public space should be divided into small zones with separation, landscaping or MAFS. The proportions of pedestrian areas or paths should tend to the ratio of 2/1 (vertical to horizontal).

6. To the maximum, MAFs in public spaces should be covered, even benches..

7. For the projected streets and roads with pedestrian trafficto the maximum, it is necessary to create covered galleries along them near buildings

8. For existing streets, it is necessary to create shaded sidewalks using landscaping..

9. In public spaces, the walking accessibility of water sources is necessary. Drinking springs, reservoirs, ponds, fountains, channels every 1000 m..

10. Every free area of the city territory should be given for landscaping.

11. Buildings must have means of sun protection of facades the upper floor and the roof.

12. Building materials should have minimal thermal inertia and maximum reflection of sunlight. Brick and wood are historically the most suitable materials of the region. They have minimal thermal inertia, do not burn when heated by sunlight. The brick is made from local raw materials-clay.

13. It is necessary to take into account the climate when selecting plants. Not everyone is suitable for a dry, hot climate types of trees. Coniferous trees, birches, oaks and other trees of the middle lane require expensive and time-consuming maintenance. The most suitable are poplars, elms, acacias, willows.

***source-PhD thesis of architect Tinyaeva N. V. (AGASU)**

1. The most frequent east and west winds should be taken into account when designing the road network. For major roads, give preference to the northern
and southern directions. Do not design buildings along the streets with one front and in one line. Make depressions/ protrusions of buildings, breaks, complex configuration.

2. It is necessary to take into account the prevailing winds when placing housing near production areas. It is better to design parks and non-residential areas on the downwind side of them..

3. It is necessary to avoid building too high, which forms large areas of high pressure.
In such conditions, a person simply cannot approach the building. Comfortable number of floors 5-6 floors..

4. Do not create an air tube, narrow long spaces, cracks in the building, large extended linear planes of construction, where a strong wind accelerates with even greater speed. The alternation of semi-closed backstage spaces and couriers in the construction allows you to create a comfortable microclimate.

5. Do not leave open courtyards. Closed or semi-closed courtyards create a comfortable microclimate..

6. Complex shapes of buildings better reduce wind speed.

7. Do not use loose coatings by type. The material in the plates is the most suitable.

8. Do not use structures that are torn down by the wind.

9. Integrated landscaping solutions allow minimizing the spread of sand that is actively carried by the winds. Strips of shrubs and trees well protect buildings and courtyards.

10. Additional areas of water (reservoirs, fountains, ponds) and grasses help to retain sand.
If possible, minimize the area of hard surfaces in the direction of increasing water, greenery.

11. Any profiles of roads, pedestrian paths should take into account the possibility of sweeping sand during cleaning.

12. Facades and roofs of buildings should not create places for the accumulation of sand. It is necessary to use slopes, dust-repellent materials.

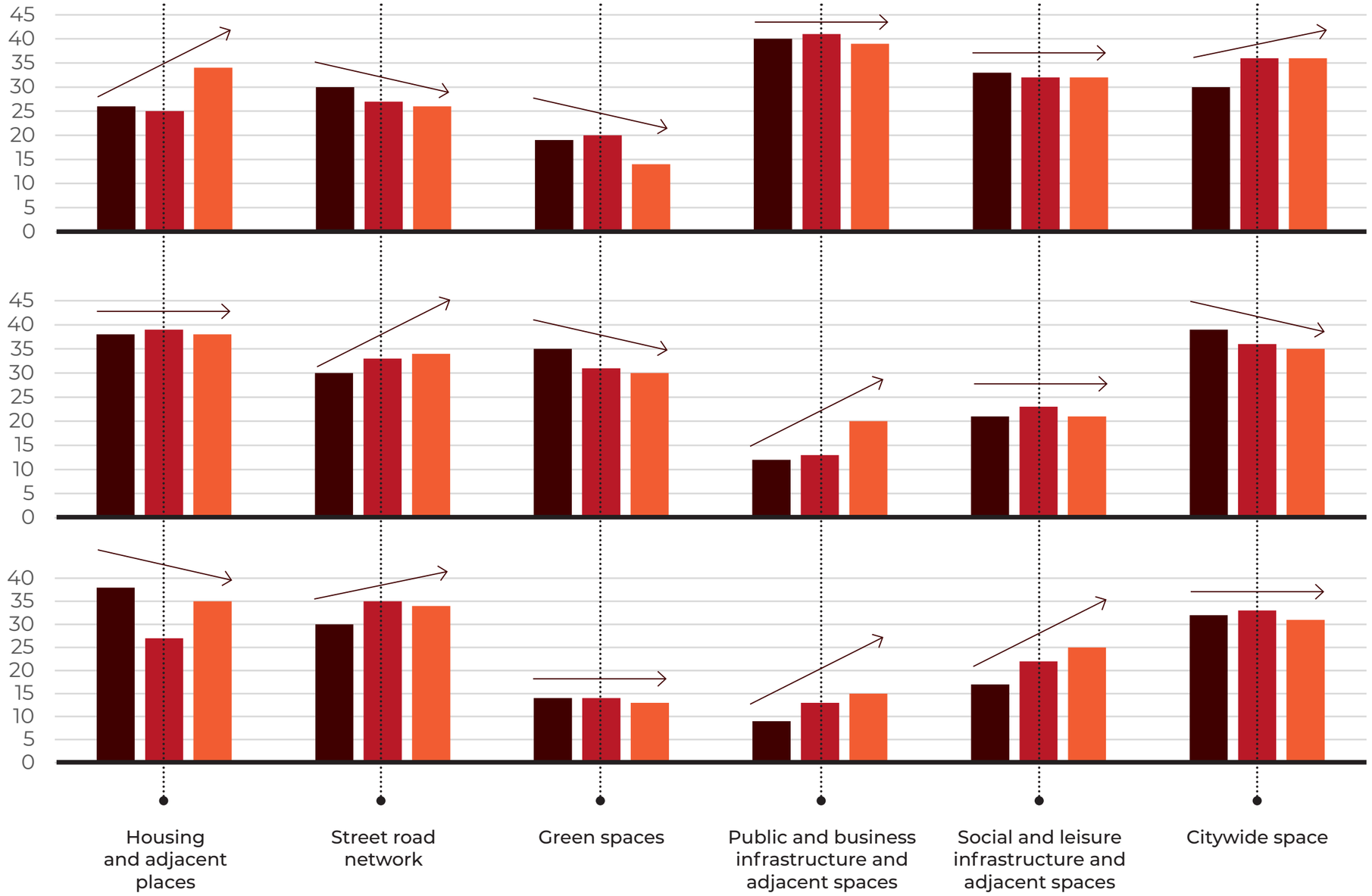
***source-PhD thesis of architect Tinyaeva N. V. (AGASU)**

1. It is necessary to provide at the level of urban planning decisions protection from flooding of buildings and blocks with groundwater. These can be additional channels, drains, special road surfaces, reservoirs, etc.

2. For new buildings, choose a foundation that is similar to geographical features, a structural scheme, a space-planning solution. Most often, this is a pile foundation, buildings on a plinth (as close to the ground as possible), but there may be other options.

3. To preserve historical buildings, a number of measures are needed to protect them from flooding and salinization.

***source-PhD thesis of architect Tinyaeva N. V. (AGASU)**



Astrakhan

The overall index did not change between 2019 and 2020 (181 points)

Kamyzyak

The overall index increased slightly between 2019 and 2020 (175 - 178 points))

Narimanov

The overall index increased slightly between 2019 and 2020 (144 - 153 points)

Year of estimate

- 2018
- 2019
- 2020

1 Agglomeration resident with high entrepreneurial competencies

In the labor market and a well-paid resident is an agglomeration with a productive economy

2 Culturally and physically active resident

It is an agglomeration with many possibilities, creative and efficient economy

3 Growing up a resident in a safe environment

It is an educated, cultural and open agglomeration

4 Protected and socially assisted resident

It is a socially oriented agglomeration

5 Resident of the region who values his native land

It is an agglomeration with comfortable and sustainable urban and natural spaces

6 Resident actively involved in solving urban issues

It is an agglomeration with competent management and a high culture of service, with efficiently working government services

A CITIZEN OF AGGLOMERATION

ENTERPRISING, IN DEMAND IN THE LABOR MARKET AND GOOD PAID RESIDENT

EMPLOYMENT SYSTEM «PERSON-TO-PERSON»

Reduced churn population

Increasing the competitiveness of the agglomeration

Subprogramme: development grant support institutions

AGGLOMERATION WITH A PRODUCTIVE ECONOMY

Subprogramme: development regional business incubators

Strategy +: Business- we transform incubators into coworking spaces

Bring entrepreneurial competence up to 10% of the population

Reducing unemployment

Subprogramme: development retraining centers in promising sectors of the agglomeration economy

Strategy +: We create objects of additional education for senior citizens

Reduce informal unemployment by 3-5 percent

Subprogramme: development legalization systems gray business

Strategy +: We form the conditions for mutually beneficial business inclusion into the economic circulation of the agglomeration

A CITIZEN OF AGGLOMERATION

UNIFIED REGIONAL CULTURAL CENTERS

AGGLOMERATION WITH MANY POSSIBILITIES

AGGLOMERATION EFFICIENT ECONOMY

Subprogram: development on the basis of libraries / recreation centers / museums of local lore, which act as support for federal cultural and educational centers

Strategy +: formation of regional structures supporting federal centers - compliance with the requirements of applications for participation in federal programs

Subprogram: Sports

Playgrounds of the future

Trusovsky district: Children's Youth School 1, a former club (they are trying to buy it out), a new park - all a single cluster.

Subroutine: Astrakhan: Creative Cluster

On the instructions of the President of the Russian Federation, 24 billion rubles were additionally allocated for the development of cultural institutions within the framework of the national project

Bringing up to 10 NewLibrary.RF (in Astrakhan - so far only 1 such library (for example, Stavropol region - 9)

We optimize 10 existing DCs:
#ournewhouseofculture

Program for the development of local history museums of the Ministry of Culture of the Russian Federation

A CITIZEN OF AGGLOMERATION

GROWING UP A RESIDENT IN A SAFE ENVIRONMENT

SAFE AGGLOMERATION VALUE SYSTEM

INCREASED SECURITY ON THE STREETS

EDUCATED, CULTURAL AND OPEN AGGLOMERATION

Subprogram: Child Safety

Strategy +: Renovation of educational facilities in disrepair

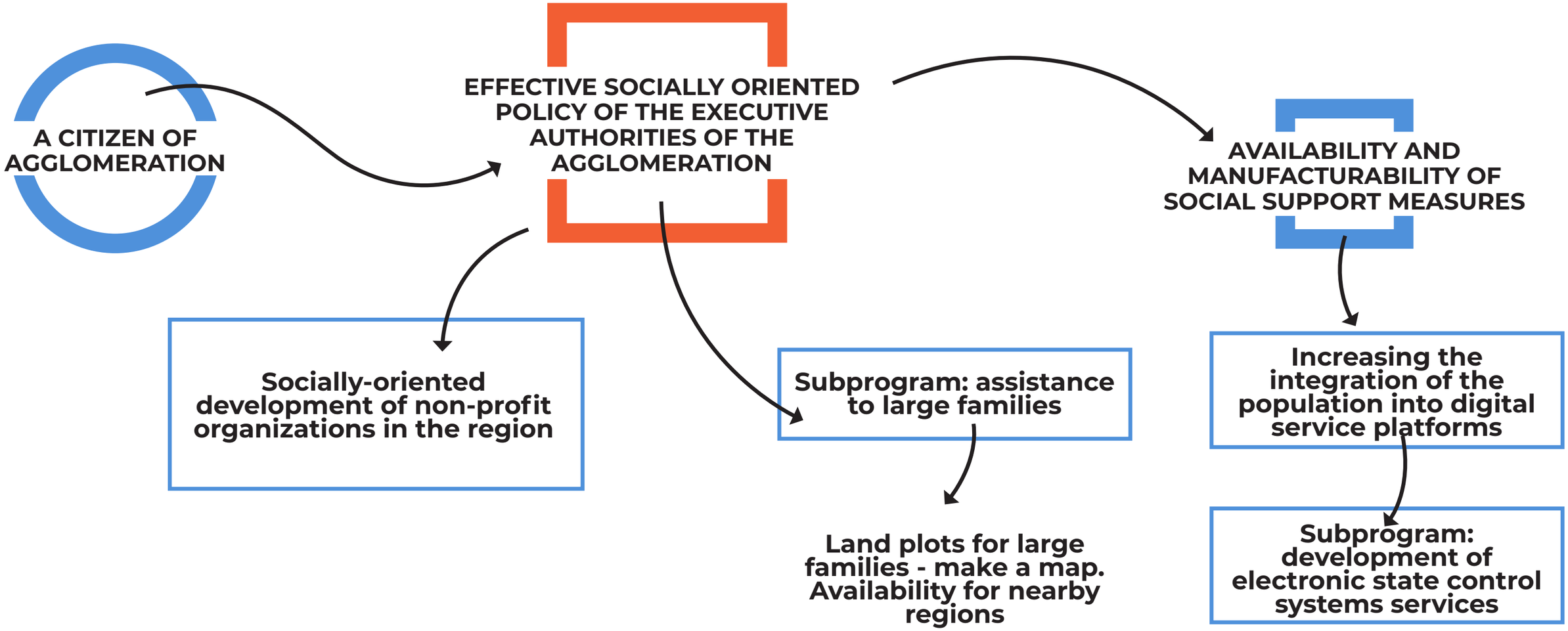
Repair all objects of primary and general education in emergency condition

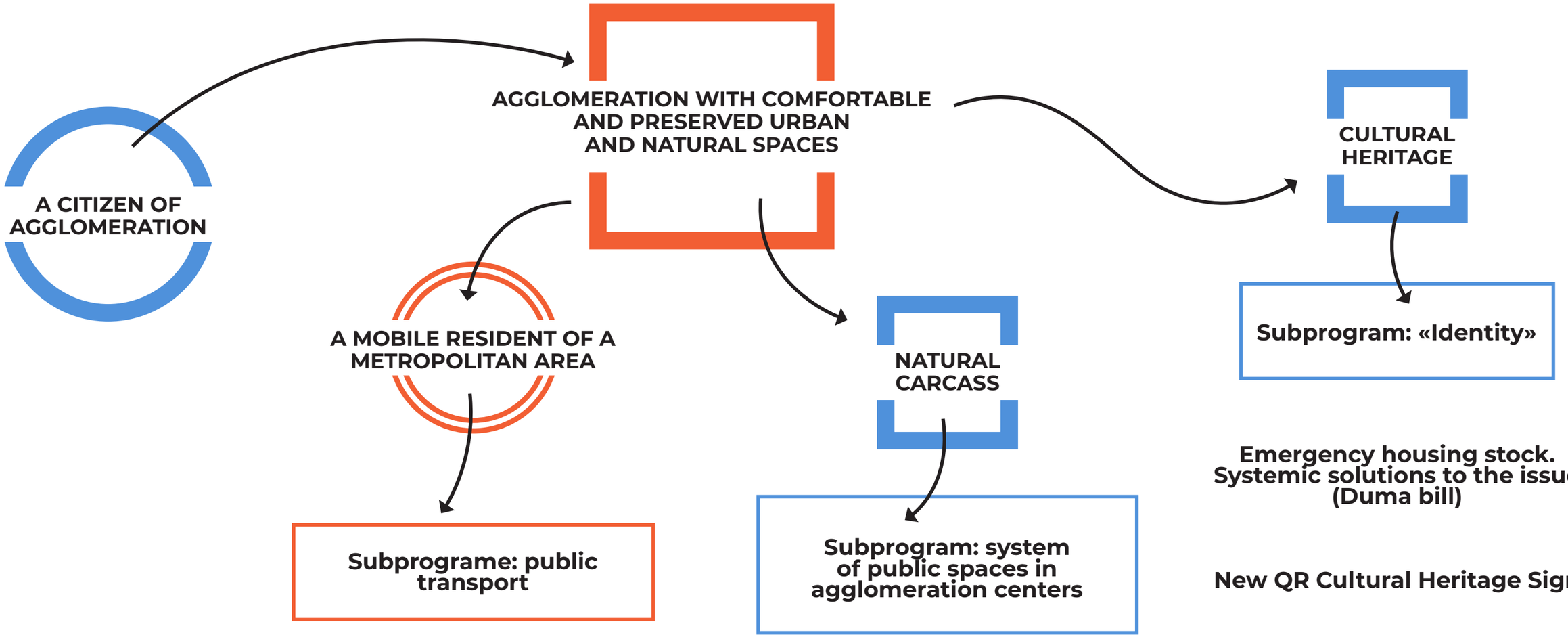
Subprogram: smart cameras (analogue of «TsAFAP» of Moscow city)

Subprogram: bright cities, priority lighting of the central districts of the cities of the agglomeration

Subprogram: Quality Distance Education

Formation of platforms for distance education of the leading universities in the country


A CITIZEN OF AGGLOMERATION
EFFECTIVE SOCIALLY ORIENTED POLICY OF THE EXECUTIVE AUTHORITIES OF THE AGGLOMERATION
AVAILABILITY AND MANUFACTURABILITY OF SOCIAL SUPPORT MEASURES
Socially-oriented development of non-profit organizations in the region
Subprogram: assistance to large families
Land plots for large families - make a map. Availability for nearby regions
Increasing the integration of the population into digital service platforms
Subprogram: development of electronic state control systems services
Analog MFC «My documents»
Analog MOS.RU



Creation of a unified travel card by analogy with the map «Troika»

Municipal river transport

Private translation transport train to the municipal own

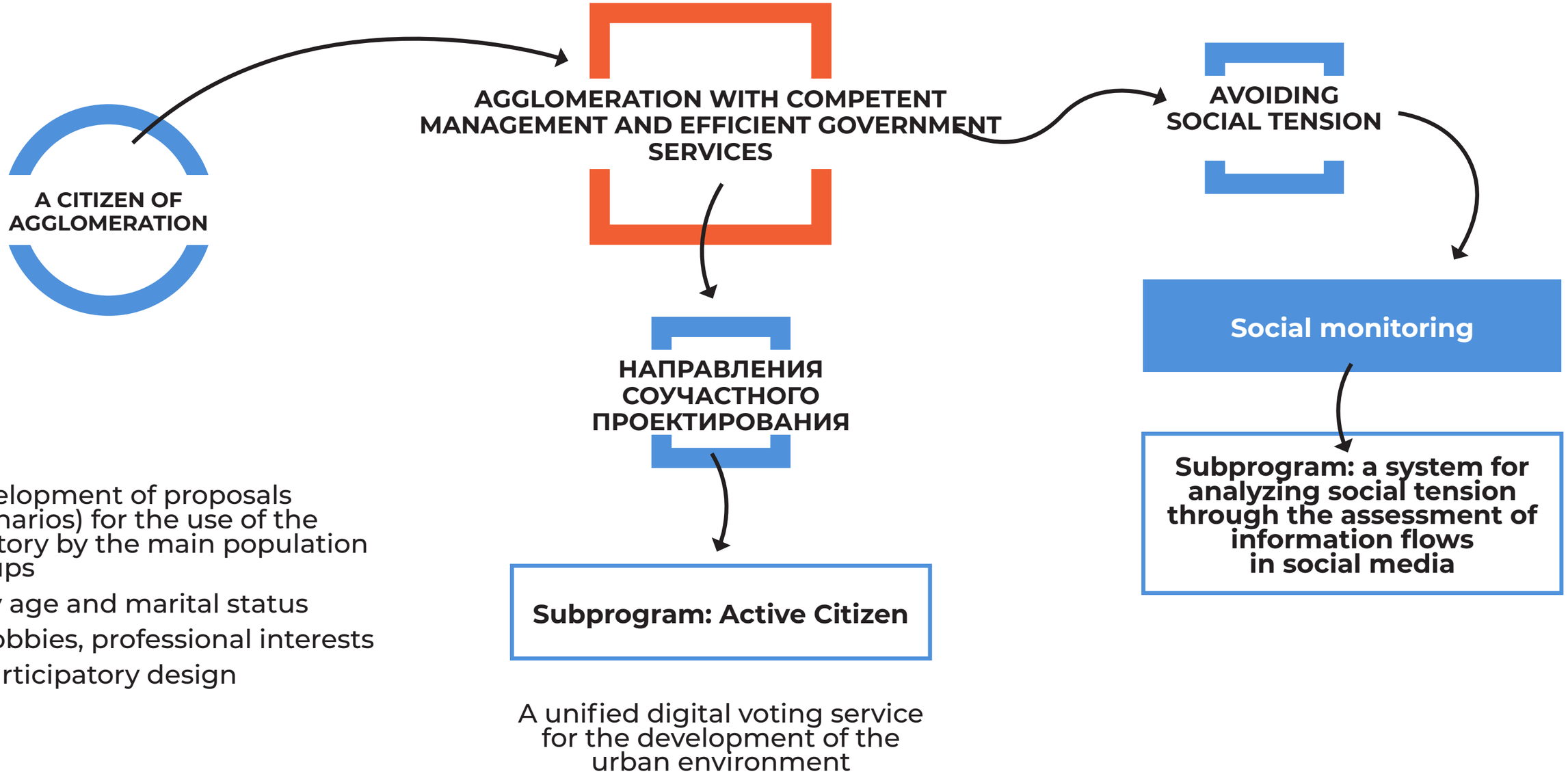
Rebranding route taxis

Urban electric train

Going out to the annual participation in the FP KGS for the main settlements of the agglomeration

Emergency housing stock. Systemic solutions to the issue (Duma bill)

New QR Cultural Heritage Sign



Development of proposals (scenarios) for the use of the territory by the main population groups

- By age and marital status
- Hobbies, professional interests
- Participatory design

Sociological research about the needs of residents regarding a comfortable urban environment (who uses, what requirements, what proposals)

In accordance with the Strategy - 2035 of the territory of the Astrakhan urban agglomeration preconditions have been created for the formation of the following economic clusters:

Caspian cluster

Development of an intermodal cargo transportation system based on the seaports of Astrakhan and Olya, shipbuilding, ship repair, production of equipment for gas production. The largest container hub in the south of Russia, the logistics center of the North-South international transport corridor. The main centers are Narimanov, Astrakhan, Krasnye Barrikady, Ilyinka, Olya. It is created on the basis of decisions of the Government of the Russian Federation and the strategy of socio-economic development of the Astrakhan region for the period up to 2035.

fuel and chemical cluster

Development of a gas and oil production complex, chemical production (fuel, sulfur, polyethylene, anti-corrosion coatings for pipes and other products for gas and oil processing; iodine production) based on the Astrakhan gas condensate field, oil fields (including the Velikoe field in the Kharabalinsky region) ... The main centers are the shelf of the Caspian Sea in the Krasnoyarsk region, Astrakhan, Limansky region. It is proposed to develop the cluster. An analogue is defined in the strategy of socio-economic development of the Southern Federal District for the period up to 2020 as an oil and gas production cluster.

agrarian and food cluster

Formation of a complex of industries for the cultivation, processing, storage, transportation of southern crops (rice, tobacco, melons, tomatoes, fruits). The main centers are Krasnoyarsky, Volodarsky, Privoljsky, Kamyzyaksky, Limansky districts, Astrakhan. It is proposed to develop the cluster.
An analogue is defined in the strategy of socio-economic development of the Southern Federal District for the period up to 2020 as an agricultural cluster.

aquaculture cluster, fishing, fish processing

Development of a network of farms for breeding, growing, catching, processing fish, storing, transporting and marketing fish (branded) products. The main centers are Astrakhan, Volodarsky, Privoljsky, Kamyzyaksky, Limansky districts. It is proposed to develop the cluster. An analogue is defined in the strategy of socio-economic development of the Southern Federal District for the period up to 2020 as a fishery cluster.

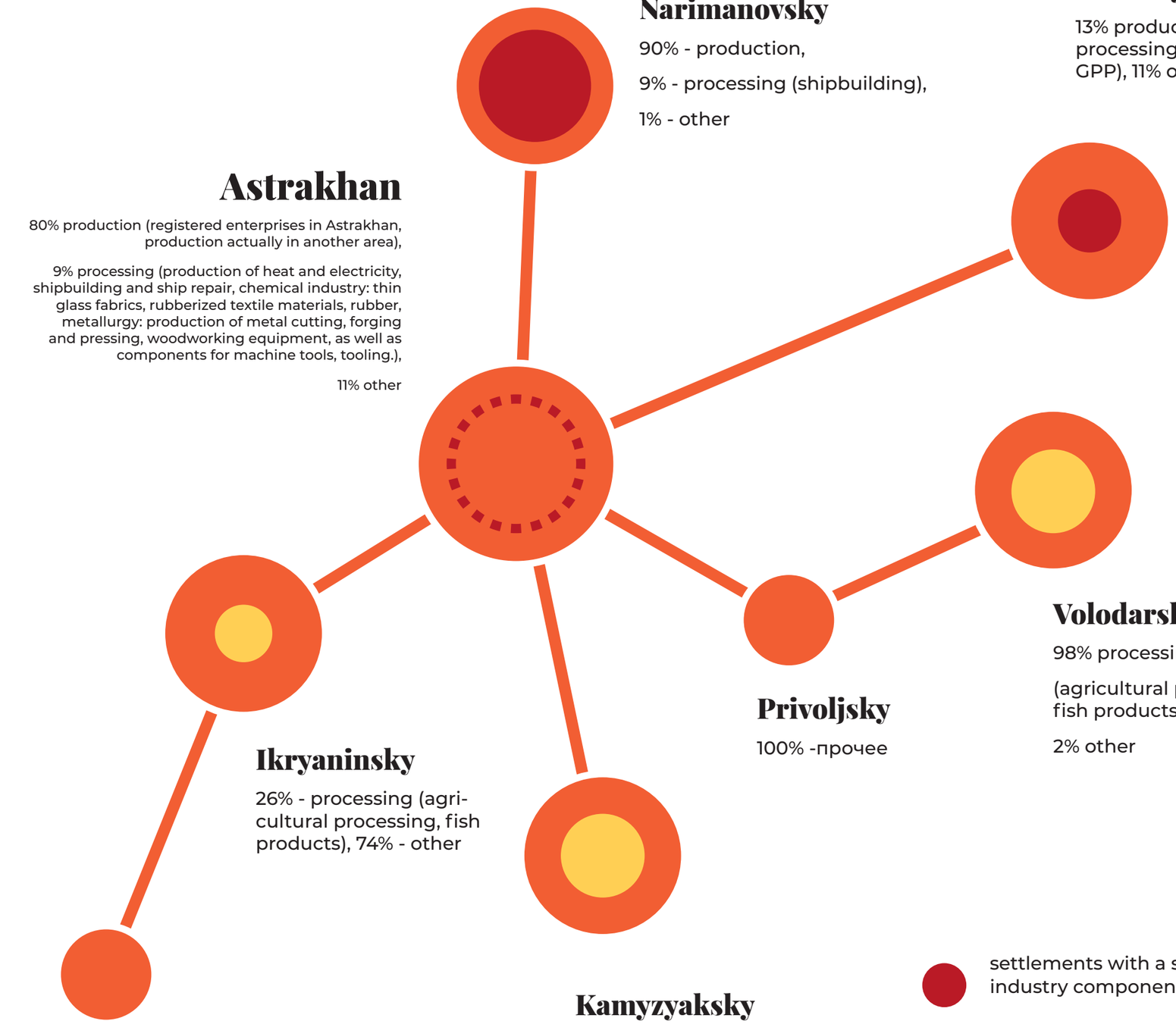
Caspian innovation educational cluster

1. Formation of centers of higher education on the basis of higher educational institutions of Astrakhan and branches of specialized Russian higher educational institutions, providing training of specialists for economic clusters of the agglomeration. The main centers are Astrakhan, Privoljsky district;

2. Creation of a center for innovative developments and their introduction into production on the basis of educational cluster organizations of the agglomeration to promote advanced products and technologies in agglomeration clusters (including shipbuilding, mining and processing of minerals, agricultural raw materials). The main centers are Astrakhan, Privoljsky district. It is proposed to develop the cluster.

regional Astrakhan tourist recreational cluster

Formation of a modern infrastructure for tourism, recreation (a complex of objects of hotel business, transport services, food, recreation, entertainment, trade) on the basis of natural, historical and cultural, other objects of agglomeration and other territories of the region, including in the Akhtubinsky district - Lake Baskunchak, mountain Big Bogdo, Bogdinsko-Baskunchaksky reserve marble lake; in the Kharabalinsky region - the Kordon tract (natural habitat of prickly pear); on the territory of the agglomeration - museums and architectural complexes of Astrakhan, Astrakhan biosphere reserve, Ilmenno-Bugrovaya nature reserve, lotus valley near the village of Liman. The main centers are Astrakhan, Volodarsky, Kamyzyaksky, Ikryaninsky, Limansky districts. It is proposed to develop the cluster.



Narimanovsky

90% - production,

9% - processing (shipbuilding),

1% - other

Krasnoyarsky

13% production, 75% processing (Astrakhan GPP), 11% other

Astrakhan

80% production (registered enterprises in Astrakhan, production actually in another area),

9% processing (production of heat and electricity, shipbuilding and ship repair, chemical industry: thin glass fabrics, rubberized textile materials, rubber, metallurgy: production of metal cutting, forging and pressing, woodworking equipment, as well as components for machine tools, tooling.),

11% other

Volodarsky

98% processing

(agricultural processing, fish products)

2% other

Privoljsky

100% -прочее

Ikryaninsky

26% - processing (agri-cultural processing, fish products), 74% - other

Limansky

100% -other

Kamyzyaksky

82% processing (agri-cultural processing, fish products)

18% other

settlements with a strong oil industry component

settlements with a strong manufacturing industry component

In industrial development:

- Krasnoyarsky region (Astrakhan field);
- Narimanovsky region (Beshkul deposit) - 20% of all-Russian condensate reserves;
- 10 hydrocarbon fields in the territory of the AO with reserves of 1.1 billion tons of oil and gas condensate 5.3 trillion cubic meters of gas (recoverable
- 10 hydrocarbon fields in the Caspian Sea with reserves of 0.35 billion tons of oil and gas condensate and 0.65 trillion cubic meters of gas (recoverable)

47,9% of GRP of JSC - extractive sector

Regional budget revenues from the extractive sector up to 5% of the total sector tax

High production costs on the shelf + global price conjuncture - reduce potential

Economy model “Person to Person”.

Employment through the development of the tertiary sector

The course towards diversification of the economy. The mining sector exists autonomously and brings insignificant funds to the regional budget.

For the development of the economy and employment of the region, six promising industries are proposed, synergy of which will diversify the region’s GRP.

eco agriculture

Ecological agriculture, biotechnology, aquaculture, aquaponics. Increasing food independence of the country.

eco infrastructure

Renewable energy, waste processing (increasing the infrastructure self-sufficiency of the territory)

fishing, animal husbandry

Including the development of a secondary processing sector based on these industries

tourism

Diversification of the tourist product, the formation of a unified system of routes. Synergy points of interest

logistics

Capitalizing on the potential of international north-south, west-east corridors

shipbuilding, mechanical engineering

River transport system development

Favorable for development

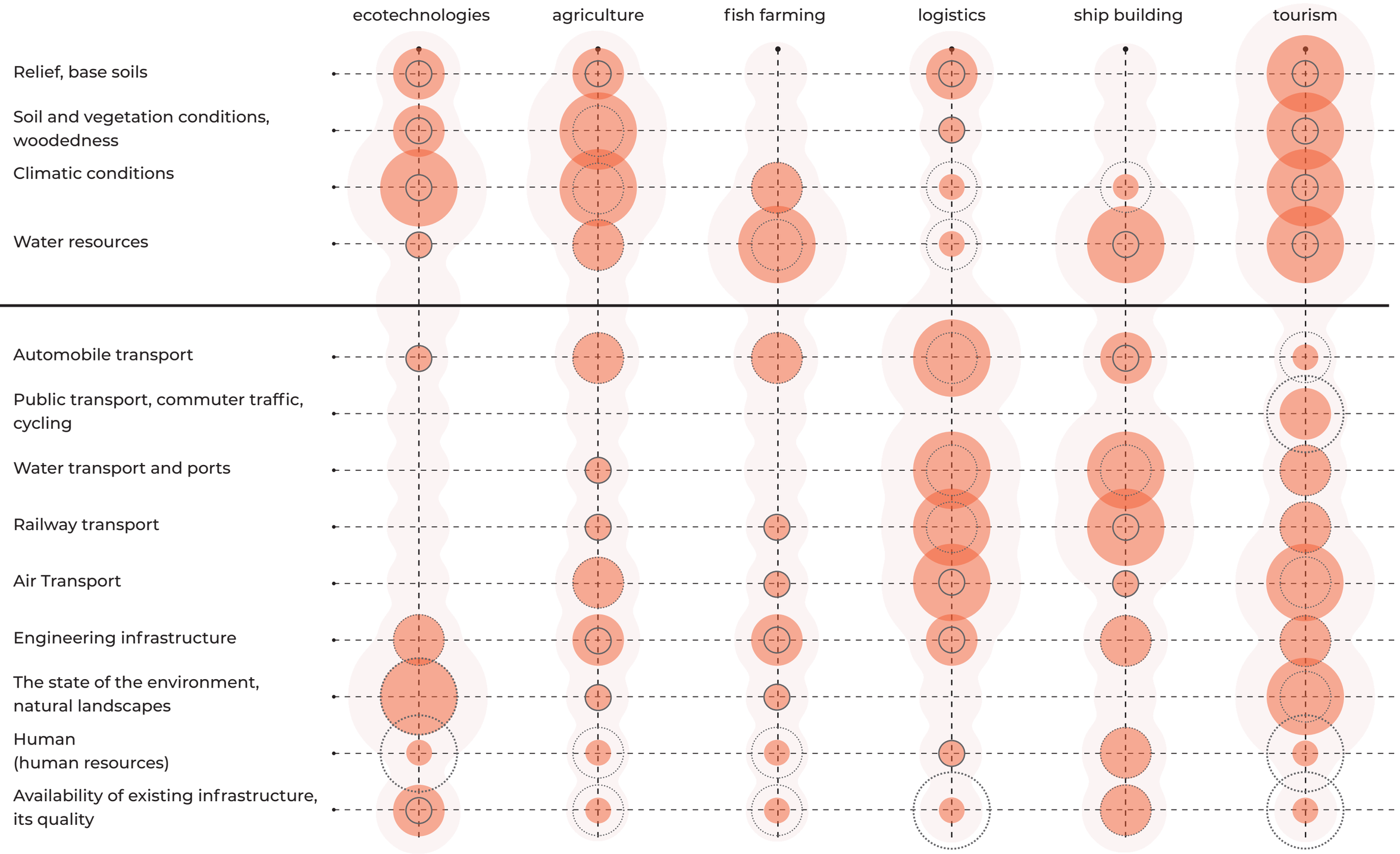
ecotechnologies | agriculture | fish farming | logistics | ship building | tourism

внешние факторы

- Relief, base soils
- Soil and vegetation conditions, woodedness
- Climatic conditions
- Water resources

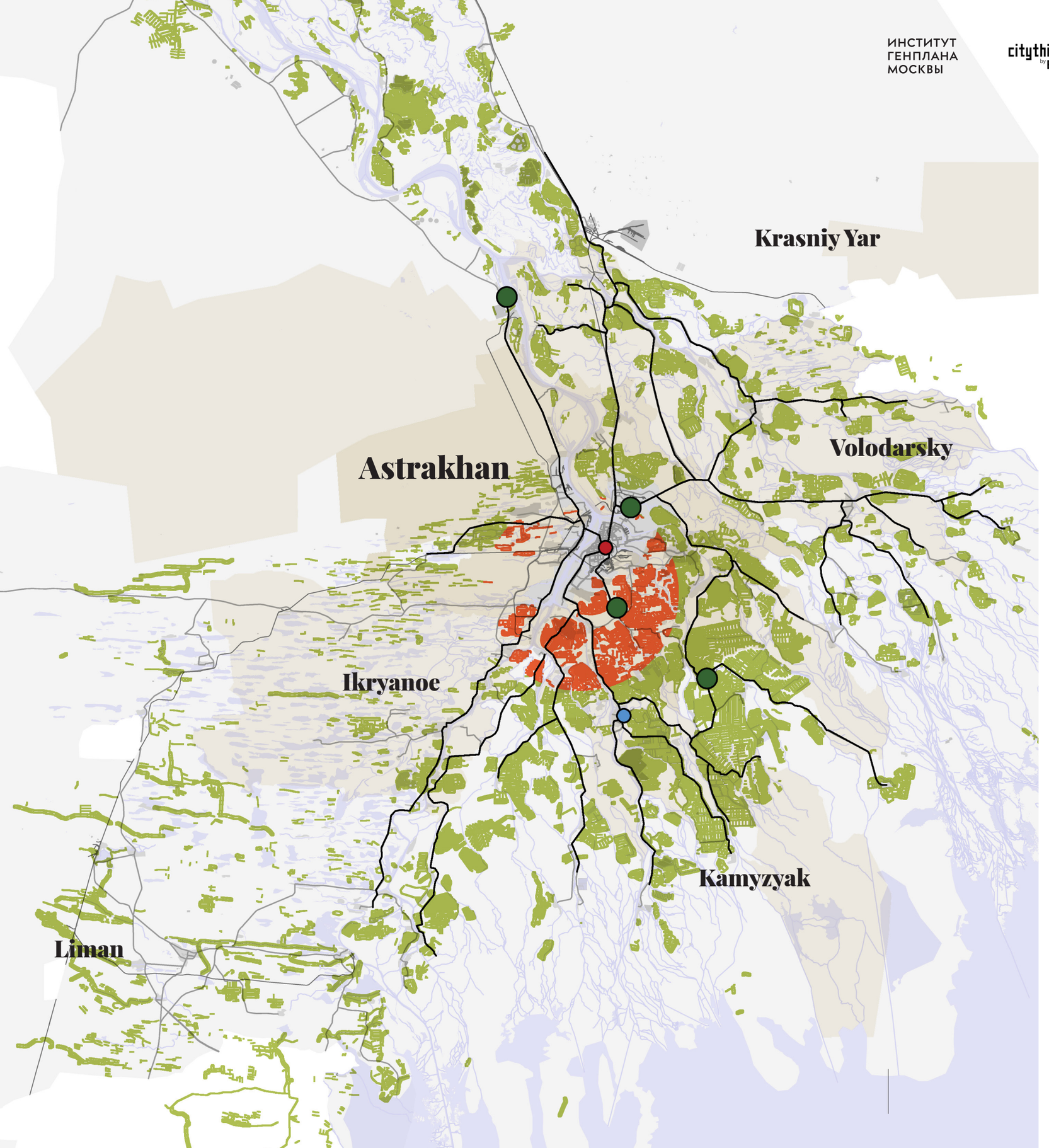
регулируемые факторы

- Automobile transport
- Public transport, commuter traffic, cycling
- Water transport and ports
- Railway transport
- Air Transport
- Engineering infrastructure
- The state of the environment, natural landscapes
- Human (human resources)
- Availability of existing infrastructure, its quality



potential level

threat level



Existing resource

- Agricultural land - the largest share in AO (68.6%) - 82% of them are agricultural land (4th place among the southern regions of the Russian Federation). Agricultural lands, mainly pastures (78%), hayfields (12.5%), arable lands (9%),
- The gross harvest of vegetables and potatoes from 1000 hectares of sown area is the 1st place among the southern agricultural regions of the Russian Federation - it is the leader in the efficiency of using the sown area of agricultural crops (including high rates in Privolzhsky, Narimanovsky and Limanovsky districts).
  The leading part of the regional economy is vegetables.

Risks

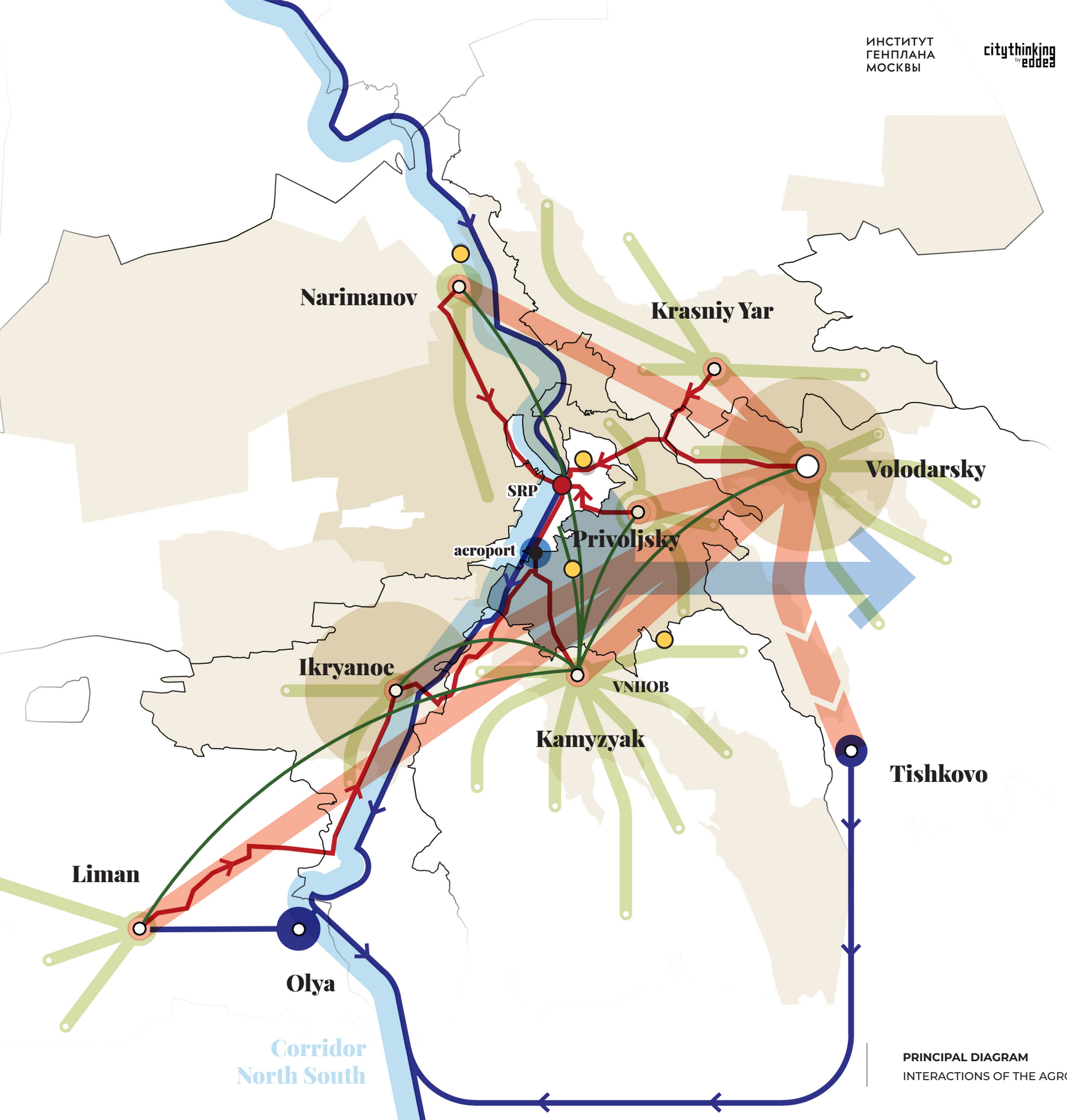
- zone of risky farming due to lack of moisture and recurring droughts - RECLAMATION IRRIGATION

Priorities

- add. investments and incentives, major regional players in the crop processing market, agent for an agreed product marketing policy

Potentials

- about 37% of arable land is underutilized
- increase in processing industries. Modern technologies in the field of agriculture and irrigation, ecosystem approach, deep processing of fruit and vegetable products, export of sheep and goat products, increasing the competitiveness of dairy cattle breeding, increasing the volume of shipment of crop and vegetable products



Volodarsky

Creation of the Federal Village Council of Peasantssko-farm - in three yearsthe largest agricultural holding in Russia (it is necessarygo to the presentation at the federal level)

Registration of companies from other regionsin the Volodarsky district

Cooperation center of the Moscow region of the agglomerationin agriculture

Kamyzyak

VNIIOB - Local Scientific Institute,which provides agricultural enterprisesregion, specially derived selec-ration sorts of products.

Privoljsky

Aerodrome territory of the airportwill significantly complicate agricultureon 40-50% of the territory of the district

Astrakhan

Areas interact with the city likewith a sales site for products. Not everyonedistricts, this practice is now successful

Doñana Sustainable Development Plans

The formulation of the Doñana Sustainable Development Plans (DSDP) was initiated by the Andalusian Regional Government in 2005, aiming to bring together administrations and stakeholders in order to:

«strengthen a social and productive culture of local development based on the values of sustainability, innovation and differentiation, with the integration and participation of local agents as its backbone».

In 2010, a second Plan was issued.

The Sustainable Development Plan is enforced from the Regional Administration, but it is a consensus document.

Since 2005, the Doñana Region has an integrated, cross-cutting Sustainable Development Plan, which is enforced by periodical Operative Programmes.

The Doñana 21 Foundation

The management of the Plan and its OP, relies on the Public Foundation Doñana 21. This foundation was originally created in 1997, through initiative of the Andalusian Regional Government and local financial institutions.

Its management structure includes a Board of Trustees in which local, regional and European institutions, entrepreneurial associations, trade unions and conservationist associations, have been represented.

Areas of intervention:

The Plan executes 103 initiatives, within 6 thematic programmes:

- Ecosystem recovery,
- Reinforcement of territorial structures,
- Improvement of production facilities and territorial integration,
- Strengthening the adaptability of the population and businesses at a global and local scale,
- Improving social cohesion and collective response capacity,
- Reinforcement of the positive and natural values of the image of Doñana.

Yearly Operative Programmes

The 2nd Doñana Sustainable Development Plan from 2010 is a perpetual plan, valid until a change in strategy becomes necessary.

The 2nd DSDP is enforced by 3-year Operative Programmes that are issued annually.

Public participation

The Plan follows a Public Participation process in which relevant stakeholders were involved, and presented with technical and scientific documentation.

This process set out a comprehensive analysis, and produced a set of challenges and strategic guidelines that govern the overall Plan.

Involved entities

The Sustainable Development Plan is drafted by the Regional Administration (Junta de Andalucía), and the Regional Ministry holding responsiblity for the environment.

Its programmes and measures are agreed and shared among the various administrations with jurisdiction in the Doñana District.

The Doñana 21 Label certifies the adoption of international quality and sustainability standards by local businesses and institutions located in the district of Doñana.

Brand objectives and framing within the DSDP

The “Doñana 21” Label was created in 1999 by the Doñana 21 Foundation. In 2005, it was adopted by the Doñana Sustainable Development Plan, in pursue of the Strategic Guideline E4 “To develop a unitary and coherent brand profile in the business sector based on sustainability criteria.”

It is included in the thematic programme 6 “Reinforcement of the positive and natural values of the image of Doñana.”

Scope and reach

The temporary right to use the DOÑANA 21 Label is granted, on a general basis, to companies and/or entities of any sector of activity, in which its headquarters is located within the municipalities belonging to the district of Doñana.

The right to use the label is determined through compliance against the objective requirements, which are sector-specific, and defined in a rule-book.

Eligible sectors of activity are farming, manufacture, distribution, agro-industry, tourism, local commerce, public entities, and forestry.

Requirements

For each sector of activity, the rule book lists the certifications, many of them are international or widely accepted standards, which grant the applicant to use the label.

The granted certifications relate to ecological production, good agricultural practice, integrated business management, food security standards, etc.

Performance is monitored periodically, and the applicants must continue to improve their performance in order to keep using the label.

General Requirements

Comply with the Quality standard UNE-EN-ISO 9001

- Focus on customer needs and expectations.
- Improve leadership by sharing the organisation’s values and objectives.
- Foster and maintain staff’s engagement at all levels.
- Set up a process to monitor achievement to objectives and management.
- Commit to continuous improvements to achieve objectives through trainings and internal audits.
- Foster evidence-based decision making processes through indicators.
- Manage effectively the relationships between suppliers, partners, customers, investors and employees.

Comply with the Environmental Management standard UNE-EN-ISO 14001

- Define environmental guidances.
- Plan activities to be carried out, identifying and evaluating their environmental aspects and legal requirements of the environmental scope.
- Monitor activities being carried out.
- Define appropriate corrective actions.
- Higher-level management reviews the whole system, and modifies the policy if needed.
- Loop back the process for continuous improvement.

- Keep indicators and related records.
- Commit to a yearly quality improvement programme.
- Commit to a yearly environmental impact improvements programme.
- Comply with environmental, sector-specific, and social and labour legislations.
- Publish a yearly Sustainability Report.

Agricultural enterprises
Path A

Hold Eco-agriculture Certificate

- Use of no chemical or synthetic products.
- Hormone-free, natural growth crops.
- Use of non-genetically modified seeds.
- Preserve biodiversity and autoctonal species.
- Rationalise the use of natural resources along the production chain.
- Use own resources during production.
- Submit to yearly audits.

Extend the UNE-EN-ISO-140001 requirements

- Non-conformity, corrective and preemptive actions.
- Make internal audits.

For each group of economic activities, additional criteria must be met in order to attain the label.

Example: Agricultural enterprises
Path B

Hold a GLOBALG.A.P. Certificate

- Implement a reference system for farming plots.
- Conduct a risk assessment and procedures to guarantee hygiene, health and safety.
- Contractors are monitored for compliance with GLOBALG.A.P. standard.
- Waste and pollutants management, recycling and reuse measures.
- Environment and biodiversity conservation plan.
- Environmental impact assessment and management.
- Customer claims protocol.
- Product recall protocol.
- Food protection protocol.
- Separation and traceability of products and supplies.
- Detailed sales registry.
- Sign Food safety policy statement.
- Food fraud risk mitigation measures.
- Non-suitable products management protocol.
- Traceability of seeds and their chemical treatment.
- Traceability and handling protocols for GMO.
- Soil management plan.
- Risk assessment, traceability and monitoring of fertilisers and their use.

For each group of economic activities, different paths and sets of standards are available in order to qualify for the label.

Example:Tourism enterprises
Path W

Hold a valid Andalusian Natural Reserve Brand (natural product)

- Towns with population under 100,000.
- Provide services inside a Natural Protected Area or its area of socioeconomic influence.
- 75% of leisure activities are to take place inside the Natural Protected Area.
- Full compliance with environmental and sector-specific legislations.
- Follow a manual of Environmental Good Practice.
- Make yearly performance improvements.

Extend the UNE-EN-ISO-14000 requirements

- Non-conformity, corrective and preemptive actions.
- Carry out internal audits.
- Keep evidence records of monitoring and measurements of clients satisfaction.

The eligible activity sectors are: agriculture, agro-industrial (handling and distribution as well as processing), tourism, local commerce, public administrations, and forestry (logging or other).

Existing resource

53rd place in the Russian Federation for the provision of electricityher, gas and steam, 5th place in the Southern Federal District

6% - the share of solar energy consumption fromenergy capacities consumed by AO 10th placefor retail sales of solar modules

Priorities

single territorial center of competence in the oil and gas industry

Potentials

concentration of competencies in the service sectorfor the extractive industry, developmentalternative energy

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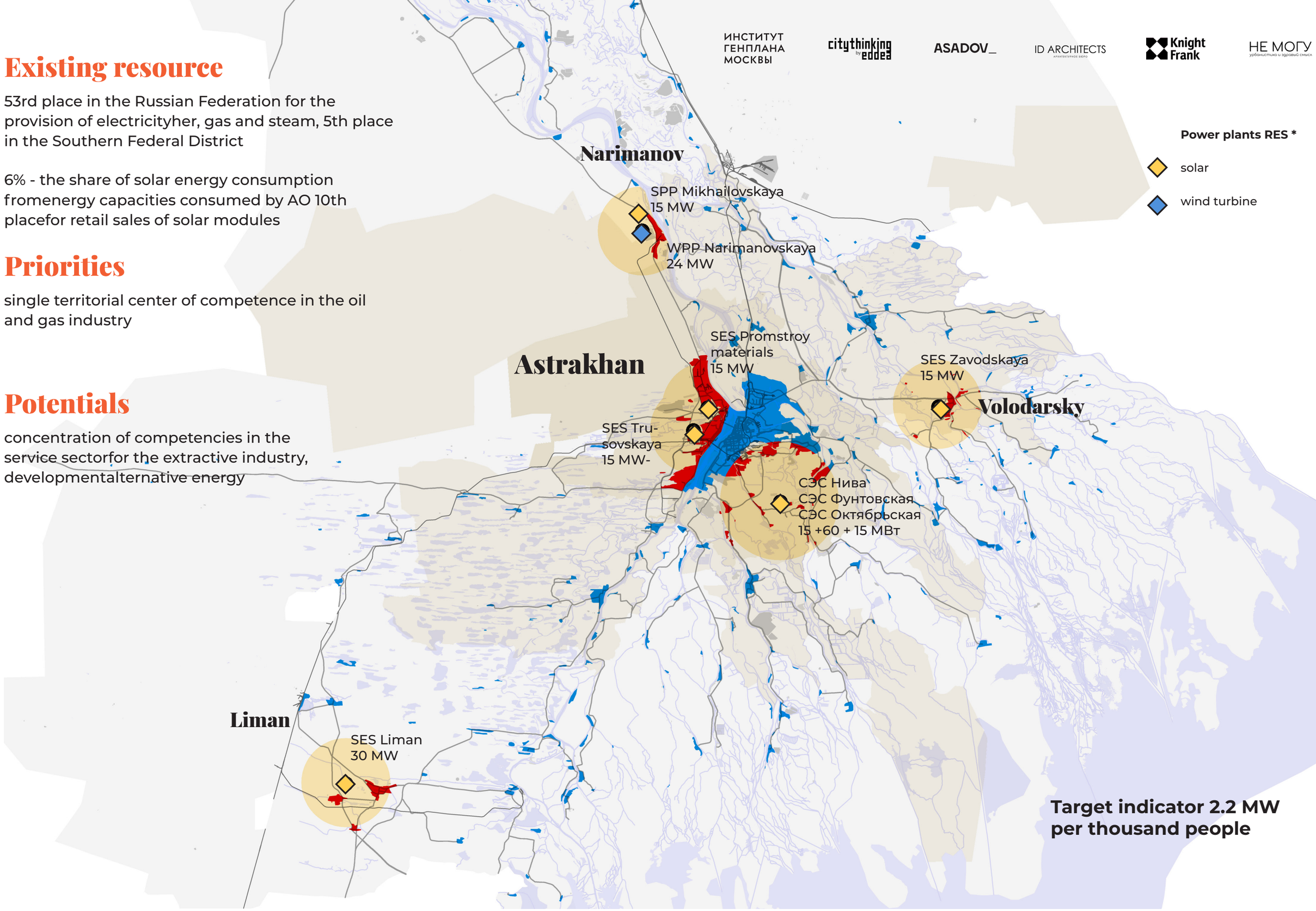
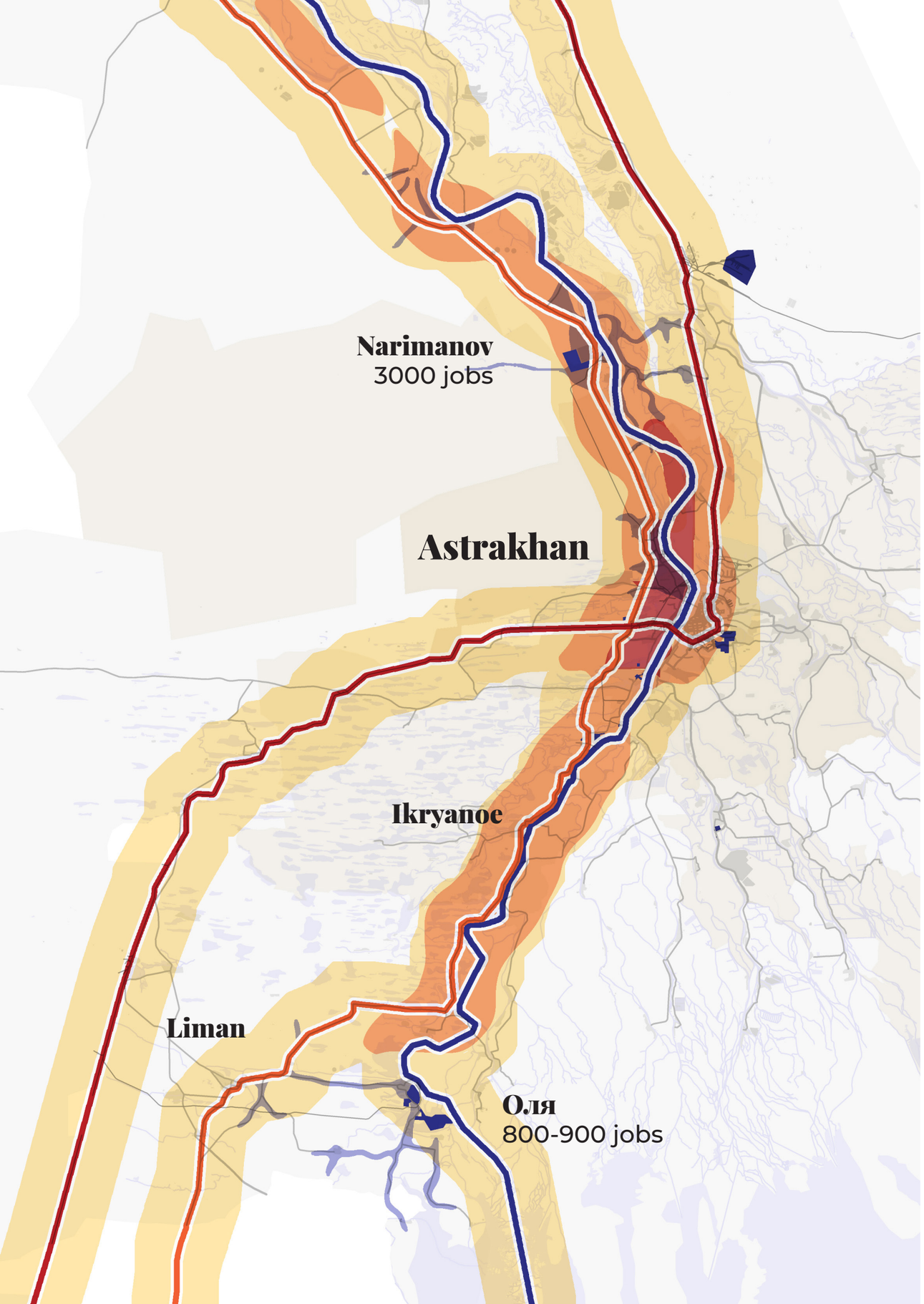


Target indicator 2.2 MW per thousand people

*https://energybase.ru/power-plant#power-plants-on-map



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Existing resource

To achieve the maximum effect from the implementation of the port area of Olya and an increase in exports is necessary to optimize the transport accessibility of key areas to it from the point of view of the development of agricultural industrial sector (Ikryanskiy, Volodarskiy, Kamyzyakskiy) or necessary development of two-phase logistics - through the use of transport north-south coridor and logistics regional center

Risks

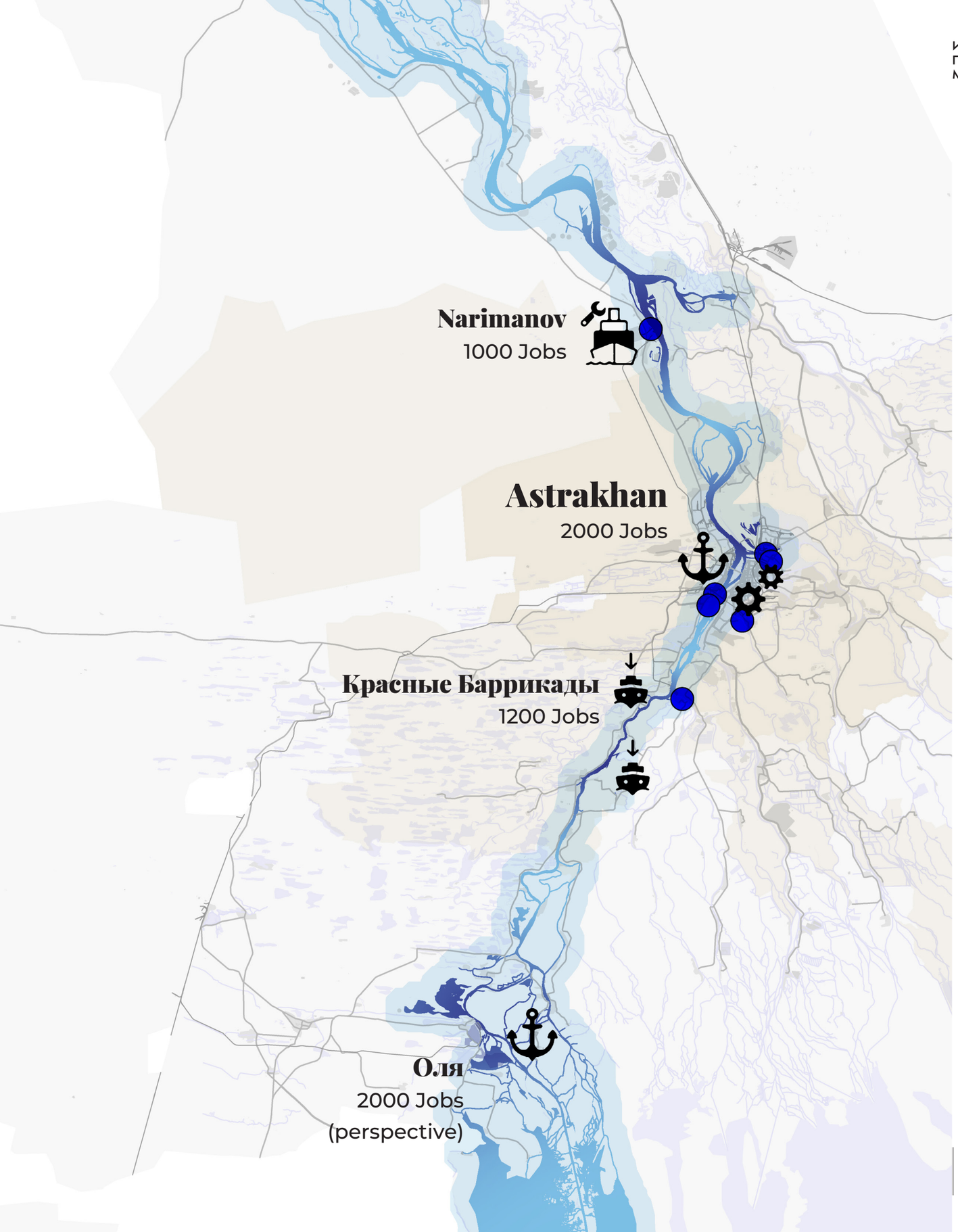
Increasing competition from port cities in other countriesCaspian region

Priorities

- diversification of government orders through civilian product linestions
- competence center
- conditions for labor migration (recruiting staff on order)attraction of qualified personnel,
- modernization of the mainproduction assets

Potentials

- multimodal transport and logistics center of the region (incl.cargo hub near the railway Astrakhan-2 and Kutum
- use: transit fed highway R-22 «Caspian», the proximity of the plannedmy Northern Bypass of Astrakhan
- transit of the fed route in the direction of Kazakhstan, railway, strengthening of logisticsthe technical center near the station «Aksaraiskaya»
- infrastructure connectivity with the agglomeration core (including cargohowl hub near the railway station «Kutum»
- Olya seaport + Special economic zone of the port,
- transit of the federal route to thereign of the North Caucasus and Azerbaijan, transit railway



Existing resource

United Shipbuilding Corporation JSC - 49% in the structure round the revenue of enterprises in this segment - mono dependent on the industry's ability to depend on the state of the enterprise

1.5% of the gross regional product of the JSC falls to the share of shipbuilding enterprises

Risks

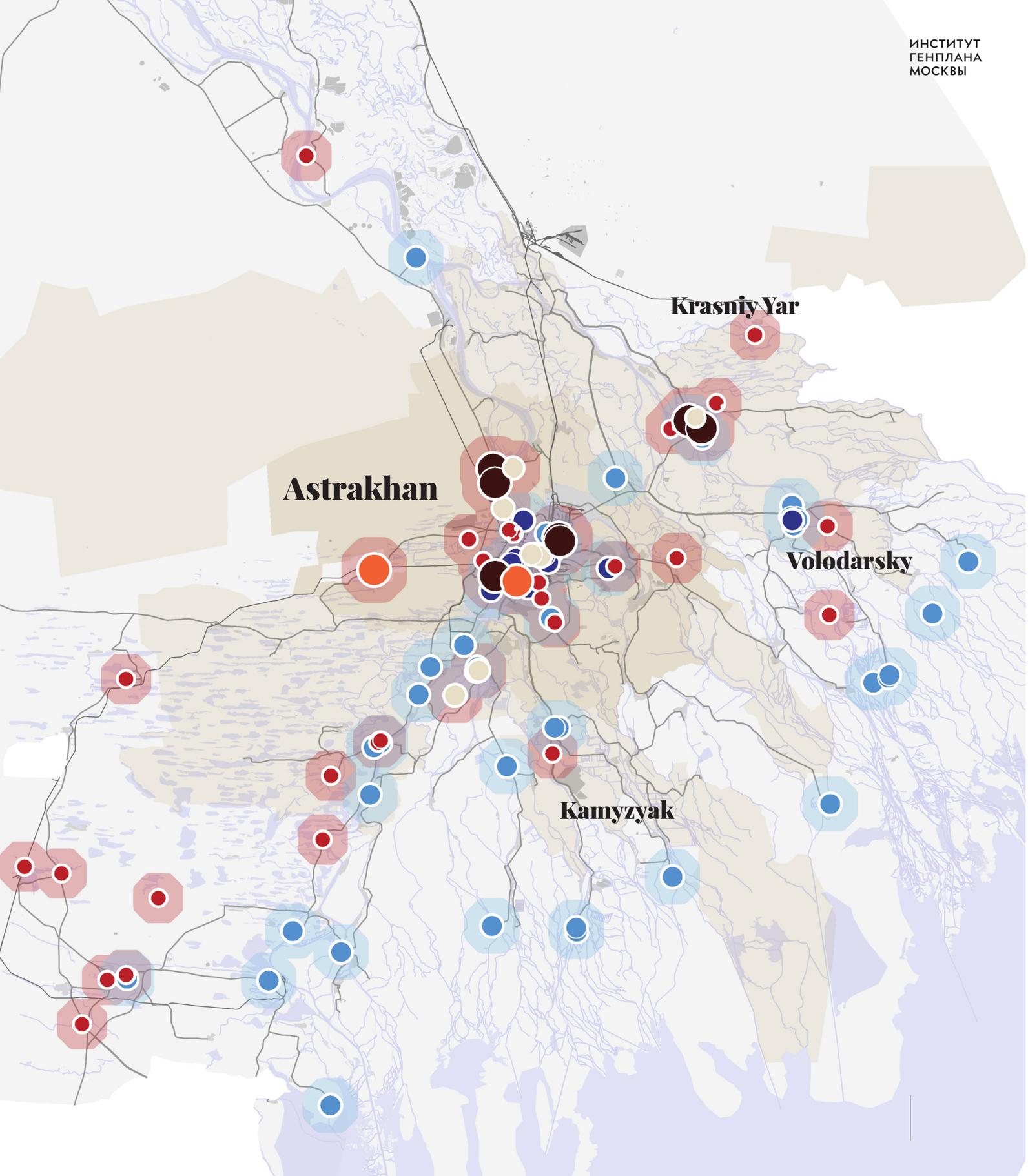
shallowing of the Volga-Caspian shipping channel

Priorities

- diversification of government orders through civilian areasproduct
- competence center
- conditions for labor migration (attracting personnel for labor)
- attraction of qualified personnel, modernization of basicnew production assets

Potentials

- increasing production capacity and professional national competencies (the presence of a special economic zone «Lotus»
- development of the shipbuilding cluster, construction and repairships
- collaboration of existing shipbuilding and ship repairenterprises with a Caspian cluster, including por-Olya SEZ and SEZ PPT Lotos



Existing resource

0.3% of the region's GRP to the share of the fish farm complex, includingincluding production - Volodarsky, Kamyzyaksky, Liman-sky, Ikryaninsky districts), aquaculture - (includingKamyzyaksky, Limansky, Ikryansky, Narimanovsky,Volga

The largest share of workers in fishing and fish-Leadership - in the southern region. One of the leading locations infisheries of Russia and the economy of the region

Priorities

- Optimize the spring flood schedule in favor ofcreating favorable conditions for naturalspawning of semi-passable and river fish species, increasedto increase the volume of artificial reproduction
- modernization of the fishing industry

Potentials

- increase in production volumes, especially aquathe culture
- Agro-industrial complex to increase the volume of shipment of plant products production and vegetable processing (the use of milestonesland, growing the most productive crops),The ability to create a cluster for storage, sortingthe packaging and packaging of agricultural products using modern technologies and focus on networktrading formats;
- improvement of fish processing technologies forbased on new technologies, complex usefish raw material
- Creation of a cryobank for storing genetic materialmaterial of valuable fish species and live fish base

The identified tourist clusters

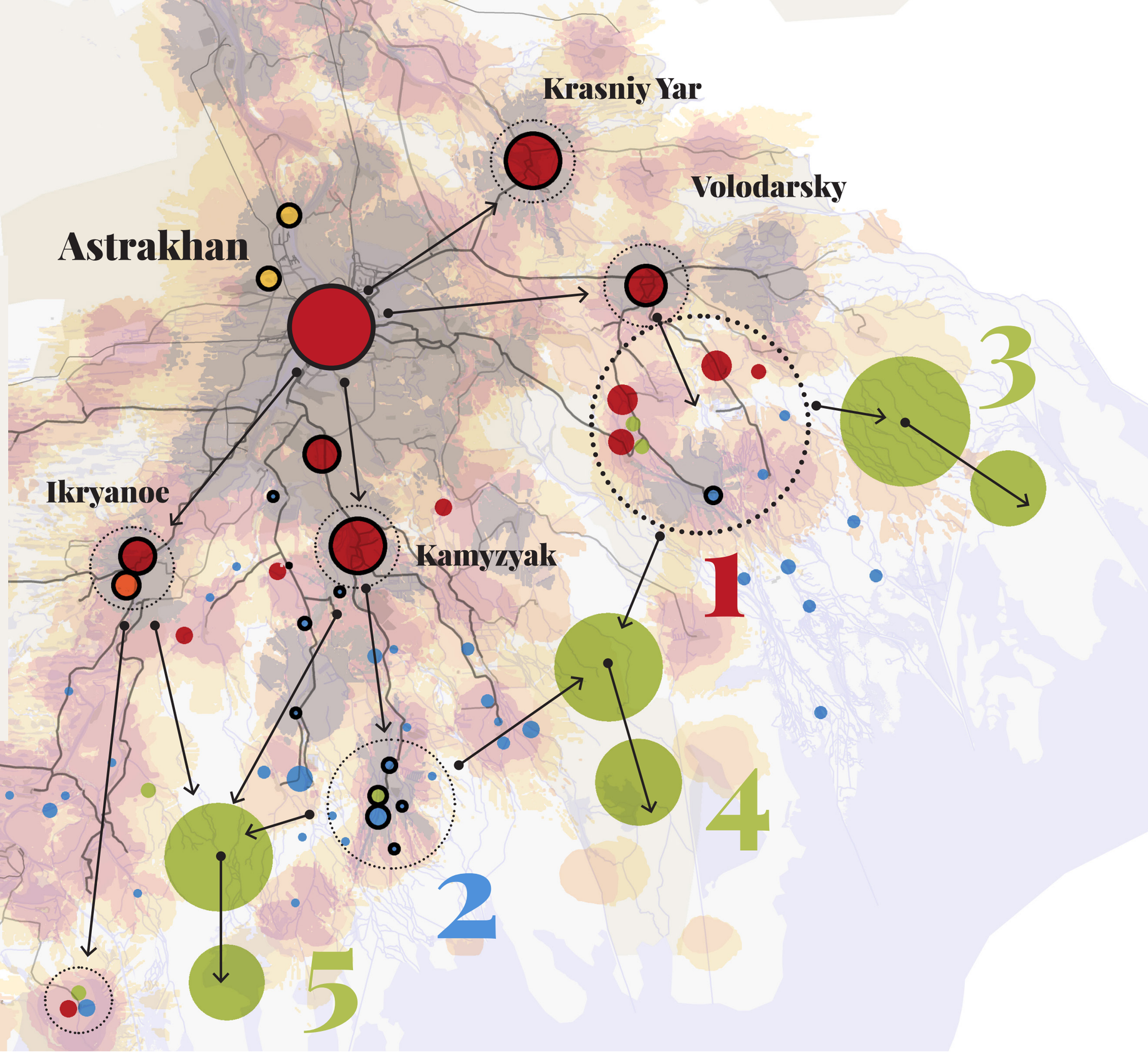
During the analysis of the placement of existingpoints of interest and infrastructuresintering (presence of cellular communication) wasidentified two key cluster:

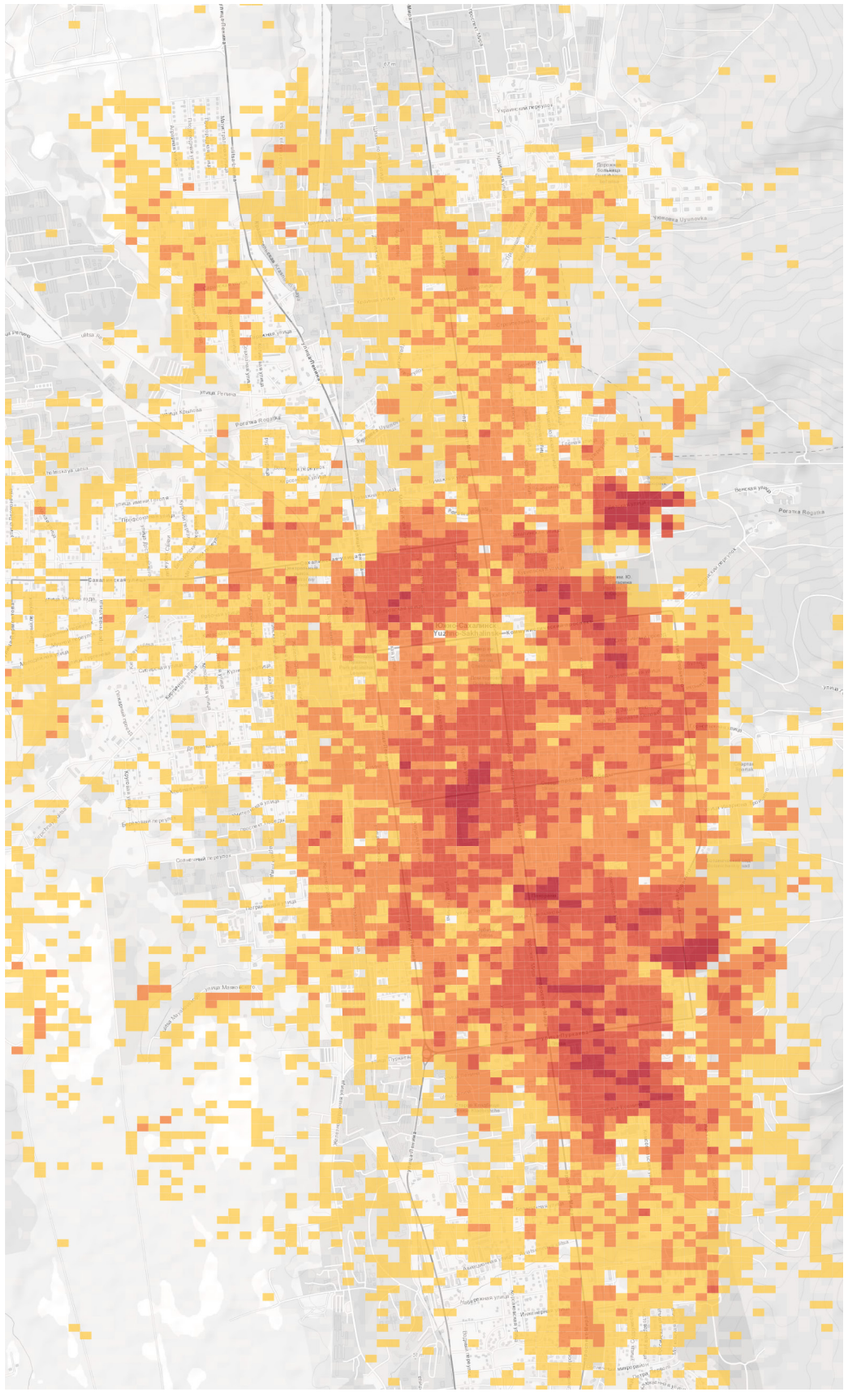
- Altynzharsko-Churkinsky;
- Kirovsky;

These two clusters are located betweenthree sections of the biosphere reserve::

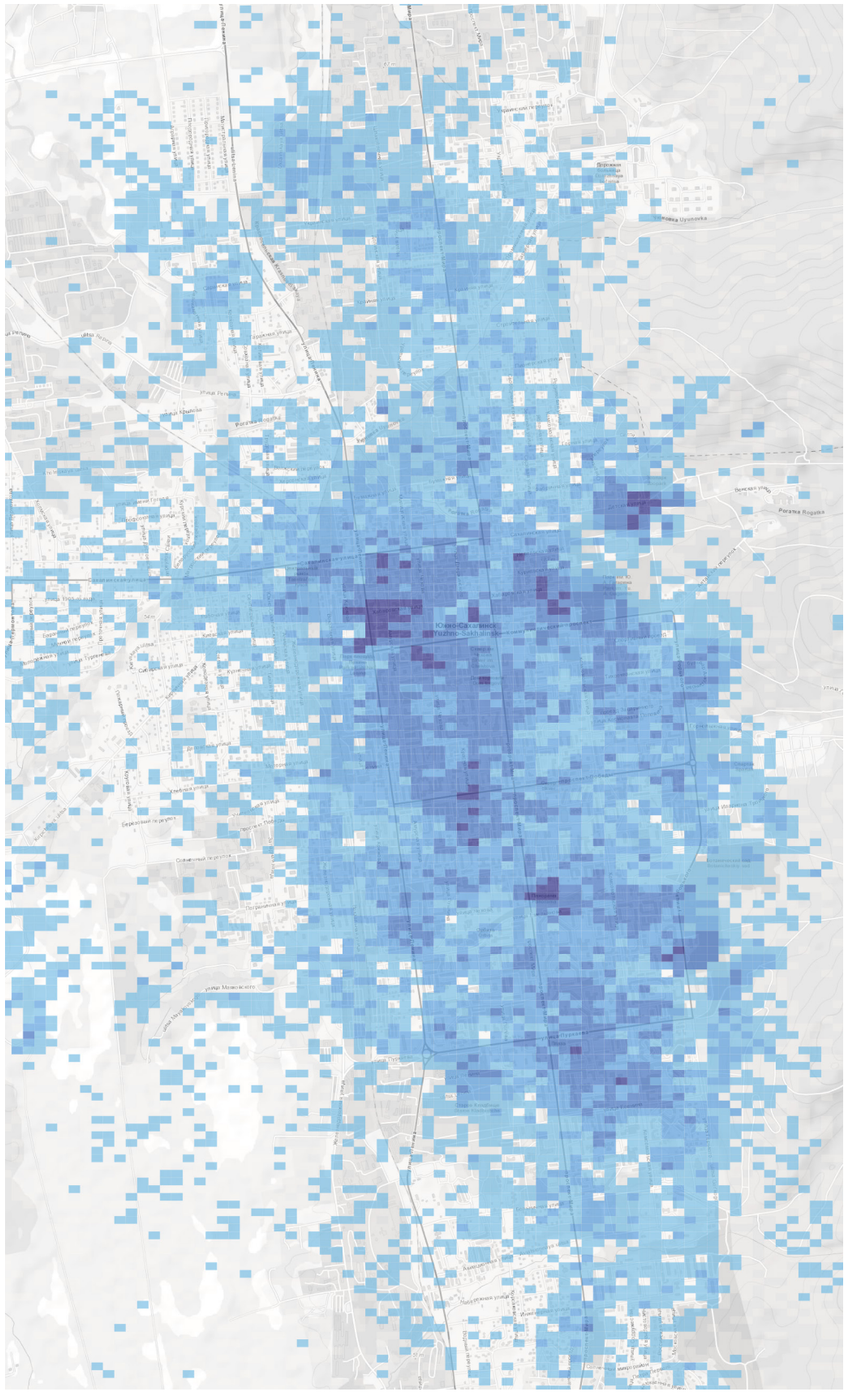
- Damchiksky reserve
- Trekhizbinsky reserve
- Obzhorovsky reserve

Routes to promising clusterslie through the regional centers of the secondorder (Ikryanoe, Kamyzyak, Volodarsky





Revealed overnight stay of people
(example - Yuzhno-Sakhalinsk)



Revealed daytime stay of people
(example - Yuzhno-Sakhalinsk)

Revealing the actual areas of residence tourists in the region

At the next stage, it is proposed to use cellular data processing for travel analysis agglomeration flows

Cellular data analysis is carried out according to the following formal signscam: in the dataset, in the aggregated form (impersonal) form, selected hugging the place of stay of people at some point, underway calculating the sum of the number of people in a cell 100 * 100 meters during reporting period

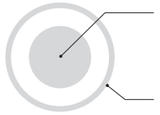
Thus, you can get the exact data on the following directions legends:

- The living population on the territories;
- Working in the territory population
- Visiting the territory of the tourist
- Matrix of correspondence between territories

	Astrakhan agglomeration	SFD	Russia	World
Ecotechnology				
Agroculture				
Fishing				
Tourism				
Shipbuilding				
Logistics				

Estimated based on analysis external and internal trends and potential of development of sectors of the economy of Astrakhan-region, Southern Federal District,Russian Federation and the World, from the point in terms of the opportunity to take up economic niche in the relevant industry

The analysis of the development of the region is based onput the Forecast of social-economic development of the Russian Federation until 2036 and Spatial development strategy Russian Federation until 2025



The level of the existing development

potential for furtherdevelopment

absent

low

average

high

	Now	Medium-term perspective	Forecast
Eco-technologies	Solar power production local geeks, general power grid	Development of a program of preferential terms electrification of alternative sources, the autonomy of individual objects from second system as a backup source or at certain hours	Production of solar panels and solutions of their disposal, supply alternative energy for export
Agroculture	Individual agricultural enterprises, of the order 50% of agricultural land is not involved in turnover, dependence on imports of products, an insignificant proportion of deep processing	Establishment of a control center for the agro-industry , reconstruction of the irrigation system,including hydroponics and drippolic, attracting investors in agriculture both primary and processing	Entering the world agricultural export market
Fishing	Separate fishing and aquaculture enterprises culture, regional scale of the market	Development of aquaculture and processing fish products, including those with use of eco-technologies	Entering the world export market for fish industrial products
Tourism	Regional scale, lack of the proper amount of quality hospitality infrastructure, lack of staff	Development of a network of tourist routest, attracting investment in changing places of attraction and shows,restoration of historical monuments and culture	Implementation of the historical and cultural potential of the region at the global level as well as the introduction of the quality standard of variety provided services, withdrawal from the gray zone of the economy type of tourism - fishing
Ship-building	Large industrial centers of ship-structures and platforms for offshore oil and gas production, SEZ Lotus	Modernization of equipment, development of cooperation, attraction of small business through technoparks and incubators in the industry of shipbuilding and machine-building	Renovation of the industry
Logistics	Regional and federal highways,international transport coridor North-South road as an alternative to the Route through the Suez Canal	Construction of modern transport-logistic complexes, realisation of Olya SEZ full capacity	Operational activity on management loading and delivery of goods in the region, including agricultural and fish products

Conditions for coordinated management of agglomerations:

1. conclusion of an intermunicipal agreementon the joint solution of issues of local importance, decision-making representative-authorities of municipalities onformation of intermunicipal coordinationcouncil (municipalities,included in the urban agglomeration)

2. Urban aglomeration Initiative:

- belongs to federal bodies of power, senior officials persons of the constituent entities of the Russian Federation and representative bodies of local government,
- is drawn up by decisions accordingly federal government authorities, senior officials of the subjects of Russian Federation and representative local government bodies

3. Initiative of representative bodies local government on the creation of a city agglomeration is a subject to agreement with the highest executive body of the state - the state power of the constituent entity of the Russian Federation

- Solution containing the initiative and the project intermunicipal agreement
- Consideration of submitted documents within 30 days (Federal Authorized the main body of executive power)
- Approval by order of the Government state - Government of the Russian Federation.

In accordance with the Project, the urban agglomeration management system includes:

- formation by representative bodies of municipalities of an intermunicipal coordination council for the development of an urban agglomeration,
- establishment, if necessary, by municipalities within the urban agglomeration of inter-municipal enterprises and (or) inter-municipal companies for the joint implementation of administrative, economic, socio-cultural and other functions on issues of local importance on the territory of the urban agglomeration,
- development and approval of a comprehensive plan for the development of an urban agglomeration in order to ensure sustainable socio-economic development of an urban agglomeration,
- creation of the Commission of the supreme executive body of state power of the constituent entity of the Russian Federation on the development of urban agglomerations on the territory of the constituent entity under the chairmanship of the highest official of the constituent entity of the Russian Federation.

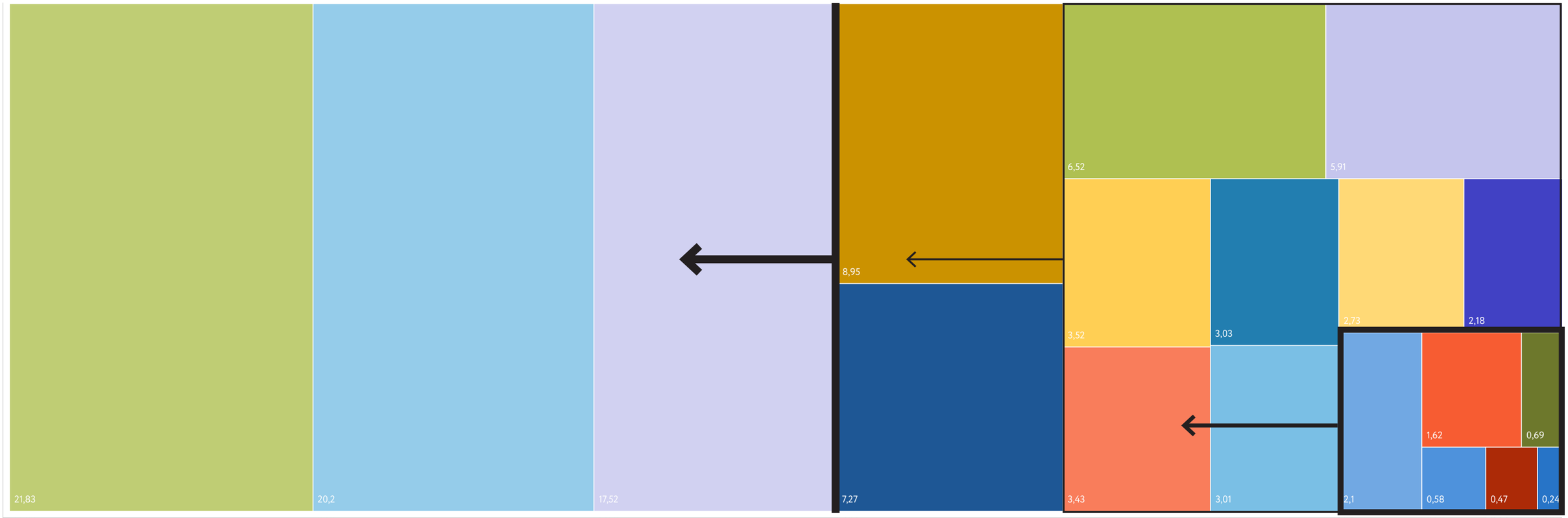
The developed Project provides for the preparation of a comprehensive plan for the development of the urban agglomeration (hereinafter referred to as the CRC) based on the decision of the inter-municipal coordination council for the development of the urban agglomeration (hereinafter referred to as the ICS).

The development of the CRC is carried out by a working group, which includes representatives of the executive and administrative bodies of municipalities, within 50 days after the decision of the ICS. The CRC approves the ISS after public hearings and approval of the project by the supreme executive body of state power of the constituent entity of the Russian Federation.

The CRC is developed for a ten-year period and contains *:

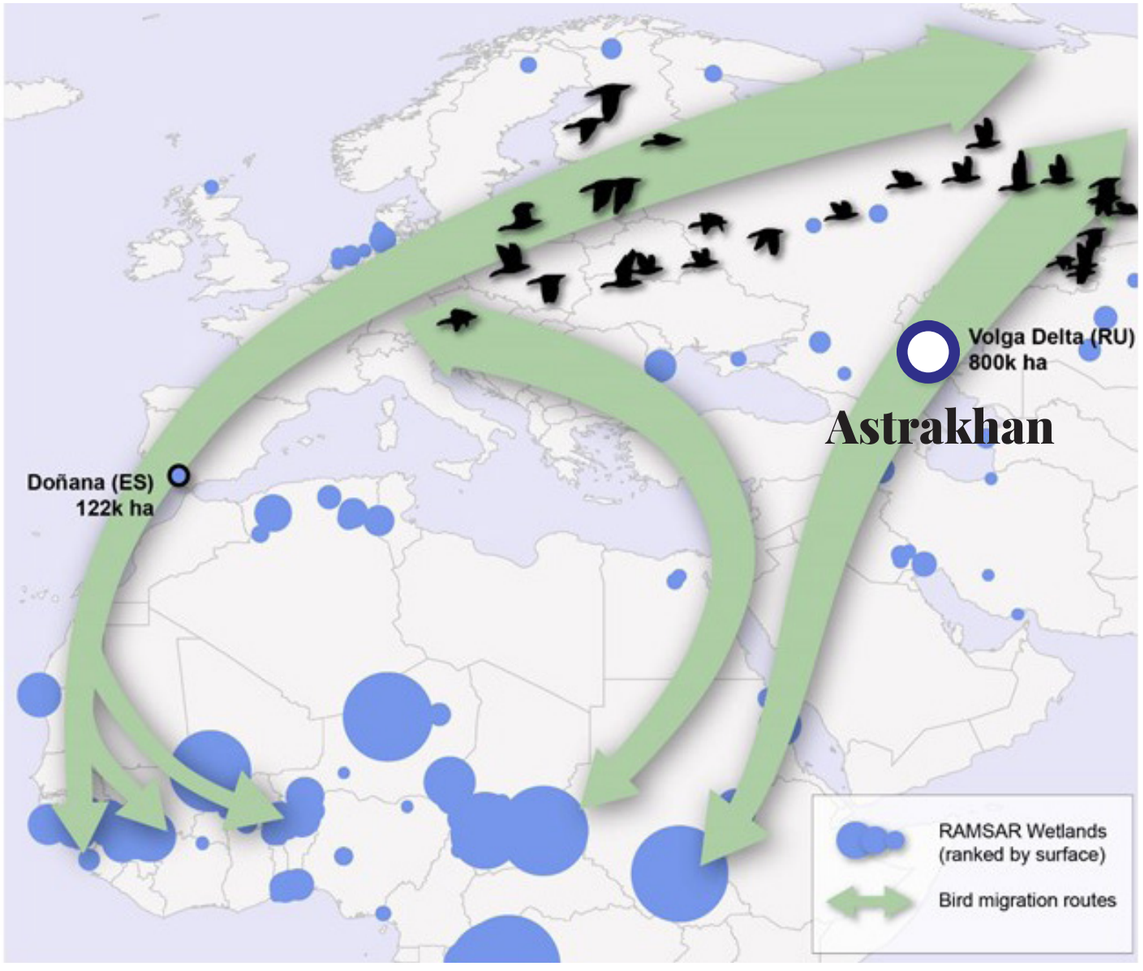
- **assessment of the current state of socio-economic development of municipalities within the territory of an urban agglomeration;**
- **problems of the development of communal, transport and social infrastructure of the urban agglomeration;**
- **goals and objectives for the development of the urban agglomeration, including in the areas:**
  - **development of communal, transport and social infrastructure;**
  - development of the health care system improvement;
  - protection and protection of the environment, including the collection, removal and disposal of solid waste;
  - education;
  - industrial development;
  - **consumer market development;**
  - **in other areas of socio-economic development within the framework of local issues;**
- **main indicators (indicators) characterizing the goals and objectives of the urban agglomeration development;**
- **a set of measures grouped according to the tasks of urban agglomeration development;**
- **capital construction projects, the construction or reconstruction of which is planned within the framework of the implementation of the tasks of the development of the urban agglomeration,**
- **assessment of the social and economic efficiency of the CRC.**

*** Orange marked materials prepared as part of the master plan of the agglomeration**



- Agriculture, fishing, fish farming
- Mining
- Manufacturing industries
- Electricity, gas, steam, air conditioning
- Water supply, sewerage, MSW
- Building
- Trade
- Transport and storage
- Hotels
- Information and communication
- Finance and insurance
- Real estate operations
- Professional, scientific and technical activities
- Administration and related services
- Public administration, military security, social security
- Education
- Health care and social services
- Culture, sports, leisure and entertainment
- Other

1 Ecological corridor
Europe - Africa



- application of ecosystem design principles
  - development of sustainable renewable energy sources;
  - taking into account the peculiarities of the climate and local natural characteristics of the territory.

2 Economic corridor
North South

- strengthening the capacity of the geospatial core north-south
  - taking into account the standards of sustainable development;
  - simultaneously in all directions, but for the highest priority tasks (the Pareto 20/80 principle) + taking into account the existing programs.

Guidelines to global positioning of the volga delta and international cooperation opportunities

Overarching objective

1 **Raise the Astrakhan and Volga Delta region international profile for its wetland management.**

1.Create a local Brand for Astrakhan and the Volga Delta region as well as a coordinating authority for its representation and management.
2. Present the Astrakhan Brand in international sectorial fairs and fora.
3.Increase participation in the Ramsar Convention international cooperation initiatives, and in particular in the Ramsar Regional Centre for Central and West Asia (RRC-CWA).
4. Work towards attaining the Ramsar Wetland City Accreditation.

2 **Situate the Volga Delta as a place of sustainable and ecological production and services.**

1.Liaise with international organisations and attain certifications (ISO, IFOAM, Global Sustainable Tourism Council) in these fields which can be included in the Astrakhan Brand:
•Ecological farming, grazing and aquaculture.
•Nature tourism.
•Hospitality standards.
•Sustainable infrastructures in natural reserves.
2.Create an offer of nature-related activities in the main niche areas: birdwatching, trekking, biking, fishing and hunting.
3.Diversify crops and cattle products in sustainable ways, and in particular reduce the usage of water and improve its cycle.
4.Increase the level of agro-industrial processing and the variety of exports-suitable products.
5.Establish international cooperation, knowledge exchange, and joint ventures with companies specialised in the same areas and in operating in wetlands of ecological importance.

3 **Claim a leader position in the implementation and use of sustainable energies and seek carbon neutrality.**

1.Foster the implementation of local, renewable and clean energies, by attracting large investors, and involving the local universities to reinforce know-how.
2.Introduce policies to support and consolidate the local entrepreneurial tissue in the field of renewable energies.
3.Improve infrastructures, networks, and access to renewable energies, at the disposal of businesses and enterprises which seek carbon neutrality, and include their performance in the Astrakhan Brand criteria.
4.Publicise the region's leadership in Russia, both nationally and internationally.

4 **Improving the quality standards of local enterprises.**

1.Assist local companies in acquiring internationally recognised certification for quality and integrated management ISO-ROSSTANDART.
2.Observe the special criteria for export-related activities, such as:
a.Export foods products.
b.Nature tourism.
c.Hospitality.
3.Include their performance requisites in the Astrakhan Brand application criteria.

Volga delta

The Volga Delta is one of the largest deltas in the world and characterized by a highly braided morphology, creating over 1,000 channels in the lower delta. It contains a UNESCO Biosphere Reserve, Strict Nature Reserve, and Wildlife Refuges. 70% of the world catch of sturgeon come from the Volga tributaries, which are a vital link in the life cycle of other commercially important fish. During mild winters, the delta supports up to 750,000 birds, it is a major staging and breeding area for many species of waterbirds, raptors and songbirds.

Ecosystem

The particularities of the Volga Delta as ecosystem and its relevance for the global wildlife stand out as major assets for is positioning in the World as a rich and sensitive urban and natural area in the face of global warming, and to gain international prominence in the fields of ecological production, clean energy production and nature tourism.

Stakeholders and prospective cooperating partners from the case of Doñana National Reserve, Spain:

The Doñana National Reserve, in Southern Spain, has already made advances in the creation of a local quality label, as well as policies with a view to drive sustainable development and solve conflicts between stakeholders in the area. Some relevant actors who could contribute their expertise in these processes are:

Public institutions:

- Consejería de Medio Ambiente y Ordenación del Territorio de la Junta de Andalucía. This regional ministry manages and awards the “Natural Park Brand” to produce and services related to protected natural spaces, and it is also responsible for the Doñana Sustainable Development Plan.
- Fundación Doñana 21. This public foundation manages and awards the “Doñana 21” label to enterprises based in the municipalities around the Doñana Park.

Research centres:

- Doñana Biological Station - Spanish Research Council. This dedicated centre carries out multidisciplinary research, aimed at understanding how biodiversity is generated, maintained and degraded, and the possibilities for its conservation and restoration.
- International Centre for Ecological and Environmental Studies and Conventions – Huelva University. This centre provides specialised scientific services to researchers, research groups, public and private institutions, and companies that need them to develop competitive projects in the field of the environment.

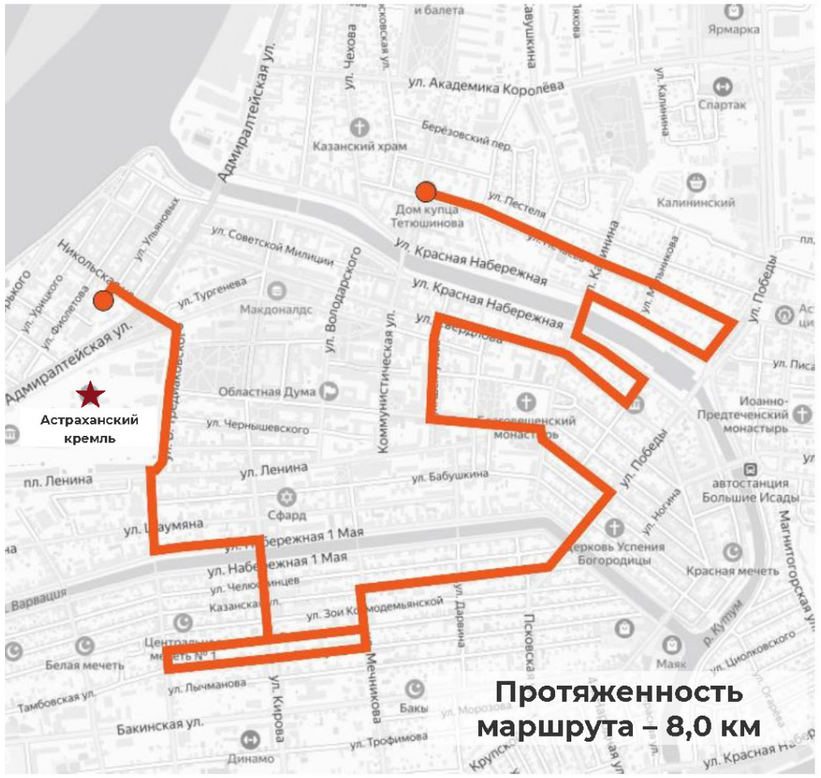
Organisations:

- WWF Spain. The world’s largest conservation organisation is present in Spain, where they pay special attention to the environmental conditions of Doñana. In the past, they formed part of the Doñana 21 Foundation Board of Trustees.
- Fundación Andanatura. This non-profit organisation undertakes business consultancy and training and in the development of innovation plans for small businesses and entrepreneurs, with a view to promoting the sustainable development of Andalusian natural areas. They also have experience in drafting sustainable development plans and strategies for natural reserves and cross-border areas.

Producers:

- Arroces de Doñana SL. This Company produces the first ecological rice production from the Doñana area, and it holds the Doñana 21 label.
- Flor de Doñana Biorganic is the only company in the Doñana area fully dedicated to the organic cultivation of berries, from an understanding of organic agriculture as a modern and sustainable way of using the land.

Route #1
«Wood patestry of Astrakhan»



Route #2
Astrakhan - p. Sergievka

Route #3
Astrakhan - Barhani

It is proposed to supplement the existing tourist routes in Astrakhan with three new routes developed by Astrakhan specialists

The «Ghost Town» route (designed by N. Tuigunova) from Astra-khani to the Barkhany village of the Narimanov district is a journey to a ghost town - to abandoned houses covered by sands (similar to the ghost town of Kolmanskop in Namibia).

The route «Once upon a time there were fishermen ...» (developed by I. Vodovozova) from Astrakhan to the village of Sergievka (also called «Holiday in the village») is dedicated to the life of rural residents with a display of crafts, fishing, household habits, clothes, feasts for tourists (based on traditional cuisine), with a show of concerts of song-and-dance folklore. It is also proposed to create an ethnocultural center «Fisherman's Compound», which can become an example for other rural centers of the new social infrastructure.

The route «Wooden lace of Astrakhan» (developed by the State Budgetary Institution of Culture of JSC «Astrakhan Museum-Reserve») introduces the wooden heritage of Astrakhan of the late XIX - early XX centuries, including objects that rarely come to the sight of tourists, because located inside quarters and courtyards. The length of the automobile route is about 8.0 km.

Guidelines to attract international tourism

Overarching objective

To strengthen the Astrakhan international brand identity for the marketing promotion of the region's natural and cultural features, and enhance the quality and variety of tourism offered, thereby creating a more appealing region to the current visitors and the wider international tourism market in the future.

1 Protecting valuable landscapes, natural heritage and local biodiversity

1.Incentivise local administrations in Astrakhan to form targeted environmental policies and conservation measures aiming to protect the region's natural assets and biodiversity i.e. establish Specially Protected Natural Areas (SPNA) of local importance in areas with rich local biodiversity and landscapes. Tourism can provide a compelling incentive to form conservation policies and measures to preserve biodiversity and correspondingly boost tourism appeal.
2.Identify the specific locations for the establishment of tourism-related infrastructures, such as accommodations, that would not compromise the integrity of the protected natural landscapes. A good international example how this had been managed is the Doñana National Park in the South of Spain.
3.Manage visitor flows, activities and behaviours in sensitive areas and sites through establishing official tour guides, entry permits and raising awareness through brochures, pamphlets and on-site information panels.

2 Supporting conservation through eco-tourism

1.Establishing, supporting and promoting eco-tourism services and activities in the region that help conserve the natural and cultural heritage while raising awareness and education on their values, e.g. cultural sites guided visits, educational excursions, official boat tours.
2.Endorse bird conservation, birdwatching activities and cooperate with international conservation associations and events (e.g. BirdLife International and World Migration Bird Day (WMBD)) to promote the international importance of Astrakhan region as a RAMSAR site as well as part of a key bird migration route and habitat. An example of a successful eco-tourism promotion and activities for birdwatching within a RAMSAR site is Wild Doñana tourism business in the South of Spain.
3.Using revenues from tourism-related activities (such as entry permits, fishing-hunting permits) to fund ecosystem monitoring and maintenance such as eradication of invasive species and monitoring the prosperity of the local flora and fauna species.
4. Encourage visitors and tourism businesses to support conservation through donations, volunteering activities and profits from official gift shops to be given to conservation efforts.

3 Promoting sustainable tourism and activities to all visitors

1.Encourage tourism businesses to improve their environmental management including the use of energy and water, and waste management through installation of renewable and nature-based infrastructures such as solar panels for energy generation and SUDS for natural water treatment.
2.Form a continuous trekking and cycling routes for tourists, including integrated pit-stops e.g. in tourist centres and local cafés for resting stops, to allow visitors to enjoy Astrakhan's scenic nature and wildlife without the need to use their vehicles.
3.Promote the use of public transportation and electric vehicles as alternatives to carbon-fuelled private vehicles. An example is Travel Oregon brand has established the largest network of electric vehicle fast-charging stations to promote the use of EV's along rural roads and scenic highways for visitors to explore natural areas carbon-free.

4 Strengthening the prosperity of the local community for tourism-related activities

1.Promoting the provision and identity of Astrakhan's local produce and locally-owned businesses and services for the purchase and use by visitors, including promoting gastronomic activities that uses local produce, or selling gifts and crafts made by local residents.
2.Provide the relevant training and capacity building for local tourism businesses and operators in promoting sustainable tourism in their operations and activities.
3.Supporting the economic viability and performance of local tourism businesses and the provision of local employment in tourism.

international positioning

This international positioning of the Volga Delta within Astrakhan region also provides a plethora of tourism potentials that would appeal to the international market. The major tourism and recreational activities in the region are oriented to fishing and hunting. This is due to the unique reserves of aquatic biological resources in the Volga Delta and the coastal part of the northern Caspian Sea adjacent to the Astrakhan region. Other types of tourism in Astrakhan include bird-watching, gastronomy, health and leisure, educational excursions as well as cultural and historical.

Astrakhan Natural Reserve

It should be noted that in the Astrakhan region, there is a State Nature Reserve of federal importance called the Astrakhan Biosphere Nature Reserve, and Specially Protected Natural Areas of regional importance. There is no Specially Protected Natural Areas (SPNA) of local importance in the Astrakhan region.

Taking into account the unique tourism potential, it is necessary to strengthen the brand identity of the region for the marketing promotion of Astrakhan's unique natural and cultural features to appeal to the international tourism market. The strategies on how we could do this are outlined below.

Human capital —high potential, but significant barriers, the elimination of which is necessary for balanced development

Social capital — high potential, which creates essential prerequisites for business development, economic growth while creating prerequisites - primarily institutions

Value attitudes— correspond to the realization of entrepreneurial potential and business development

Institutional environment — poor quality of institutions is one of the factors that hinder the balanced development of Astrakhan

Entrepreneurship — very high potential, source of economic growth

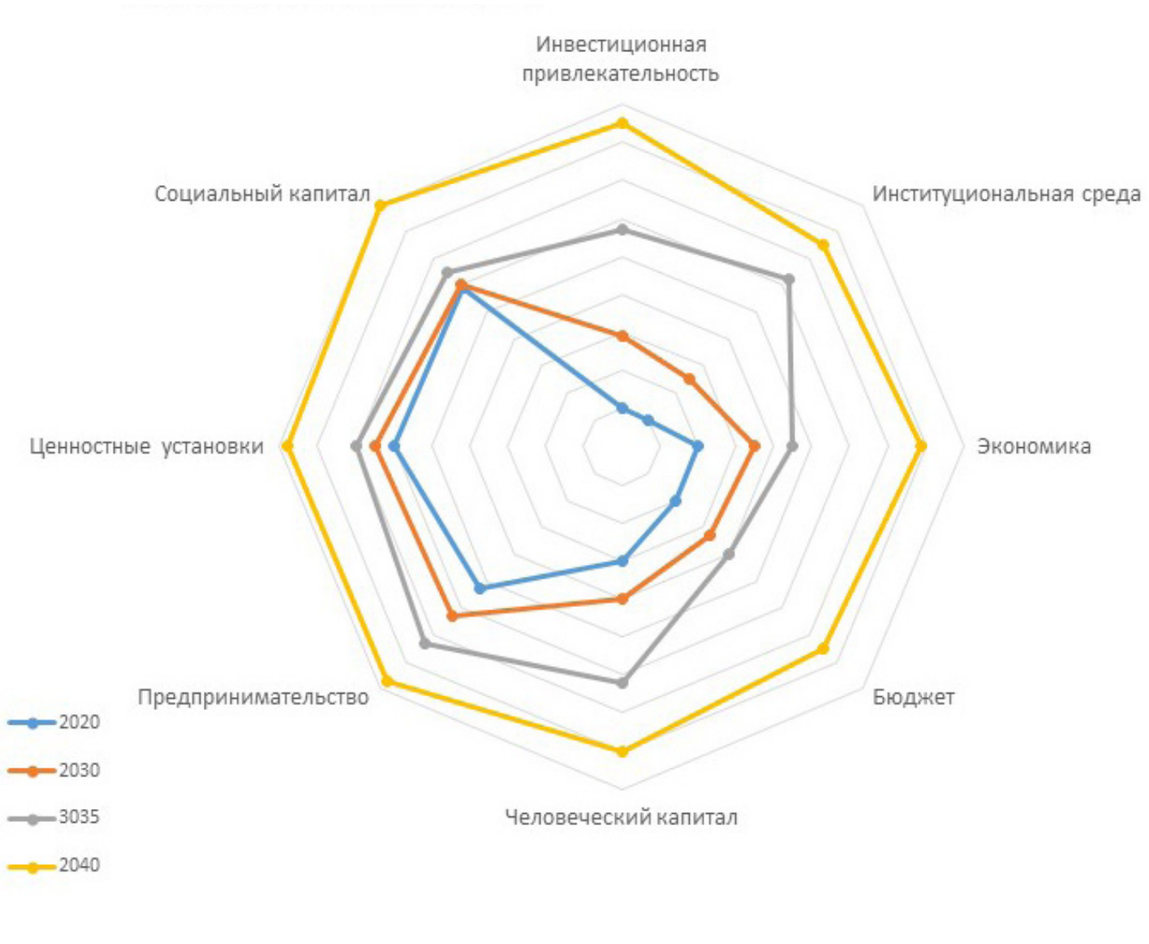
Budget — creating conditions for the development of new companies and self-employment

Economy — future development depends on overcoming institutional barriers, building human capital and realizing entrepreneurial potential

Investment attractiveness — high potential, is included in the leading group of the rating (12th place), implements particularly important investment projects with an investment volume of 50 billion.

Areas of measures to ensure the strengthening of the core of the agglomeration

Sequential development of eight dimensions builds economic resilience



January

- Thematic event «Ataman Christmas tree»
- New Year’s events within the framework of the Christmas market

February

- Folk-ethnographic holiday «Maslenitsa»
- Festival of Culture and Art of the Caspian States
- Conference «Healthy Eating»

March

- Ancient Kalmyk folk holiday "Tsagan-Sar"
- Festival of youth creativity "Yug ART"
- Military-patriotic quest "Native Astrakhan" *

April

- Regional holiday Navruz
- International festival of vocal art named after Valeria Barsova and Maria Maksakova
- Rally-Raid "Kagan's Gold"
- Fishing festival "Vobla"
- Subbotniks

May

- National holiday «Sabantuy»
- Museum night
- Open-air concert of classical and popular music "Music on the Grass"
- Half Marathon ZaBeg.rf
- International Scientific Forum "Caspian Sea 2021: Ways of Sustainable Development"

June

- Festival of folk culture and crafts «Green Christmastide» («Trinity»)
- Summer Solstice Festival of Slavic Culture *
- Commercial and industrial exhibition of the Caspian states

July

- International Music Festival of Ildar Abdrazakov
- Water sports festival
- Fisherman’s Day in Astrakhan

August

- International project of the Astrakhan State Opera and Ballet Theater «Russian Operas in the Astrakhan Kremlin «
- Astronomical Festival «Caspian stars»
- Tom Sawyer Fest Historical Restoration Festival
- Sports day and physical culture *
- Watermelon festival
- Festival «Friendship of Peoples»
- Caspian Sea Day
- Open Air Contemporary Art Festival «Astra-Fest» *

September

- International ethno-tourism project "Ethno-fair South Bazaar"
- International Festival of Puppet Theaters of the Caspian States "Caspian Coast"
- Chilim Public Art Festival
- Sports Olympiad of the countries participating in the Caspian region *
- Day of the city of Astrakhan
- Airfest Kite Festival
- Festival "Blooming Lotus"

October

- International Festival of Jazz Music "Delta Jazz"
- Festival "Days of Indian
- culture "in Astrakhan
- Camel Race (Privoljsky District)
- Fair "Astrakhan products"

November

- International Festival "Astrakhan Multinational"
- Night of the arts
- International competition-festival of choreographic groups "Grace"
- Business Forum "Clean Land" *
- Festival of Contemporary Popular Culture "Fish and Geek"

December

- Festival of Kazakh culture "Native land"
- Caspian festival-competition of young maestro "Golden Key"
- Book exhibitions
- Festive program

Typology of tourist activity

№	Types of tourist activity	Types of tourist activities
1	Ethnography	ethnographic tourism; archaeological tourism; religious tourism
2	Culture and art	historical and cultural tourism
3	Sport and health	sports tourism; health tourism; medical tourism
4	Business life	business tourism; congress and exhibition tourism; educational tourism
5	Leisure and social activities	gastronomic tourism; nature tourism; fishing and hunting tourism; beach tourism; cruise tourism; event tourism

Suggestions for types of tourist activities in the centers of the Astrakhan agglomeration

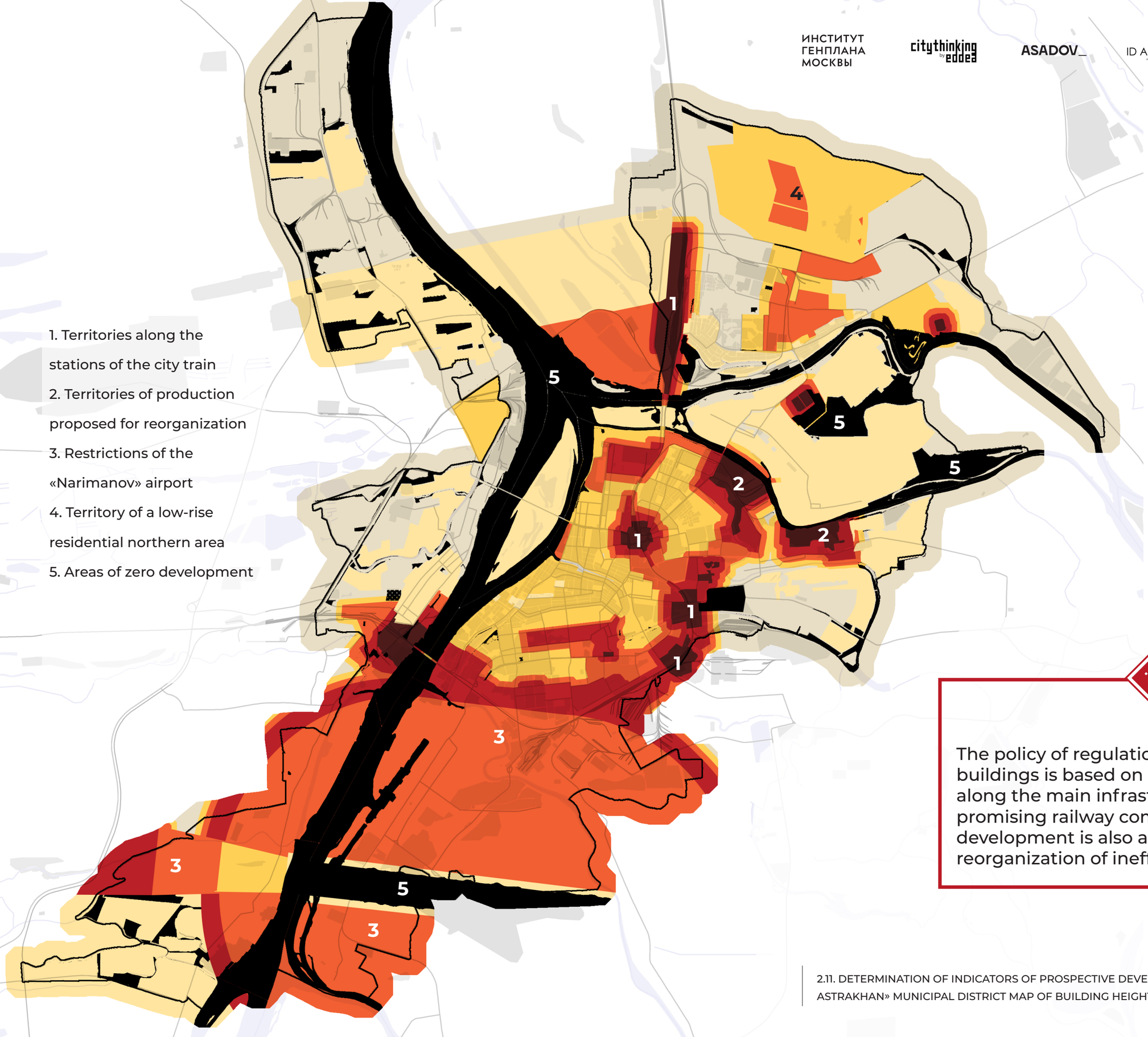
№	Place	Views tourist activity	Potential regions - tourist suppliers
1	Astrakhan	religious tourism ethnographic tourism archaeological tourism historical and cultural tourism sports tourism health tourism medical tourism business tourism convention and exhibition tourism educational tourism gastronomic tourism nature tourism fishing and hunting tourism beach tourism cruise tourism event tourism	Astrakhan region; Moscow; Regions of the Russian Federation; Kazakhstan, Azerbaijan, Iran; USA, United Kingdom, Germany, Italy, Spain, Israel, PRC, Republic of China (Taiwan), Japan
2	Narimanov	business tourism	Astrakhan region; Moscow; regions of the Russia
3	Olya	business tourism	Astrakhan region; Moscow; regions of the Russia
4	Ikryanoe	gastronomic tourism fishing and hunting tourism	Astrakhan region; Moscow; regions of the Russia far abroad; Caspian states
5	Karoar	business tourism	Astrakhan region; Moscow; regions of the Russia Kazahstan
6	Krasniy Yar	historical and cultural tourism	Astrakhan region; Moscow; regions of the Russia
7	Tinaki	health tourism	Astrakhan region; Moscow; regions of the Russia far abroad; Caspian states
8	Volodarsky	gastronomic tourism nature tourism fishing and hunting tourism	Astrakhan region; Moscow; regions of the Russia far abroad; Caspian states
9	Tumak-Bolshoi Mogoy	ethnographic tourism archaeological tourism nature tourism fishing and hunting tourism	Astrakhan region; Moscow; regions of the Russia Kazahstan; far abroad;
10	Yaksatovo	sports tourism nature tourism	Astrakhan region; Moscow; regions of the Russia
11	Kamyzyak	sports tourism gastronomic tourism nature tourism fishing and hunting tourism	Astrakhan region; Moscow; regions of the Russia far abroad; Caspian states
12	Kirovsky	gastronomic tourism nature tourism fishing and hunting tourism	Astrakhan region; Moscow; regions of the Russia far abroad; Caspian states
13	Liman	sports tourism gastronomic tourism nature tourism fishing and hunting tourism	Astrakhan region; Moscow; regions of the Russia far abroad; Caspian states

Ресурсы	Agglomeration	Privoljsky	Volodarsky	Kamyzyaksky	Ikryaninsky	Narimanovsky	Krasnoyarsky	Limansky
2021–2022	not lower 840 ths. ppl not lower 4,35 тыс. un.	not lower 55 ths. ppl not lower 200 un.	not lower 46,5 ths. ppl not lower 575 un.	not lower 45,9 ths. ppl not lower 300 un.	not lower 47 ths. ppl not lower 775 un.	not lower 48 ths. ppl not lower 185 un.	not lower 37 ths. ppl not lower 200 un.	not lower 28,4 ths. ppl not lower 125 un.
2022–2024	not lower 846 ths. ppl not lower 10,5 тыс. un.	not lower 56,9 ths. ppl not lower 250 un.	not lower 46,5 ths. ppl not lower 825 un.	not lower 45,6 ths. ppl not lower 600 un.	not lower 47,5 ths. ppl not lower 1225 un.	not lower 48,9 ths. ppl not lower 631 un.	not lower 37 ths. ppl not lower 350 un.	not lower 27,8 ths. ppl not lower 325 un.
2024–2027	not lower 865 ths. ppl not lower 26,57 тыс. un.	not lower 60 ths. ppl not lower 675 un.	not lower 45,5 ths. ppl not lower 1150 un.	not lower 45,8 ths. ppl not lower 1350 un.	not lower 47,5 ths. ppl not lower 1875 un.	not lower 49,5 ths. ppl not lower 1040 un.	not lower 37,5 ths. ppl not lower 650 un.	not lower 27,8 ths. ppl not lower 825 un.
2027–2032	not lower 885 ths. ppl not lower 42,77 тыс. un.	not lower 64 ths. ppl not lower 875 un.	not lower 45,5 ths. ppl not lower 1650 un.	not lower 44 ths. ppl not lower 1600 un.	not lower 47,5 ths. ppl not lower 2525 un.	not lower 52 ths. ppl not lower 2350 un.	not lower 37,3 ths. ppl not lower 850 un.	not lower 27,4 ths. ppl not lower 1925 un.

not lower 44 ths. ppl — target indicator living population

not lower 44 un. — target indicator of jobs created (cumulative)

Категория	Ключевые КПЭ	Оптимальные значения	Единицы измерения
MORPHOLOGY AND URBAN STRUCTURE	Housing density	100 - 160	dwelling/Ha
	Population density	250 - 400	inhabitants/Ha
	Absolute compactness	> 5	m
	Corrected compactness	10 - 20	m
	Floor Area Ratio	> 1.25	m2/m2
SUSTAINABLE MOBILITY	Access to alternative transport means	100	% population
	Proximity to alternative trnasport means	< 300	m bus stops and bike lane
	Space for pedestrians within roads	> 75	% street area
	Space for private transport means within roads	< 25	% street area
INHABITING PUBLIC SPACE	Air quiality (population exposure)	100	% population (< 20 µg/m3)
	Acoustic quiality (population exposure)	> 75	% population (< 65dB(A) day)
	Thermal comfrot (comfort hours/day)	1.7 - 2.4	hours/day (unfavourable months)
	Sterrts accesibility (handicapped)	100	% accesible streets
URBAN COMPLEXITY	Urban Diversity Index	> 6	bits of information
	Landuse balance (activity/residential)	30	% facilities and tertirary uses
	Spatial and functional continuity of the street	50	% street lenght
GREEN SPACES AND BIODIVERSITY	Green space per inhabitant	> 10	m2/inhabitant
	Simultaneopus proximity to open spaces	100	% population with access to open spaces
	Provision of trees on streets	100	% street stretch
	Soil biotic index	30	% total floor area
URBAN METABOLISM	Total energy consumption	20.6	GWh/año (régimen basal)
	Energy self-suffiency	100	% basal regimen
	Total water consumption	< 104	lpd optimized consumption
	Water self-suffciency	100	% local sources
OCIAL COHESION	Provision of facilities	1.8	m2/inhabitant
	Simultaneous proximity to facilities	100	% population with access to facilities
	Provision of social housing	15-30	% public renting
EFFICIENCY	Sustainable Function (E/nH)	< 10	.



1. Territories along the stations of the city train
2. Territories of production proposed for reorganization
3. Restrictions of the «Narimanov» airport
4. Territory of a low-rise residential northern area
5. Areas of zero development

Suggested height restrictions

- 0 floors
- 1-3 floors
- 4-8 floors
- 9-15 floors
- 16-20 floors
- 20+ floors

- territory of preservation of the existing number of storeys

The policy of regulations on the height of buildings is based on stimulating development along the main infrastructure of the city - a promising railway commuter train. Intensive development is also allowed in the territories of reorganization of ineffective industries.

	Scientific innovation, ecotechnology	Agrocomplex	Fishery	Tourism	Logistics	Shipbuilding
Город Astrakhan	50 bln. rub 20000 Jobs	-	-	4,0 bln. rub 7000 Jobs	1,5 bln. rub 1000 Jobs	5,0 bln. rub 3000 Jobs
Volodarsky municipal district	-	2,5 bln. rub 400 Jobs	1 bln. rub 100 Jobs	1 bln. rub 150 Jobs	1,5 bln. rub 1000 Jobs	-
Ikryaninsky municipal district	20 bln. rub 200 Jobs	1,0 bln. rub 50-100 Jobs	7,5 bln. rub 650 Jobs	1 bln. rub 100 Jobs	1,0 bln. rub 500 Jobs	3,0 bln. rub 1000 Jobs
Limansky municipal district	-	1,0 bln. rub 50-100 Jobs	3 bln. rub 300 Jobs	0,5 bln. rub 50 Jobs	1,0 bln. rub 500 Jobs	3,0 bln. rub 1000 Jobs
Narimanovsky municipal district	20 bln. rub 200 Jobs	2,5 bln. rub 400 Jobs	1,2 bln. rub 100 Jobs	1 bln. rub 150 Jobs	1,0 bln. rub 500 Jobs	5,0 bln. rub 1000 Jobs
Kamyzyakинский municipal district	10 млрд. руб 150 Jobs	2,5 bln. rub 400 Jobs	8,5 bln. rub 1000 Jobs	0,5 bln. rub 50 Jobs	-	-
Krasnoyarsky municipal district	20 bln. rub 200 Jobs	4 bln. rub 600 Jobs	-	0,5 bln. rub 50 Jobs	-	-
Privoljsky municipal district	-	1,0 bln. rub 50-100 Jobs	4,5 bln. rub 350 Jobs	1 bln. rub 150 Jobs	-	5,0 bln. rub 300 Jobs
Sum:	**120 bln. rub 20750 Jobs**	**14,5 bln. rub 2025 Jobs**	**25,7 bln. rub 2500 Jobs**	**9,5 bln. rub 7700 Jobs**	**6 bln. rub 3500 Jobs**	**21 bln. rub 6300 Jobs**

EDUCATION THE SCIENCE

Interuniversity research and educational campus - a new center of city life

- New opportunities to improve the level of research work and the quality of education
- development of areas adjacent to the campus
- Ensuring the cultural interpenetration of the urban and university environment.
- A modern campus is a multifunctional transformable educational and library space, sports infrastructure facilities, cultural and leisure spaces, etc.

Investments - 12 billion rubles

Construction of new facilities with a total area of over 70 ths.sq.m .:

- Dormitories for students
- Specialized educational and scientific center
- Leisure center
- Student project center, scientific library
- Scientific and educational center
- Research Center
- New Jobs - about 8 thousand

TOURISM CULTURE

Hotel and business cluster - synergy of business and tourism

- Formation of an updated image of the city with a developed cultural component
- Increasing cultural and tourist attractiveness
- Inclusion in federal projects
- Creation of infrastructure for professional self-realization of specialists
- Creation of new points of growth
- Creation of a new cultural and tourist environment and new infrastructure
- New Jobs - about 7-10 thousand.

INNOVATIVE PRODUCTION

Technopark is a tool for solving the problems of innovative business

- The main goal is to ensure the accelerated development of high-tech sectors of the economy and turn them into one of the main driving forces of economic growth.
- Creation not lower 20 successful innovative businesses «from scratch» per year
- Main directions: information technology; bioengineering; biotechnology; nanotechnology; biomedical technologies
- attracting investment in science
- introduction of the latest developments into the industry
- Construction of new infrastructure and housing
- New Jobs - about 10-15 thousand.

To increase the beneficial effect of the master plan of the Astrakhan agglomeration, it is necessary to develop a marketing and communication strategy. A clear positioning of the region helps to attract investments, develop internal and external tourism, local business, help overcome the outflow of the population and attract new residents to the city. For the formation of a marketing and communication strategy, work is needed breaks
in two stages:

Positioning stage:

1.

Determination of priority areas and targets for the development of the city for the period of validity of the master plan.

2.

Analysis of the current situation and identification of both strengths, and factors hindering the achievement of the assigned tasks.

3.

Positioning the region based on directions and targets (industrial, cultural, historical, recreational center, etc.). Different positioning is possible for different purposes, as well as for different target audiences. Revealing fears, stereotypes and potential blocks in target audiences.

4.

Analysis of the competitive environment and the formation of a set of unique offers of the territory.

5.

Preparing the identity of the future project: logos, patterns, design code, etc.

Strategy implementation stage:

1.

Drawing up a communication plan based on from the timing of the implementation of specific decisions of the master plan.

2.

Determination of the city brand promotion channels

3.

Analysis and embedding of strategy elements to existing events, to existing sites.

4.

Phased implementation of the plan.

5.

Periodic interim analysis of results and adjusting plans if necessary.

The territory of the Astrakhan agglomeration has enormous potential for both spatial development, increasing the connectivity of the territory, and economic growth, the formation of a stable environment for attracting investments and developing entrepreneurship.

Basis potential agglomeration -r eostrategicheskoe position, the intersection of federal and international highways, unique natural wetland landscapes, the conditions for agriculture and the development of the fishing and aquaculture industry, increase the use of renewable energy sources (solar energy as a priority)

The centers of municipal districts have low connectivity with the agglomeration center and zero connectivity with each other. The key infrastructure problem is the low availability of the periphery of the metropolitan area.

The mobile communications infrastructure plays a key role for the introduction of modern technologies, both in the sphere of life and in the sphere of economic production. The highest quality, fastest and most stable cellular coverage is typical only for the center of the agglomeration.

A factor-by-factor analysis of the agglomeration territory revealed a high potential for the development of economic sectors related to environmental technologies and the use of alternative energy sources (with high levels of favorable natural and climatic factors and a relatively low level of threats from infrastructural factors), the development of agriculture and the fishing industry - as traditional sectors of the economy , but with access to a fundamentally new quality level (based on new production technologies, processing and formation of a stable product logistics system)

The territory of the agglomeration also has a high potential for the development of the tourism sector of the economy, the total potential flow of tourists based on the coverage of the population within a radius of 5-6 hours of road accessibility and coverage of the population based on existing air flights is about 27 million people. The most promising areas of tourism, in addition to the traditional ones associated with fishing and hunting , are presented as: event tourism, cultural tourism, health and wellness, as well as ecological / hiking and cruise tourism.

The identified areas of the economy were also assessed from the point of view of reaching a regional and global scale. The highest development potential in terms of entering the world market has been expertly identified in the sectors related to eco-technologies , logistics and tourism.

Comparison of the matrix of expectations in the context of residents-executive authorities-investors, showed the key expectations in terms of the development of the agglomeration in the following directions: the development of social infrastructure, including from the standpoint of meeting the needs of the population and training of qualified personnel, the development of public spaces with high-quality infrastructure and high connectivity territories, increasing the investment attractiveness of the territory, synergy of urban development-education- science -production , branding and the formation of a positive image of the region.

The uniqueness of the territory, the combination of various factors, both natural, ecological, landscape, and socio-economic, the peculiarities of the location and the presence of transit flows, is also associated with the presence of restrictions on the development of the territory. Moreover, the totality of such territories occupies a significant share of the agglomeration. This fact is of particular importance in the context of the effective use of the territory . In this regard, further design spatial solutions are aimed at a qualitative transformation, and not a territorial expansion of functions.

A comprehensive assessment of the territory of the center of Agglomeration, the city of Astrakhan, revealed a significant drop in the quality of life on the outskirts of the city, which is associated with the low functional self-sufficiency of the territory. The average values of the quality of life index within the boundaries of residential zones determine the directions of priority measures for the placement of public facilities. There is a high potential for a qualitative reorganization of production territories in view of the high density of services and services of the tertiary sector of the economy in these territories. Among the identified problem areas, the territories along the railway have the highest potential.

A factor-by-factor analysis revealed the most promising potential directions for the development of the city of Astrakhan associated with: the development of underutilized educational and innovative potential, development as a large logistics center, the development of tourism as an economic sector, and the development of a general tourist infrastructure.

3

TERRITORIAL DEVELOPMENT MEASURES TO ENSURE THE IMPLEMENTATION OF THE PROPOSED SCENARIO

SUSTAINABLE PRINCIPLE	BASE STRATEGIES	PROGRAMMES	PRIORITY		
			H	M	L
STRONG IDENTITY Укрепление уникальной Strengthen the unique local identity of the Volga Delta as a place of natural beauty, rich biodiversity and diverse cultural heritage within the local communities.	PRESERVE THE REGION'S NATURAL AND CULTURAL HERITAGE that create Astrakhan´s distinctive natural character and environmental quality, becoming its competitive advantage and asset.	Protect the physical and visual integrity of Astrakhan's outstanding natural landscapes by regulating uses, activities and development, and enforcing measures to maintain the local landscape character and biodiversity, such as removing physical obstacles to natural water flows and to fish upstream passage during breeding season.	●		
		Preserve Astrakhan's built heritage, character and features, by means of an improved set of regulations and plans, a retrofit incentive programme, and restoration works for highly valued local architecture, historical monuments and public squares.	●		
		Maximise the potential for various types of tourism in the region, capitalising on the unique natural and historical assets: sanatorium and health resorts, bird-watching, fishing, hunting, gastronomy, educational, recreational.		●	
	CREATE AND PROJECT A NEW IMAGE of Astrakhan and the Volga Delta as a leader region in sustainable management of the natural environment.	Seek international certification for the local products and services as sustainable, locally sourced and environmentally responsible, through establishing an official organisation for the application, award and use of an Astrakhan label and attain internationally recognised certifications for sustainable policies such as the Ramsar Wetland City Accreditation.		●	
		Coordinate the Astrakhan region's administrative levels in pursuit of the Masterplan of Blue-Green Strategies through forming a new governing body for a better collaboration among city, intermunicipal and regional administratives, and establish regular monitoring and evaluation of the Blue-Green strategies		●	
	STRENGTHEN SOCIAL COHESION, OWNERSHIP, IDENTIFICATION AND SENSE OF BELONGING in the territory by means of community building and local participation in city decisions.	Integrate each district's unique cultural identity into the neighbourhood design and place-making strategies through stronger public participation in decision-making processes, enhance heritage sites and routes with informative panels, enhance the cultural events programme with additional festivals that appeal to national and international visitors.		●	
		Improve and develop social infrastructures, such as training and educational centres, kindergartens and schools, and healthcare centres.		●	
		Improve and develop cultural infrastructures, including those that facilitate exchange of knowledge and ideas, creating a cultural district in Astrakhan city, as well as enhancing the cultural life across the agglomeration, with a congress centre, houses of culture, community halls, a hippodrome and sports and leisure centres.		●	

SUSTAINABLE PRINCIPLE	BASE STRATEGIES	PROGRAMMES	PRIORITY		
			H	M	L
NEW HABITAT Create a greener and bluer settlement network through the adoption of a sustainable urban ecosystem model, providing a foundation for a better quality of life.	**DEVELOP A REGIONAL AFFORDABLE HOUSING STRATEGY AND PLAN** to provide affordable and high-quality housing both by creating a new stock and renovating existing dwellings.	Determine optimal land plots in Astrakhan (soil resilience, proximity to existing basic infrastructure and transport links) for new developments taking into account growth and identify suitable city models for consolidation and settlement growth.	●		
		Provide large-scale new housing stock and streamline project administration processes to accelerate the pace of construction by attracting major national and international operators.		●	
		Retrofit existing dilapidated housing stock to improve habitability to repopulate crumbling neighborhoods with financial incentive schemes for households on specific characteristics such as roof replacement, infrastructure upgrades, energy efficiency measures.	●		
	TRANSITION TO GREEN AND BLUE INFRASTRUCTURES, fostering the synergies between the natural and the built environments to create a pleasant and attractive living environment for all.	Build an efficient city with an optimal functional urban metabolic rate through means such as improving basic infrastructure, including water supply and distribution, gas supply and distribution, power grid, sewage treatment plants, and local streets.	●		
		Design a compact city in harmony with its natural morphology and using natural solutions to support traditional infrastructure.		●	
		Complexity through multi-purpose urban design to improve self-reliance, reduce commuting and improve functionality, adaptability and social resilience.		●	
		Build cohesive and inclusive neighborhoods by equipping them with a varied and balanced mix of social infrastructure.		●	
	ПЕРВЫЙ РОССИЙСКИЙ РЕГИОН, У КОТОРОГО ЕСТЬ ПЛАН ДОСТИЖЕНИЯ НУЛЕВОГО БАЛАНСА. Continue to lead the Russian Federation in the implementation of renewable energies, optimising solar as well as wind sources, both in the urban and rural landscapes.	Actively engage the world's energy operators.	●		
		Promote the automation and digitalization of infrastructure, create smart digital networks and IoT networks at city and regional scales.		●	
		Focus on solar power on a small and large scale and wind power on a large scale by identifying suitable sites and providing special tax systems in strategic locations. The transition to cleaner marine fuels in ports and freight traffic continues.	●		

SUSTAINABLE PRINCIPLE	BASE STRATEGIES	PROGRAMMES	PRIORITY		
			H	M	L
UNITY OF GREEN-BLUE FRAME Form a well-connected territory of multiple district centres, capitalizing the region's strategic geopolitical location between land and sea as well as its unique natural resources.	Enhance the main transport corridors to the North, South and East that connect Astrakhan to other national and international centres, by improving the infrastructure – roads, railway, ports and airport - and locating logistics nodes along it.	Main roads, railway and highway improvements to enhance the connection of Astrakhan region with the neighbouring boundaries such as Kazakhstan, Iran, the greater Russian Federation and the EU, as well as improving transport connections inter-districts in the region to better facilitate the flow of goods and citizens.	●		
		Improve river connections and ports in the Delta towards the Caspian Sea, by maintaining optimum conditions along the Volga Delta route, carry out dredging works on shoaling rivers, and expand regular shipping routes from Port Olya to expand markets to Kazakhstan, Iran, Turkmenistan and Azerbaijan.		●	
		Locate logistics hubs and distribution centres on the main transport corridors, to take advantage of the planned improvements to highways and railway, which include potential SEZ areas along the Northern and Eastern bypass highways and along railway route.	●		
	Strengthen the intermunicipal connections between agglomeration centres, forming a more coherent and integrated territory.	Improve connections between the main business districts through the creation of unified agglomeration routes (incl. inter-municipal public transport routes), integrated with the northern and eastern bypasses around Astrakhan city and the new bridge over the Volga river.	●		
		Improve transport connections between production centres (ie. farms, fish-farms, industries) and the distribution network across the Delta to boost marketing and distribution processes of the local produce.	●		
		Improve the connections between smaller settlements and district centres (incl. rural public transport routes), along the blue-green Delta structure, without interfering with its outstanding landscapes.			●
	Establish an efficient public transport network within each district that encourage the use of sustainable modes of transport to citizens and visitors.	Improve existing public transport in each district centre including buses, inter-district trains and urban trams, and establish a clear division between intra- and inter-municipal routes to establish unified agglomeration routes.	●		
		Provide new types of individual mobility for the active population such as the provision of a consolidated and continuous cycling and pedestrian network routes within Astrakhan City, and establish an intermunicipal scenic cycling and trekking route to appeal for visitors and boost tourism-related businesses.		●	
		Integrate riverboats and ferry services into the public transportation system, when feasible, increasing its accessibility, frequency, and efficiency.			●

SUSTAINABLE PRINCIPLE	BASE STRATEGIES	PROGRAMMES	PRIORITY		
			H	M	L
ECONOMY NATURAL FRAMEWORKS Establish a thriving eco-incubator that drive innovations as well as attract new sustainable business opportunities, companies and people to make the most of the Green and Blue assets and landscapes.	Maximise the value of the unique products and services that distinguish Astrakhan in the home and foreign markets	Introduce new and more sustainable technologies in existing traditional industries - fish farming, fishing, grazing, shipbuilding - as well as new varieties of produce, such as cotton, to boost productivity and to appeal to the competitive national and international markets.		●	
		Introduce a secondary processing sector in the region to process local agricultural produce and raw materials and diversify the end products, adding more value locally.	●		
		Establish economic specialization in each district capitalizing on its local assets and resources such as cultural heritage, agriculture, logistics, shipbuilding, aquaculture, and tourism.		●	
	Enhance the attractiveness of the territory for investors and businesses, including youth entrepreneurs, via enhanced cooperation, inclusive governance and accessible markets.	Attract home and foreign investors by establishing a cross-border and international cooperation policy framework, and the creation of SEZs in the main international corridors.	●		
		Actively attract global renewable energy operators through the provision of consolidated schemes with key stakeholders and the provision of special tax systems on strategic locations.		●	
		Promote automation and digitalization of infrastructures, such as creating smart digital grids and IoT networks at the urban level, establishing district heating and electricity supply network and facilitating the connection and coordination of grids at the regional scale.		●	
	Build a strong Green-Blue innovation and knowledge economy through fostering collaboration between educational/research institutions, regional businesses and the local workforce	Facilitate interaction and knowledge sharing among local and external workers in the agricultural sector through the provision of training opportunities for small businesses and entrepreneurs, promote the creation of producers cooperatives and associations, and establish connection with international knowledge networks.		●	
		Strengthen the networks of region-wide business, entrepreneurs and educational sector, through building a cluster of knowledge centres, with the capacity to hold large-scale international events.			●
		Take advantage of the region's natural assets via enhanced international contact with blue-green regions across the world, which include benchmarking and implementing innovative eco-infrastructures and technologies and facilitate the ports and shipyards connection to territorial renewable energy grids.		●	

STRATEGIES BASED ON FROM THE PRINCIPLES OF SUSTAINABLE DEVELOPMENT

IDENTITY

Strengthening the unique local identity of the Volga delta as a place of natural beauty

ECONOMY

Creating a thriving eco an incubator that will stimulate innovation as well as attract new opportunities for sustainable business

ENVIRONMENT

Making greener and the blue network of settlements through the adoption of a sustainable urban ecosystem model

CONNECTIVITY

Formation of well-connected territories from several regional centers, using the strategic geopolitical position of the region

OBJECTIVES

BUILDING STRONG GLOBAL BRAND

CREATION OF AN ECOSYSTEM URBAN ENVIRONMENT

DEVELOPMENT BASED ON INNOVATION

OBTAINING THE STATUS OF THE FIRST RUSSIAN REGION WITH ZERO ENERGY BALANCE

SUB-STRATEGIES

- 1.1 Preservation of the natural and cultural heritage of the region, which create the distinctive natural appearance and quality of the environment of Astrakhan
- 1.2 Co-creation of a strong global individual brand as a reference region for sustainable management with an ecosystem approach
- 1.3 Strengthening social cohesion, ownership, identity and a sense of belonging
- 2.1 Increase the value of unique products and services that distinguish Astrakhan in the domestic and foreign markets.
- 2.2 Increasing the attractiveness of the territory for investors and enterprises, including young entrepreneurs, through increased cooperation and inclusive governance
- 2.3 Build a strong green-blue economy of innovation and knowledge through increased collaboration between educational / research institutions
- 3.1 Developing a Regional Affordable Housing Strategy and Plan for the Provision of Affordable and Quality Housing
- 3.2 Adoption of the principles of ecosystem urbanism for the territory, in order to harmoniously integrate green-blue infrastructure networks to master plan
- 3.3 The first Russian region that has a plan to achieve zero balance. Continue to lead the Russian Federation in the implementation of renewable energy sources
- 4.1 Improvement of the main transport corridors to the north, south and east that connect Astrakhan with other national and international centers
- 4.2 Strengthening inter-municipal links between agglomeration centers
- 4.3 Establish an efficient public transport network in each district that will encourage the use of environmentally friendly modes of transport for citizens and visitors

PRIORITY TASKS

- 1.1 Preservation of the natural and cultural heritage of the region, which create the distinctive natural appearance and quality of the environment of Astrakhan
  - 1.1.1 Protecting the physical and visual integrity of the outstanding natural landscapes of Astrakhan
  - 1.1.2 Preservation of the architectural heritage, character and peculiarities of Astrakhan
  - 1.1.3 Maximizing the Potential for Different Types of Tourism in the Region
- 1.2 Co-creation of a strong global individual brand as a reference region for sustainable management with an ecosystem approach
  - 1.2.1 Creation of a new strong regional brand to represent Astrakhan in the international market
  - 1.2.2 Management of the brand of the Astrakhan region as a unified and consistent brand profile of Astrakhan
  - 1.2.3 Inclusion of the Astrakhan agglomeration in the list of priority areas for the development of the Russian Federation
- 1.3 Strengthening social cohesion, ownership, identity and a sense of belonging
  - 1.3.1 Integrating the unique cultural identity of each area into the collaborative design
  - 1.3.2 Improvement and development of social infrastructure
  - 1.3.3 Improvement and development of cultural infrastructure, including one that facilitates the exchange of knowledge and ideas
- 2.1 Increase the value of unique products and services that distinguish Astrakhan in the domestic and foreign markets.
  - 2.1.1 Introducing new and more sustainable technologies into existing traditional industries
  - 2.1.2 Formation of a recycling sector in the region for processing local agricultural products
  - 2.1.3 Formation of economic specialization in each district, using its local assets and resources
  - 2.1.4 Attracting domestic and foreign investors
- 2.2 Increasing the attractiveness of the territory for investors and enterprises, including young entrepreneurs, through increased cooperation and inclusive governance
  - 2.2.1 Active involvement of global renewable energy operators
  - 2.2.2 Promoting automation and digitalization of infrastructure
  - 2.2.3 Stimulating the creation of small and medium-sized businesses and attracting young entrepreneurs
- 2.3 Build a strong green-blue economy of innovation and knowledge through increased collaboration between educational / research institutions
  - 2.3.1 Integration of migrants and skilled labor
  - 2.3.2 Facilitate interaction and knowledge sharing between local and external workers
  - 2.3.3 Strengthening networks of regional business, entrepreneurs and education sector
  - 2.3.4 Taking advantage of the natural resources of the region
- 3.1 Developing a Regional Affordable Housing Strategy and Plan for the Provision of Affordable and Quality Housing
  - 3.1.1 Determination of optimal land plots in Astrakhan for new development
  - 3.1.2 Securing a large-scale supply of new housing stock
  - 3.1.3 Modernization of existing dilapidated housing stock
- 3.2 Adoption of the principles of ecosystem urbanism for the territory, in order to harmoniously integrate green-blue infrastructure networks to master plan
  - 3.2.1 Creation of an efficient city with an optimal functional level of urban metabolism
  - 3.2.2 Applying the principles of a compact city in harmony with its natural morphology
  - 3.2.3 Achieve the complexity of the environment through multi-purpose urban design in order to increase self-sufficiency
- 3.3 The first Russian region that has a plan to achieve zero balance. Continue to lead the Russian Federation in the implementation of renewable energy sources
  - 3.3.1 Increasing the use of renewable energy sources
  - 3.3.2 Formation of solar energy integration systems on small and large scale
  - 3.3.3 Formation of systems for the integration of wind energy on a regional scale
- 4.1 Improvement of the main transport corridors to the north, south and east that connect Astrakhan with other national and international centers
  - 4.1.1 Improvement of trunk roads, railways and highways to improve the communication of the Astrakhan region
  - 4.1.2 Improvement of river connections and ports in the Delta to the Caspian Sea
  - 4.1.3 Locate logistics hubs and distribution centers along major transport corridors
- 4.2 Strengthening inter-municipal links between agglomeration centers
  - 4.2.1 Improving connectivity between major business districts through the creation of unified metropolitan routes
  - 4.2.2 Improving transport links between production centers
  - 4.2.3 Improving connectivity between small settlements and district centers
- 4.3 Establish an efficient public transport network in each district that will encourage the use of environmentally friendly modes of transport for citizens and visitors
  - 4.3.1 Improvement of existing public transport in each district center
  - 4.3.2 Providing new types of individual mobility for the active population
  - 4.3.3 Integration of river vessels and ferries into the public transport system

Goal:

To intensify industrial, business, cultural and trade ties with nearby cities and increase the number of flights and direct flights

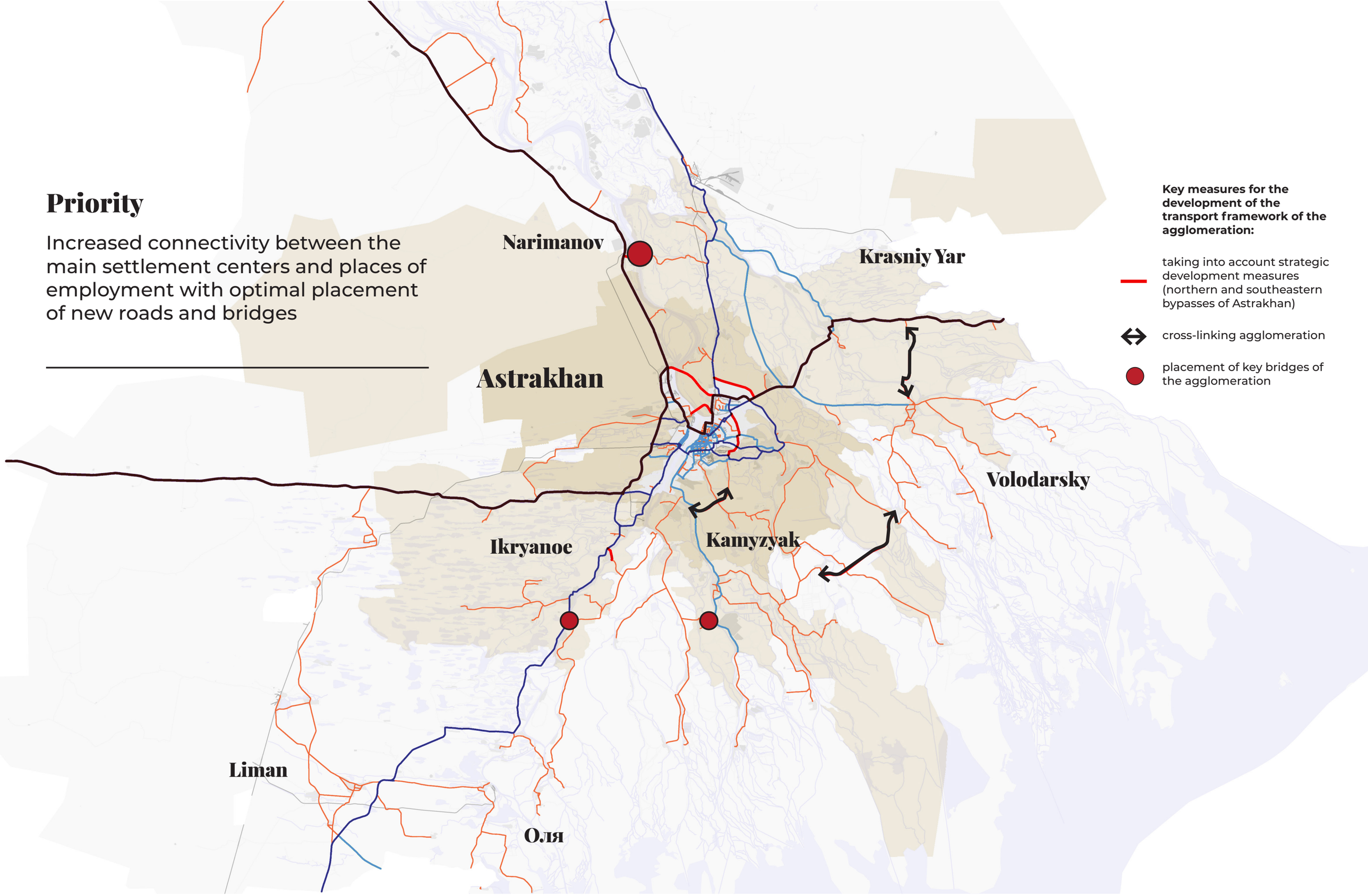
Russian border

640 Air distance from Astrakhan, km

1,5 Duration of flights from Astrakhan, h.

Priority

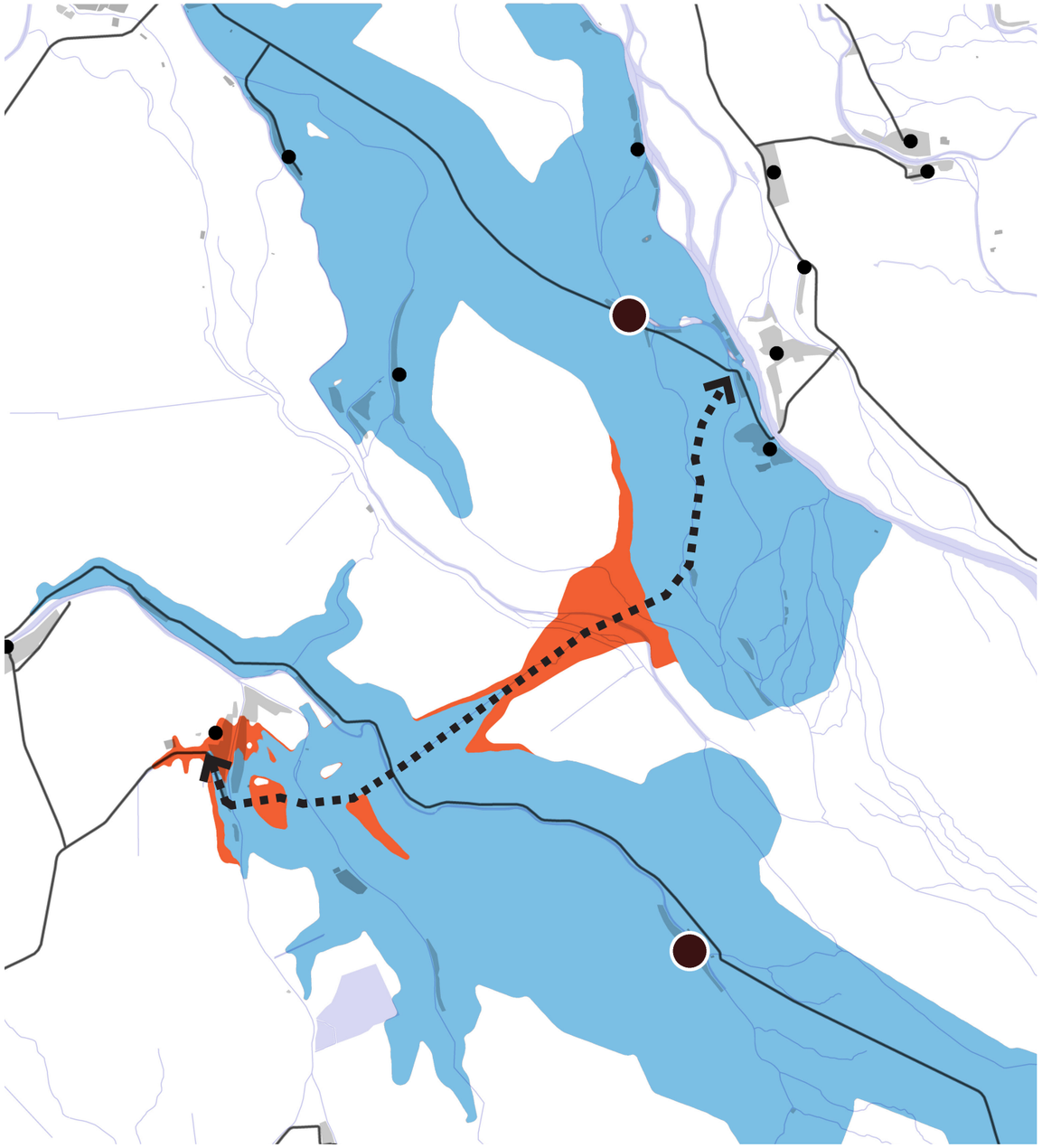
Increased connectivity between the main settlement centers and places of employment with optimal placement of new roads and bridges



Key measures for the development of the transport framework of the agglomeration:

- taking into account strategic development measures (northern and southeastern bypasses of Astrakhan)
- cross-linking agglomeration
- placement of key bridges of the agglomeration

How the tool works



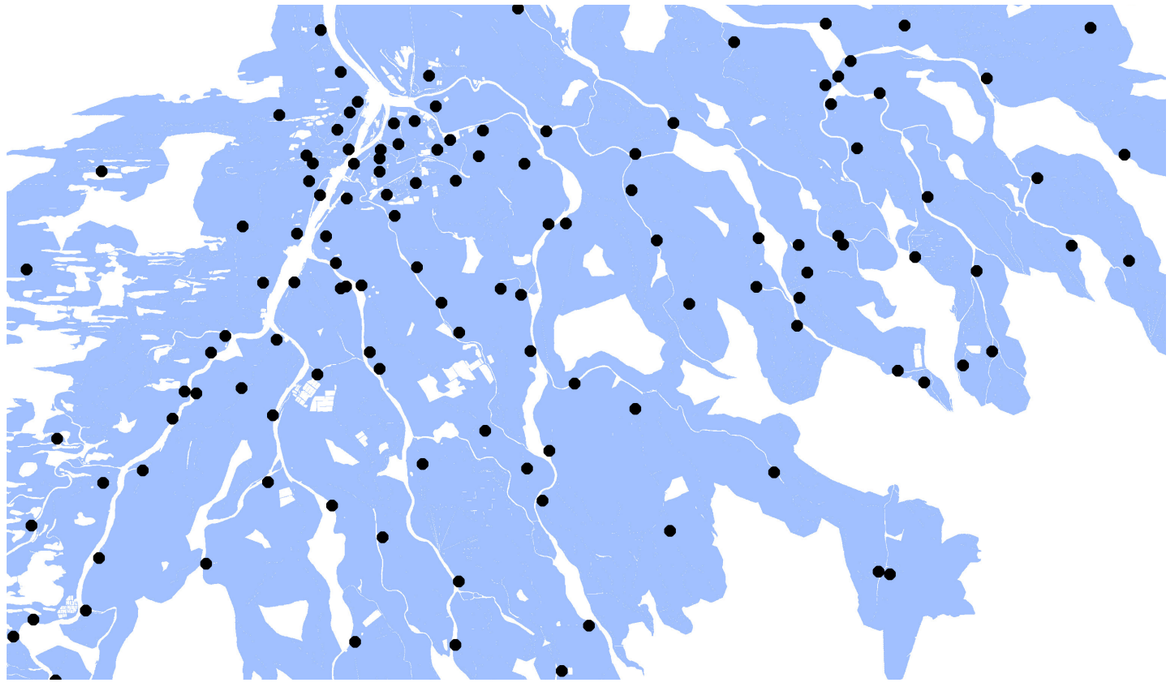
settlements with respect to which isochrones of automobile accessibility are built

proposed cross-link

existing connectivity

post-crosslink connectivity

Assessment of all settlements of the agglomeration



Priority

Increased connectivity between the main settlement centers and places of employment with optimal placement of new roads and bridges

E 40
A 340
E 119
R 216
New bridge
Old bridge
Yablochkova st.
Ostrovskogo st.
Energetics Highway

Road categories:

- federal
- 1st class
- 2 class
- 3 class

railroad

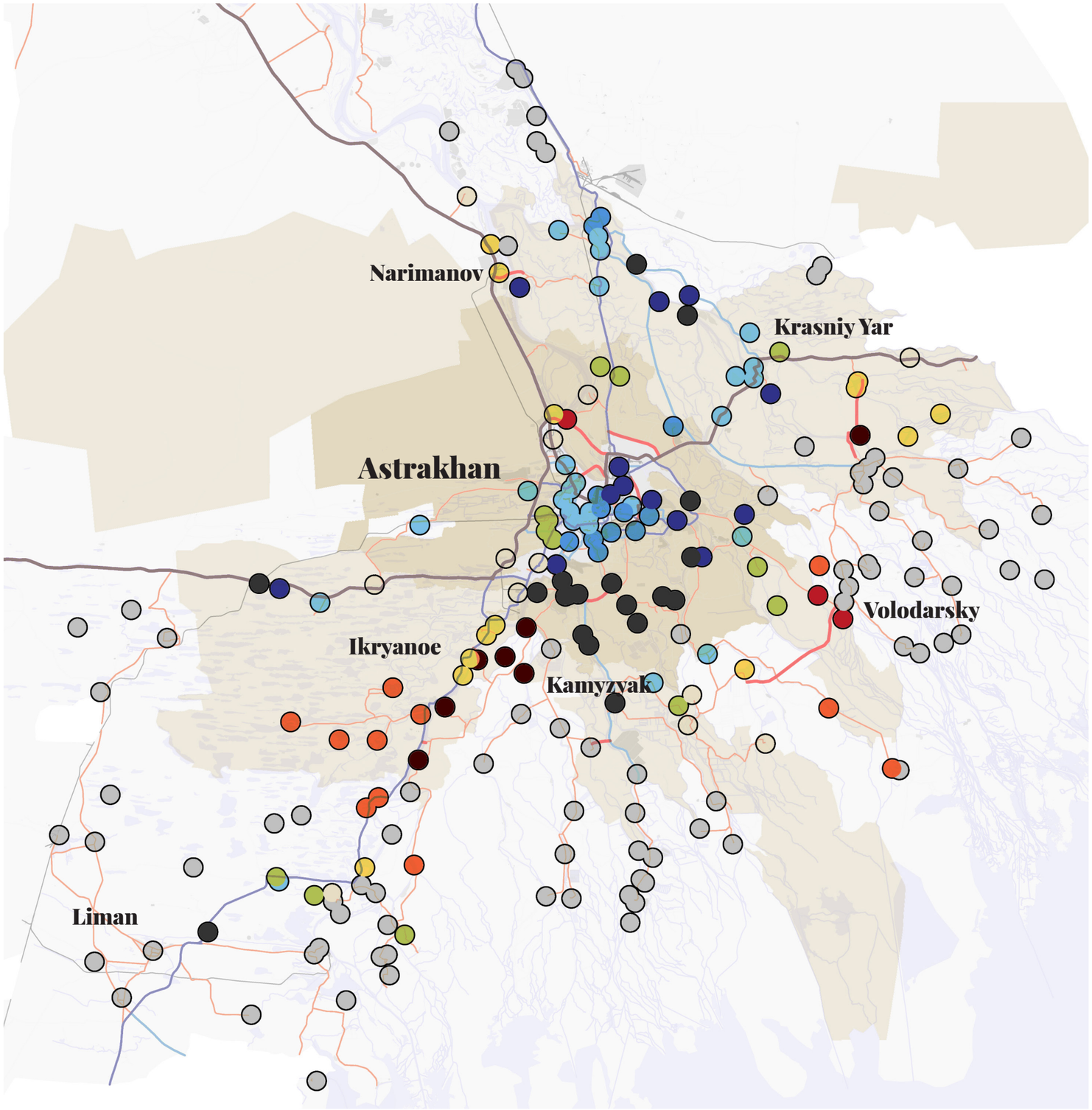
an airport

bus station

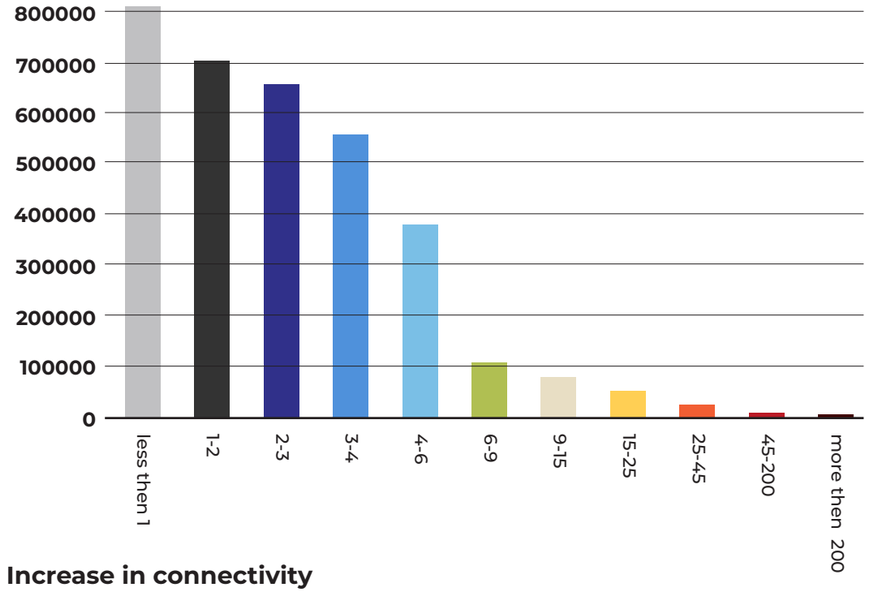
project proposals:

by KTS

proposal of the authors of the master plan



Connectivity Enhancement Analysis for residents of the agglomeration, ppl

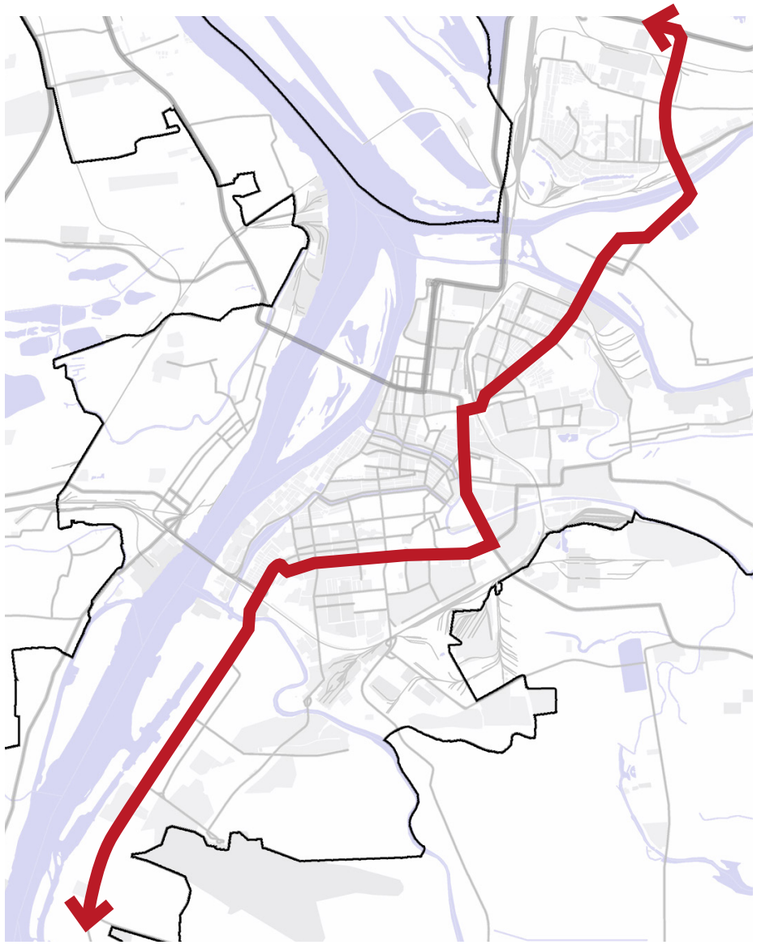


Increase in connectivity for a settlement (part of a settlement),%:

- more then 200
- 45-200
- 25-45
- 15-25
- 9-15
- 6-9
- 4-6
- 3-4
- 2-3
- 1-2
- less then 1

The proposed solutions lead to a substantial increase connectivity for agglomeration settlements.

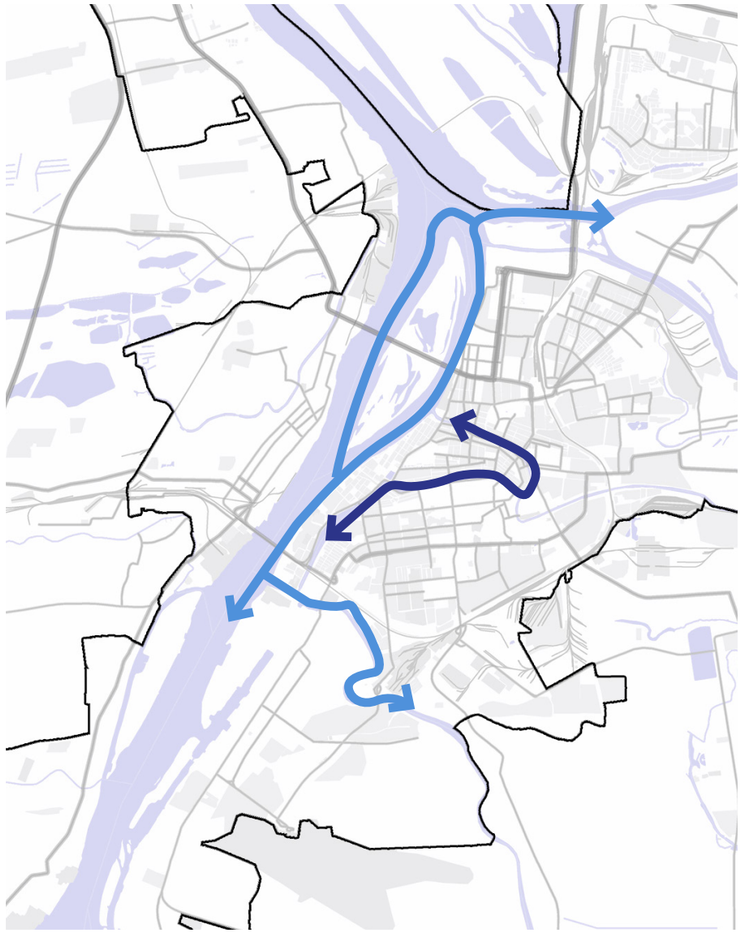
Priority action
launch of a bus connecting the north and south of the city



- Form routes covering all urban areas (for example, a through bus route in the direction «North-South» along the streets of Avtozavochnaya, Staroverova, 2nd Solikamskaya, Yablochkova, Pobedy, Magnitogorskaya, Nikolai Ostrovsky, Porokhovaya, Bogdan Khmelnitsky, Admiral Nakhimov - after restoration of the Police Bridge.

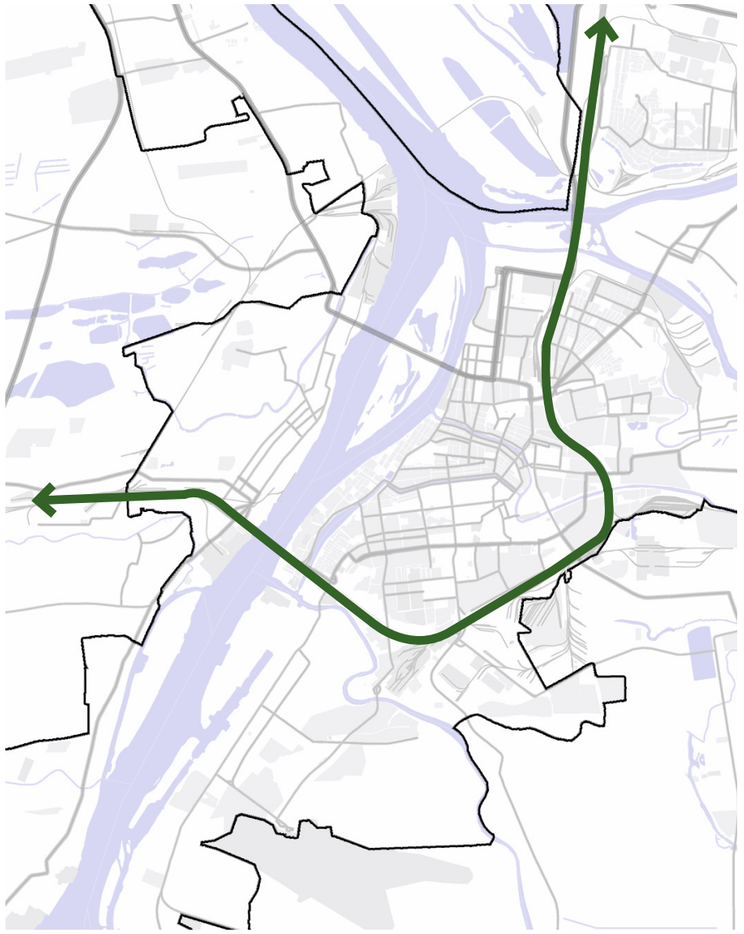
Currently, there are no such routes in the city.

Organization of a system of municipal river routes



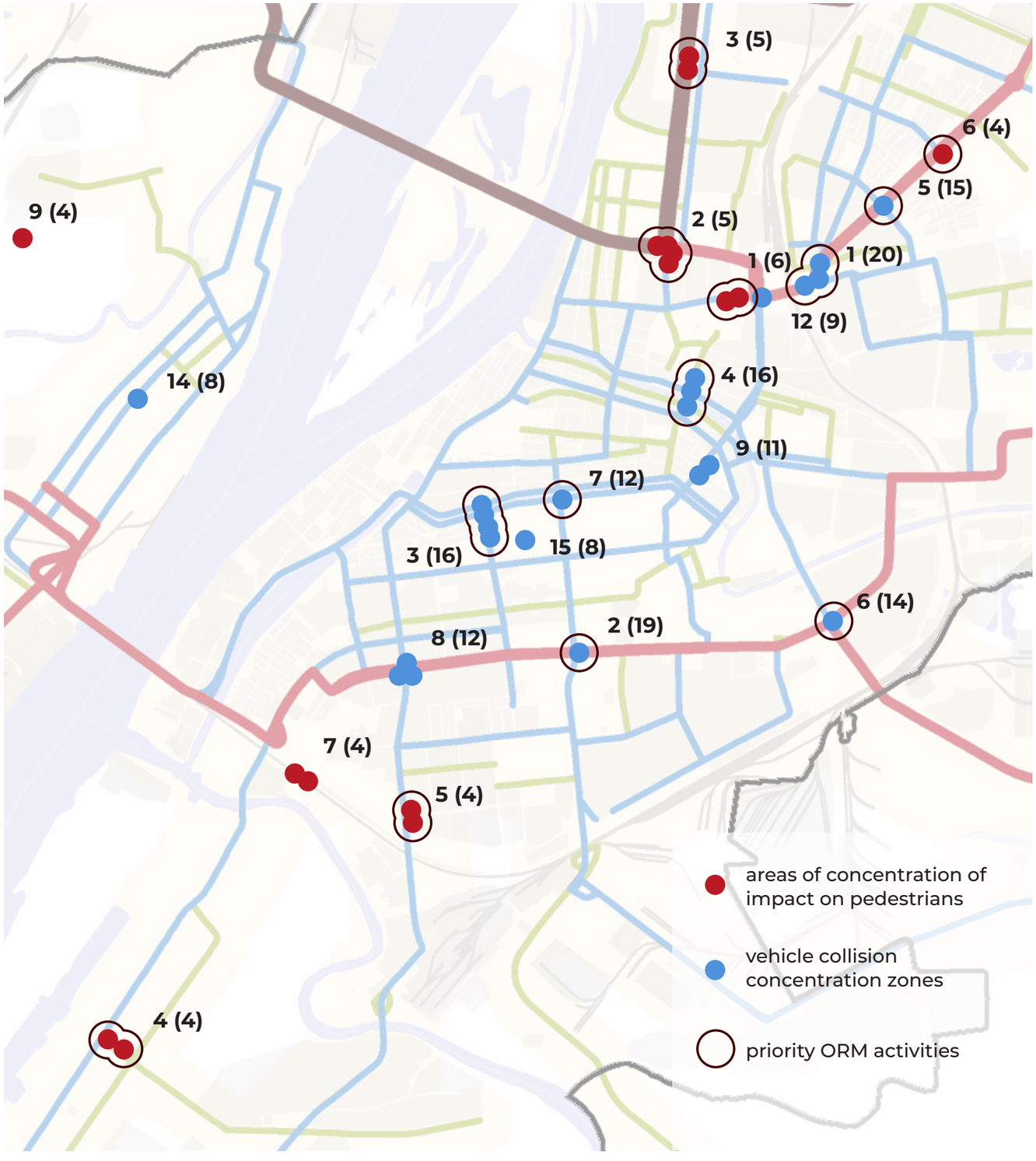
- Use small-sized rolling stock (with a capacity of up to 30 passengers), which has greater maneuverability.
- linking the organization of berths to the main public spaces and large investment projects.
- development of a tourist route of a river taxi in a closed system of city canals.

A promising city train

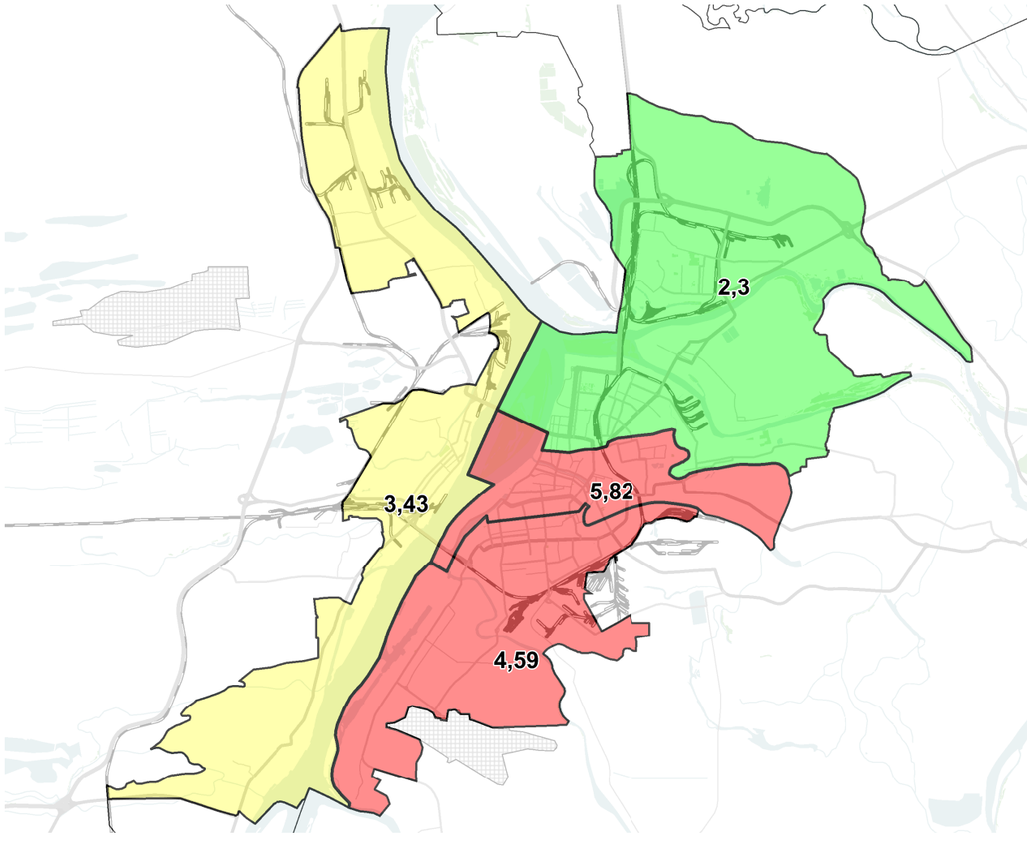


- The use of the railway as a priority type of intracity transport.
- creation of conditions for the development of territories near the stations of the city electric train (high-altitude regulations).

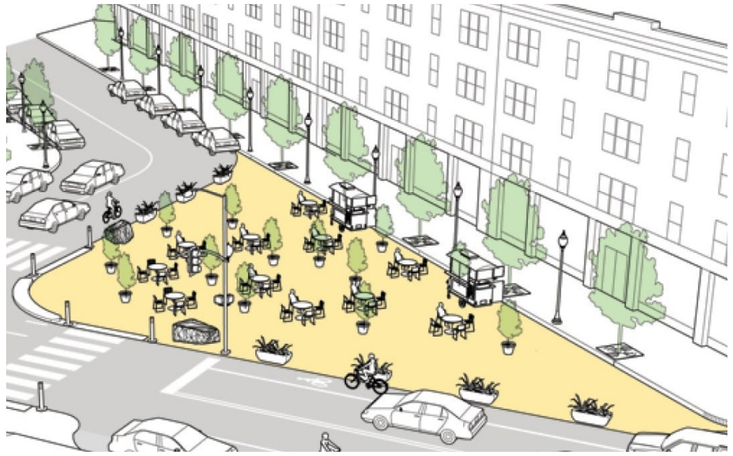
Priority actions to improve ORM should start from the territories with the highest level of danger (in points of assessments of various types incidents)



Map of priority actions for ORM



Number of accidents per 1 km of roads



Crossroads st. Kirov - Esplanadnaya

Strong expansion of the carriageway, empty space, spontaneous parking.

Proposal:

- The use of quickly erected structures, benches, pergolas, landscaping.
- In summer, there are not enough places in the square opposite. The said proposal will solveand this problem.

Komsomolskaya embankment

A popular place that is sorely lacking in seating.

Proposal:

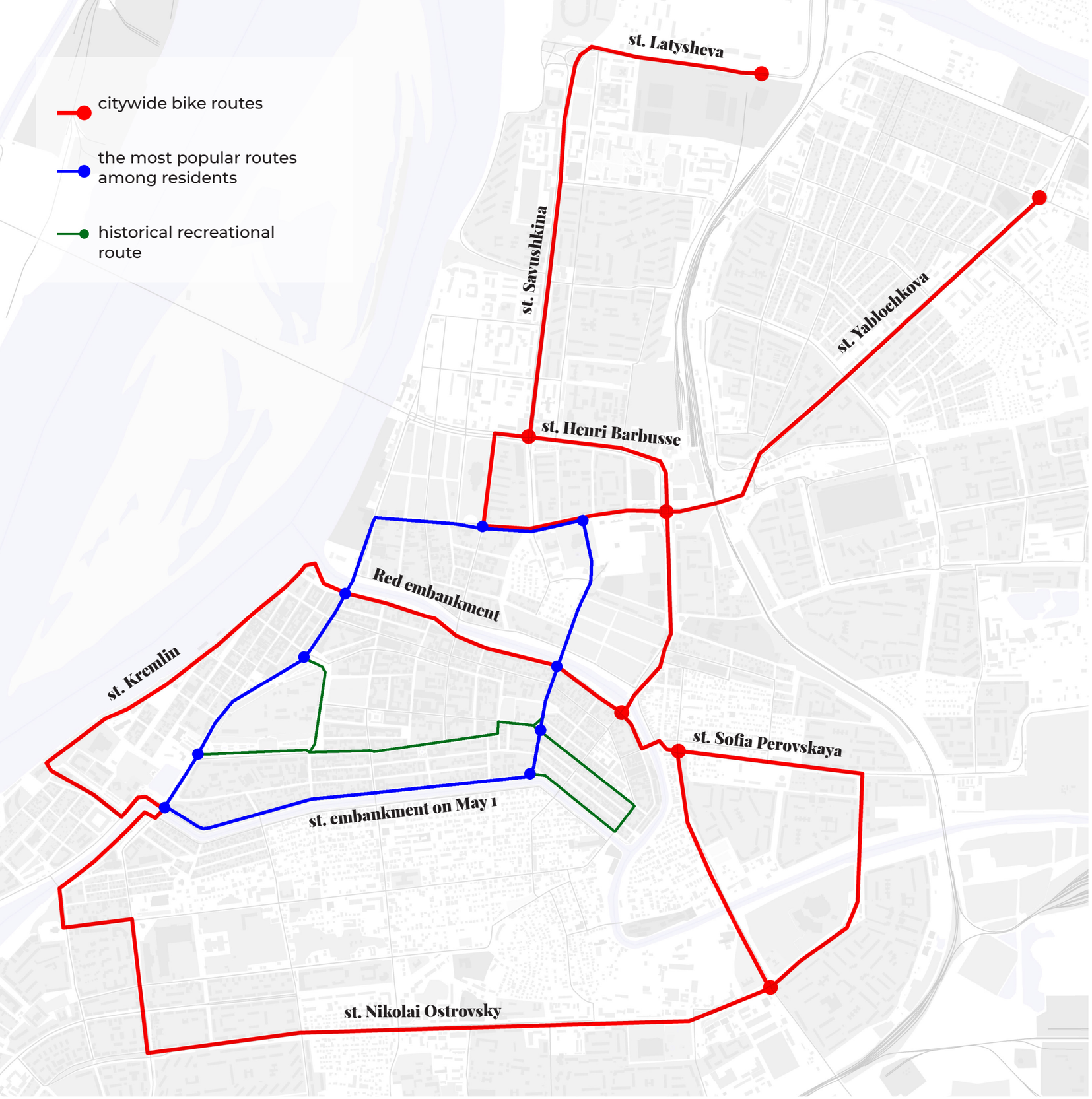
- We need quickly erected benches, pergolas that can be attached to an inclined surface.

st. Akhmatovskaya

It was planned earlier as the second pedestrian street in the city. These plans were not implemented.

Proposal:

- to implement a pedestrian street with modern landscaping and MAF.



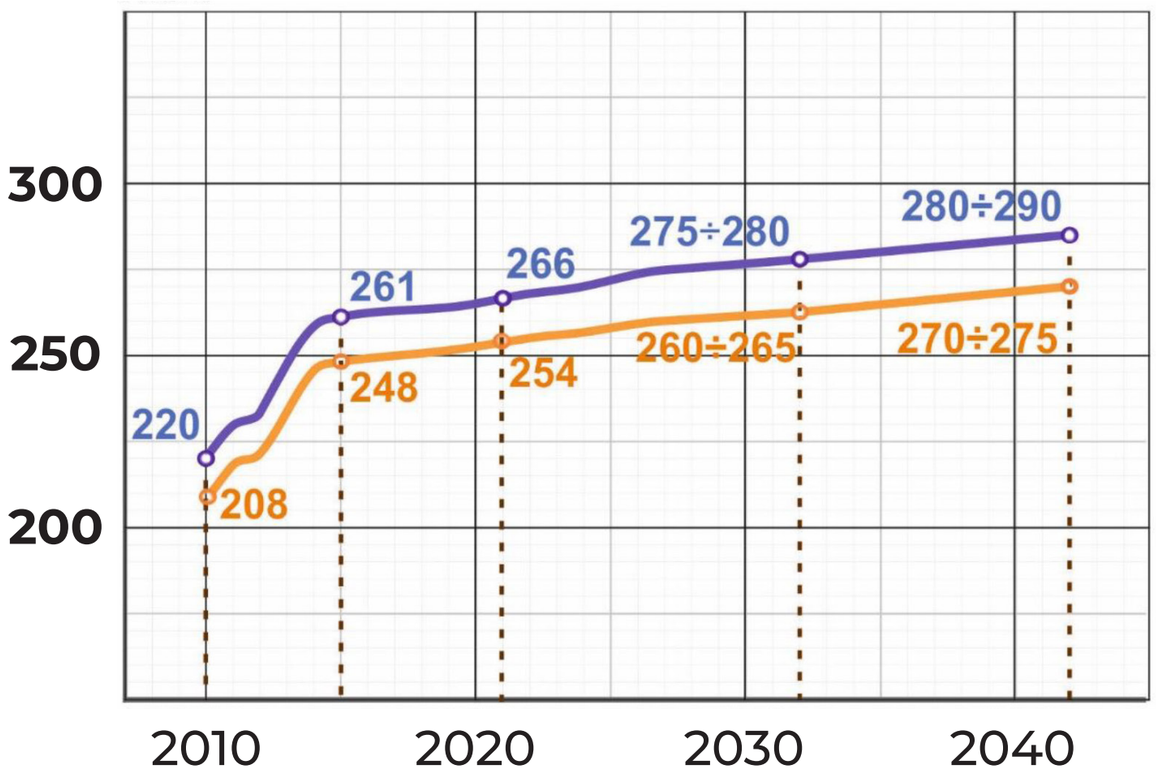
Proposed cycling route in Astrakhan

It is proposed to run a cycling route:

- from st. Latysheva on the boulevard on the street. Savushki, which is further divided in both directions along the street. Henri Barbusse: in one - to the Theater Park, in the other - to st. Victory.
- Through the Theater Park, the route continues to st. Academician Korolyov and then turns to st. Yablochkova, crossing with another direction of the route on the street. Victory.
- Further the route goes along the street. Victory across the Victory Bridge to the Red Embankment.
- From Krasnaya Embankment, the route continues on Petrovskaya Embankment to the monument to Peter the Great, at which it turns to the Privolzhsky Zaton Embankment, bends around the canal named after Varvatsiya and, passing through the Customs Bridge, continues on the street. Combat.
- From st. Combat proposed route goes to st. Baku and from there - to the street. Volzhskaya.
- Then the route goes along the street. Nikolay Ostrovsky, where it is divided into two directions: one turns to st. Magnitogorskaya, the second - continues until the intersection with st. Sophia Perovskaya.

The route connects at the Red Bridge and returns along the Red Embankment on the street Victory.

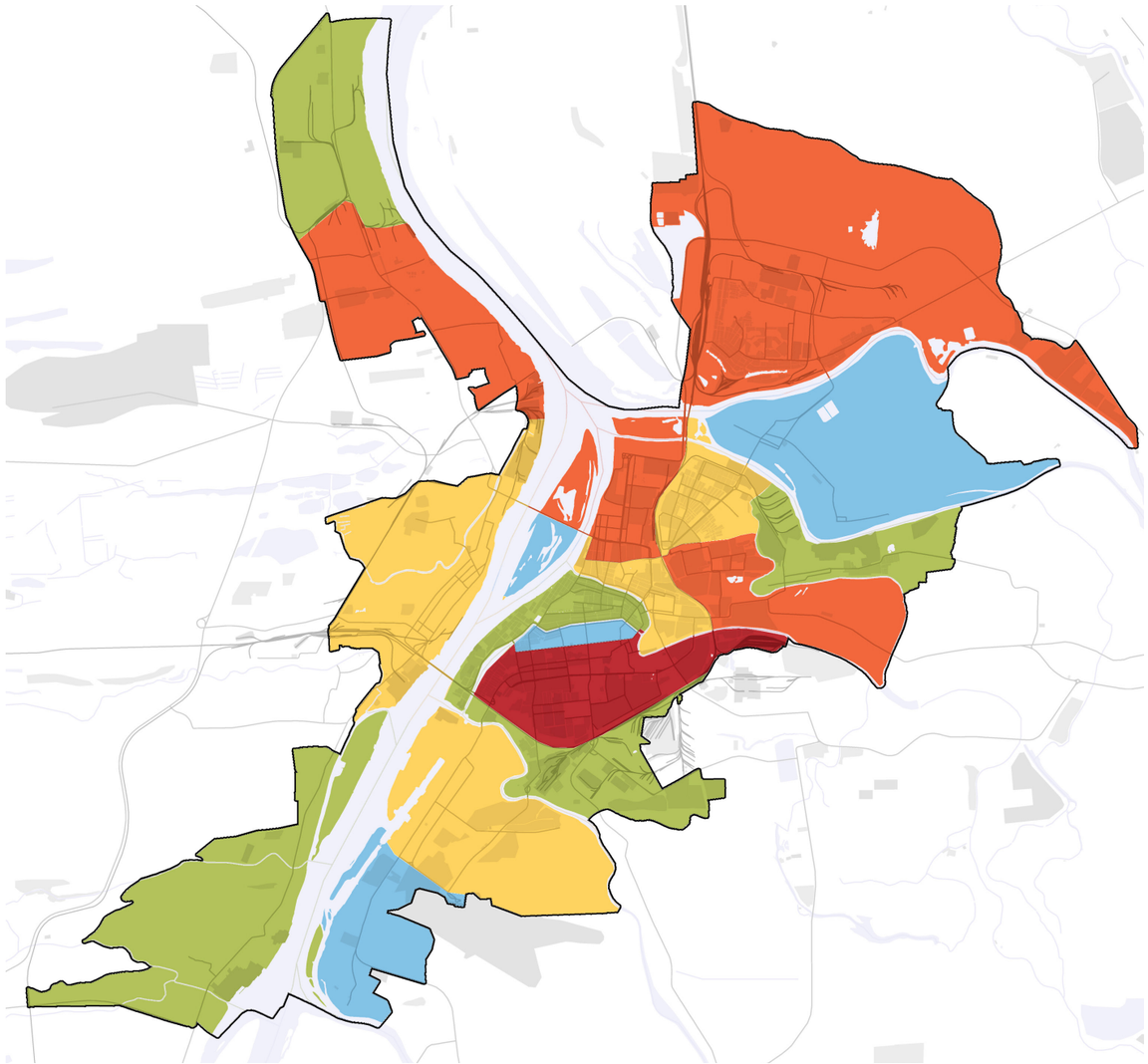
Cars per 1000 inhabitants



220 all cars

208 private cars

The required number of parking spaces for storing passenger cars of the population (Etr)



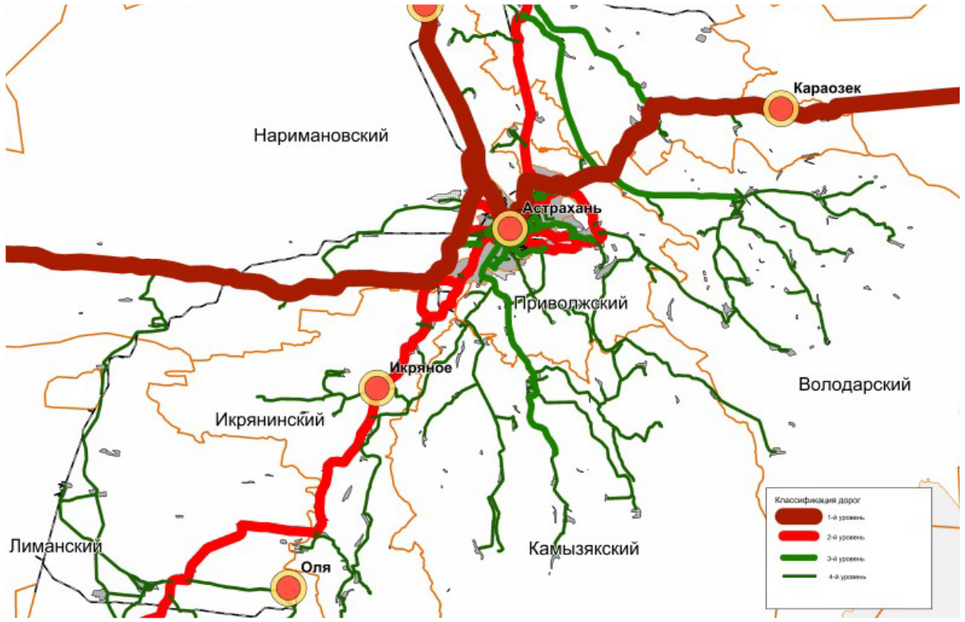
Required number of parking spaces, thousand units

- more than 25
- 10-25
- 5-10
- 2-5
- less than 2

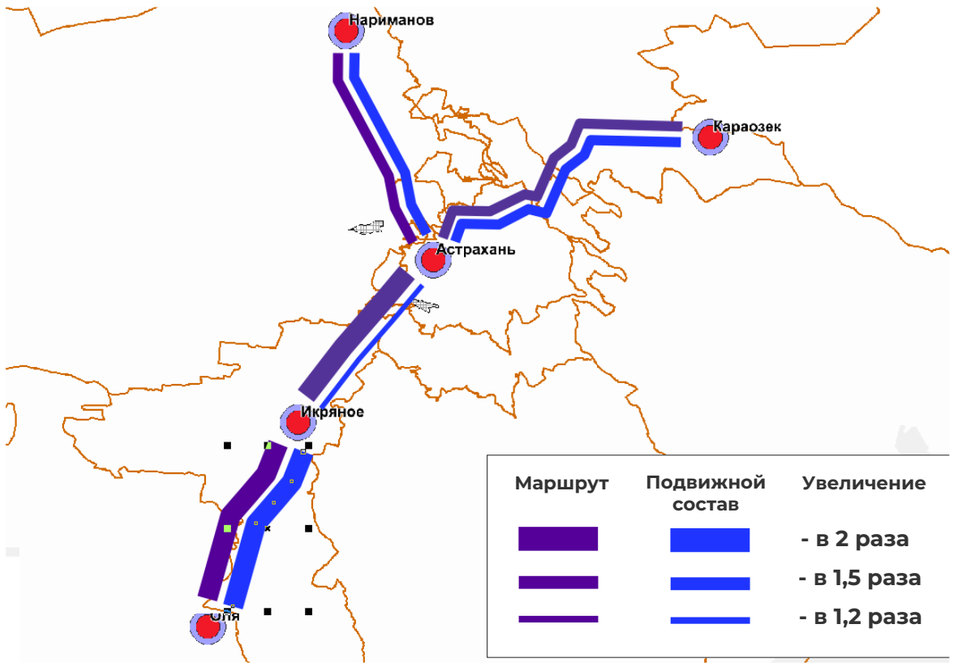
Level of motorization, Astrakhan, vehicles / thousand people

Passenger cars	2015 г.	2021 г.	2022 г.	2024 г.	2027 г	2032 г.	2042 г.
cars (All categories)	261	266	268	270	275	275–280	280–290
Incl. personal use	248	254	255	256	260	260–265	270–275

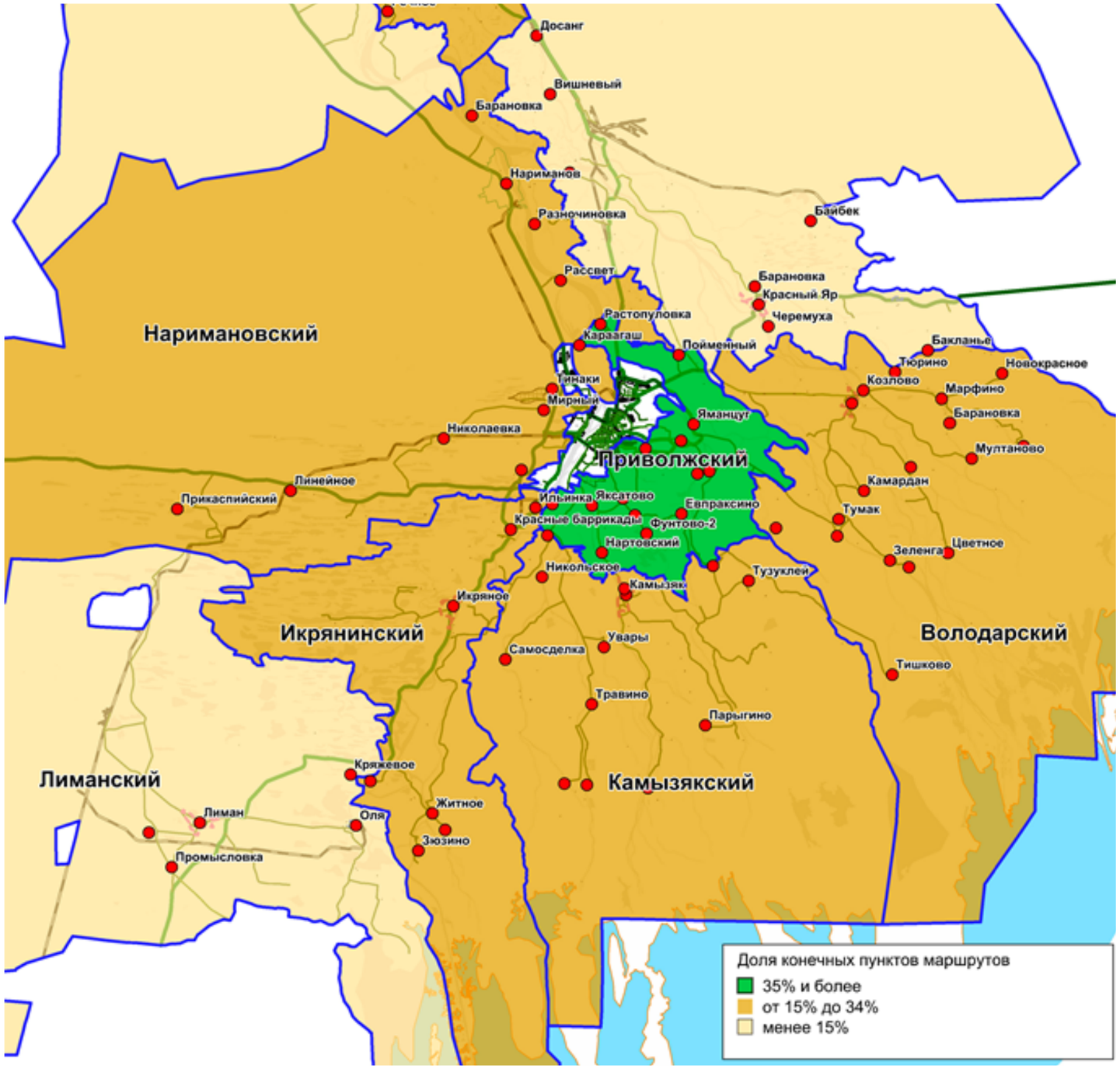
CLASSIFICATION OF THE ASTRAKHAN AGGLOMERATION ROAD NETWORK

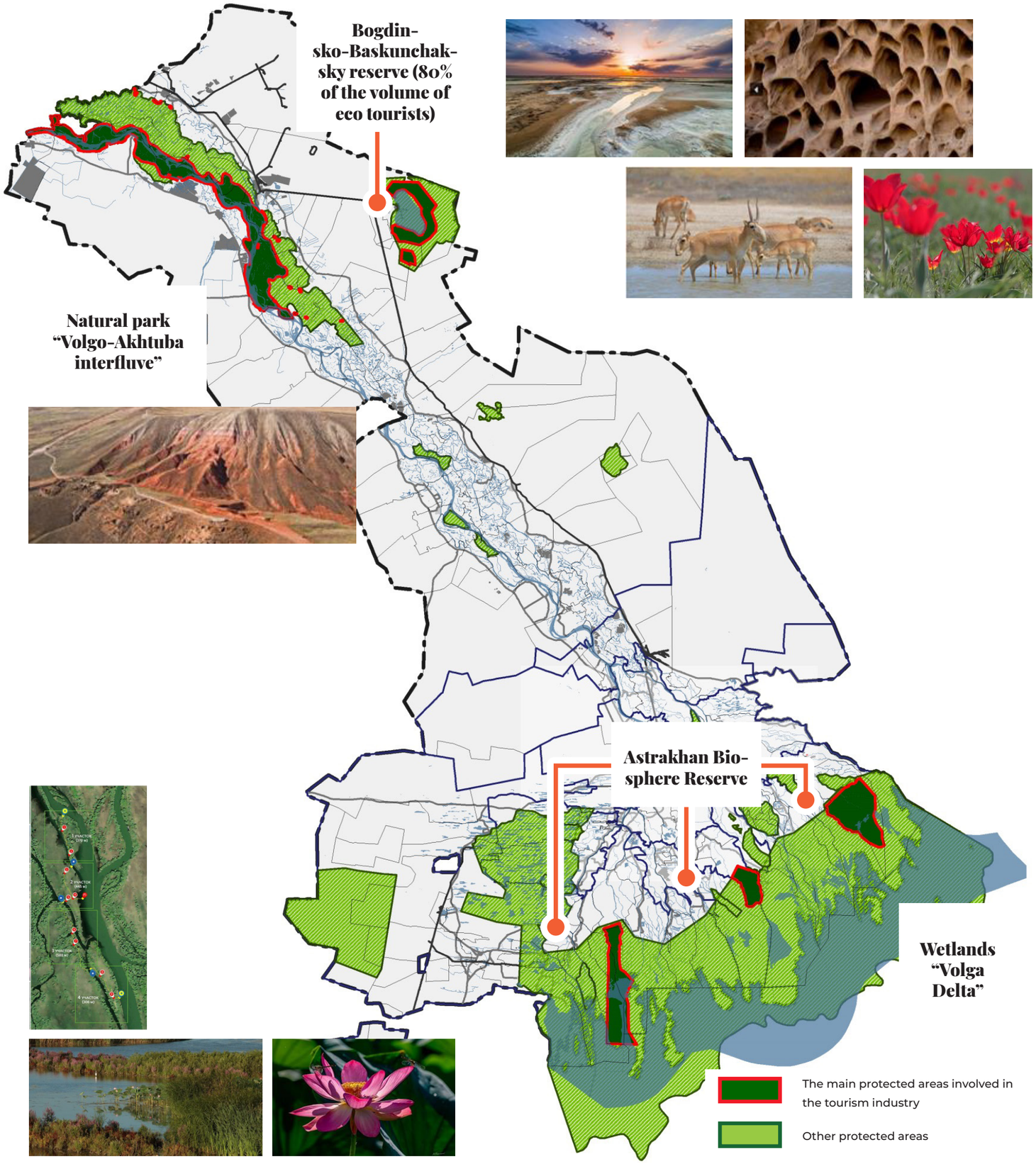


PROPOSAL FOR STRENGTHENING INTERMUNICIPAL ROUTES AND FREQUENCY TRAFFIC TRAFFIC TAKING INTO ACCOUNT AGLOMERATION DEVELOPMENT



ANALYSIS OF THE SECURITY OF THE POPULATION OF THE AGREEMENT TERRITORY BY BUS TRANSPORT (the share of settlements that are the end points of the NPTOP routes, in the total number of settlements of the district, by districts of the Astrakhan region)





Problematic

- lack of popularization of tourism in protected areas in comparison
- with other countries;
- uneven attendance;
- lack of arrangement of observation platforms and tourist campsites on the main tourist routes, including educational tourist routes;
- anthropogenic load on the environment
- from the side of amateur tourists (autotourists);
- insufficient quality of customer service.

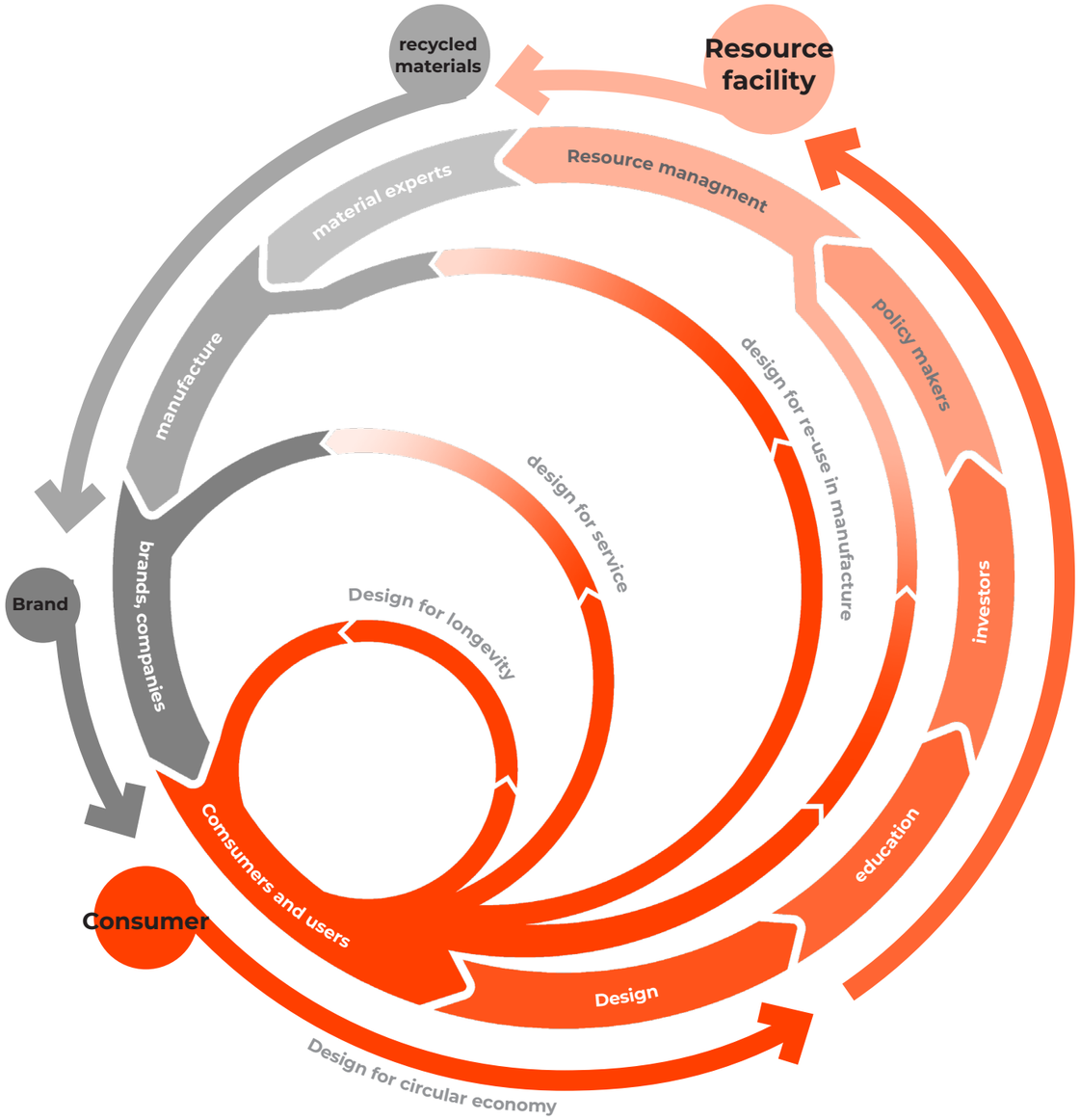
Tasks

ecological tourism within the framework of the National Project «Ecology»:

- an increase in the number of visitors to specially protected natural areas to 16 million people by 2035;
- implementation by 2035 on the territory of not lower than half of the national parks of the model of ecological tourism, taking into account the standards for conducting tourist activities within the boundaries of protected areas developed jointly with the Ministry of Natural Resources and Ecology of the Russian Federation;
- implementation by 2035 of the model of ecological tourism on the territory of not lower half of the national parks.

Предложения:

- Allocation of plots in the territories adjacent to the protected areas for the formation of tourist infrastructure facilities, while:
  - control over the observance of sanitary norms and rules, etc .;
  - equipment of places of deployment of tourists by means of communication;
  - ensuring the safety of tourists in the immediate vicinity of natural sites;
  - organization of glampings, campings, recreation areas, which will help to reduce the number of unorganized tourists, as well as to resolve the issue of pollution of the shores of reservoirs with solid household waste by the population of the Astrakhan region and amateur tourists who prefer accommodation in the “wild” nature. «
- Compliance and control over the fulfillment of the requirements of the Order of the Ministry of Agriculture of Russia dated 04/18/2018 No. 164. (Amendments were made to the Fishing Rules for the Volga-Caspian fishery basin, for the first time establishing the daily rate of extraction (catch) of aquatic biological resources for citizens in the implementation of amateur fishing in the Astrakhan region).
- Popularization of ecological tourism
- Astrakhan agglomeration



It is proposed to create a Center for the recycling of waste, which will develop new types of business and research in the field of circular economy.

The Recycling Center will house an anaerobic fermentation plant, a dry waste sorting and processing plant, a waste-to-energy plant (in the long term) and a new biogas and waste-to-energy CHP plant.

Waste Management Strategy (MSW)

The Federal Law of 24.06.1998 No. 89-FZ (run. Of 03.07.2016) “On production and consumption waste” declares: “The directions of the state policy in the field of waste management are priority in the following sequence:

- maximum use of raw materials and materials;
- waste prevention;
- reduction of waste generation and reduction of the hazard class of waste in the sources of their generation;
- waste treatment;
- recycling;
- waste neutralization “.

The basis of environmental policy in the field of waste management in the Astrakhan agglomeration, the following principles should be:

1. use of the best available technologies for waste management;
2. a ban on the commissioning of buildings, structures and other facilities not equipped with technical means and technologies for neutralization and safe disposal of waste;
3. ban on the use of municipal solid waste for land reclamation and quarries;
4. the prohibition of the disposal of wastes containing useful components to be disposed of;
5. complex processing of material and raw materials in order to reduce the amount of waste;
6. the use of methods of economic regulation of activities in the field of waste management in order to reduce the amount of waste and involve it in economic circulation.

The main step, which will have the most ambitious consequences, is the separate collection and processing of organic waste. At the initial stage, processing will be carried out on open or closed compost sites, which will allow the production of valuable materials for the agricultural sector. The advantage of closed compost sites is the possibility of obtaining low-temperature heat, which can be used to heat greenhouses and, thus, to extend the harvest season.

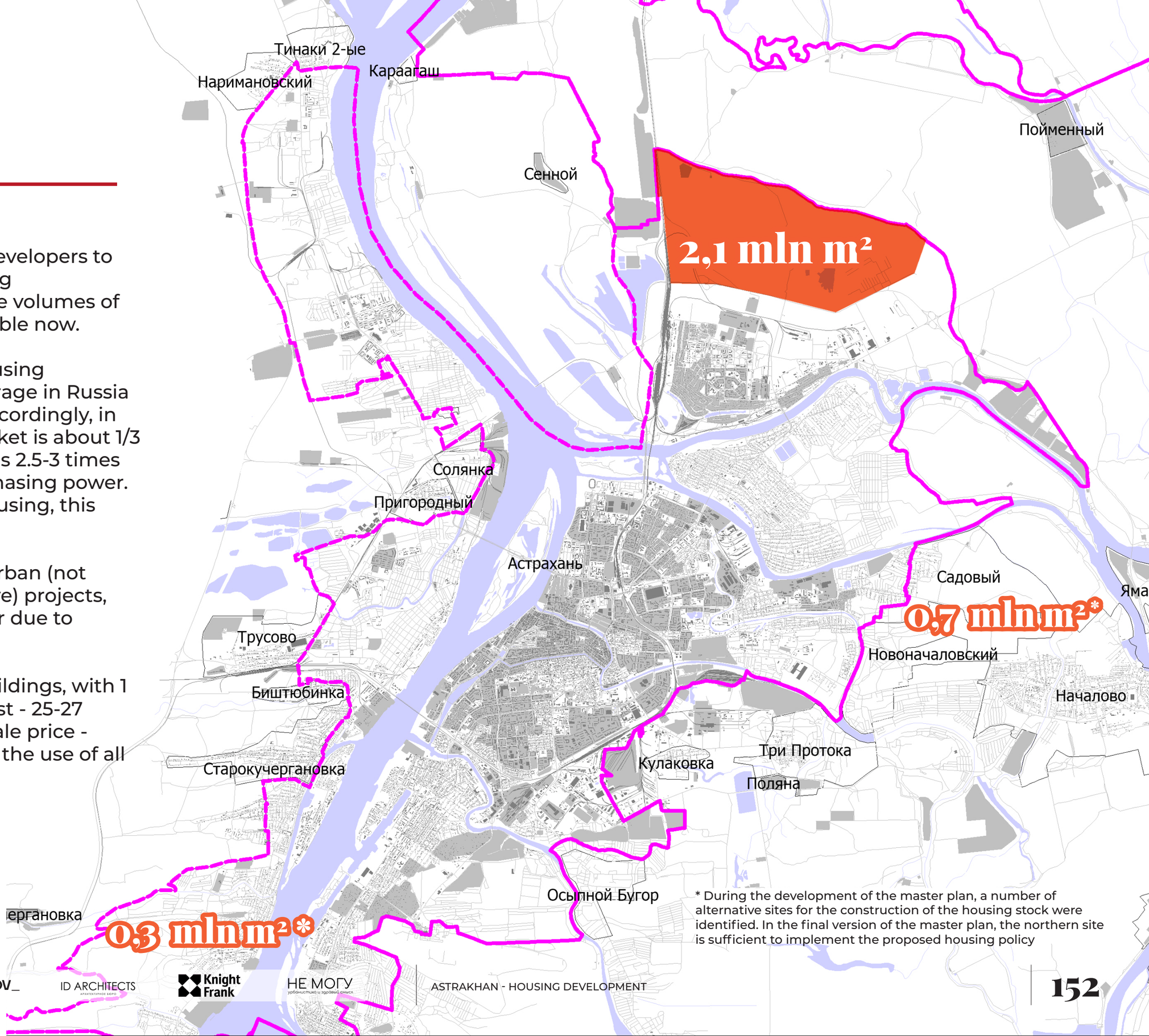
Program “Affordable Housing”

It is unprofitable for local developers to form economy class housing within the framework of the volumes of construction that are available now.

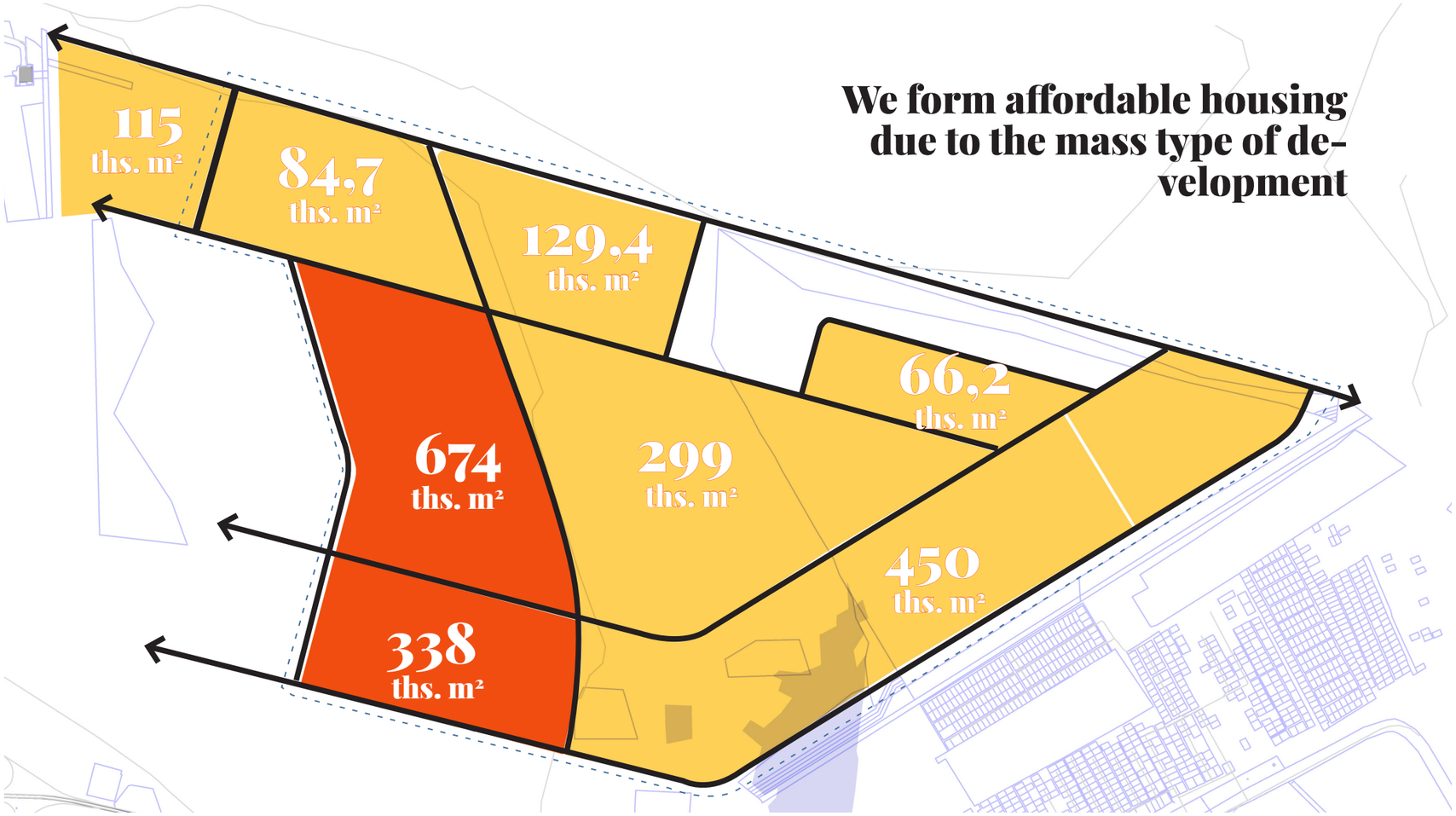
Statically, comfort class housing and higher housing on average in Russia is 30-40% of the market. Accordingly, in Astrakhan, the current market is about 1/3 of the possible. Its real size is 2.5-3 times higher with the same purchasing power. In the absence of cheap housing, this demand remains deferred.

We need 2-3 complex suburban (not central, where it is expensive) projects, where the cost will be lower due to volumes.

Morphotype - 3-4 storey buildings, with 1 residential floors, (prime cost - 25-27 thousand rubles, starting sale price - 37-45 thousand rubles, and the use of all preferential programs



* During the development of the master plan, a number of alternative sites for the construction of the housing stock were identified. In the final version of the master plan, the northern site is sufficient to implement the proposed housing policy



We form affordable housing due to the mass type of development

LCD Seasons, Kazan

LCD Park April, Moscow region

Source: Guidelines for the development of projects, Dom.rf

Source: Guidelines for the development of projects, Dom.rf

LCD Park April, Moscow region

- Financial analysis was performed in Russian rubles using the discounted cash flow (DCF) method on a quarterly basis;

- Financial analysis was performed for 2 clusters Growth points:

1 - multi-apartment residential development, 2 stages

2 - blocked buildings and individual housing construction, 3 stages

- The total area of new construction is 2,165,380 m2, including:

1 - multi-apartment residential building, 1,012 160 m2

2 - blocked building and individual housing construction, 1,153,220 m2

- The forecast period of the financial model is 20 years;

- As part of the development analysis, a cash flow model was developed for own and borrowed funds invested in the project;

- Share of debt financing - 60% (level of coverage of required investments);

- Estimated cost of borrowed funds for blocked development and individual housing construction (loan rate) - 9%.

- Estimated cost of borrowed funds for apartment buildings (loan rate) - 4% -8%.

- Taxation is accounted for according to the base rates of the Tax Code of the Russian Federation

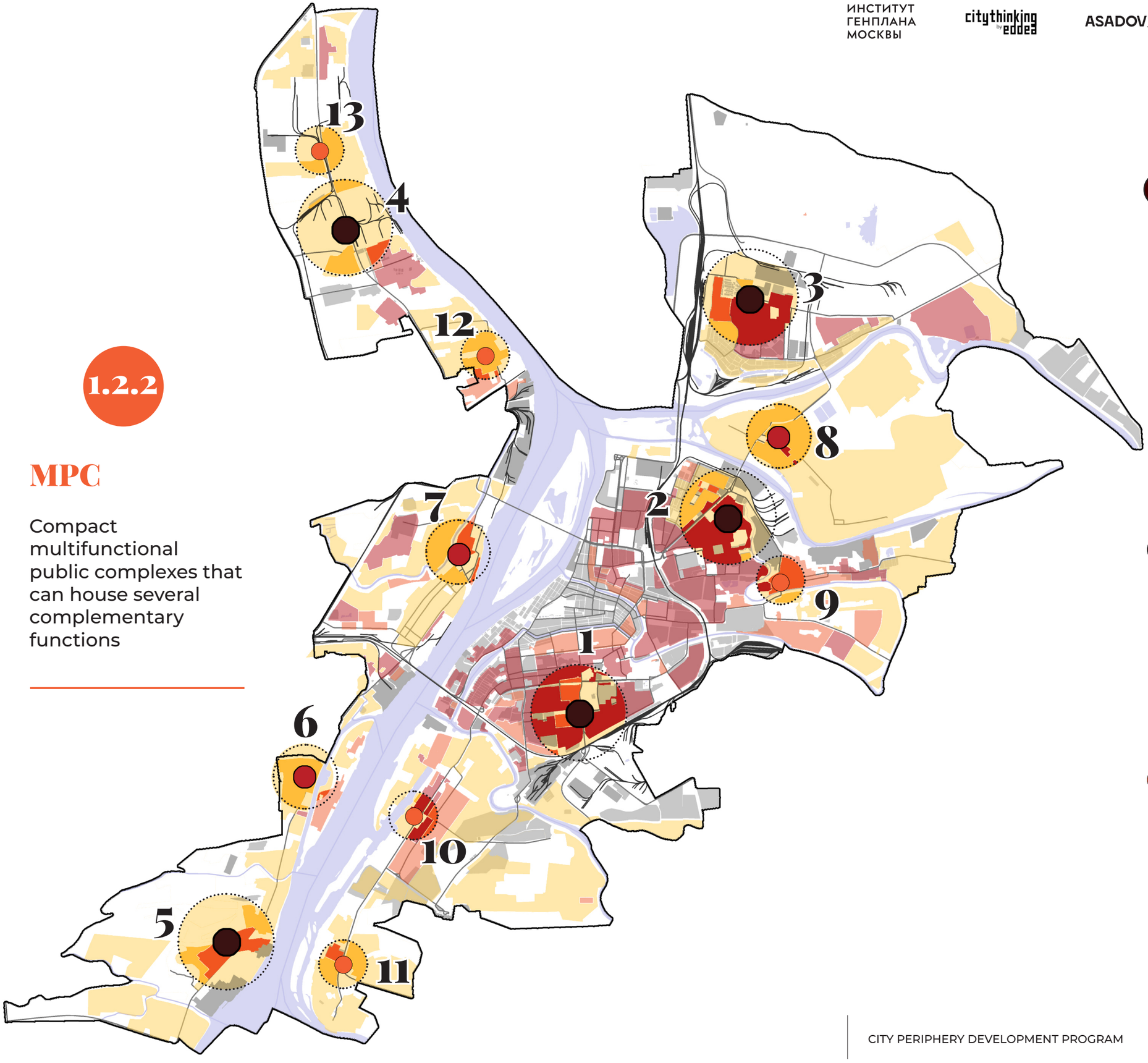
- Discount rate - for blocked development and individual housing construction: 9.0% (CAPM), 7.9% (WACC), for multi-apartment residential development: 9.0% (CAPM), 6.0% (WACC)

- Calculation for commercial objects is made on the basis of the flow, taking into account the terminal value at the end of the forecast period, with a capitalization rate of 10%

1.2.2

MPC

Compact multifunctional public complexes that can house several complementary functions



Local service centers population:

for 15000 people:

1. Food, Trade, Cinema, Theater / Museum, Entertainment, Library, Fitness.

2. DOE, Cafe, Restaurant, Theater / Museum, Entertainment, Library, Fitness.

3. DOE, Food, Trade, Cafe, Restaurant, Cinema, Theater / Museum, Library.

4. Food, Trade, Cafe, Theater / Museum, Entertainment, Library, Fitness.

5. Trade, Cafe, Restaurant, Cinema, Theater / Museum, Entertainment, Library, Fitness.

for 10000 people:

6. Food, Restaurant, Cinema, Museum, Fitness.

7. Food, Trade, Cafe, Theater, Entertainment.

8. Restaurant, Cinema, Museum, Entertainment, Fitness.

for 5000 people:

9. DOE, Cinema, Theater.

10. Trade, Cinema, Entertainment.

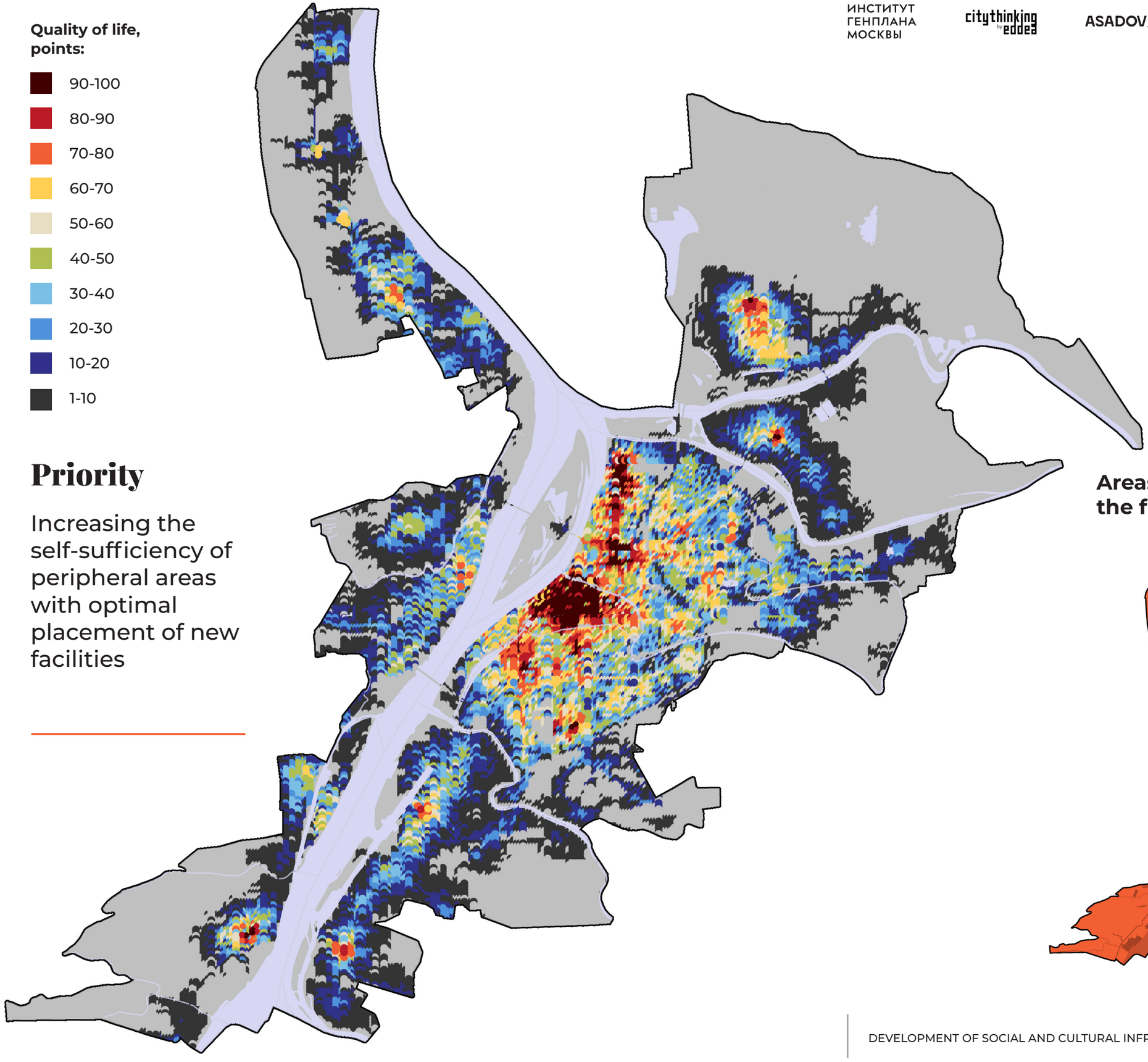
11. Restaurant, Theater, Entertainment.

12. Cinema, Entertainment, Fitness.

13. Food, Restaurant, Fitness.

Quality of life, points:

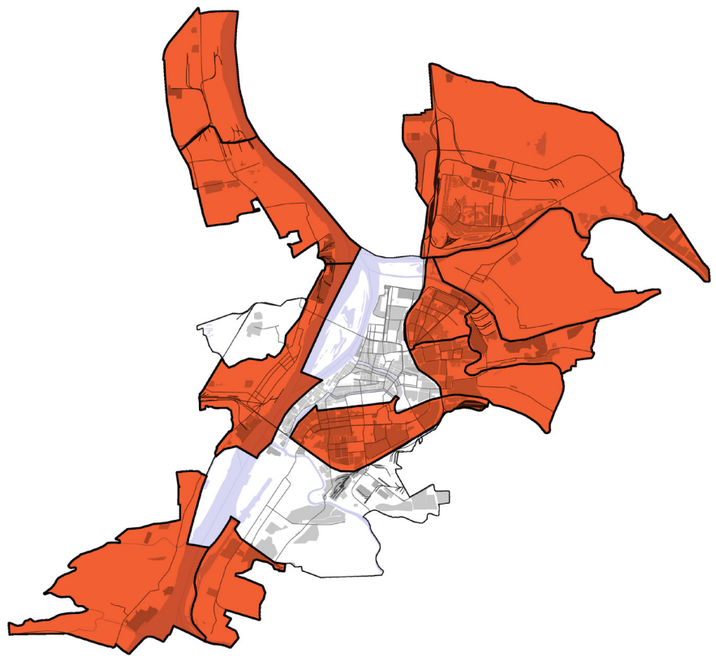
- 90-100
- 80-90
- 70-80
- 60-70
- 50-60
- 40-50
- 30-40
- 20-30
- 10-20
- 1-10



Priority

Increasing the self-sufficiency of peripheral areas with optimal placement of new facilities

Areas with a significant increase in the functional saturation index



For Astrakhan, the actual question is: is a historical settlement of federal significance an encumbrance or a resource? Our answer: Resource. And here is a variant of one of the justifications.

EQUAL AND TRANSPARENT CONDITIONS FOR INVESTORS

Detailed and difficult to change building restrictions within the boundaries of the historical settlement create the same and transparent conditions for all investors.

ACCURATE FINANCIAL AND ECONOMIC MODEL

Strict constraints accurately enough (without redundancy) make it possible to formulate technical requirements for the engineering infrastructure. Based on this, it is possible to correctly and efficiently design engineering communications. Based on the correct requirements for engineering communications and the exact volume of possible development (based on the generated regeneration scheme for the development of a historical settlement), it is possible to form an accurate financial and economic model of the development of the territory with new construction (reconstruction) of communications.

DEBT FINANCING FOR ENGINEERING INFRASTRUCTURE

Currently, the Ministry of Construction of the Russian Federation has formed a separate department for the Integrated Development of Territories (KRT). It seems expedient to position Astrakhan as a pilot project with the Department of MRT of the Ministry of Construction of the Russian Federation for the formation of ARC within the boundaries of historical city centers. This topic is important and relevant for the entire territory of the Russian Federation, but very poorly developed in the regulatory and legal terms.

CONDITIONS FOR THE DEVELOPMENT OF THE MIDDLE CLASS AND SMALL BUSINESS

If the supply of communications is not required from investors, then the development object itself may require a smaller amount of investment. Accordingly, a wider circle of citizens and organizations can act as investors, moreover, mainly local, and not large regional or federal developers. Accordingly, in the region, on the one hand, conditions are created for the development of the middle class of residents, and on the other, the profit from the implementation of development projects is more likely to remain in the territory. This will positively affect both the further development and maintenance of the territories, and the development of small business, providing a high level of employment of the population.

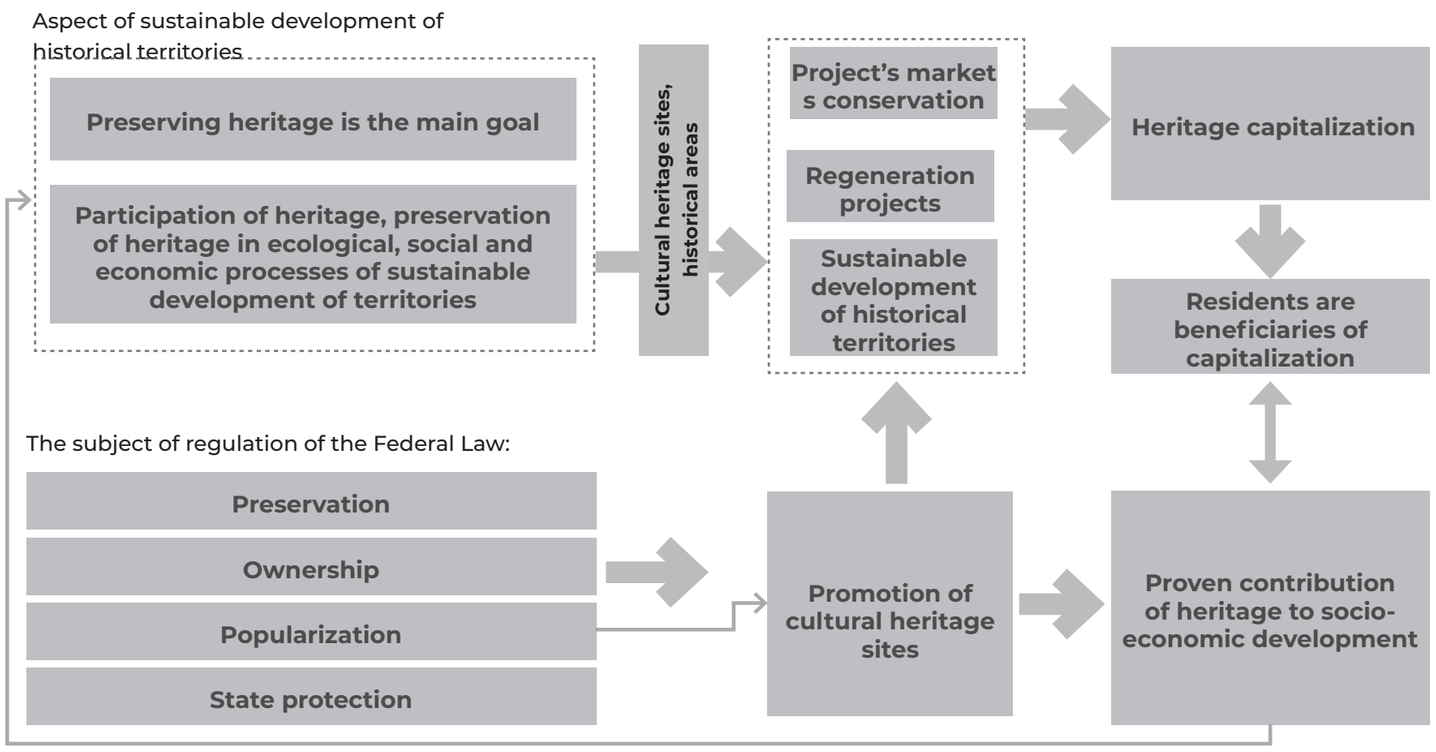
The aspect of sustainable development of historical territories can be represented in two different ways:

Problem

The problem of heritage preservation, which is considered as an end in itself

Contribution to sustainable development

Potential contribution that heritage and heritage conservation can make to the environmental, social and economic parameters of sustainable development of territories



"Focusing on cultural heritage as a justified end in itself when there is no evidence of heritage contributions to other basic human well-being, such as job creation or other material wealth, often places heritage preservation in a category of 'special reserve' of underfunded good intentions."

Guidelines for the Management of World Cultural Heritage Sites - © UNESCO / ICCROM / ICOMOS / IUCN 2013

• Increase in urban planning potential

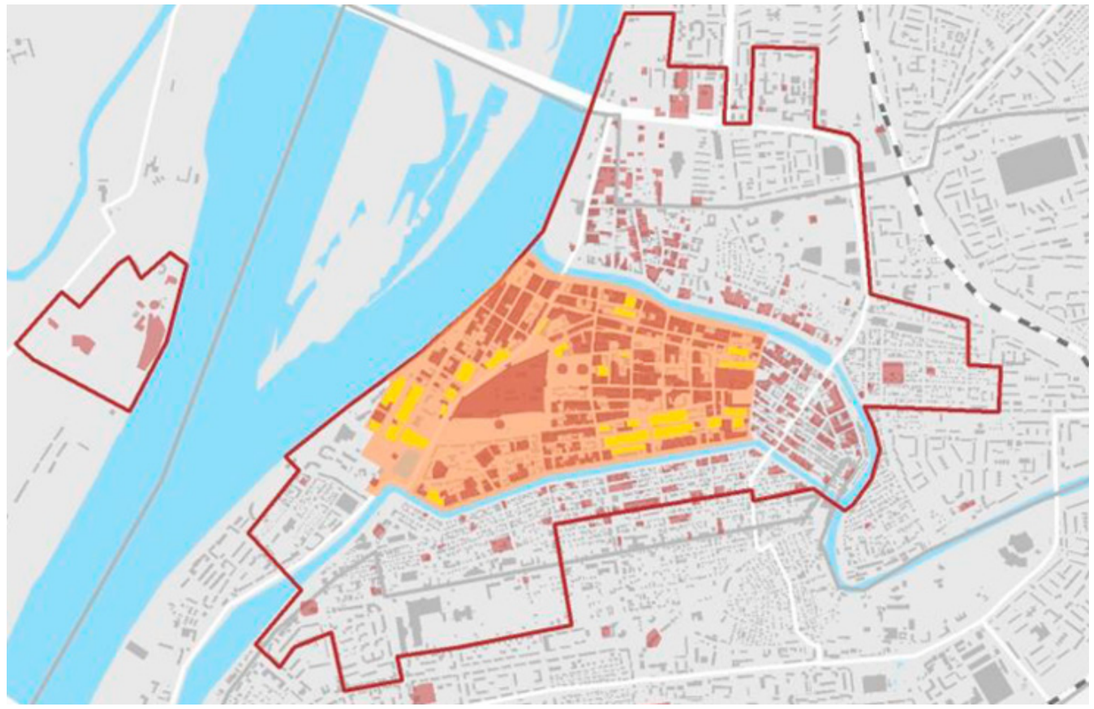
• Optimization of documents on the terms of protection of cultural heritage objects

• Building up historical and cultural potential

• Optimization of management mechanisms for historical territories

• Fundraising

• Justification of the need for the reconstruction of engineering infrastructure



Formulated on the basis of recommendations for the management of UNESCO sites and sustainable development of territories

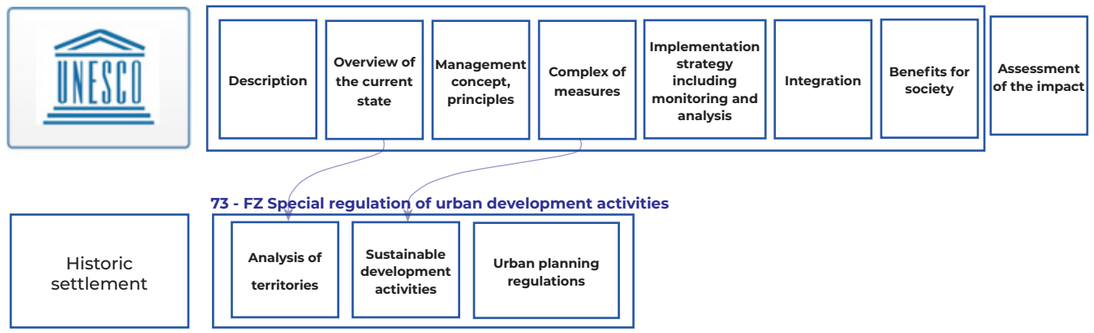
Организация Объединенных Наций по вопросам образования, науки и культуры

Конвенция о всемирном наследии

ICS > 03 > 03.100 > 03.100.70

ISO 37101:2016

Sustainable development in communities — Management system for sustainable development — Requirements with guidance for use



HISTORICAL ENVIRONMENT REGENERATION SCHEME

- Regeneration zones from existing Cultural Heritage Protection Zones (CWP) Projects.
- Urban development potential (new economically viable regeneration zones) deep in historic homes
- Investment passports of historical households and (or) cultural heritage sites
- Prospective improvement schemes
- Typical (recommended) architectural solutions as a tool for understandable TEPs for investors are linked to regeneration zones
- Accurate calculation of the historical and urban planning potential of territories (including new or reconstructed buildings) and individual quarters within the boundaries of the historical settlement
- All information online and freely available

OPTIMIZATION OF FUNCTIONAL ZONING

In some cases (mainly in the central part of the city), the construction and (or) operation of IZhS facilities may be economically unprofitable. To overcome this problem, land plots conditionally permitted by VRI are formed, implying higher TEPs (administrative and business, for hotel accommodation, etc.)

OPTIMIZATION OF LAND USE

Areas are being formed for improvement, placement of tourist information centers, etc. These plots are transferred for use to interested persons, communities and organizations (including on a competitive basis)

As one of the main tools for enhancing urban planning potential, the online functionality of the Regeneration Scheme of the Historical Environment is proposed. With its help, it is expedient to "digitize", calculate and strengthen the urban planning potential of historical territories. Make it measurable and understandable for investors.

OPTIMIZATION OF DEVELOPED, BUT NOT APPROVED PROJECTS OF PROTECTION ZONES

- The concept of «regeneration» in the PZO of the Astrakhan Kremlin is detailed (now this definition is too vague and based on this - the implementation of regeneration may actually be impossible)
- Regeneration according to historical morphotypes is allowed in all sections of the buffer zone (now, in some sections, regeneration is established in the parameters of a previously existing building, and if this building was 1-storey, then in fact, regeneration is impossible for economic reasons)
- The remaining PZOs are being finalized and approved to cancel the protection zones

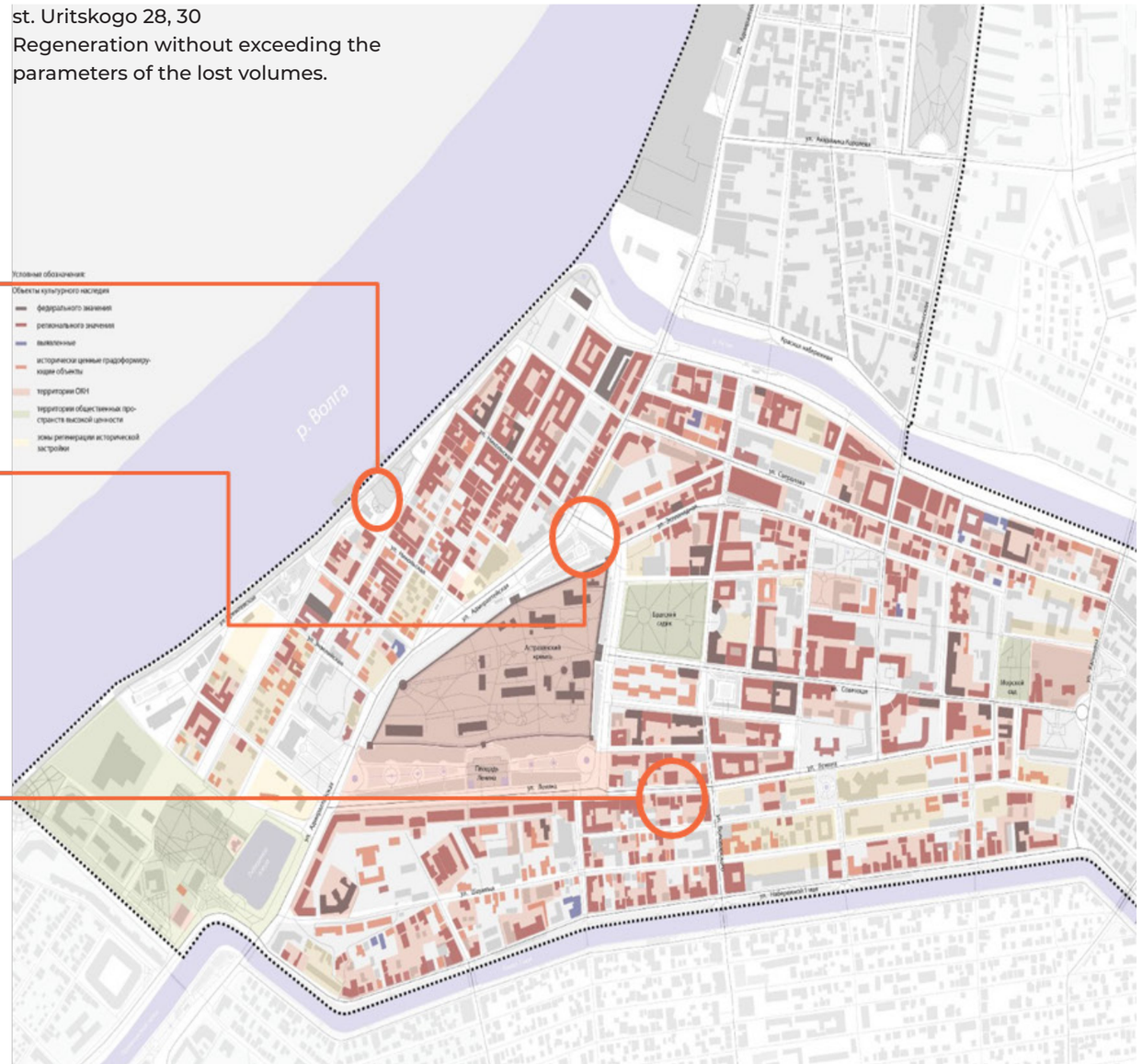
FURTHER FORMATION AND APPROVAL OF DOCUMENTATION FOR THE HISTORICAL SETTLEMENT

- Development and approval of documentation in two stages
- Borders and subject of protection - developed and approved by order of the Ministry of Culture of the Russian Federation.
- Requirements for town-planning regulations: the powers of the municipality are implemented according to a special order of town-planning regulation, laid down in 73-FZ (based on this, town-planning regulations can be developed and approved by order of municipal authorities)
- The powers of the municipality to develop measures for sustainable development of the Historical Settlement are being implemented (the formed measures can be a justification for requesting funding at the federal level)
- Approval of new standard architectural solutions for new construction in the historic settlement.

OPTIMIZATION OF TYPICAL ARCHITECTURAL SOLUTIONS

The previously developed «typical architectural solutions of the city of Astrakhan» are made understandable and convenient for owners and investors

st. Uritskogo 28, 30
Regeneration without exceeding the parameters of the lost volumes.



1. Clarification of general regeneration requirements
2. Updating areas and territories of regeneration with regulation of limiting parameters

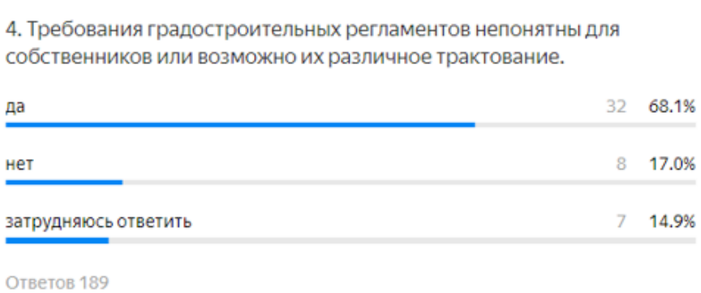
In the regeneration zone, plots have been identified located in territories developed by modern (Soviet) buildings. We are replacing regeneration areas, where their implementation is impossible, with areas with requirements for optimizing architectural and stylistic characteristics, which can be implemented in the medium term during reconstruction or overhaul of buildings.

CONCLUSION: The limitations of the project of the protection zones of the Astrakhan Kremlin make the regeneration impossible for economic and organizational reasons.

PROPOSAL: Regeneration according to historically established morphotypes with fully defined marginal and architectural and stylistic characteristics, without additional urban planning analysis.

METHODOLOGICAL RECOMMENDATIONS FOR OWNERS AND INVESTORS OF HISTORICAL REAL ESTATE

Very often, both owners and investors do not have a sufficient level of competence to work in historical territories.
According to the results of the survey conducted by the Institute of the General Plan of Moscow in cooperation with the Russian Association of Restorers and the All-Russian Society for the Protection of Historical and Cultural Monuments (the Institute of the General Plan leads the direction on scientific and methodological support of issues of heritage protection and this qualified survey is one of the elements of this work), the development of methodological recommendations practically on the entire spectrum of heritage conservation issues is unambiguously supported by all respondents.



PUBLICATION OF HISTORICAL AND CULTURAL STUDIES

Publication of historical and cultural studies carried out within the framework of the PZO and documentation on the establishment of the Historical Settlement, thereby activating in general interest in the history of the city and cultural heritage sites

STRENGTHENING THE BRANDS OF HISTORIC TERRITORIES

- Additional historical and cultural studies of villages and small towns of the Astrakhan agglomeration are being carried out (especially on the territory of the «Silk Road»)
- A program for the «visualization» of the Silk Road is being developed (installation of signs, projections, installations, etc.)
- Individual archaeological sites and research are popularized (taking into account the protection of these territories from «black» diggers)
- Residents are used as - a source of information about the value of the building and the territory
- A program is being formed to reveal the potential of the image and history of the Astrakhan Khanate

THE FORMATION OF COMMUNITIES OF RESIDENTS LIVING IN HISTORICAL AREAS

Conditions are being created for the formation of communities of residents living in historical territories (HOAs of owners of historical real estate) by forming programs for co-financing restoration, improvement and development activities (taking into account recommendations for the development of communities in related industries on the model of “Best Practices for Creating Energy Efficient Housing in the UNECE Region (UN Geneva, 2013).

MANAGEMENT COMPANY OF HISTORICAL TERRITORIES

A separate management structure of historical territories with urban or regional participation is being created (possibly similar to the management company Irkutsk Quarters, with the transfer of individual objects and territories to its balance sheet or management).
The structure is formed through an open tender or a subdivision of the Project Office for the implementation of the Master Plan or a subdivision of the Interdisciplinary Competence Center (the latter can be created to combine into one structure of competences to attract federal funding).

RESTORATION LICENSE FOR MANAGEMENT COMPANIES

Consideration of the possibility of optimizing the costs of restoration repairs by obtaining restoration licenses by city management companies (or creating one such management company with city participation.
Taking into account the Moscow experience - when companies like Zhilischnik Arbat received a restoration license.

PILOT PROJECTS

The formation of the territory of «pilot projects» for the development of historical territories is advisable after a comprehensive study of the scheme for the Regeneration of the historical environment of the city of Astrakhan. Including - after determining all possible zones of regeneration of the historical environment and a comprehensive quarterly calculation of the historical and urban planning potential.

ORDER OF THE PRESIDENT OF THE RUSSIAN FEDERATION PR-555GS, ITEM 1

Formation of proposals and request for federal funding within the framework of the Instruction of the President of the Russian Federation Pr-555GS, clause 1 to the implementation of «individual measures for the restoration and development of historically established urban areas.» This instruction was formed for the development of historical centers of cities, including those that do not meet the criteria of the competition of the Ministry of Construction of the Russian Federation “Historical settlements and small towns”.
It seems advisable to format the above proposed measures into a single program for «Rehabilitation and development of the historically formed territories of the city of Astrakhan» and a report on this program to the First Person of the State. Additionally - sending this application to the Ministry of Construction of the Russian Federation, including as an investment passport of the Historical Settlement of the Federal Settlement of the city of Astrakhan.

INFRASTRUCTURE LOANS

A number of regions in the Russian Federation are currently attracting debt financing for the modernization of engineering infrastructure.
It is proposed for the historical part of the city of Astrakhan to form a financial model for the development of engineering infrastructure on the basis of the above Scheme of regeneration of the historical environment.
Based on the financial model, request financing for the development of engineering infrastructure from several sources: infrastructure bonds or the BRICS bank. Including - taking into account the possibility of reducing the debt burden due to the tools of the Decree of the Government of the Russian Federation of October 19, 2020 No. 1704.

FINANCING OF KRT PROJECTS

Currently, the Ministry of Construction of the Russian Federation has formed a separate department for the Integrated Development of Territories (KRT).
It seems expedient to position Astrakhan as a pilot project with the Department of MRT of the Ministry of Construction of the Russian Federation for the formation of ARC within the boundaries of historical city centers. This topic is important and relevant for the entire territory of the Russian Federation, but very poorly developed in the regulatory and legal terms.

SUBSIDIES, BENEFITS, SURETIES

Subsidizing the costs and interest rates on loans for the preservation of IPOs, land tax exemptions and loan guarantees should be provided to the responsible owners or users, as well as partnerships and other organizational forms of owners or users of real estate objects or organizations involved in the development of historical territories

RENT (RUB)

It is necessary to envisage the possibility of subleasing OKNs and forming them as a bank collateral to attract financing

An important principle of attracting funding:
In view of the complexity and complexity of the problems of historical territories, it seems to be a wrong strategy to rely on one or two sources of funding. The formation of various sources and financial instruments that can be used by both organizations and communities and residents, depending on their property and social status, can be considered more correct.

Individual dwelling house, 8 * 12 m.

Apartment building, 12 * 16 m.

Small buildings (trade / administration)

Large buildings (administration)

Individual dwelling house, 8 * 12 m.

Apartment building, 12 * 16 m.

Small buildings (trade / administration)

Large buildings (administration)

All-Russian survey conducted by the Institute of the General Plan of Moscow jointly with the Russian Association of Restorers (RAR) and the All-Russian Society for the Protection of Historical and Cultural Monuments (VOOPIK) on the problems of historical settlements and historically valuable city-forming objects

Укажите, кем Вы являетесь (можно выбрать несколько вариантов ответа):

Представитель органа охраны ОКН	23	41.8%
Активист, общественный защитник наследия	15	27.3%
Проектировщик	5	9.1%
Реставратор	5	9.1%
Эксперт ГИКЭ	4	7.3%
Представитель иных органов исполнительной связи	2	3.6%
Инвестор	1	1.8%

Мероприятия устойчивого развития ИП

Сохранение исторически ценных морфотипов застройки.	39	11.0%
Предложения по развитию туристического потенциала.	37	10.5%
Формирование зон регенерации исторической среды.	35	9.9%
Мероприятия по обучению заинтересованных сторон.	35	9.9%
Предложения по увеличению капитализации объектов культурного наследия, ИЦГФО и исторических территорий.	31	8.8%
Корректировка документов территориального планирования, в том числе - оптимизация функционального зонирования.	29	8.2%
Социологические исследования.	28	7.9%
Предложения по управленческой модели реализации мероприятий устойчивого развития исторического поселения.	28	7.9%
Предложения по развитию общественных пространств.	27	7.6%
Мероприятия по развитию компетенций предпринимателей.	27	7.6%
Мониторинг реализации мероприятий устойчивого развития, в том числе, по показателям оценивающим социально-экономическое ...	23	6.5%
Оптимизация межевания территории.	15	4.2%

Ответов 354

Историко-градостроительная среда и экономические аспекты

1. Формирование методических рекомендаций по разработке типовых архитектурных решений.

да	34	72.3%
нет	8	17.0%
затрудняюсь ответить	5	10.6%

2. Внедрение механизма типовых архитектурных решений не только для нового строительства, но и реконструкции ИЦГФО, в том числе, в части пристройки к ИЦГФО новых объемов.

да	29	61.7%
нет	14	29.8%
затрудняюсь ответить	4	8.5%

3. Формирование нового инструмента "Договор развития застроенных территорий", в рамках которого к инвесторы должны будут обеспечить полное сохранение ценной исторической среды, но требования на создание городской инфраструктуры будут менее строгими.

да	22	46.8%
затрудняюсь ответить	15	31.9%
нет	10	21.3%

Ответов 141

«Culture should be considered as a set of distinctive characteristics inherent in a society or social group - spiritual, material, intellectual and emotional; in addition to art and literature, it covers the way of life, the ability to live together, value systems, traditions and beliefs»

UNESCO

Introduction

Federal Law «On Cultural Heritage Objects (Historical and Cultural Monuments) of the Peoples of the Russian Federation» of June 25, 2002 N 73-FZ (the main regulatory legal act in the field of heritage protection) describes the procedures for the preservation, possession (use) and state protection of cultural heritage sites ... Moreover, the mechanisms of state protection of cultural heritage objects are focused not only on the object of cultural heritage, but also on its historical, town-planning and natural environment.
Some territories are preserved and regulated as urban planning, landscape and natural surroundings of cultural heritage sites. And territories with independent historical and cultural value are allocated into separate objects of protection. In Astrakhan, such valuable territories are endowed with the status of a historical settlement of federal significance, but so far without the established boundaries, subject of protection and town planning regulations of the historical settlement.

The impact of the requirements for the preservation of heritage on socio-economic, urban planning processes and, in general, on the sustainable development of both Astrakhan and other cities of the agglomeration occurs both at the level of preserving cultural heritage objects directly, and regulating urban planning activities in significant territories with valuable historical and cultural and landscape characteristics.

From the point of view of cultural heritage, the aspect of sustainable development of historical territories can be represented in two different ways:

- as a problem of heritage preservation, which is considered as an end in itself,
- as a possible contribution that heritage and heritage preservation can make to the environmental, social and economic parameters of sustainable development of territories.

Действующее законодательство в области охраны памятников устроено так, что основное attention is directed precisely to the preservation of heritage as an independent task. At the same time, the tasks of determining the contribution of heritage to the improvement of the ecological, social and economic characteristics of the development of territories are poorly worked out.

The guidelines for the Management of World Cultural Heritage Sites - © UNESCO / ICCROM / ICOMOS / IUCN, 2013 read: “Focusing on cultural heritage as a justifiable end in itself where there is no evidence of heritage contributions to other basic human well-being, such as the creation of jobs or other material goods, often places heritage preservation in a kind of “special reserve” of underfunded good intentions ”. This is exactly what is happening now in Astrakhan.

The search for such evidence should be conducted in many directions, but the main “mundane” goal of such a search should be the capitalization of the heritage. One of the beneficiaries of which will be residents of the city of Astrakhan. The capitalization of heritage can be implemented at several levels (below is not a complete, but the most materialistic list): the formation of a market for projects for the preservation of cultural heritage objects (when the heritage will work at least relatively as profitably as with development projects), the launch of projects for the regeneration of historical territories the city of Astrakhan, sustainable development of the territory of the historical settlement of Astrakhan as a whole. The scheme presented below does not imply a specific implementation, but determines those essential guidelines that we must adhere to when developing a program for the management and maintenance of the territories of the historical settlement of the city of Astrakhan.

At the same time, in a social context, the most important goals of preserving cultural heritage objects is the recognition of their leading role in the formation of systems of cultural education of the population and the ability of heritage to determine the identity of the inhabitants of Astrakhan and the Astrakhan region with their small homeland and its history.

Regulatory limit and its danger for Astrakhan

A significant problem in establishing requirements for the protection of cultural heritage is the achievement of a certain regulatory and restrictive limit. When an increase in the strictness of the protection of cultural heritage does not lead to the desired result. And sometimes it leads to a result that is directly opposite to the goals of preserving cultural heritage objects. In Astrakhan, the requirements for town-planning regulations have not yet been fully introduced within the boundaries of the zones of protection of cultural heritage objects, and the town-planning regulations of the historical settlement are «next in line». This creates certain fears (both objective and not so) that restrictions on the terms of protection will make the development of historical territories fundamentally impossible for economic and organizational reasons. In turn, the relaxation of these restrictions can lead to greater risks of losing the historical environment. In any case, all this does not create conditions for attracting investment. Which ultimately leads either to their desolation of historical territories or to the emergence of a number of conflicts associated with the demolition of historical buildings and the destruction of the historical environment of cultural heritage sites.

Principles of optimization of management and maintenance of the territory of a historical settlement

It is obvious that the only way to eliminate the above contradictions is to find the optimal balance of issues of heritage protection, urban planning processes and socio-economic development of the historical settlement. At the same time, an orientation towards development processes, mainly independent of state funding or organized according to the principles of public-private partnership, seems to be more stable.

The search point for such a balance should be located in time before the approval of the requirements for urban planning regulations. Considering that the requirements for urban planning regulations established within the boundaries of historical territories are focused mainly on the preservation of cultural heritage sites, it is necessary to search and develop additional mechanisms that ensure the linkage of heritage conservation issues with urban planning projects and the sustainable development of historical territories in general.

These mechanisms should be formalized and public. Find your reflection or be the basis for adjusting urban planning documentation, spatial planning documentation, urban planning zoning, as well as land use documentation.

Within the framework of the current legislation, certain mechanisms are laid down for working with historical territories, which, due to the lack of by-laws and relevant methodological instructions, are not actually applied. These are the mechanisms for the regeneration of the historical environment of cultural heritage sites and a special procedure for regulating the urban planning activities of historical settlements, which is implemented by defining a list of measures for the sustainable development of its territory. But the lack of by-laws in the field of heritage protection for the purposes of this Master Plan can be easily compensated for by using international norms for heritage protection, for example, “Guidelines for the Management of World Cultural Heritage Sites © UNESCO / ICCROM / ICOMOS / IUCN, 2013”, and various standards and recommendations in “related” industries for the sustainable development of territories and communities (one of the most interesting is the standard GOST 56548-2015 / ISO / DIS / 37101 “Sustainable development of administrative and territorial entities.” Based on these standards, optimization of management and It is proposed to conduct maintenance of the territory of the historical settlement of the city of Astrakhan in the following directions:

- the magnification of urban development potential. Where should the increase in the TEP of the development of historical territories to at least the minimum economically acceptable level be ensured? Or a level that allows the implementation of public-private partnership mechanisms.
- Optimization of documents on the terms of protection of cultural heritage objects. The main goal of this block of measures is to eliminate regulatory barriers and uncertainties that make it difficult to conduct investment activities to preserve cultural heritage sites and regenerate the historical environment.
- Building up historical and cultural potential. Aimed at creating the necessary conditions for strengthening the role of cultural heritage sites in the issues of social and economic development of territories and activating the heritage preservation agenda
- Optimization of management mechanisms for historical territories. Should define general principles and specific solutions for the management and development of the historical territories of the city of Astrakhan.
- Financing. An important block of specific proposals for ensuring financing of programs for the preservation and development of the territory of the historical settlement of the city of Astrakhan.
- Justification of the need for the reconstruction of engineering infrastructure. These proposals are highlighted in a separate block, since they can very significantly determine the terms of financing (financial development model) and general approaches to the development of historical territories.

The main directions (stages) of optimization of management and maintenance of the territory of the historical settlement

- Increase in urban planning potential
  - The online functionality of the Historical Environment Regeneration Scheme is proposed as one of the main tools for enhancing urban planning potential. With its help, it is expedient to “digitize”, calculate and strengthen the urban planning potential of historical territories. Make it measurable and understandable for investors. The regeneration scheme should be filled in different directions and from different sources:
  - Regeneration Zones from existing Cultural Heritage Protection Zones (CWP) Projects. Already now, in the draft of the protection zones of the Astrakhan Kremlin, which was sent for approval by the Ministry of Culture of the Russian Federation, separate zones for the regeneration of buildings are outlined.
  - Search for urban development potential (regeneration zones) in the depths of historical households within the boundaries of the developed, but not approved Projects of zones for the protection of cultural heritage objects. Formation of additional economically viable regeneration zones (when regeneration is really possible from the point of view of economic conditions)
  - Investment passports of historical households and (or) cultural heritage sites are formed, including the development of items for the protection of cultural heritage sites (taking into account the experience of developing investment passports of cultural heritage sites from the Agency for the Management and Use of Historical and Cultural Monuments - there is a ready-made Terms of Reference). These passports are associated with specific regeneration zones, which in the future will make it possible to accurately calculate the historical and urban development potential of the territory.
  - Multi-apartment buildings-monuments with TEPs for their resettlement and (or) overhaul (for further calculation of the historical and urban planning potential).
  - The schemes of prospective improvement of the historical environment are linked or formed for the territories with the highest density of regeneration zones of the historical environment, thereby increasing the potential of these territories. Are displayed on the regeneration diagram.
  - Typical (recommended) architectural solutions for new construction (regeneration, reconstruction) of buildings within the boundaries of historical households are formed - as a tool for understandable TEPs for investors (including on the basis of the requirements of 73-FZ for historical settlements). Regeneration zones are indicated for which certain typical architectural solutions are possible.
  - An accurate calculation of the historical and urban planning potential of territories or individual quarters is carried out. After completing quarterly calculations of the town planning potential, which will take into account:
    - the amount of costs for the restoration and overhaul of cultural heritage sites,
    - the cost of capital and (or) reconstruction of the repair of preserved capital construction objects
    - the cost of demolition of dilapidated and emergency buildings
    - the cost and possible area of new construction in accordance with the parameters of the approved Projects of protection zones of cultural heritage objects
    - the cost of the improvement,
  - it is necessary to draw up a kind of rating of the TEP of the quarters in the implementation of their integrated development. And already on the basis of these data, it is necessary to determine the priority quarters for the MCT projects. Including, CRT implemented with the support of the program of the Ministry of Construction of the Russian Federation (additional information is given in the financing section).

Note: The Institute of the General Plan of Moscow performed such a calculation for the historical territory of the Ufa-Chernikovka region. Prior to the calculations performed by the Institute, it was believed that there was no urban development potential on the territory and its problems could be solved only by the construction of 16-storey buildings with the demolition of historical buildings. As a result of calculations carried out under the condition of preserving all valuable buildings, demolishing non-valuable buildings and regenerating them in the parameters of historically successive morphotypes, it turned out that the urban development potential of the territory is about 700,000 m2.

- All information of the Regeneration Scheme is presented online and freely available
- Optimization of functional zoning (if necessary)
- In some cases (mainly in the central part of the city), the construction and (or) operation of IZhS facilities may be economically unprofitable. To overcome this problem, land plots conditionally permitted by the VRI are formed, suggesting higher TEPs for the commercial use of the territory (administrative and business, for the placement of hotels, etc.).

- Optimization of land use
    - Areas are being formed for improvement, placement of tourist information centers, etc. These plots are transferred, we transfer them for use to interested persons, communities and organizations (including on a competitive basis)

Optimization of documentation on the conditions for the protection of the historical environment

- Optimization of existing Projects of Conservation Areas (CPZ)
    - The concept of «regeneration» is detailed in the PZO of the Astrakhan Kremlin (now this definition is too vague and based on this, the implementation of regeneration may actually be impossible)
    - Regeneration according to historical morphotypes is allowed in all sections of the protected zone (now, in some sections, regeneration is established in the parameters of a previously existing building, and if this building was 1-storey, then in fact, regeneration is impossible for economic reasons)
    - A requirement is introduced to optimize the architectural and stylistic characteristics of discordant buildings during their reconstruction and overhaul. In the current PZO, these are areas of regeneration, mastered by Soviet or modern buildings, the actual regeneration of historical buildings on which there will never be for economic reasons.
    - Changing the wording «excess building height on the basis of additional urban analysis ...» as contradicting clause 22 of the Decree of the Government of the Russian Federation of 12.09.2015 No. 972 «On approval of the Regulations on the protection zones of cultural heritage objects (historical and cultural monuments) of the peoples of the Russian Federation and on the recognition as invalid certain provisions of regulatory legal acts of the Government of the Russian Federation
    - The remaining PZOs are being finalized and approved to cancel the protection zones
- Further formation and approval of documentation for the historical settlement is in progress
    - It is proposed to develop and approve documentation in two stages.:
        - Borders and subject matter of protection - are developed and approved by order of the Ministry of Culture of the Russian Federation.
        - Requirements for town planning regulations: the powers of the municipality are implemented according to a special order of town planning regulation, laid down in 73-FZ (based on this, town regulations can be developed and approved by order of municipal authorities)
        - The powers of the municipality to develop measures for the sustainable development of the Historical Settlement are being implemented (the formed measures can be a justification for requesting funding at the federal level). The Institute of the General Plan of Moscow has extensive experience of working in historical territories (Ufa, Kazan, Samara, Tula, Ryazan, Moscow, Sevastopol, Sakhalin), a separate well-developed program for the sustainable development of historical centers and the corresponding Terms of Reference.
    - New standard architectural solutions for new construction in the historical settlement are being approved.
- The previously developed «typical architectural solutions of the city of Astrakhan» are made (by updating a previously developed set of documentation) understandable and convenient for owners and investors (as a sample - typical architectural solutions developed by the Institute of the General Plan of Moscow for the historical settlement of the city of Yegoryevsk).

Building up historical and cultural potential

- Methodological recommendations are formed for owners and investors of historical real estate. Very often, both owners and investors do not have a sufficient level of competence to work in historical territories. According to the results of the survey conducted by the Institute of the General Plan of Moscow in cooperation with the Russian Association of Restorers and the All-Russian Society for the Protection of Historical and Cultural Monuments (the Institute of the General Plan is actively pursuing the direction of scientific and methodological support of heritage protection issues and this survey is one of the elements of this work) - the development of methodological recommendations practically on the whole spectrum of problems of heritage preservation is unambiguously supported both by the bodies of protection of monuments, and by city defenders.
    - Historical and cultural studies carried out within the framework of the PZO and documentation on the establishment of the Historical Settlement are published (thereby, in general, interest in the history of the city and cultural heritage sites is activated)
    - Brands of Historic Areas are Strengthening
    - Additional historical and cultural studies of villages and small towns of the Astrakhan agglomeration are being carried out (especially on the territory of the «Silk Road»)
    - A program for the “visualization” of the Silk Road is being developed (installation of signs, projections, installations, etc.)
    - Individual archaeological sites and research are popularized (taking into account the protection of these territories from “black diggers”).
    - Residents are used as - a source of information about the value of the building and the territory.
    - A program is being formed to reveal the potential of the image and history of the Astrakhan Khanate.

Optimization of management mechanisms for historical territories

- Conditions are being created for the formation of communities of residents living in historical territories (HOAs of owners of historical real estate) by forming programs for co-financing restoration, improvement and development activities (taking into account recommendations for the development of communities in related industries on the model of “Best Practices for Creating Energy Efficient Housing in the UNECE Region (UN Geneva, 2013) This publication provides an overview of the practices of co-financing and public-private partnerships in the field of housing and communal services, but it is quite applicable for projects of restoration and development of the historical environment, including in terms of organizational and legal schemes and approaches. ...
- A separate management structure (ANO) of the Historical Territories is being created (possibly similar to the Irkutsk Quarters management company with the transfer of individual objects and territories to its balance sheet or management): through an open tender or a subdivision of the Project Office for the implementation of the Master Plan or a subdivision of the Intersectoral Center competencies (the latter can be created to combine into one competence structure for attracting federal funding).
- Consideration of the possibility of optimizing the costs of restoration repairs by obtaining restoration licenses by city management companies (or creating one such management company with city participation. Taking into account the Moscow experience - when companies like Zhilishnik Arbat received a restoration license.
- Active use of «pilot projects» for the development of historical territories. When certain organizational and legal forms of project implementation can be worked out on individual administrative-planning formations. Formation of specific “pilot projects” for the development of historical territories is advisable after a comprehensive study of the scheme for the Regeneration of the historical environment of the city of Astrakhan. Including, after determining all possible zones of regeneration of the historical environment and a

comprehensive quarterly calculation of the historical and urban development potential of building and reconstruction.

- Management of multi-apartment buildings (MKD) - objects of cultural heritage. The problem of apartment buildings, which are monuments, is quite acute for the whole country. And Astrakhan, where about 400 MKD monuments are no exception. The generally accepted solutions to this problem are resettlement, capital repairs at the expense of the state or at the expense of investors, re-profiling. And the problem of finding funding is a top priority. It is preferable if funding is sought not only for apartment buildings, but also for solving the problems of historical territories in general. The next section will be devoted to options for attracting such financing. It should be noted that due to the complexity of the MKD problem, its solution should not be in a single version either. It is necessary to offer various tools, and users and other participants in the process will be able to choose what is more suitable for them both in terms of wealth and financing conditions. There is always a question - is it possible to place the burden of maintaining such houses on the owners or the problem cannot be solved without the involvement of the state and investors? We believe that it is also necessary to create co-financing programs (PPP) for capital repairs of MKD OKN, where the responsible owners or partnerships of such owners will act as customers of such works, and the state, based on PPP principles, will allocate subsidies to pay part of the cost of capital repairs. Perhaps such programs will not be very popular among owners, but it cannot be ruled out that individual residents will use them. The task of the state is to form such programs and actively promote them among the owners, since in the long term, the model, when exactly residents act as customers of work, is more sustainable. For those MKD - OKN, where such programs, for one reason or another, cannot be implemented, programs will have to operate to buy out and resettle residents with further capital repairs of the monument.

Subject to receiving money from the capital repair fund

Financing

An important principle of attracting funding: Due to the complexity and complexity of the problems of historical territories, it seems to be a wrong strategy to rely on one or two sources of funding. The formation of various sources and financial instruments that can be used by both organizations and communities and residents, depending on their property and social status, can be considered more correct.

- Formation of proposals and request for federal funding within the framework of the Instruction of the President of the Russian Federation Pr-555GS, clause 1 to the implementation of «individual measures for the restoration and development of historically established urban areas.» This instruction was formed for the development of historical centers of cities, including those that do not meet the criteria of the competition of the Ministry of Construction of the Russian Federation “Historical settlements and small towns”. It seems advisable to format the above proposed measures into a single program for «Rehabilitation and development of the historically formed territories of the city of Astrakhan» and a report on this program to the First Person of the State. Additionally - sending this application to the Ministry of Construction of the Russian Federation, including as an investment passport of the Historical Settlement of the federal settlement of the city of Astrakhan, as well as to the Ministry of Culture of Russia for inclusion in the State Program «Culture».
- A number of regions in the Russian Federation are currently attracting debt financing for the modernization of engineering infrastructure. It is proposed for the historical part of the city of Astrakhan to form a financial model for the development of engineering infrastructure on the basis of the above Scheme of regeneration of the historical environment. Further, based on the financial model, request financing for the development of engineering infrastructure from several sources: infrastructure bonds or the BRICS bank. Including - taking into account the possibility of reducing the debt burden through the tools of the RF Government Decree No. 1704 dated October 19, 2020. We consider it possible to take such calculations as the basis for the financial model to justify the infrastructure development program for the historical part of Samara.
- Subsidizing costs, interest rates on loans for the improvement of historical territories, capital repairs and restoration of the OKN, renovation of historical buildings. Land tax incentives for OKNs that are in satisfactory condition. Or endowing the Project Office for the implementation of the Master Plan with the function of a guarantor for the relevant loans. Subsidies and sureties should be directed to responsible individual owners or users, as well as partnerships and other organizational forms of owners or users of real estate objects or organizations involved in the development of historical territories.
- Financing within the framework of the integrated development of territories. Currently, the Ministry of Construction of the Russian Federation has formed a separate department for the Integrated Development of Territories (KRT). It seems expedient to position Astrakhan as a pilot project with the Department of the MRT of the Ministry of Construction of the Russian Federation for the formation of the MRT within the boundaries of the historical centers of cities. This topic is important and relevant for the entire territory of the Russian Federation, but very poorly developed in the regulatory and legal terms.
- Rent (rub). A similar program is being considered by the Astrakhan Duma. To obtain a sufficient effect under this program, it is necessary to provide for the possibility of subleasing cultural heritage objects and forming them as a bank pledge. Otherwise, it will be practically impossible to attract debt financing for these programs, which will translate the action of this instrument into the category of patronage, charity or the construction of private residences. That will not allow to provide a sufficient volume of restoration within the framework of this program.
- Note. The problem of redemption of unused premises by the owners of neighboring premises is proposed to be solved by launching a consulting center at the management company of Historical Territories.

Justification of the need for the formation of engineering infrastructure

- Now the lack of engineering infrastructure makes it economically unprofitable for investors to develop construction in historically consistent parameters. Infrastructure costs can be justified only through the formation of multi-apartment buildings (approximately 9 floors high). But the town planning regulations of the protected zones do not allow this. Proceeding from this, investment activity in historical territories is minimized.
- It is proposed for borrowed funds to build an engineering infrastructure (engineering collector). Credit servicing is offered through the inclusion of these costs in tariffs and in the cost of connecting to the networks. As an example: a feasibility study for the construction of a collector in the historical part of Samara. The estimated cost of carrying out communications for the historical center of Samara is 39 billion rubles. The area of the historical center of Astrakhan is about 30% smaller.

Name of works	Amount	units	Cost per unit (rub)	Summary
Expenditure part				
The volume of costs for the restoration and overhaul of cultural heritage sites	23 160,00	м^2	100 000,00	2 316 000 000,00
The cost of capital and (or) reconstruction of the repair of preserved capital construction objects	42 612,00	м^3	5 000,00	213 060 000,00
Cost of demolition of dilapidated and emergency buildings	6 700,00	м^3	4 600,00	30 820 000,00
Improvement cost	8 362,20	м^2	1 500,00	12 543 300,00
The cost and possible area of new construction in accordance with the parameters of the approved Projects of protection zones of cultural heritage objects	13 000,00	м^2	40 000,00	520 000 000,00
Buyback cost	72 472,00		50 000,00	3 623 600 000,00
			sum	6 716 023 300,00
Income part				
Total - m2	78 772,00			
Of which residential real estate	66 956,20	м^2	70 000,00	4 686 934 000,00
Of which commercial real estate	11 815,80	м^2	110 000,00	1 299 738 000,00
			sum	5 986 672 000,00
The cost of the necessary subsidies for the quarter of the KRT				**729 351 300,00**

Amount of funding for the program of work on the development of the territory of the historical settlement of the city of Astrakhan

Priority activities

- Development of boundaries, subject of protection and requirements for urban planning regulations of the Historical Settlement 13 million
- Development (updating) of the necessary projects of protection zones for cultural heritage objects 6 mln.
- Measures for the sustainable development of the historical settlement with the formation of the Sectoral scheme for the regeneration of the historical environment - 4 million
- Development of protection items for individual (priority) cultural heritage objects - MKD buildings: approximately 30 objects (300 tons rubles each) - 9 million rubles
- Investment passports of individual (priority) objects of cultural heritage (draft designs for restoration and adaptation to the modern use of cultural heritage objects): approximately 30 objects (700 tons rubles each) - 21 million rubles.
- Implementation of top-priority projects of KRT blocks (10 blocks - 1st stage) within the boundaries of the historical settlement.
- An enlarged calculation of one KRT of a historical quarter (for an example, an averaged typical quarter was chosen in which there are monuments and reconstructed buildings and the potential for new construction):

Second stage

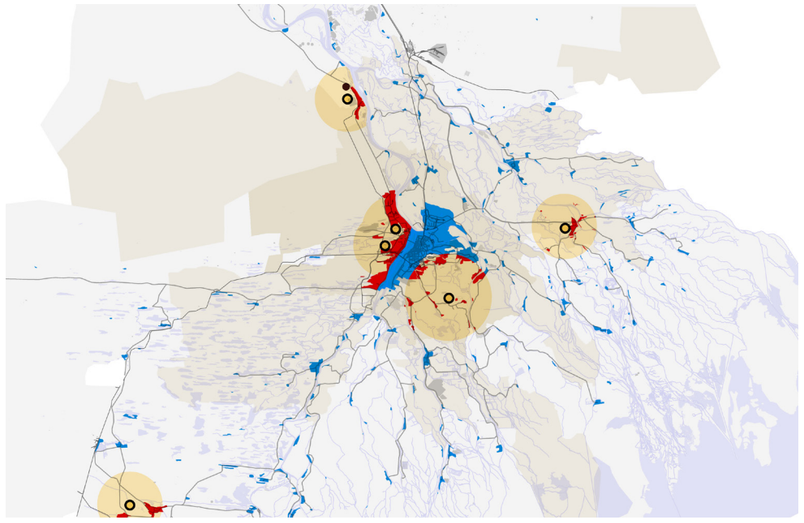
- Development of protection items for separate (second stage) cultural heritage objects - MKD buildings: approximately 370 objects (200 tons rubles each) - 74 million rubles.
- Investment passports of individual (second stage) objects of cultural heritage (draft designs for restoration and adaptation to the modern use of cultural heritage objects): approximately 370 objects (400 thousand rubles each) - 148 million rubles.
- Implementation of projects of KRT blocks of the 2nd stage within the boundaries of the historical settlement - 20 blocks (or a comparable area).
- The estimated cost of financing for the KRT is 14 billion rubles.
- Formation of guidelines for owners and investors of historical real estate RUB 1.5 million
  Updating of Typical architectural solutions of capital construction objects within the boundaries of the territory of the historical settlement 1 mln
- Additional historical and cultural research of villages and small towns located in the Astrakhan agglomeration, in particular on the territory of the «Silk Road» - 3 million rubles

Separate calculation of the cost of restoration of apartment buildings that are objects of cultural heritage

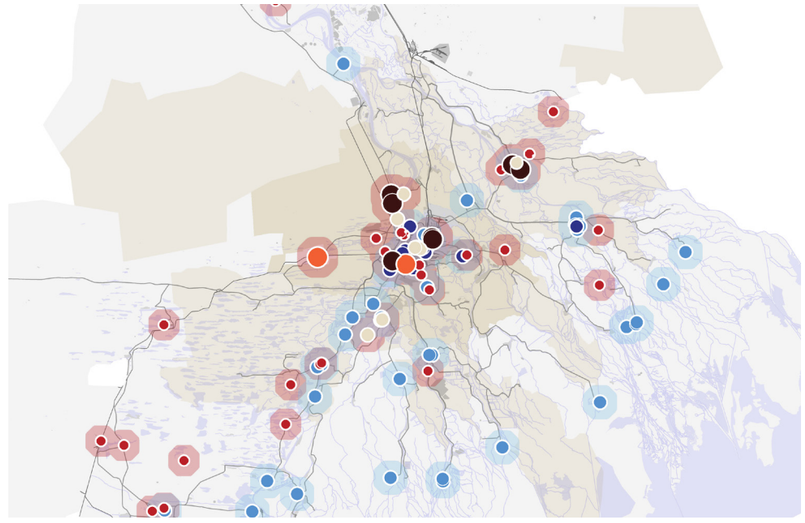
- Within the framework of this project, we consider it expedient to carry out the reconstruction of historical quarters within the framework of the KRT projects. If we separate out the costs of the restoration of cultural heritage sites, then it is almost impossible to get any real cost of these works on a city scale without additional research. Including, proceeding from the fact that only a minimum number of cultural heritage objects have approved objects of protection. If we talk about the aggregated calculation, then, roughly with the total number of OCHs requiring restoration equal to 400 objects and the total cost of work from 20 to 50 million rubles, the total cost of restoration work will be about 8 - 20 billion rubles. Proceeding from this, even with the allocation of the first stage, it seems almost impossible to carry out the restoration only at the expense of budgetary funding. Moreover, if you pay attention only to the restoration of the OKN without putting in order their urban environment, the result of this will be, though restored monuments, but in the same degrading territories. The only possible implementation of MCT with the implementation of both MCT and PPP mechanisms. In our proposals, an enlarged calculation of the MCT of one quarter is given and the need for financing the program of work on the MCT of the historical part of the city of Astrakhan is estimated.
- In addition, the performed enlarged calculation of the MRT allows us to assert that carrying out the MRT of quarters is approximately 2-3 times more profitable than simply performing the restoration of individual monuments (provided that the same amount of restoration work is performed).

ECO AGRICULTURE

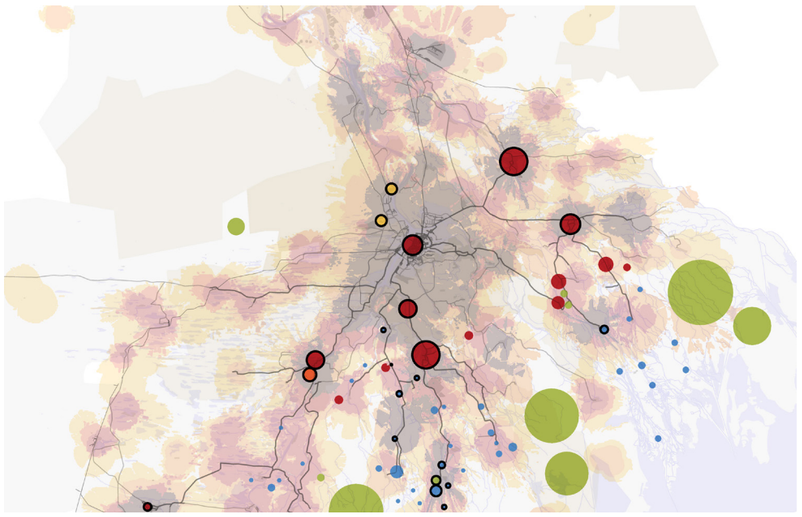
ECO INFRASTRUCTURE



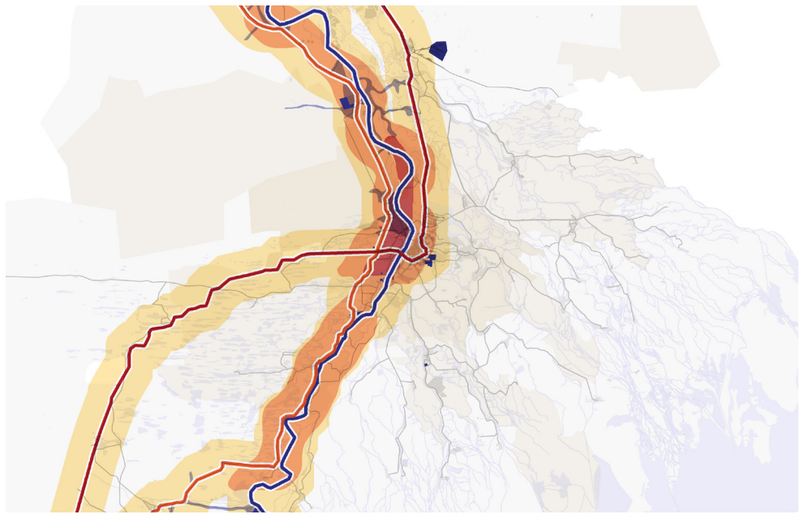
FISHING, ANIMAL HUSBANDRY



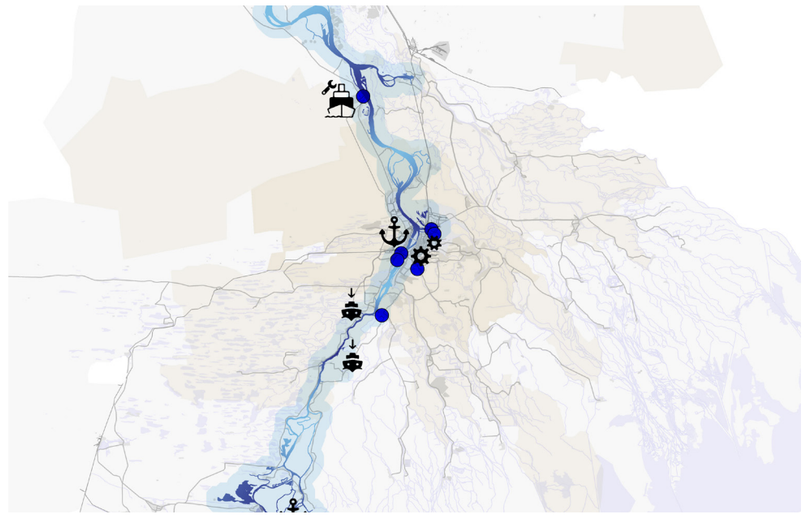
TOURISM



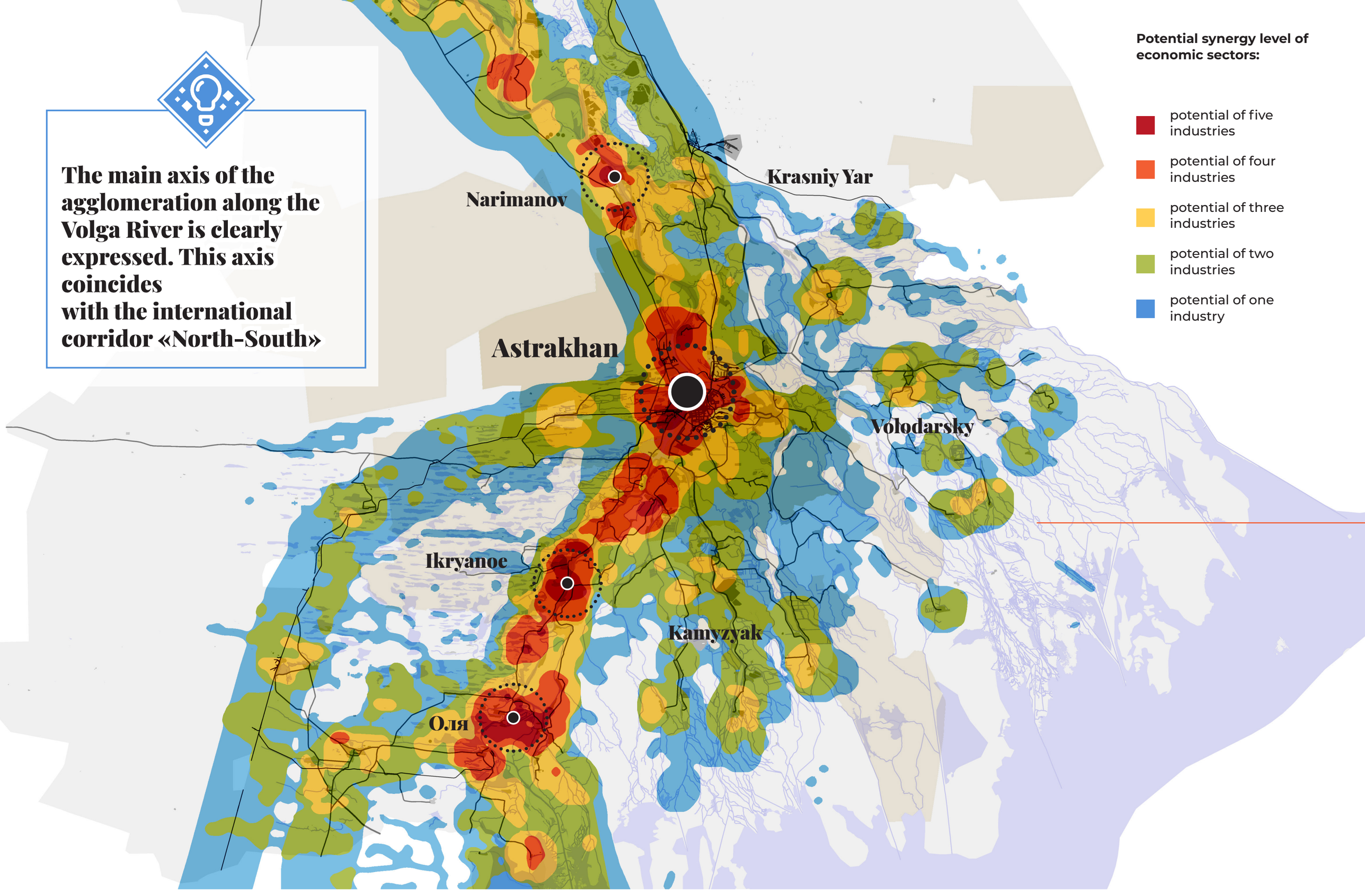
LOGISTICS



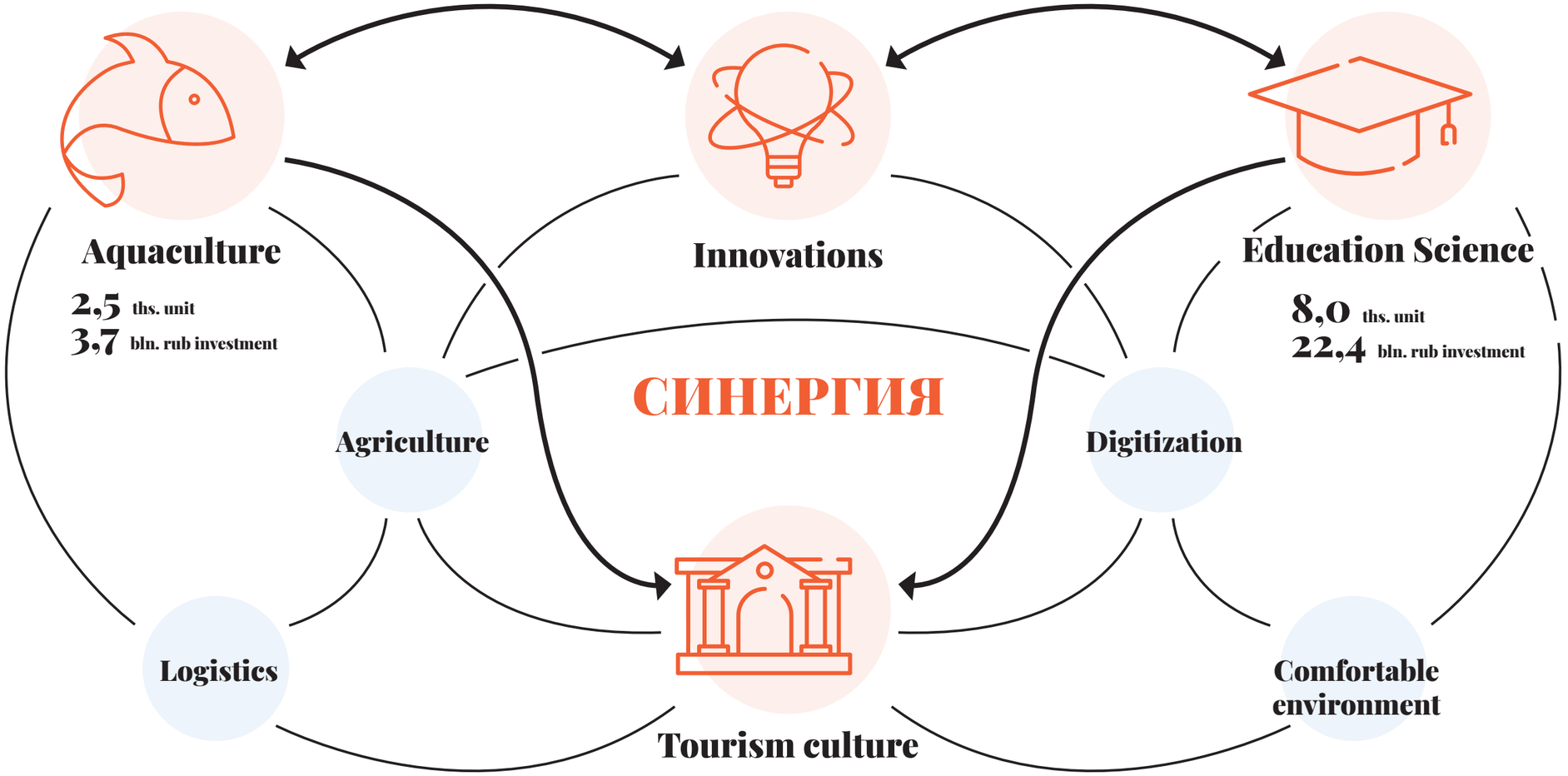
SHIPBUILDING, MECHANICAL ENGINEERING



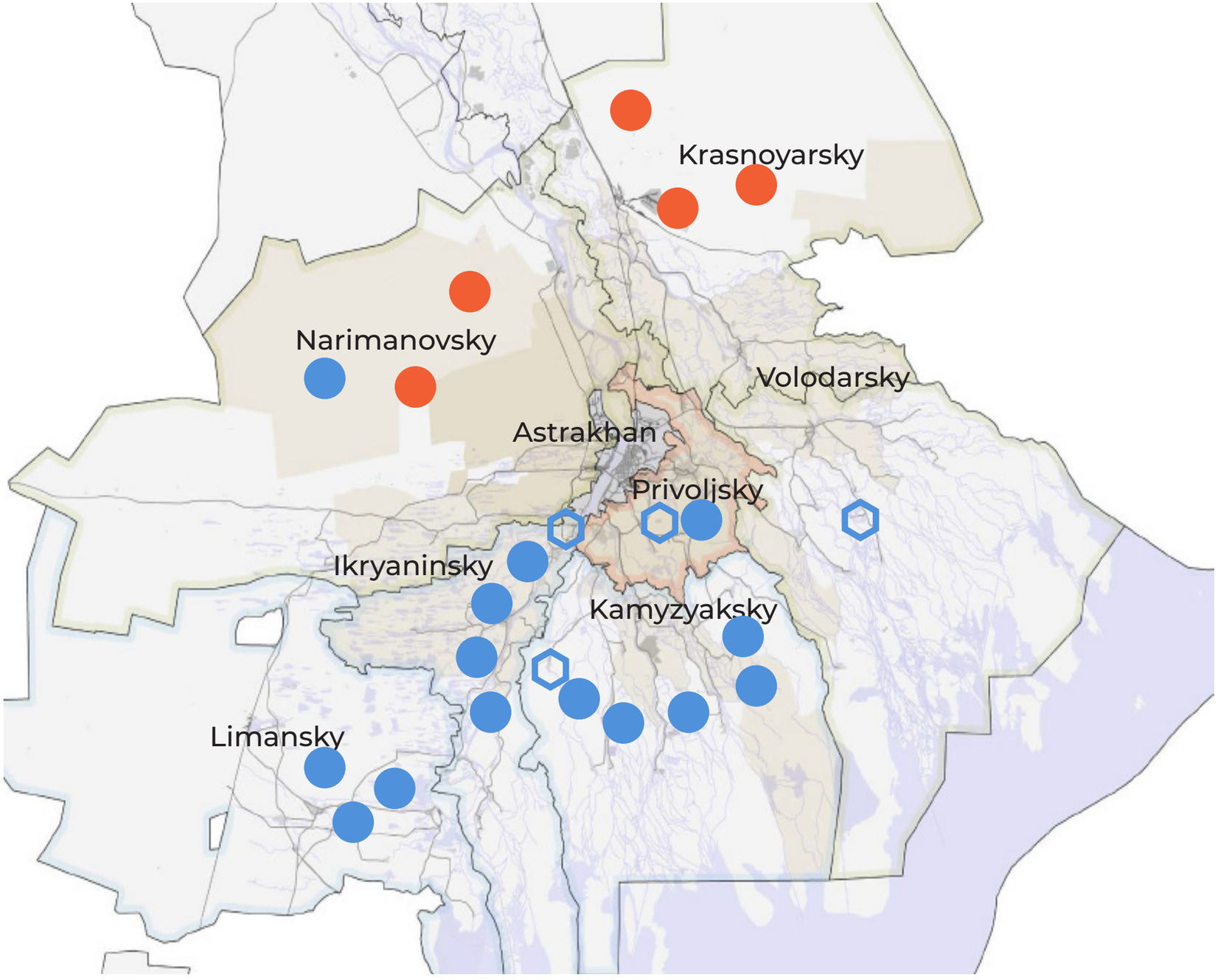
The main axis of the agglomeration along the Volga River is clearly expressed. This axis coincides with the international corridor «North-South»



Competencies



- sales synergy is based on the combination and use of the same distribution channels, personnel and logistics by sellers to sell different goods and services
- operational synergy
- common goods model
- combining labor as a union of dissimilar efforts - the principle of division of labor
- creating a joint favorable environment - creating, obtaining the effect of cooperation and synergy
- investment synergy
- synergy of “scale”, in fact, scale is the potential for synergy



AQUAFARMS

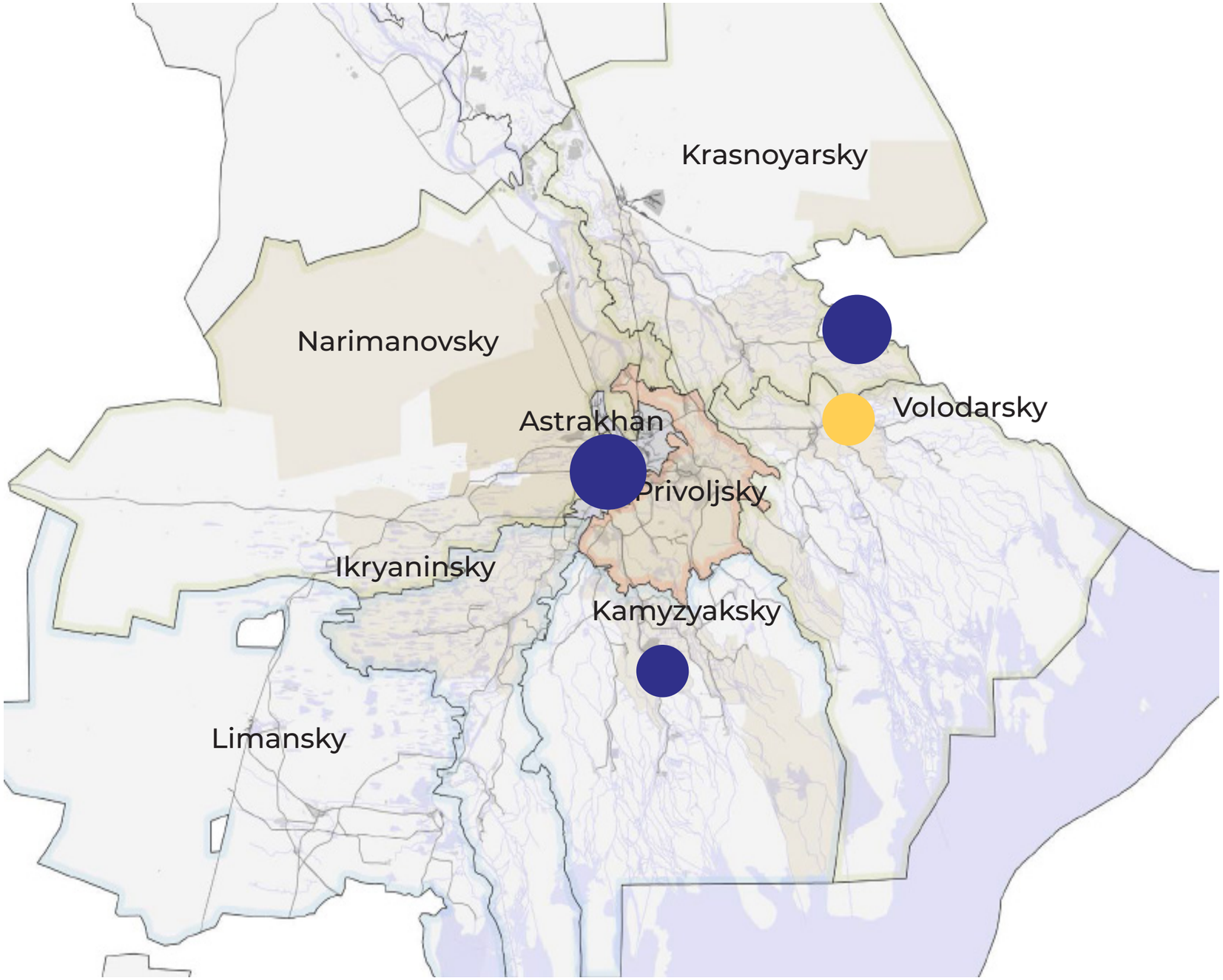
- performance up to **100** tons of marketable products per year
- area of buildings and structures – **3,0** ths.sq.m
- investments – **1,0** billion rubles
- Jobs – **100** ppl

LIVESTOCK FARMS

- area of buildings and structures – **15,0** ths.sq.m
- investments – **1,2** billion rubles
- Jobs – **200** ppl

AQUACULTURE PROCESSING PLANTS

- performance up to **10,0** ths. ton per year
- area of buildings and structures – **6,0** ths.sq.m
- investments – **3,5** billion rubles
- Jobs – **250** ppl

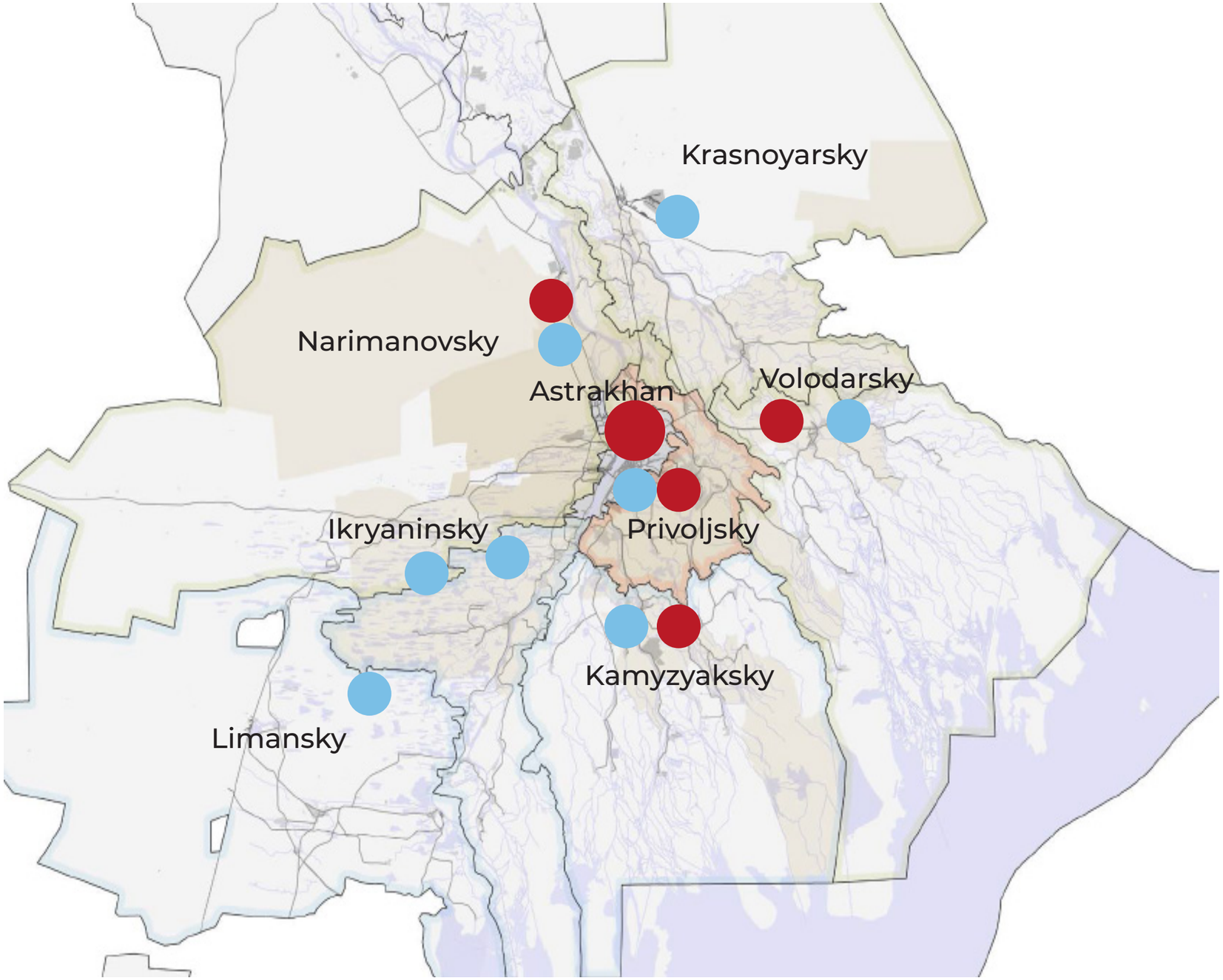


WHOLESALE DISTRIBUTION CENTER

- for up to **30** thousand tons of agricultural products
- tasks of centralizing services for storage, processing, pre-sale preparation, transportation and wholesale of fresh products - vegetables, fruits, meat, fish and dairy products
- investments – **1,5** billion rubles
- Jobs – **1000** ppl

SCIENTIFIC AND EDUCATIONAL CENTER

- Biotechnology
- Selection and genetic research, cell technologies and genetic engineering (genetics of animals and plants)
- Digital transformation of the agro-industrial complex and resource-saving technologies
- Technology of functional, healthy food products, storage and processing of agricultural products
- Training and additional professional education of personnel for the agro-industrial complex.

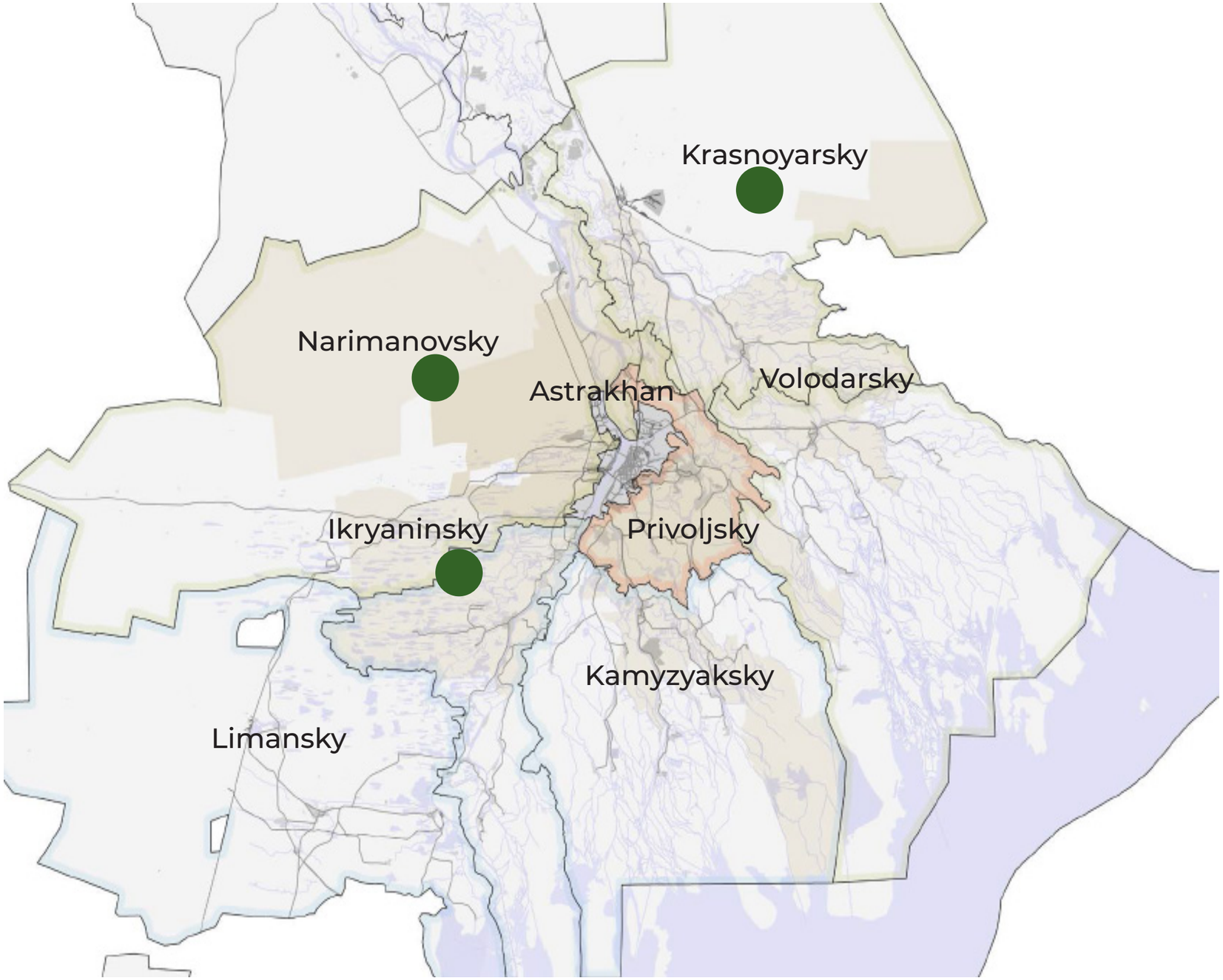


AGRO AND ECOTOURISM COMPLEXES

- use of natural, cultural, historical and other resources of rural areas
- area - about **10-15** ths.sq.m
- Jobs – **50-100** ppl

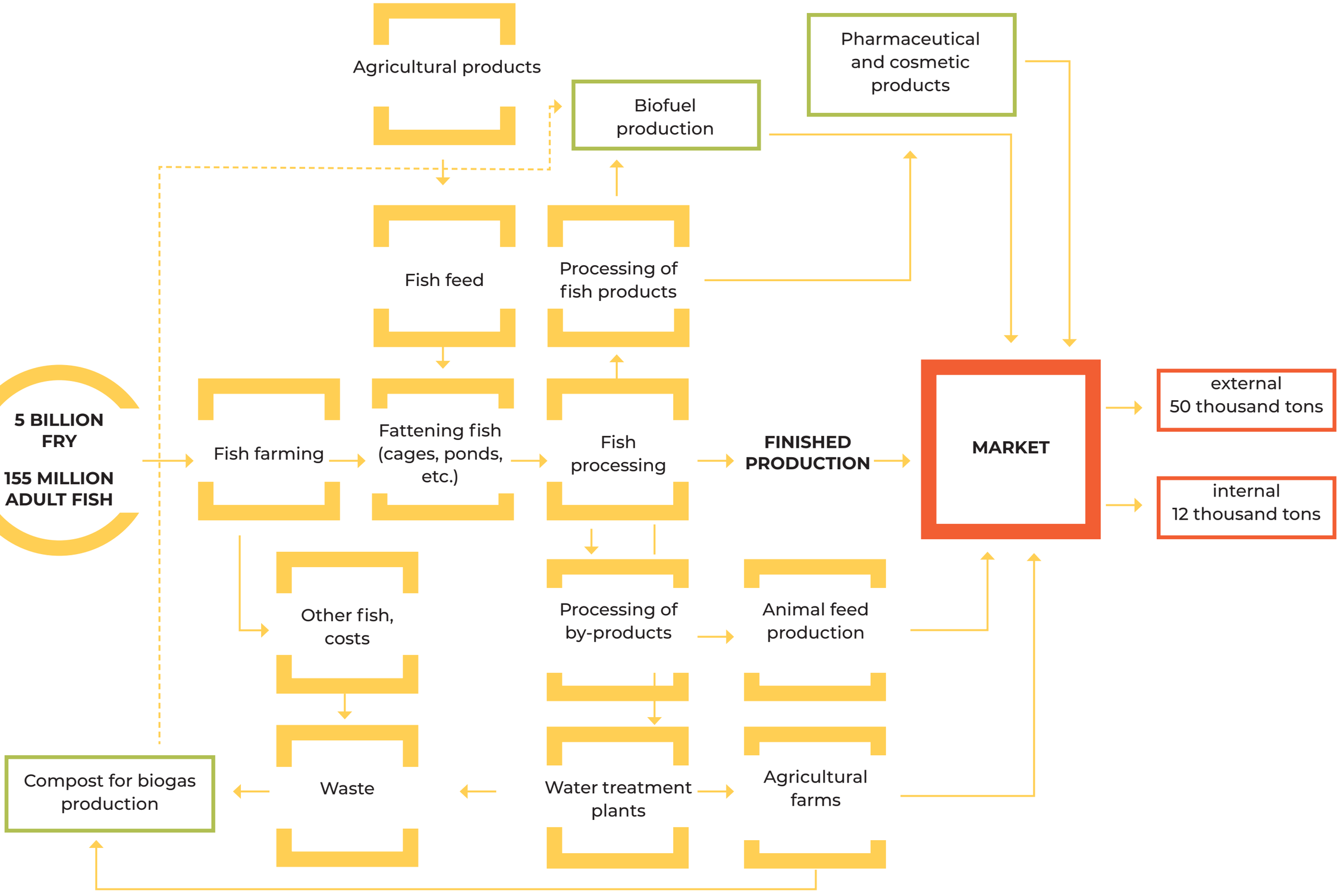
BUSINESS TOURISM FACILITIES

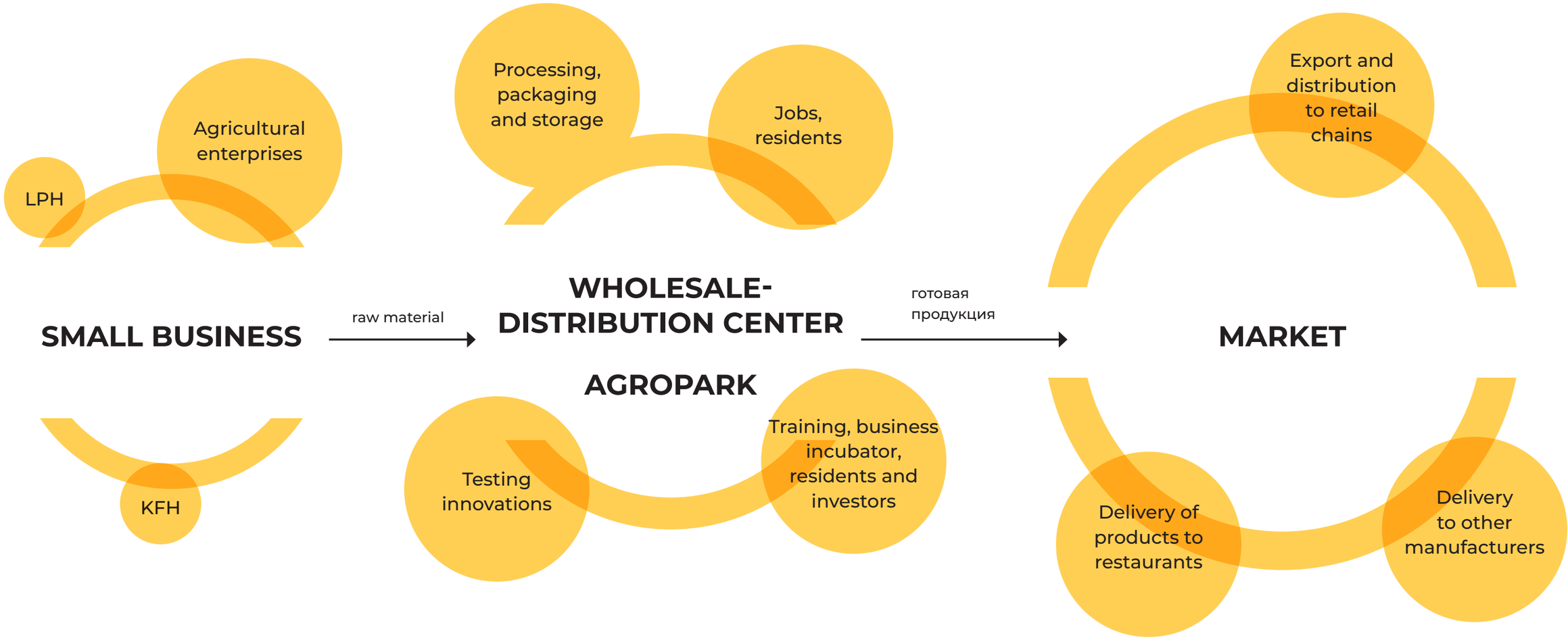
- goal: to create a single market space for well-known international hotel chains, as well as independent and small hotels, to increase their competitiveness in the hospitality industry for the business travel industry
- cater to the interests and needs of corporate buyers and business travelers in terms of accommodation and events
- area – **5-10** ths.sq.m
- Jobs – **50-100** ppl



BIOENERGY COMPLEXES

- bioenergy as one of the drivers of sustainable development
- the possibility of introducing the developed closed bioenergy complex into agriculture
- applied priority global technologies in the energy balance: bioenergy, solar generation (primarily solar panels), wind generation, carbon dioxide capture and storage systems (CCS) installed at thermal power plants, smart grids and related schemes for consumer participation in the regulation of energy systems , energy saving, various energy storage technologies, including hydrogen energy and fuel cells
- bioenergy technologies: biogas technologies, ethanol production, production of biodiesel fuels, fatty acids, vegetable hydrocarbons; biohydrogen production, thermal energy production
- investments – **20-50** bln. rub
- Jobs – **200-1000** ppl


Agricultural products
Biofuel production
Pharmaceutical and cosmetic products
Fish feed
Processing of fish products
5 BILLION FRY
155 MILLION ADULT FISH
Fish farming
Fattening fish (cages, ponds, etc.)
Fish processing
FINISHED PRODUCTION
MARKET
external 50 thousand tons
internal 12 thousand tons
Other fish, costs
Processing of by-products
Animal feed production
Compost for biogas production
Waste
Water treatment plants
Agricultural farms

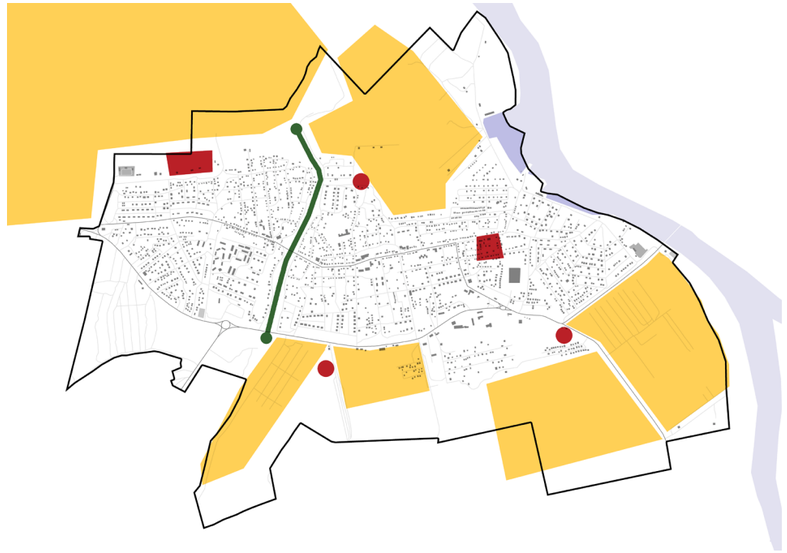


The main current areas of investment in innovations of the agro-industrial complex in world practice:

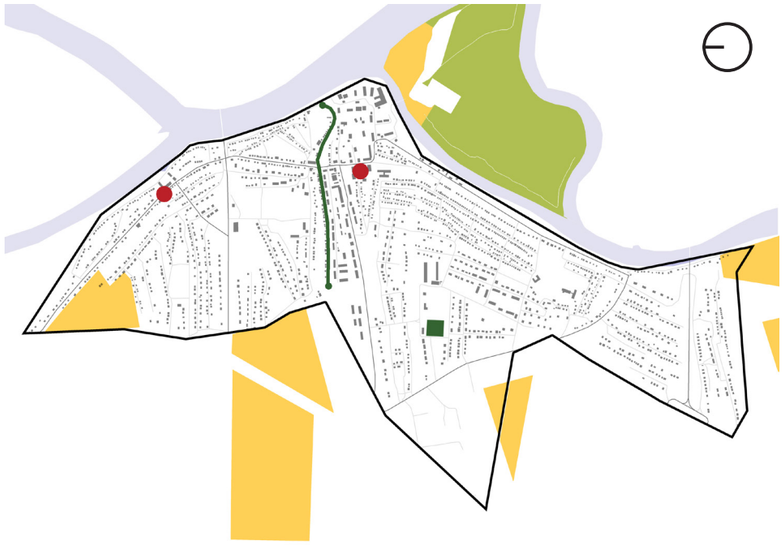
- new food products
- increase in the efficiency of agricultural crops
- supply chain management
- biochemistry, bioenergy, biomaterials
- growing in a controlled environment

3.1. ASSESSMENT OF THE URBAN PLANNING POTENTIAL OF THE AGGLOMERATION TERRITORY WITH THE ALLOCATION OF PROMISING DEVELOPMENT SITES

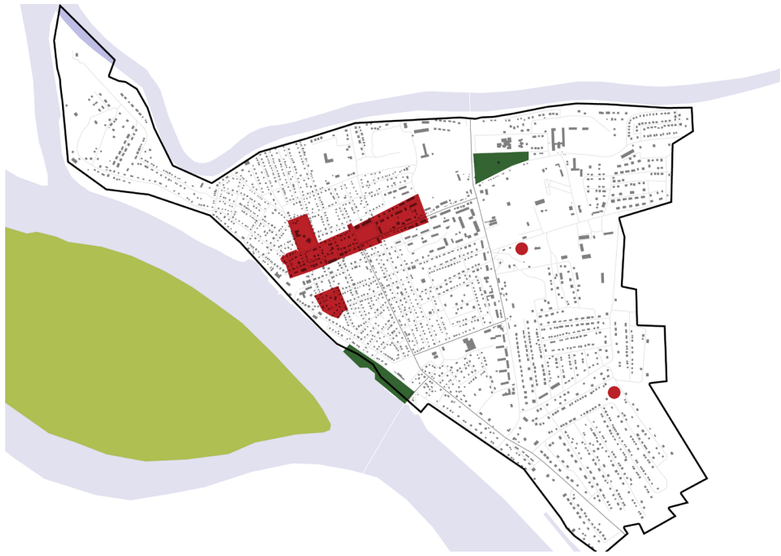
Nachalovo



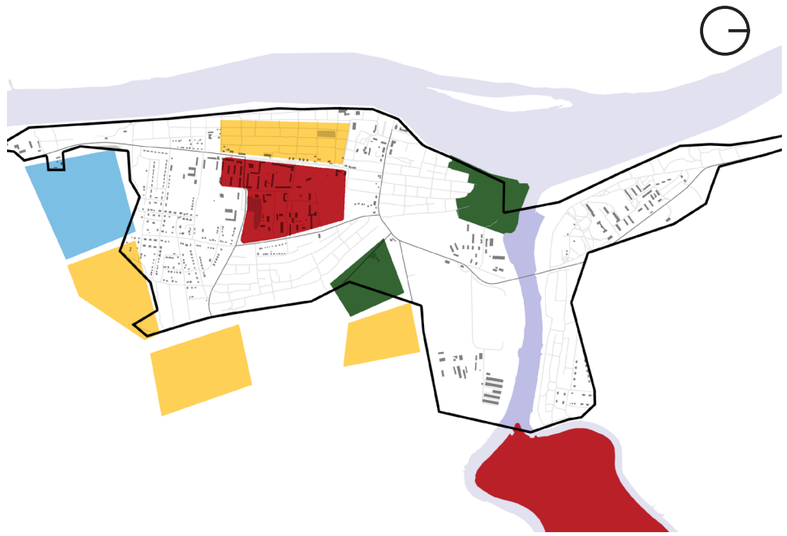
Volodarsky



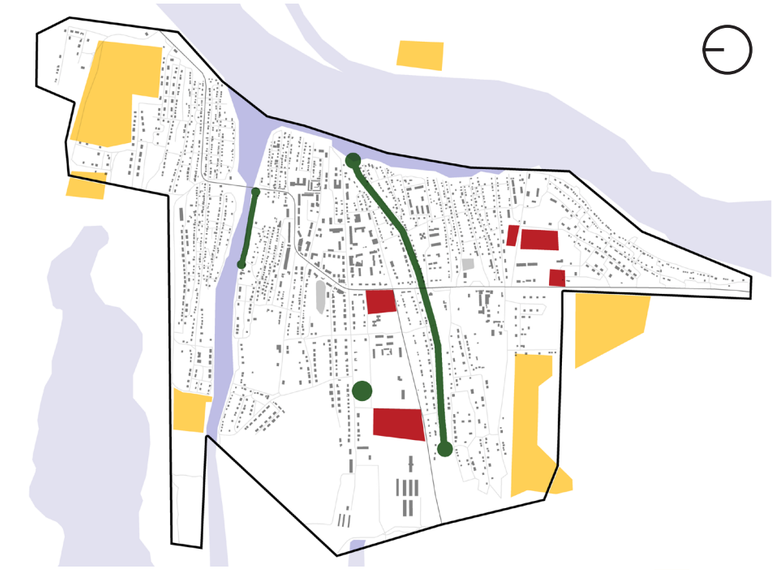
Krasniy Yar



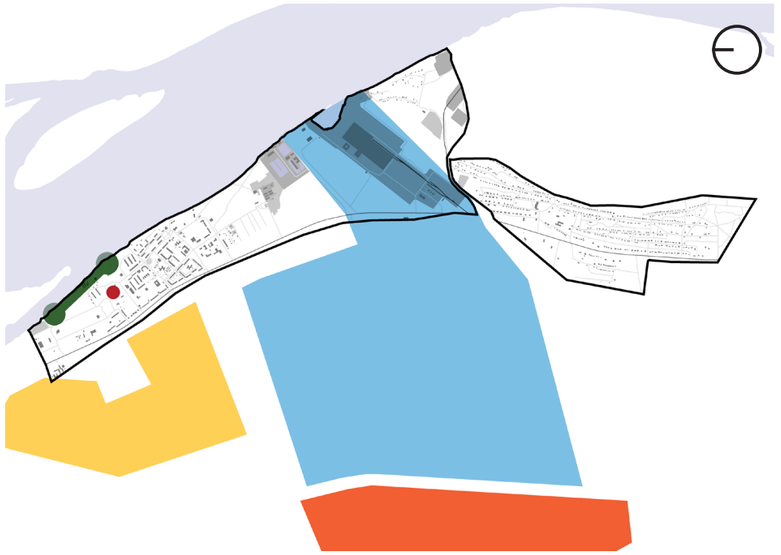
Kamyzyak



Ikryanoe



Narimanov



- construction of individual housing construction
- construction of environmentally friendly housing
- construction of public facilities
- organization of green areas

ИНСТИТУТ ГЕНПЛАНА МОСКВЫ

citythinking by zodea

ASADOV_ ID ARCHITECTS Knight Frank НЕ МОГУ

green areas of common use

large-scale

local

forests

orchards

territory within walking distance from OTOP (30 minutes)

proposed green areas of common use

large-scale

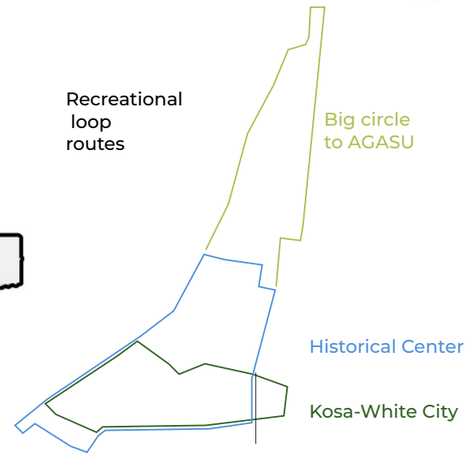
local

improvement of embankments

development areas, within the boundaries of which it is proposed to observe the principles of increasing the proportion of green areas

recreational loop routes

Recreational loop routes



innovative production and logistics sites,

objects of tourist and recreational infrastructure,

territories for the development of street retail facilities and other significant commercial facilities and infrastructure for the development of small businesses

Narimanov

Krasniy Yar

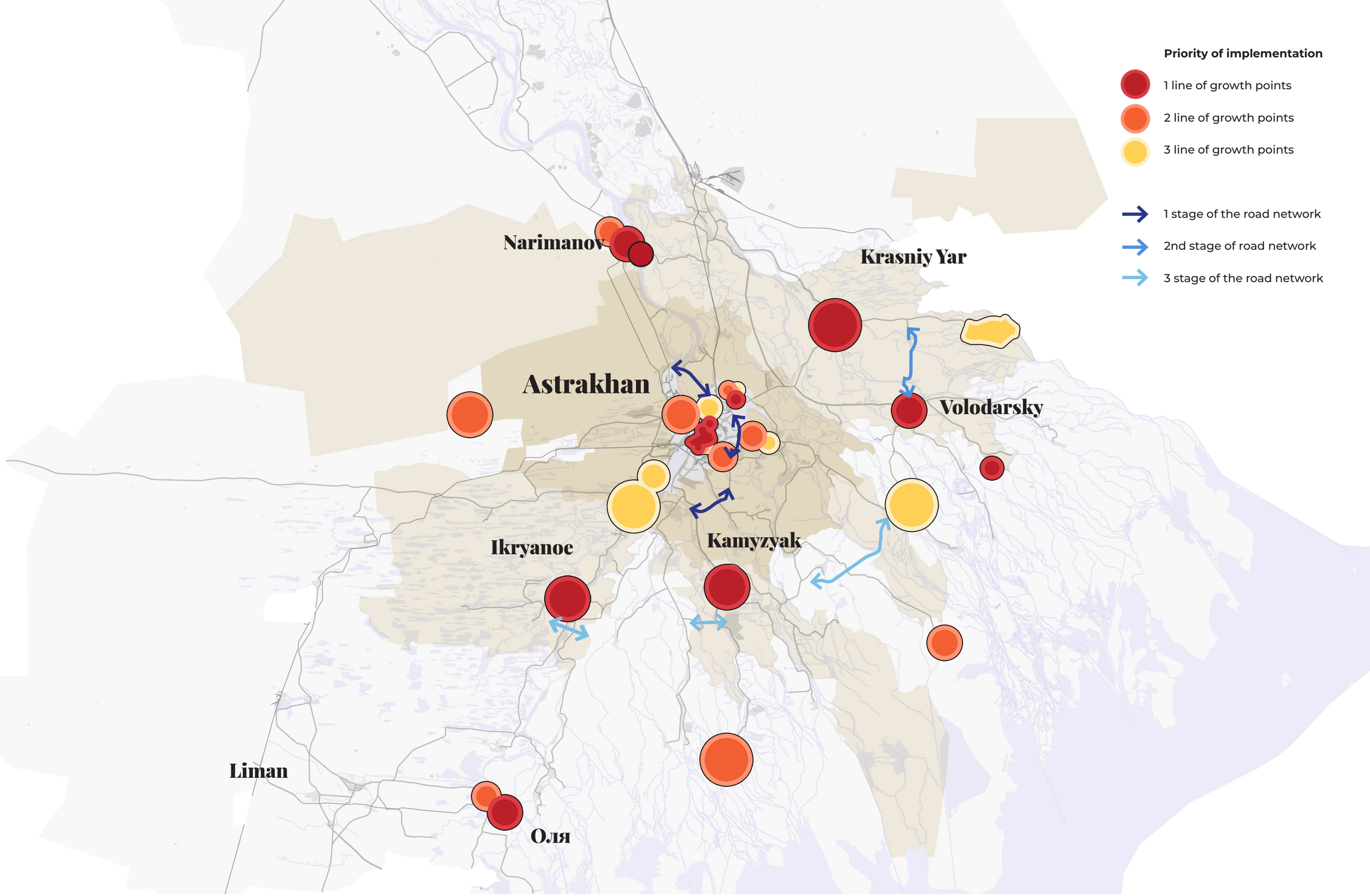
Astrakhan

Volodarsky

Ikryanoe

Kamyzyak

Liman

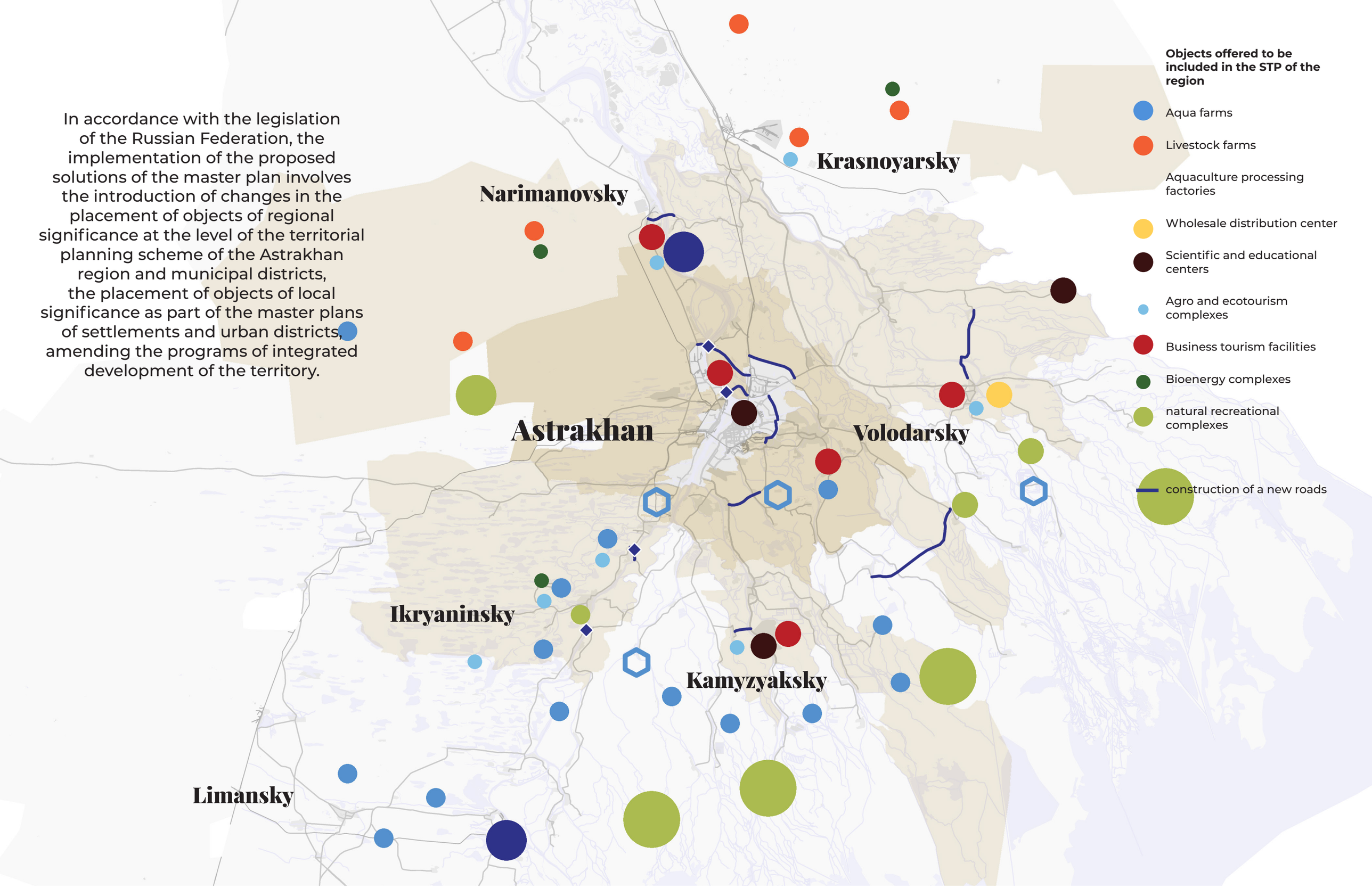

Priority of implementation
1 line of growth points
2 line of growth points
3 line of growth points
1 stage of the road network
2nd stage of road network
3 stage of the road network
Narimanov
Krasniy Yar
Astrakhan
Volodarsky
Ikryanoe
Kamyzyak
Liman
Оля

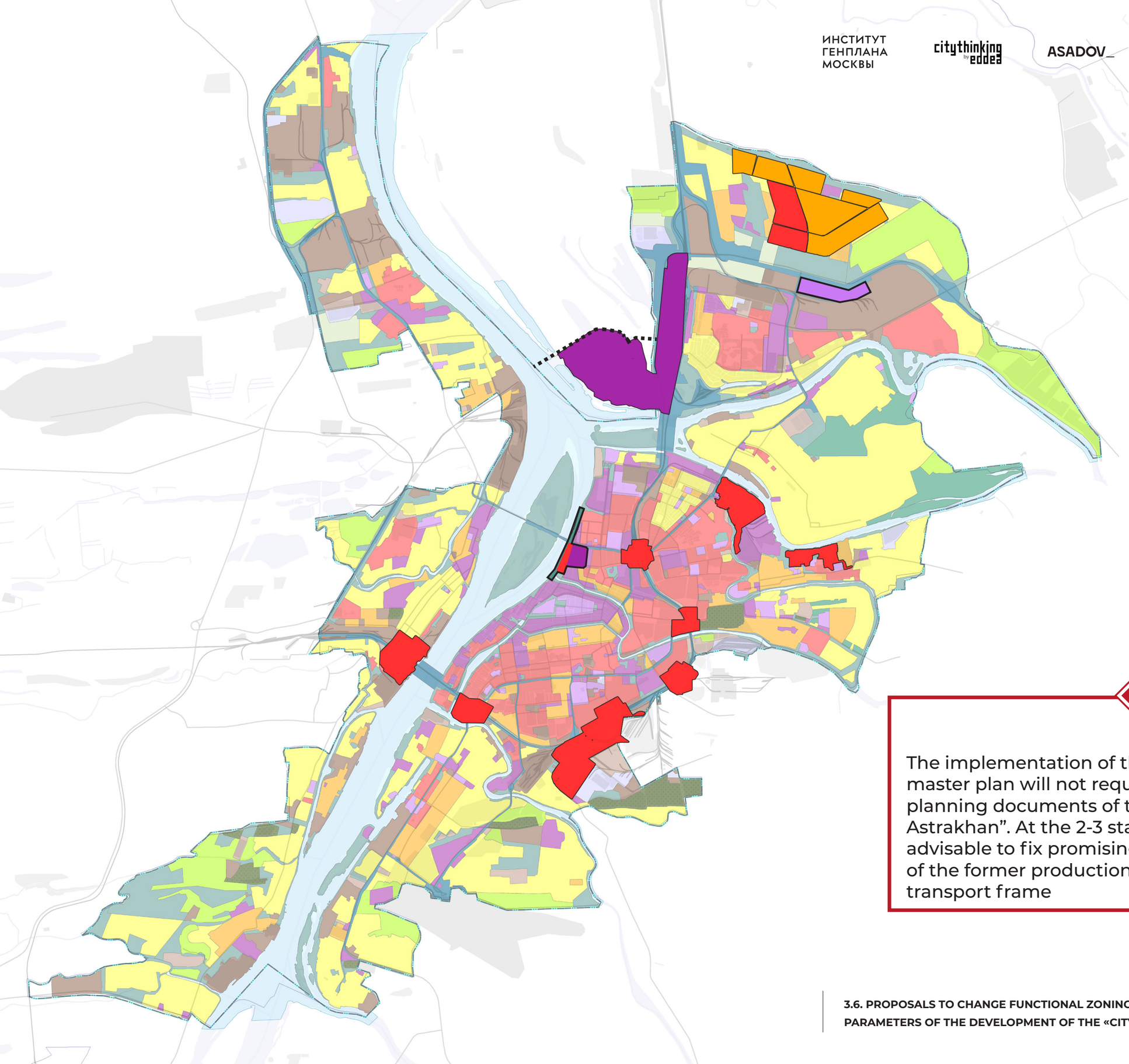
Priority of implementation

- 1 line of growth points
- 2 line of growth points
- 3 line of growth points

SCHEME OF THE PLANNED LOCATION OF NONLINEAR CAPITAL CONSTRUCTION OBJECTS OF LOCAL, REGIONAL, FEDERAL AND INTERNATIONAL SIGNIFICANCE ON THE TERRITORY OF THE MUNICIPAL DISTRICT «CITY OF ASTRAKHAN»

In accordance with the legislation of the Russian Federation, the implementation of the proposed solutions of the master plan involves the introduction of changes in the placement of objects of regional significance at the level of the territorial planning scheme of the Astrakhan region and municipal districts, the placement of objects of local significance as part of the master plans of settlements and urban districts, amending the programs of integrated development of the territory.





- Зона застройки индивидуальными жилыми домами
- Зона застройки малоэтажными жилыми домами
- Зона застройки многоэтажными жилыми домами
- Зона кладбищ
- Зона лесов
- Зона рекреационного назначения
- Зона режимных объектов
- Зона садоводческих, огороднических или дачных некоммерческих объединений
- Зона специализированной общественной застройки
- Зона транспортной инфраструктуры
- Коммунально-складская зона
- Многофункциональная общественно-деловая зона
- Производственная зона
- Поверхностные водные объекты
- Зона сельскохозяйственных угодий

The implementation of the priority measures of the master plan will not require amending the territorial planning documents of the municipal unit “City of Astrakhan”. At the 2-3 stage of implementation, it is advisable to fix promising development sites in the place of the former production territories and nodes of the transport frame

The scale of consideration of the master plan is subordinated to the general hierarchy from large to private: agglomeration - centers of districts - Astrakhan - separate territories.

As part of the master plan of the Astrakhan agglomeration, proposals have been formed that relate to a wide range of areas. In addition to the general economic development strategy, the master plan also includes more detailed investment projects - priority development areas. Most of them are located in the center of the agglomeration - the city of Astrakhan.

At the stage of determining the scenarios of development of the agglomeration of Al in the structure of the master plan is about means page Amer and under-development strategy for the territory. Strategies and sub-strategies determine the key and priority tasks for the areas of development of the territory selected by the master plan .

The principal model of agglomeration includes the formation of nuclei-centers of various orders: 1. Interregional centers: a multifunctional center with unique city-forming functions - Astrakhan , specialized centers with unique city-forming functions: Narimanov, Ikryanoe, Olya, Karaozek; 2. Agglomeration centers: multifunctional centers dominated by: Volodarsky, Krasny Yar, Kamyzyak, Liman; specialized centers: Tumak, Bolshoi Mogol, Yaksatovo, Kirovsky; 3. Regional multifunctional centers : Seitovka, Nachalovo, Buruny, Krasnye Barrikady, Trudfront, Zelenga, Kalinino.

The master plan proposes the development of 6 main sectors of the economy:

- Agro - approximately 2 025 workplaces
- Travel - approximately 7 700 workplaces
- Scientific innovations, eco technologies - approximately 20 750 workplaces
- Logistics - approximately 3 500 workplaces
- Fisheries, animal husbandry - approximately 2 500 workplaces
- Shipbuilding, mechanical engineering - approximately 6 300 workplaces

The scenario proposes strengthening the directions of spatial development associated with the selected priority economic sectors:

1. Eco technologies - placement of bioenergy complexes: Krasnoyarsk, Narimanovskiy, Ikryanskiy districts; development of alternative energy sources - solar panels - everywhere
2. Fishing and fish farming industry: placement of aqua farms in Limansky, Ikryansky, Kamyazksky districts, livestock farms - Krasnoyarsky, Narimanovsky district , aquaculture processing factories - Volodarsky, Privolzhsky, Kamyzyaksky districts
3. Commodity distribution and scientific and educational direction: placement of a wholesale distribution center - Volodarsky, scientific and educational centers: Krasnoyarsk, Kamyzyakinsky districts, Astrakhan
4. Agriculture: placement of agro and ecotourism complexes: Narimanovsky, Volodarsky, Privolzhsky, Ikryansky, Limansky, Kamyzyakinsky districts
5. Tourism: objects of business tourism - Volodarsky, Narimanovsky, Kamyzyakinsky, Privolzhsky regions, Astrakhan.

The priority tasks are continued in the description of specific measures for the territorial and programmatic development of the territory, which include both a description of specific growth points and development subprograms (management level).

The main activities in the field of transport development are bypass roads in the north, east and south of the city of Astrakhan and cross links in Kamyzyaksky, Volodarsky and Krasnoyarsk districts.

With regard to the center of agglomeration - the city of Astrakhan, it is proposed:

It is proposed to develop public transport with the help of the city train, new bus routes and municipal river transport.

The direction of development of the reorganization of inefficient industrial zones , creating a compact multifunctional public complexes service peripheral areas.

A unified system of green spaces is proposed in the form of recreational circular routes.

Much attention is paid to the preservation of cultural heritage.

In addition, for each district center, new construction sites and landscaping of green areas of public use have been proposed.

Housing construction sites have been identified to provide affordable and quality housing. The volume of housing construction at the main points of growth by 2032 will amount to 5.6 million square meters.

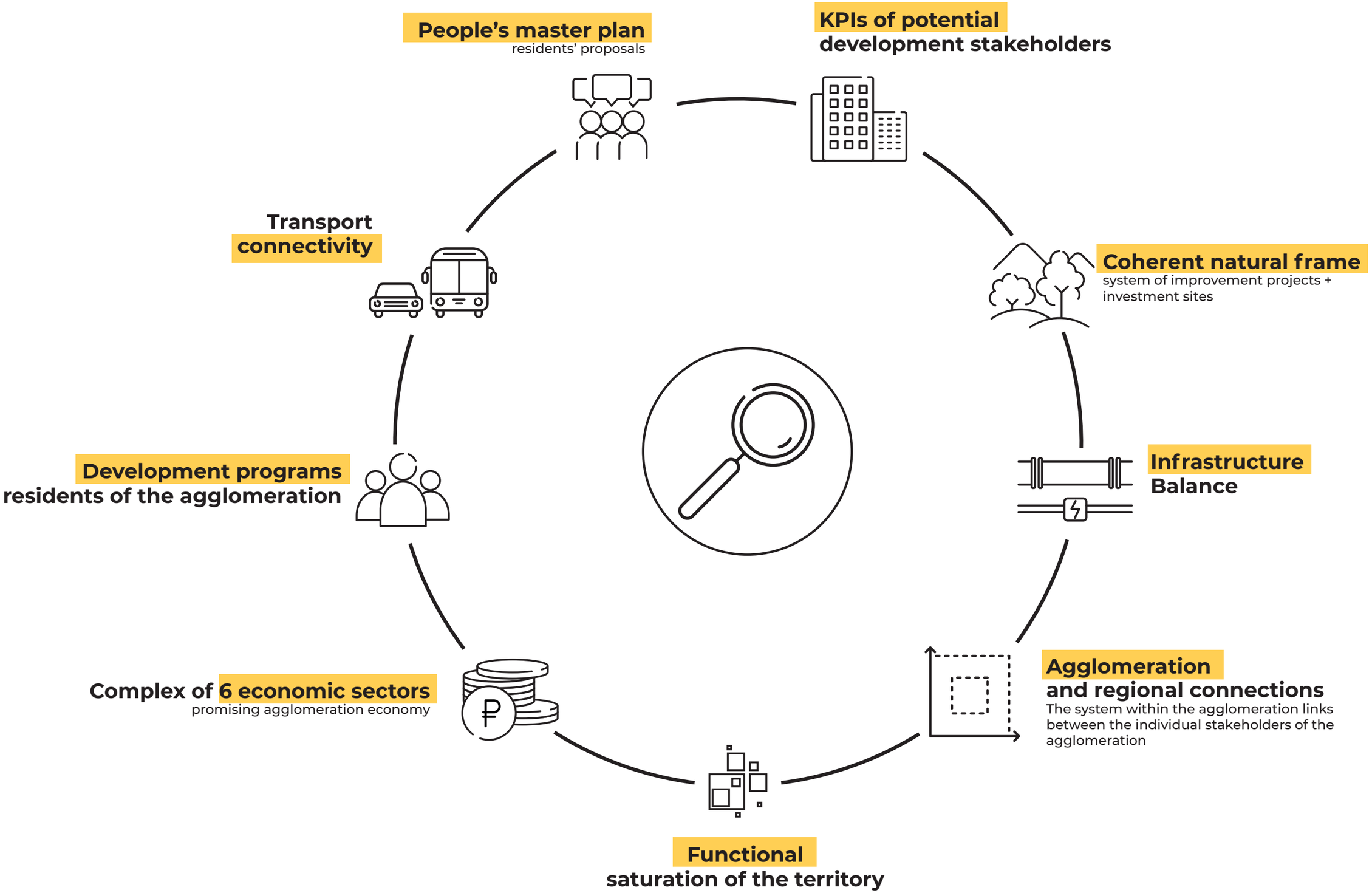
Due to the measures proposed for implementation on the territory of the agglomeration, it is planned to stop the population decline (according to the depressive forecast, the population of the agglomeration will decrease and amount to 805,750 people) and to start growing from the existing 834,725 people (2021) up to 885 100 people by 2032

Fina nsovye and other socio-economy cally e ffekty implementation of the proposed master -plan are reflected in the plan is implemented tion - bookmark yuchitelnoy structural part ma ster plan.

On the territory of the city of Astrakhan and the Astrakhan agglomeration, the following priority areas for reorganization and transformation of functions have been identified:

1. 1Cultural and educational you machine cluster (southern port)
2. Kos area
3. Complex development area along the street. Baku
4. Northern residential area
5. Hospitality and business cluster
6. Olya village (territory near the Olya SEZ in the Liman district)

4 DETAILED ARCHITECTURAL AND PLANNING SOLUTIONS


People’s master plan
residents’ proposals
KPIs of potential
development stakeholders
Transport
connectivity
Coherent natural frame
system of improvement projects +
investment sites
Development programs
residents of the agglomeration
Infrastructure
Balance
Complex of 6 economic sectors
promising agglomeration economy
Agglomeration
and regional connections
The system within the agglomeration links between the individual stakeholders of the agglomeration
Functional
saturation of the territory

Cultural and educational exhibition cluster

(examples, Vladivostok, Sevastopol, Kaliningrad and Kemerovo)

Federal culture and education localized on the territory. Accessibility of the population - where to place it so that it is as efficient as possible.

The project budget is 42-44 billion rubles.

Interuniversity scientific educational campus

A total of 10 such clusters are expected in Russia. Three clusters have already been identified. They are fighting for inclusion in the remaining 7 (examples of tough competitors are Moscow, St. Petersburg, Tomsk, Novosibirsk and even Samara - you cannot objectively win against them), a political decision of the federal center is needed.

The project budget is 40 bln. rub A site in the north has been identified. Universities of the Ministry of Culture, Defense and other large universities.

Public and business cluster

It is assumed that the first two clusters will pull the need for a hotel and business function that will attract investors to this sector.

In addition, the cluster can be supplemented with a representation of the Caspian states, a congress center, a representation of the heads of agglomeration districts (agglomeration council), a competence center in the field of eco-agriculture.

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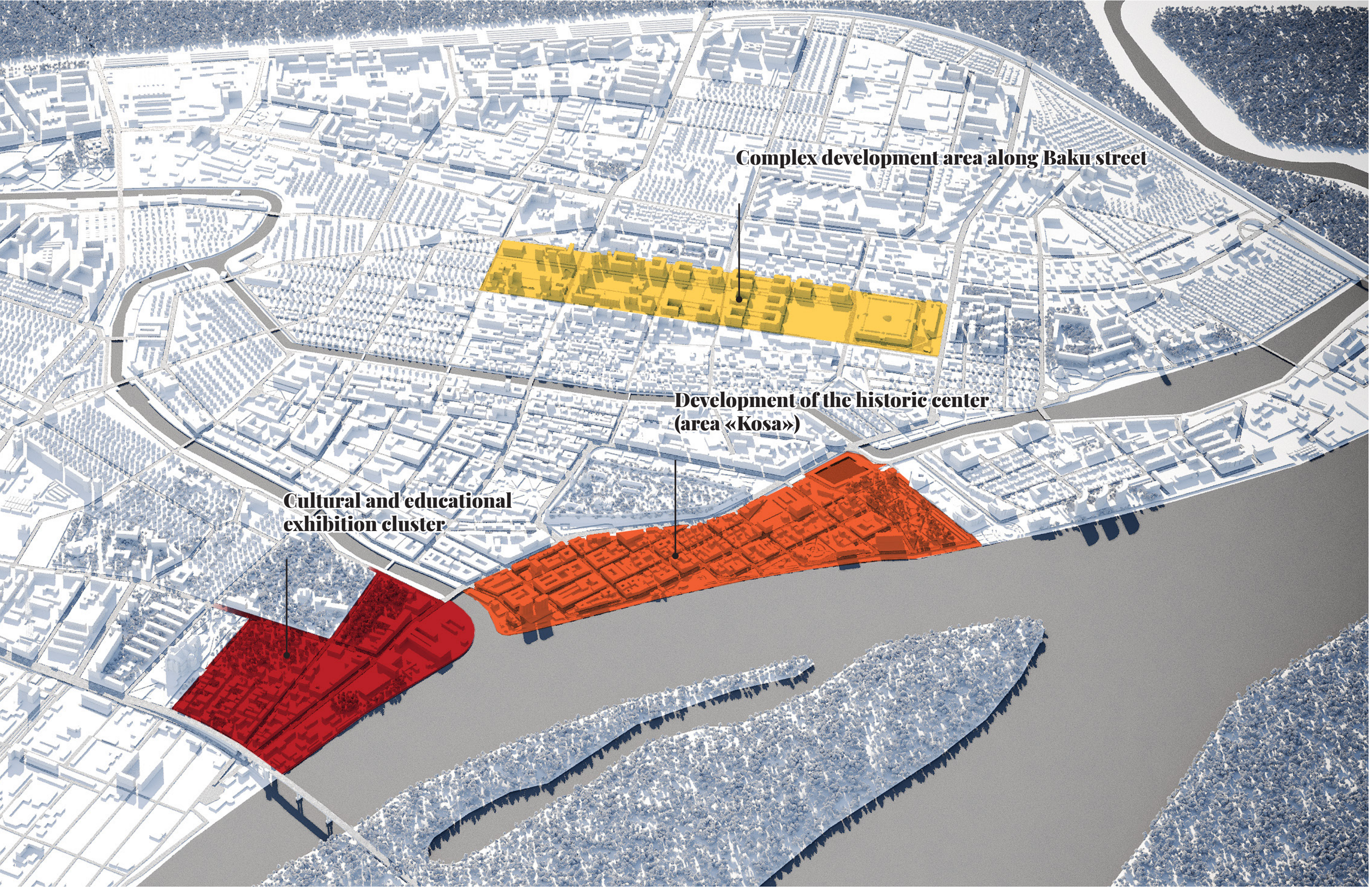
key projects for the development of architectural and planning solutions:

1. Development of the historical center (the area of the Spit and the White City «)
2. Cultural and educational exhibition cluster
3. Interuniversity scientific and educational campus
4. Hotel and business cluster
5. Children's cultural and educational center on Latysheva
6. Territory of integrated development along Bakinskaya street

key projects of landscape and architectural solutions

7. Improvement of the urban island-plot

Growth points	Units	Development of the historical center (the area of the Spit and the White City «)	Cultural and educational exhibition cluster	Interuniversity scientific educational campus	Hotel and business cluster	Children's cultural and educational center on Latysheva	Complex development area along Baku street	Northern residential area	Village SEZ Olya
Residential area, sq.m.	sq.m.	104772	202373	-	1655400	-	1461000	2165380	85990
Population, people	ppl	3492	6746	-	41385	-	36525	54135	4300
Greening of residential areas	ths.sq.m.	20,9544	40,4746	-	248,31	-	219,15	324,807	25,797
secondary school sites	Ha	1,57	3,03	-	18,58	-	16,40	24,31	1,93
areas of preschool educational institutions	Ha	0,34	0,66	-	4,06	-	3,58	5,31	0,42
green areas	Ha	1,71	3,30	-	20,24	-	17,86	26,47	2,10
service areas	Ha	0,34	0,66	-	4,06	-	3,58	5,31	0,42
closed parking lots	Ha	2,28	4,40	-	27,02	-	23,85	35,35	2,81
DOW places	units	437	843	-	5173	-	4566	6767	537
School locations	units	349	675	-	4139	-	3653	5413	430
Non-food stores	sq.m.	349,24	674,58	-	4138,50	-	3652,50	5413,45	429,95
Grocery stores	sq.m.	628,63	1214,24	-	7449,30	-	6574,50	9744,21	773,91
Consumer service enterprises	work places	17	34	-	207	-	183	271	21


Complex development area along Baku street
Development of the historic center
(area «Kosa»)
Cultural and educational
exhibition cluster

RC «Spanish
quarters »Moscow
4000 apartments, 2017

Compact
By its morphology

Complex
By organization

Effective
By its metabolism

Cohesive
By its social
characteristics

Compact
By its morphology

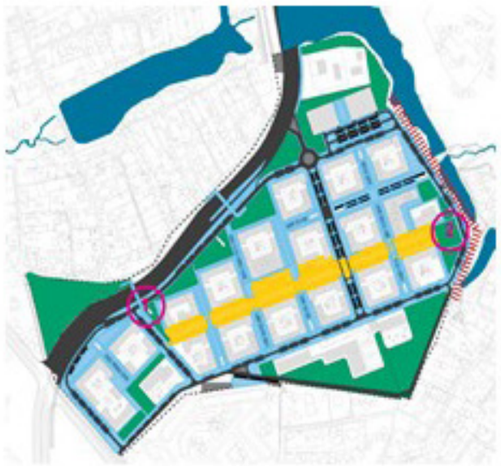
Complex
By organization

Effective
By its metabolism

Cohesive
By its social characteristics

Numerous Variables> Scenario Modeling> Optimizing Key Performance Indicators

Adjusted compactness



Public spaces

Public transport coverage

Альтернативная транспортная инфраструктура

Diversity

Density of residential development

Water consumption

Power consumption

RC «Spanish quarters »Moscow
4000 apartments, 2017

Our vision of the new urban model in Astrakhan

The Astrakhan Region provides a unique opportunity to create a sustainable, multifunctional and inclusive territory attractive to tourists. Which one wants to visit and live in order to stay and prosper. To do this, we propose to implement 15 principles of the concept of ecosystem urbanism

City blue and green master plan

With this approach, each of the proposed development sites in the Astrakhan agglomeration is viewed as an ecosystem in which environmental, social and economic factors can be assessed using a set of key performance indicators (KPIs) that allow comparing several scenarios with different stakeholders - creating a strategic result of Blue and the Green Master Plan of Astrakhan

15 PRINCIPLES OF ECOSYSTEMIC URBANISM

1. COMPACTNESS vs. DISPERSION
Reducing land use by increasing the proximity and critical mass of inhabitants and legal persons.

2. DECOMPRESSION vs. COMPRESSION
Urban equilibrium.

3. ACCESSIBILITY vs. PRIVATE MOBILITY
Alternative transport to cars, guaranteeing that all citizens can access the city.

4. CITIZEN vs. PEDESTRIAN
Uses and rights in the public space.

5. HABITABILITY IN THE PUBLIC SPACE
Controlling environmental variables.

6. COMPLEXITY vs. SIMPLIFICATION
Increasing urban complexity with a greater and wider range of legal persons.

7. HYPERCONNECTIVITY
Information and knowledge flows in the digital era.

8. GREEN SPACE vs. ASPHALT
Increasing green space and urban biodiversity.

9. SELF SUFFICIENCY vs. DEPENDENCY
Moving towards energy sufficiency.

10. WATER SELF SUFFICIENCY WITH NEARBY AND RENEWABLE RESOURCES
Conservation in the water cycle.

11. REDUCE, REUSE, RECYCLE vs. WASTE
Moving towards self-sufficiency in terms of materials.

12. ADAPTING TO AND MITIGATING THE IMPACT OF CLIMATE CHANGE

13. SOCIAL COHESION vs. SOCIAL EXCLUSION
Moving towards social cohesion with a mix of income.

14. UNIVERSAL ACCESS TO HOUSING IN MORE SUSTAINABLE BUILDINGS

15. BALANCED RESOURCES AND DISTRIBUTION OF FACILITIES

TREE TRUNK
Connected water-green frame along rivers **NATURE**

FLORA
Strengthening the quality of landscaping and landscaping of coastal areas

FAUNA
Full-fledged public spaces in linear parks along waterways

ECOSYSTEM
Revitalizing Coastal Areas Through Event Programming

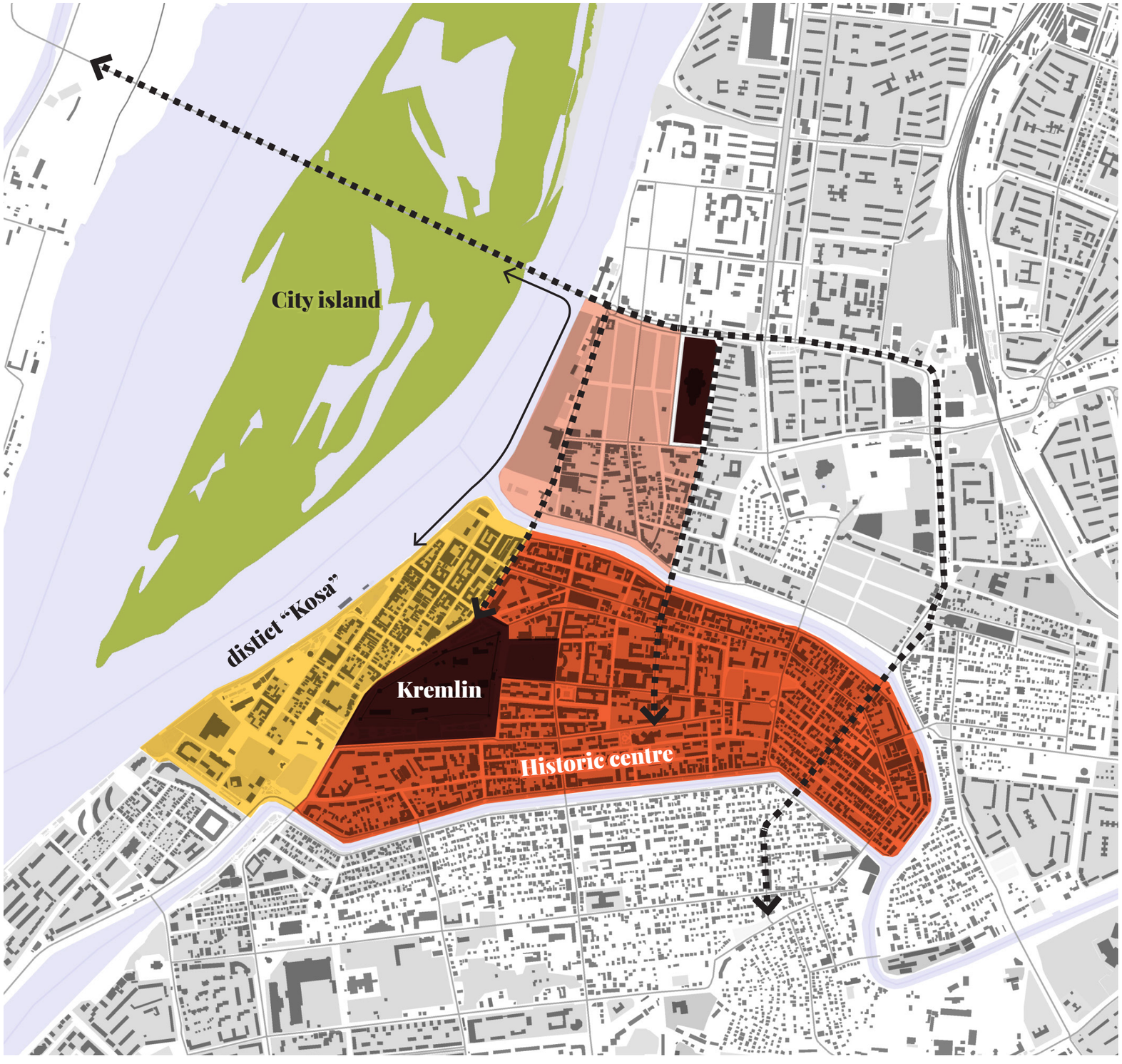
ROOTS
expansion of the network of a water-green frame of public spaces throughout the agglomeration

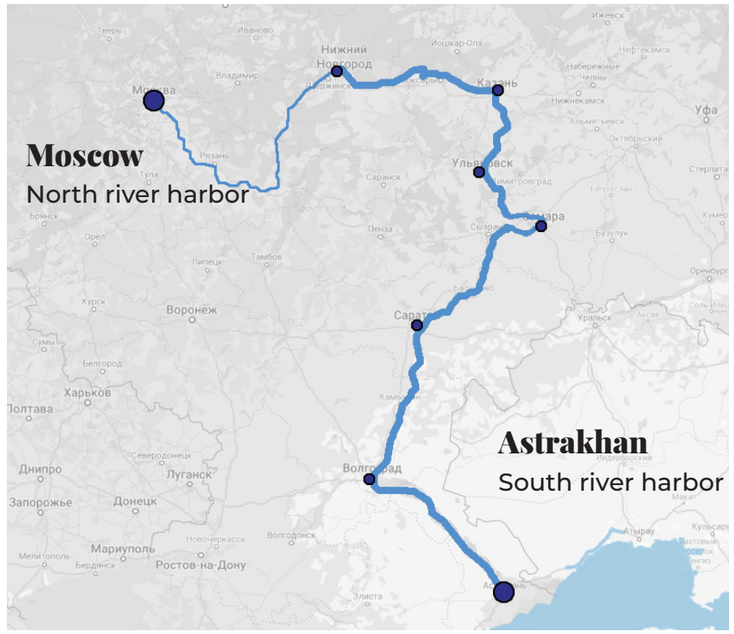
DIVERSITY
Formation of a recognizable appearance of the building, revealing local identity

PARCELING
Quarter buildings that delimit private and city-wide spaces

COSINESS
Public spaces of city streets and private courtyards with a homely atmosphere **CITY**

WELLNESS
Balanced natural and urban environment for a prosperous life





The port site assumes the placement of the following functions:

- The southern point of the Moscow-Astrakhan river route (river station);
- Federal Cultural and Exhibition Center;
- A new regional market «Astrakhan Isady»;

public areas
living areas
mixed multifunctional zones

recreational areas
public and recreational areas

territory of restoration of historical buildings while maintaining the function

Priority

The project provides for the complete preservation of the OKN and the restoration of some of them in the first place.

Territory transport frame

existing road network of city-wide significance

existing local road network

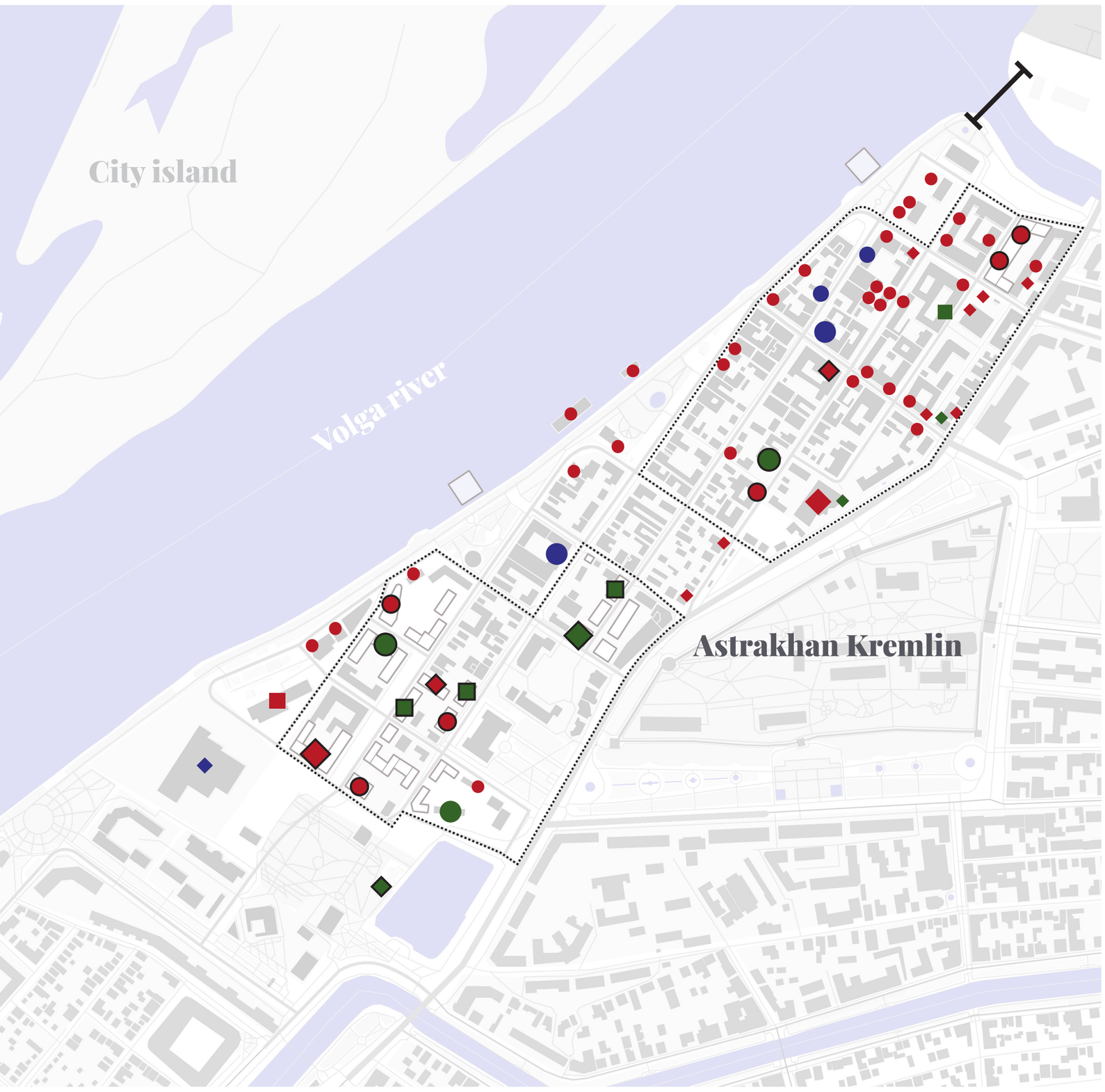
planned road traffic system of local significance

long-term proposals for the creation of additional links (beyond the implementation period of the master plan)

Priority

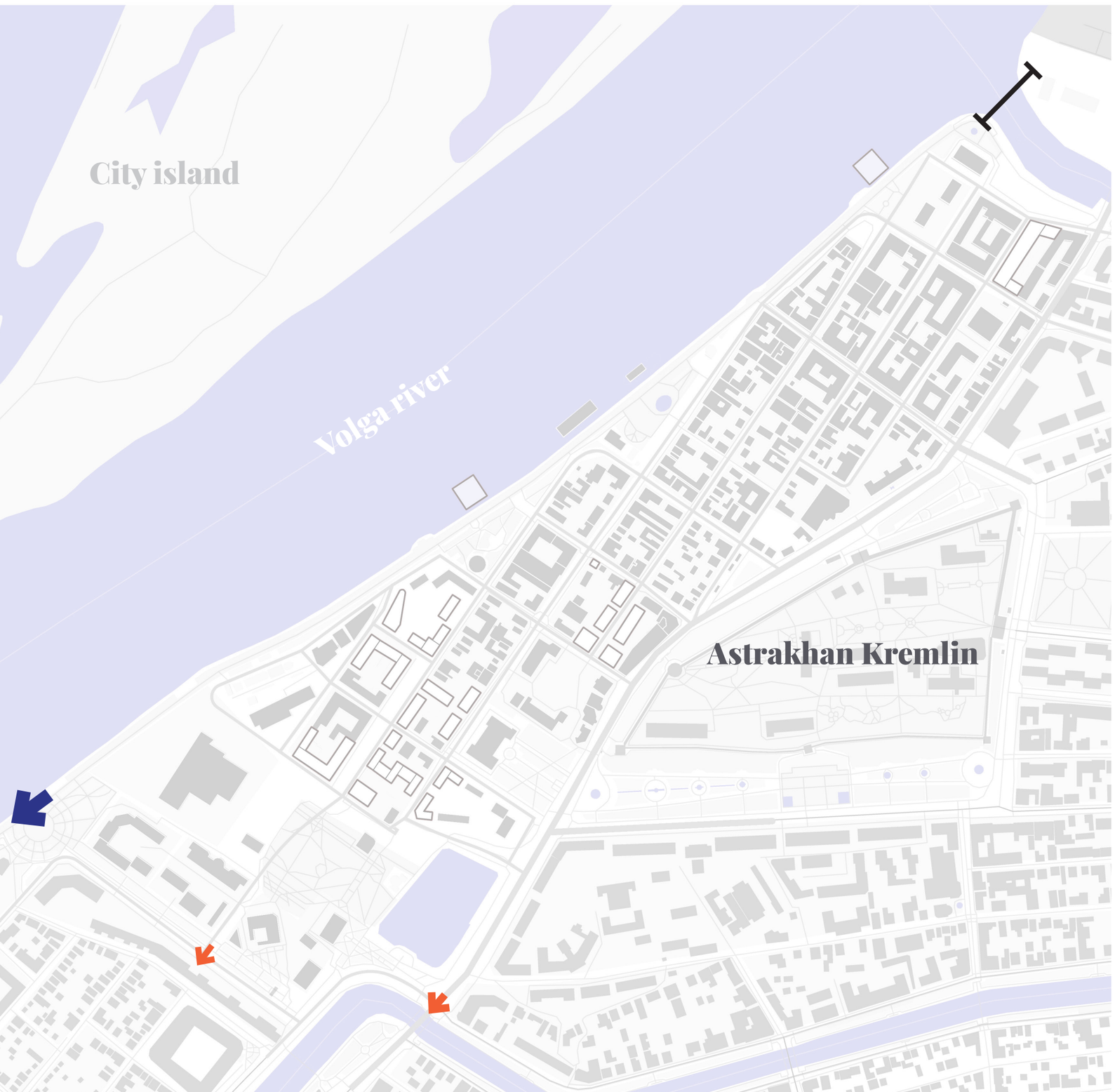
The territory of the Spit today is already distinguished by one of the highest density of the road network.

The main task of the development of the transport frame is to increase the connectivity of the territory with the creeping zones by increasing the number of alternative entrances and exits from the territory.



Objects of social, commercial, municipal infrastructure:

exs.	pr.	
◆	◆	trade
●	●	public catering
■	■	hotels
●		medicine
●	●	Preschool
◆	◆	libraries
■	■	museums



Priority measures for engineering support and engineering protection of the territory

- reconstruction of engineering structures of the Volga river embankments
- improvement and strengthening of the profiles of the inner canals of the city
- priority streets for the development of the storm sewer system in the framework of the developed improvement projects

- The financial analysis was performed in Russian rubles using the discounted cash flow (DCF) method on a quarterly basis;

- The total area of new construction and reconstruction - 211,533 sq. M, including:

Residential area: 104 772 sq.m

Hotels: 37 358 sq.m

Cultural objects: 16,011 sq. M.

Objects of trade: 53 393 sq. M.

- The forecast period of the financial model is 20 years;

- As part of the development analysis, a cash flow model was developed for own and borrowed funds invested in the project;

- Share of debt financing - 60% (level of coverage of required investments);

- Estimated cost of borrowed funds for residential development (loan rate) - 4% -8%.

- Estimated cost of borrowed funds for other facilities - 9%.

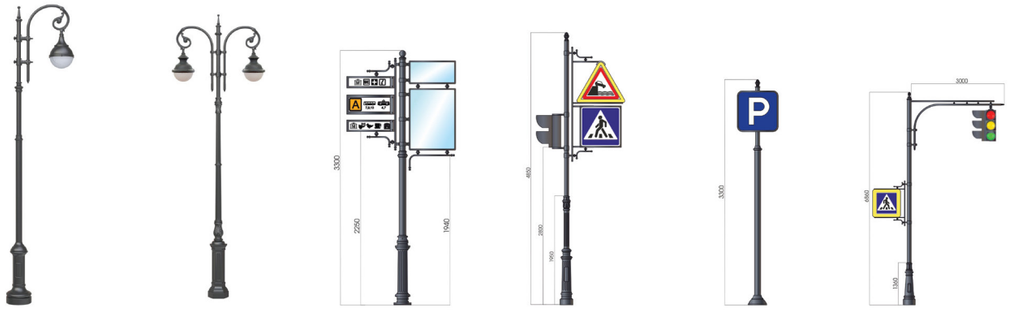
- Taxation is accounted for according to the base rates of the Tax Code of the Russian Federation

- Share of private investment - 100%

- Discount rate - 9.0% (CAPM), 7.8% (WACC)

- Calculation for commercial objects is made on the basis of the flow, taking into account the terminal value at the end of the forecast period, with a capitalization rate of 10%

Lamp Pole Design



Bench design

Material recommendations

Дизайн МАФ/ограждений

Signs design (AO brand book)

Navigation design (AO brand book)

public areas
living areas
mixed multifunctional zones

recreational areas
public and recreational areas

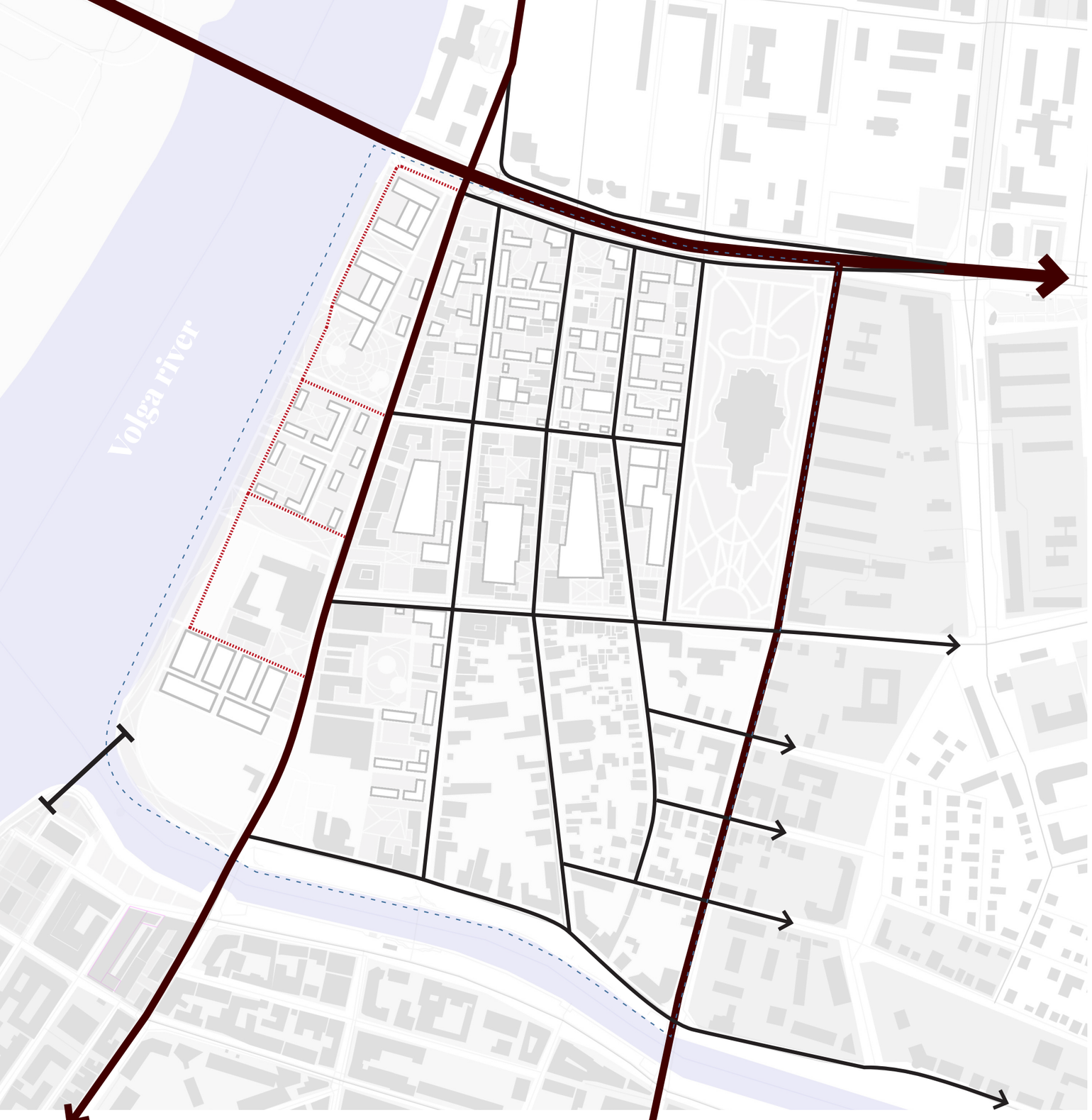
territory of restoration of historical buildings while maintaining the function

potential development of the territories of the RF Ministry of Defense (mini «Park Patriot»)

Priority

The project provides for the complete preservation of the OKN and the restoration of some of them in the first place.

In some of the neighborhood courtyards, it is proposed to make covered exhibition spaces.

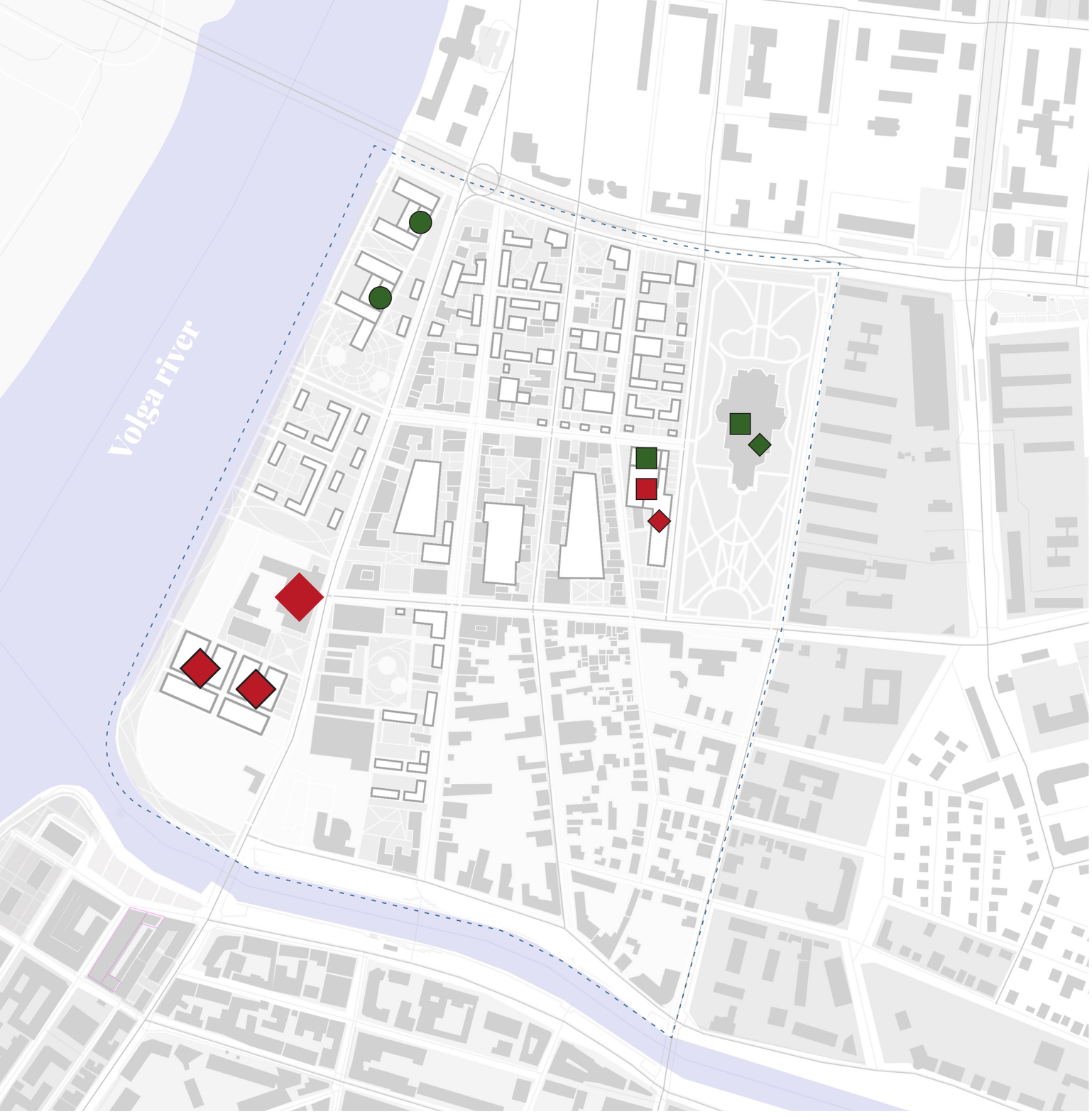


Territory transport frame

- existing road network of city-wide significance
- existing local road network
- planned road traffic system of local significance
- pedestrian bridge

The draft master plan does not propose a significant change in the transport frame within the boundaries of the territory of the South Port growth point.

Due to the development of the territories, the connectivity of the pedestrian frame is increased, including the formation of a new pedestrian bridge, which will unite the project embankment with the existing one.



Objects of social, commercial, municipal infrastructure:

exs.	pr.	
◆	◆	trade
●	●	public catering
■	■	hotels
●		medicine
●	●	Preschool
◆	◆	libraries
■	■	museums

Priority measures for engineering support and engineering protection of the territory

- reconstruction of engineering structures of the Volga river embankments
- improvement and strengthening of the profiles of the inner canals of the city
- priority streets for the development of the storm sewer system in the framework of the developed improvement projects

- Financial analysis was performed in Russian rubles using the discounted cash flow (DCF) method on a quarterly basis;

- Financial analysis was performed for 2 clusters Growth points:

Part 1 - hotel and restaurant business, residential buildings and cultural objects on an area of 16.32 hectares

Part 2 - hotel and restaurant business, cultural and commercial objects, residential buildings and on an area of 43.3 hectares

- Total area of reconstruction - 115 757 sq. M, new construction - 505 091 sq. M, total 620 849 sq. M. m, including:

hotel and restaurant business - 231 468 sq.m.

low-rise residential buildings - 202,373 sq.m

trade objects - 106 711 sq. m.

cultural objects - 80,296 sq. m.

- Forecast period of the financial model - up to 20 years;

- As part of the analysis, a model of cash flows for own and borrowed funds invested in the project was developed;

- Share of debt financing - 60% (level of coverage of required investments);

- Estimated cost of borrowed funds for commercial objects (loan rate) - 9%.

- Estimated cost of borrowed funds for residential development (loan rate) - 4% -8%.

- Taxation is accounted for according to the base rates of the Tax Code of the Russian Federation

- Discount rate: 9.0% (CAPM), 7.1% -7.9% (WACC)

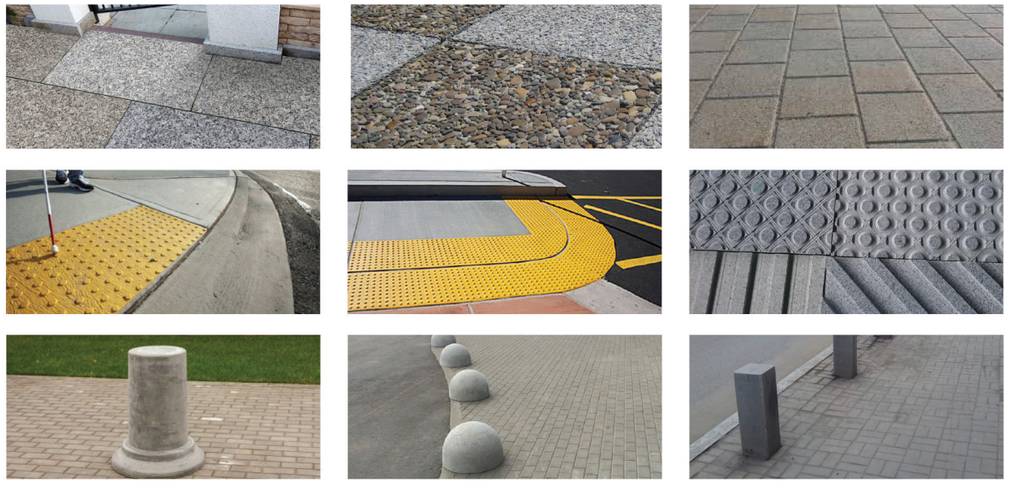
- Calculation for commercial objects is made on the basis of the flow, taking into account the terminal value at the end of the forecast period, with a capitalization rate of 10%

VINCI

RANGE ROVE
В999ЕК 30 RUS

Lamp Pole Design

Material recommendations



Bench design

MAF design

Signs design (AO brand book)

Stop design (AO brand book)

- public areas
- living areas
- recreational areas
- scientific and technological zones

1. Administrative center
2. Conference center
3. Educational and laboratory buildings
4. Scientific and technological building
5. Experimental laboratory
6. Scientific and educational center
7. Educational buildings
8. Transport node
9. Multifunctional public complex
10. Social infrastructure
11. Commercial services
12. Dorms
13. Sports objects
14. Moscow Railway
15. Cultural and entertainment center
16. Library
17. Public service

Intercollegiate character (in terms of accommodation)

Relationship with development strategies of the constituent entity of the Russian Federation and universities

Confirmed need for places to stay from 4,000 places (VPO-1, VPO-2)

Urban environment quality indices (quality assessment tool)

The presence of various functional areas of the created campus as an advantage

Energy efficient construction technologies

High level of environmental friendliness (assigned ESG rating)

A unique concept of architectural and urban planning solutions

The presence of a marketing research, which includes a survey of students, postgraduates, faculty members and the National Assembly

The level of the estimated budgetary provision of the constituent entity of the Russian Federation

Availability of a formed land plot for the created campus facilities

The maximum amount of co-financing from the federal budget is 60%

Readiness of the constituent entity of the Russian Federation to finance the provision of the campus with engineering networks and transport infrastructure

Walking distance between campus facilities no more than 30 minutes

Availability of design and estimate documentation

Participation of universities in the program of strategic academic leadership «Priority - 2030»

The territory of the campus is assigned to the priority and border geostrategic territories of the Russian Federation

The population of the cities of sale is more than 300 thousand people

In cities of implementation is located 4 universities or more

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INTERUNIVERSITY SCIENCE AND EDUCATION CAMPUS - 3D VISUALIZATION OF CONCEPTUAL SPACE-PLANNING SOLUTIONS

- Financial analysis was performed in Russian rubles using the discounted cash flow (DCF) method on a quarterly basis;
- Total area of new construction - 706 650 sq. M.
- The forecast period of the financial model is 20 years;
- As part of the development analysis, a cash flow model was developed for own and borrowed funds invested in the project;
- Share of debt financing - 60% (level of coverage of required investments);
- Estimated cost of borrowed funds for residential development (loan rate) - 4% -8%.
- Estimated cost of borrowed funds for other facilities - 9%.
- Taxation is accounted for according to the base rates of the Tax Code of the Russian Federation
- Share of federal funding - 35.6% (scientific and educational facilities)
- The share of financing from the budget of the subject - 5.3% (transport infrastructure facilities)
- Share of private investment - 59.1%
- Discount rate - for residential development: 9.0% (CAPM), 7.6% (WACC), for other properties: 9.0% (CAPM), 7.9% (WACC)
- Calculation for commercial objects is made on the basis of the flow, taking into account the terminal value at the end of the forecast period, with a capitalization rate of 10%

High level of connectivity

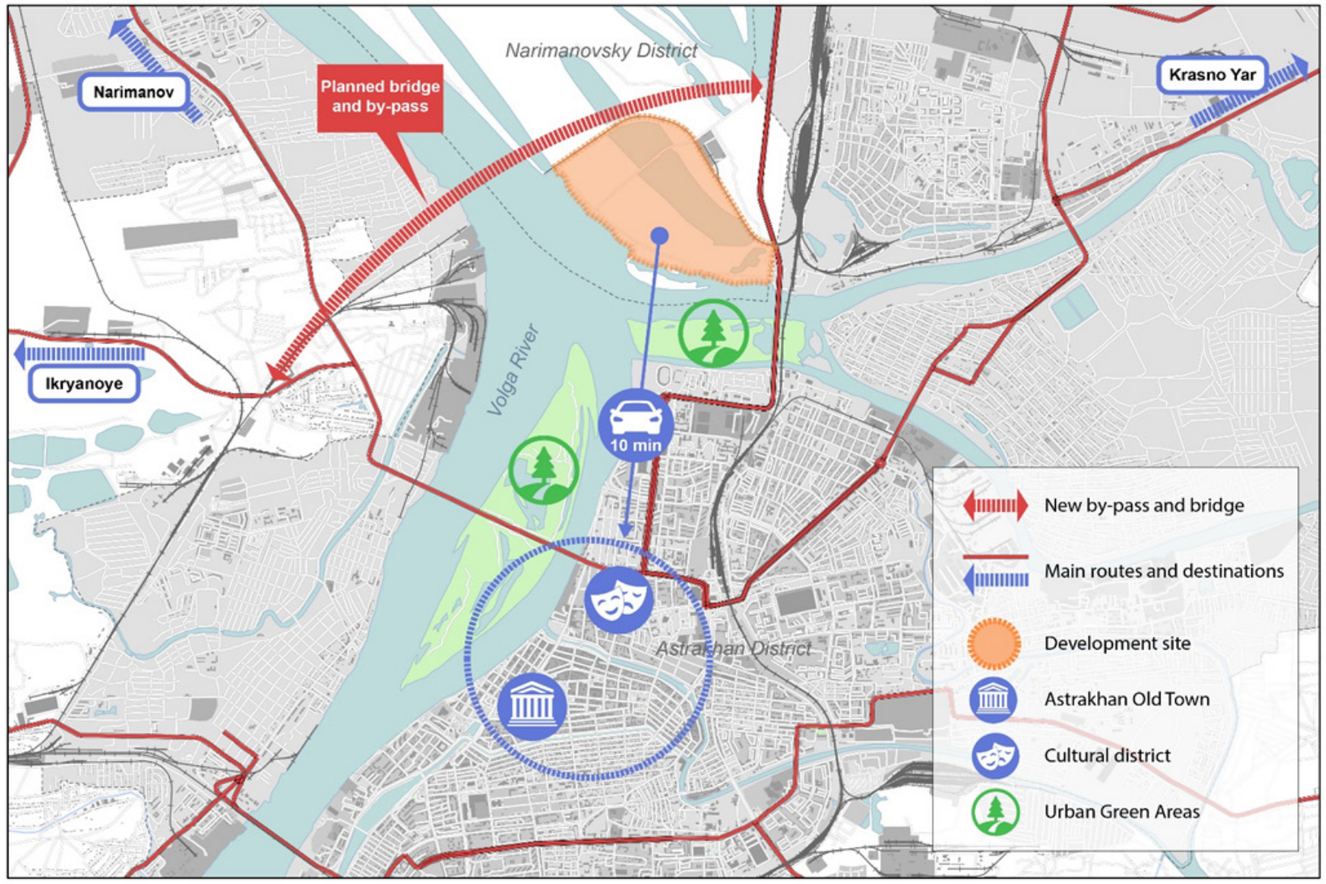
Among the advantages of the proposed site is the presence of planned new infrastructure facilities, and its development will help integrate them into a fully functional urban space

Closeness to valuable natural and cultural sites

The site is located ten minutes by car from the historical center of the city, the region rich in cultural objects and the City Island, as well as within walking distance from the Boldinsky Island.

An example of a growth model interconnected with natural blue-green frame

Located on the banks of the river, in an area saturated with natural objects - in particular, residual reservoirs, not far from about. Urban, this site has great potential for exemplary development in harmony with the natural environment.



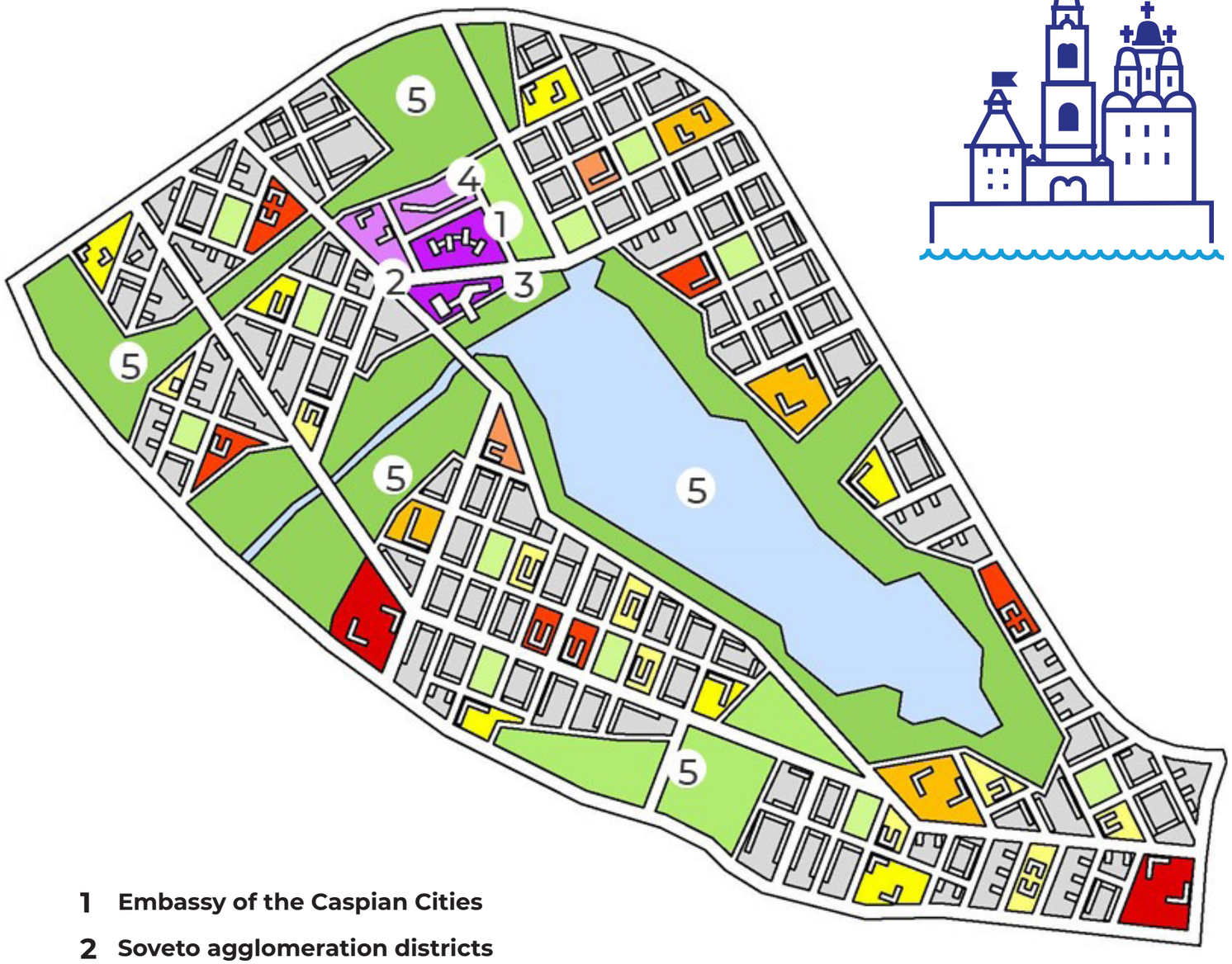
Plot size 492 hectares

HIGH LEVEL OF AVAILABILITY + CLOSE TO VALUABLE OBJECTS OF CULTURE AND NATURE + EXAMPLE OF A GROWTH MODEL IN RELATION TO THE NATURAL FRAME

The proposed layout plan for the Astrakhan area embodies all the key tasks and opportunities described earlier, creating

a new habitat, organically integrated into the urban environment and intertwined with the natural environment – a territory that disposes people to live, work and make plans for the future in Astrakhan.

The result is a network of urban corridors that ensures connectivity of natural features and waterways, which minimizes the threat of flooding in the city, supports biodiversity, facilitates access to green spaces, and increases the city's ability to adapt to climate change. The planning grid provides the necessary balance between the desired flexibility and the recommended standardization required for efficient industrial housing production.



1 Embassy of the Caspian Cities

2 Soveto agglomeration districts

3 Congress center

4 Competence Center for Sustainable Agriculture and Renewable Energy

5 Natural spaces

1

Plot location

The identified building plot in Astrakhan is located in the northern part of the city.

2

A network of water bodies and green corridors

On and around the site there are vegetation clusters worthy of conservation, and the water body located in its center - Erik Sennoy - will also be taken into account and preserved in the developed master plan.

3

Main route network

The site is bordered by the Volga delta from the west and an inter-municipal highway from the east. In the northwest of the site, a new bridge is planned across the Volga, which will connect this area with the western part of Astrakhan.

4

Homogeneous spaces

Based on the presence of “green” and “blue” areas of water and vegetation on the territory and the existing network of routes of movement, we can identify 5 undeveloped dry zones that have the potential to accommodate new residential complexes there.

1

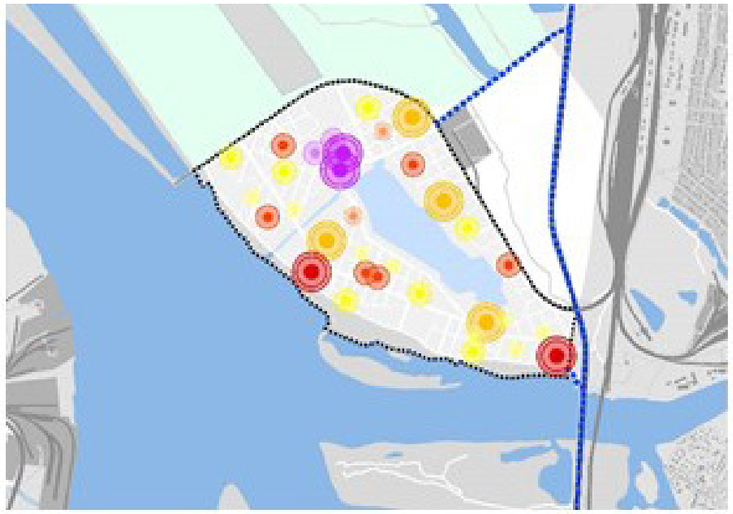
Green and blue natural spaces

The analyzed aquatic-vegetation frame helps us to structure the planning proposal for the development of the site. The existing natural corridors and facilities will be expanded and connected, creating a continuous network of attractive public spaces that are integrated into the surrounding natural landscapes.

2

Travel route network

A connected system of routes for transport and pedestrian movement is created on the basis of a rational planning grid, which, in turn, forms a compact microdistrict in harmony with the natural relief and configuration of the site. All of this is pushing residents to use sustainable modes of transportation such as walking and cycling.



3

Public and business buildings and service facilities

The strategically thought-out dispersed placement of service facilities and points of attraction provides a variety of functions and activities on the territory. Among them are trade, business and educational facilities. All this contributes to the formation of a compact environment and socially cohesive communities of citizens.

ТЕРРИТОРИАЛЬНЫЙ БАЛАНС / TERRITORY BALANCE	Sector 1	Sector 2	Total
	Площадь уч-ка (га) Plot area (ha)		
Общая площадь участка / Total plot area			492,0
Всего природных пространств — Сине-зеленая Стратегия Total natural spaces — Green and Blue Strategy			182,1
Чистая площадь застраиваемой территории Net planned area	134,26	175,68	309,9 (100%)
Зона зеленых насаждений общего пользования Green spaces network	12,8	4,1	16,9 (5,5%)
Центральный парк Central park	6,3	0	6,3 (2%)
Другие мелкие озелененные пространства и зоны отдыха Local green and recreational areas	6.5	4,1	10,6 (3,4%)
Зона объектов транспортной инфраструктуры Mobility network	51,38	69,03	120,41 (38,8%)
Уровень 1 Tier 1	28,26	37,28	65,53 (21,1%)
Уровень 2 Tier 2	7,19	11,04	18,24 (5,9%)
Уровень 3 Tier 3	16,44	20,71	37,15 (12%)
Зона многофункциональной общественно-деловой застройки Amenities	26,41	36,95	63,36 (20,4%)
Объекты административно-делового и торгового назначения Tertiary and commercial areas	3,84	22,7	26,53 (8,6%)
Объекты учебно-образовательного назначения Educational Use	13,45	14,26	27,71 (8,9%)
Конгресс-центр Congress centre	1,89	0	1,89 (0,6%)
Центр компетенции по экологичному сельскому хозяйству и возобновляемым источникам энергии Centre of competence for eco-agriculture and renewable energy	2,23	0	2,23 (0,7%)
Посольство городов Прикаспия Embassy of Caspian cities	2,93	0	2,93 (0,9%)
Совет районов агломерации Council of agglomeration districts	2,07	0	2,07 (0,7%)
Зона жилой застройки Residential	43,67	65,6	109,27 (35,3%)
Закрытые кварталы Enclosed blocks	29,26	29,52	58,78 (19%)
Открытые кварталы Open blocks	5,68	19,68	25,36 (8,2%)
Многоэтажная застройка High-rise	8,73	16,4	25,13 (8,1%)

ОБЩИЕ ХАРАКТЕРИСТИКИ / GENERAL FEATURES		Sector 1	Sector 2
Число жителей Number of Inhabitants		48 522	49 766
Количество ;илых помещений Number of Dwellings		16 174	16 592
Жилая застроенная площадь Residential TBA		808 260	847 110
Жилая площадь Residential Footprint		142 935	164 130
Среднее количество этажей Average amount floors	**Закрытые кварталы** Enclosed blocks	5	5
	Открытые кварталы Open blocks	6	5
	Многоэтажная застройка High-rise	10	7

- The financial analysis was performed in Russian rubles using the discounted cash flow (DCF) method on a quarterly basis;

- The total area of new construction is 2,254,725 sq. M, including:

Residential area: 1,655,370 sq.m

Hotel and business cluster: 599 355 sq. M

- The forecast period of the financial model is 20 years;

- As part of the development analysis, a cash flow model was developed for own and borrowed funds invested in the project;

- Share of debt financing - 60% (level of coverage of required investments);

- Estimated cost of borrowed funds for residential development (loan rate) - 4% -8%.

- Estimated cost of borrowed funds for other facilities - 9%.

- Taxation is accounted for according to the base rates of the Tax Code of the Russian Federation

- Share of private investment - 100%

- Discount rate - 9.0% (CAPM), 6.9% (WACC)

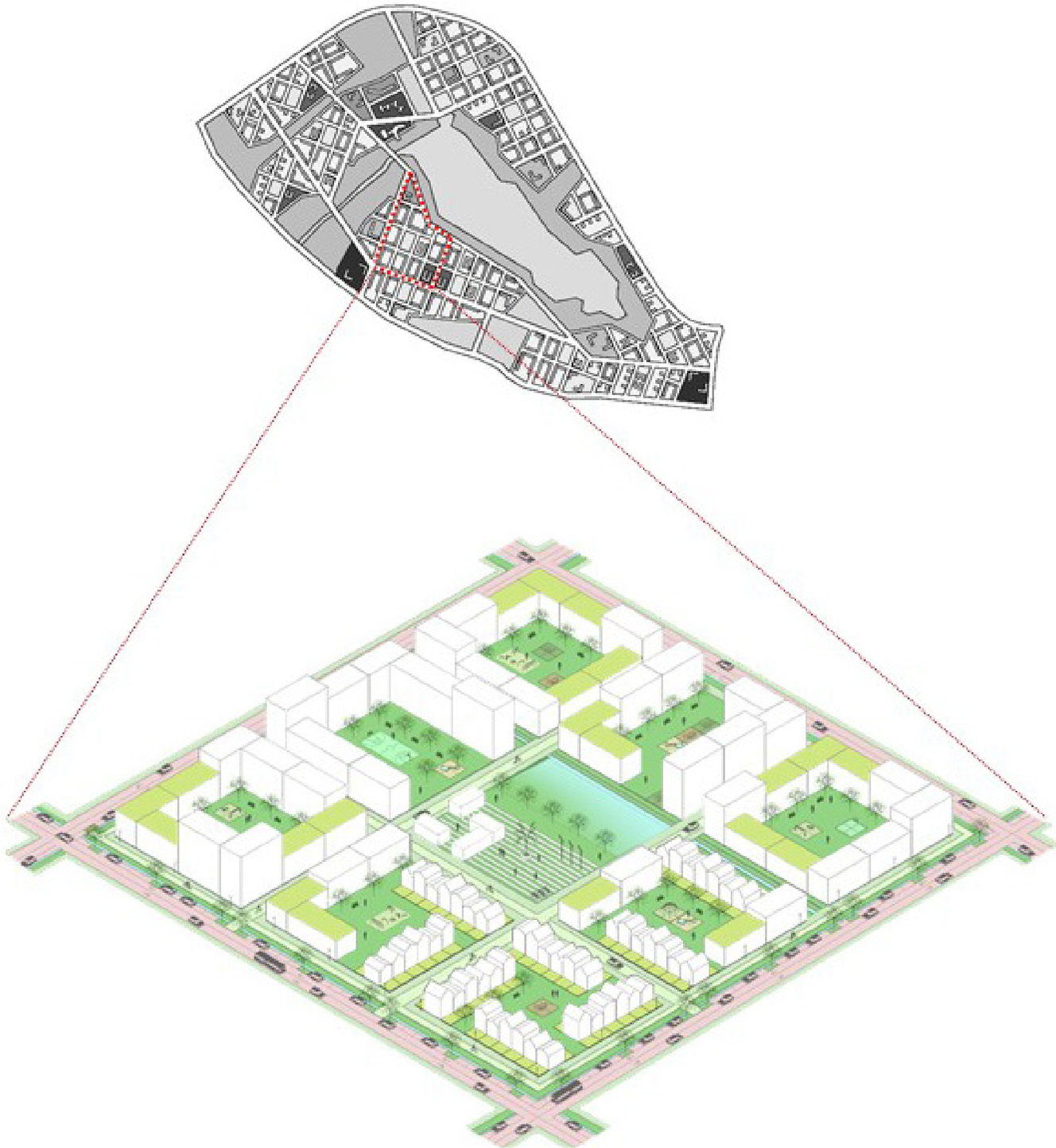
- Calculation for commercial objects is made on the basis of the flow, taking into account the terminal value at the end of the forecast period, with a capitalization rate of 10%

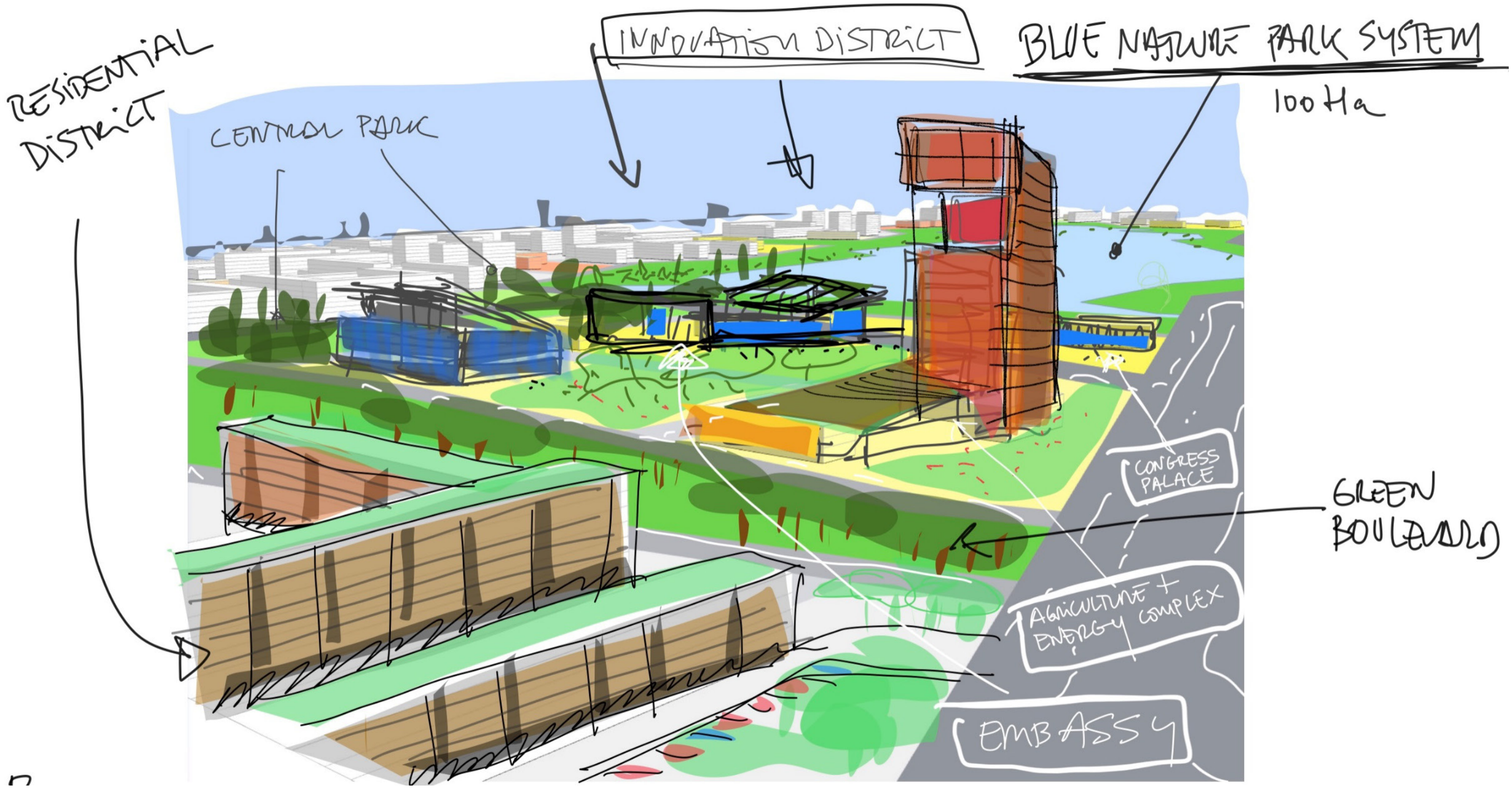
Public business cluster

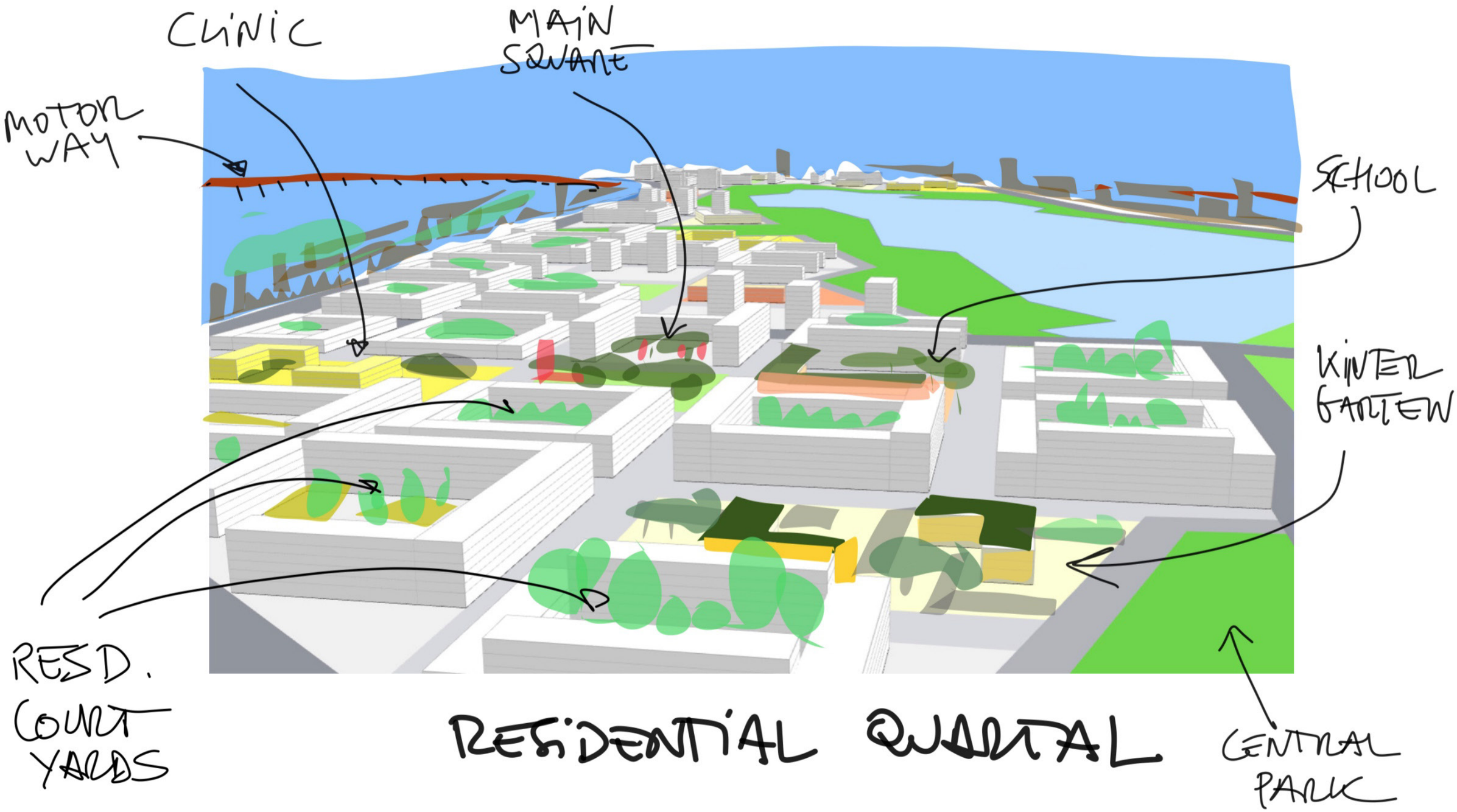
We propose to apply the super-quarter model: an urban-planning unit interconnected with the environment, which is the basis of our concept of eco-system urbanism

A super-quarter is a basic spatial unit (about 15 hectares), which can consist of one or several buildings and have one function (housing, education, commerce) or be multifunctional (unwanted premises on the ground floor and residential on standard floors). This compact model allows for the introduction of more blue-green infrastructure - natural spaces, and establishes a complete hierarchy of streets that are interconnected, accessible for crossings and safe for residents.

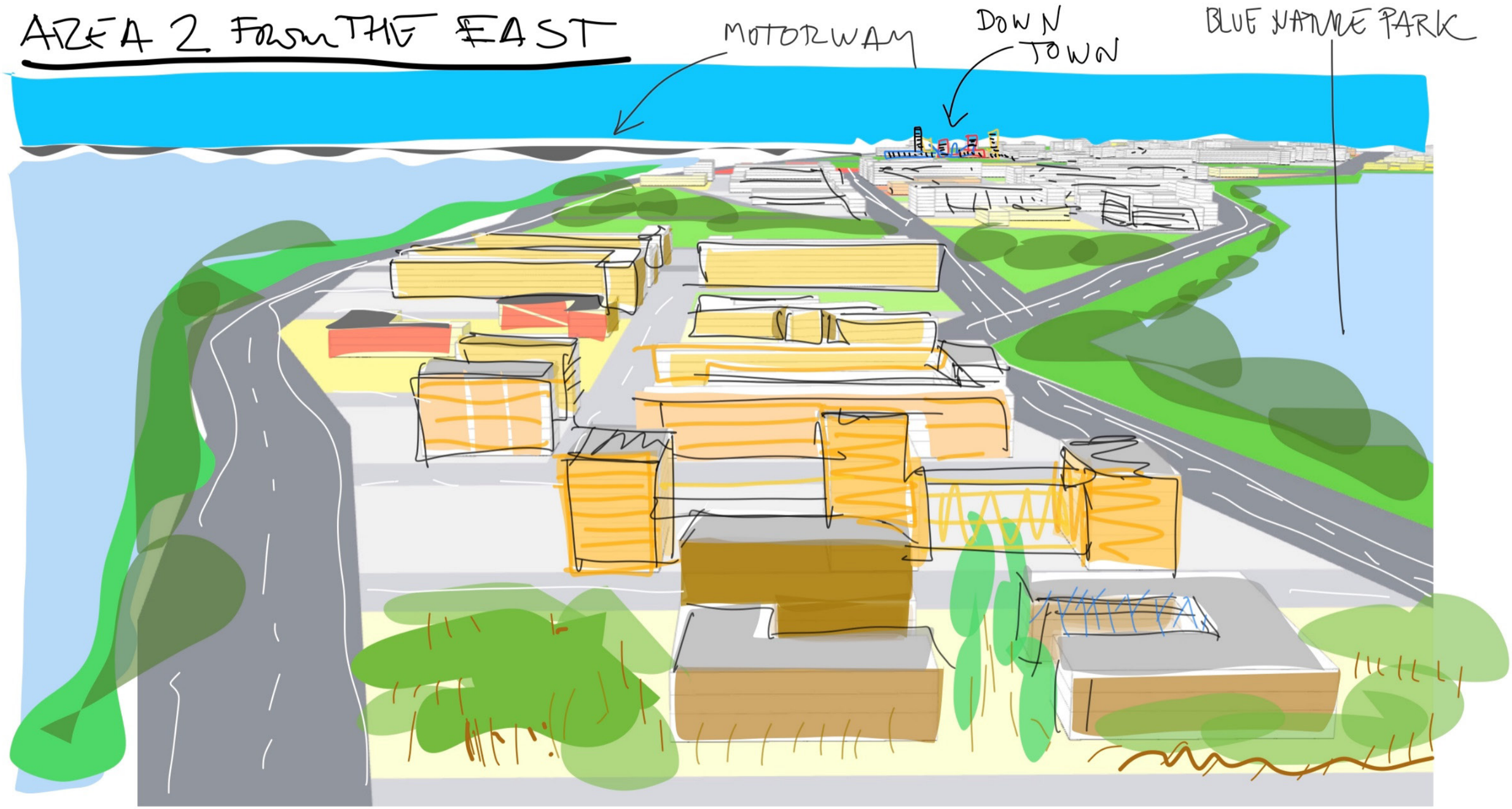
The super-quarter unit increases both ecological and social sustainability of the environment, ensuring the formation of residential complexes with the sizes ideal for the city, and strengthening the neighborhood relationship and a sense of belonging to the astrakhan community.




RESIDENTIAL DISTRICT
INNOVATION DISTRICT
BLUE NATURE PARK SYSTEM
100 Ha
CENTRAL PARK
CONGRESS PALACE
GREEN BOULEVARD
AGRICULTURE + ENERGY COMPLEX
EMBASSY


CLINIC
MAIN SQUARE
MOTOR WAY
SCHOOL
KINDERGARTEN
RESD. COURT YARDS
RESIDENTIAL QUARTAL
CENTRAL PARK

AREA 2 FROM THE EAST



FEDERAL LEVEL

Cultural and educational exhibition cluster

Interuniversity scientific educational campus

REGIONAL LEVEL

Formation of cultural multifunctional centers based on advanced Russian practices

ДК-XXI
Наш ДК

БИБЛИОТЕКА НОВОГО ПОКОЛЕНИЯ

МИНИСТЕРСТВО КУЛЬТУРЫ РОССИЙСКОЙ ФЕДЕРАЦИИ

GOAL:

Formation of regional cultural multifunctional centers acting as supporting federal projects (including as a justification for funding)

ИНСТИТУТ ГЕНПЛАНА МОСКВЫ

citythinking by eddea

ASADOV_

ID ARCHITECTS

Knight Frank

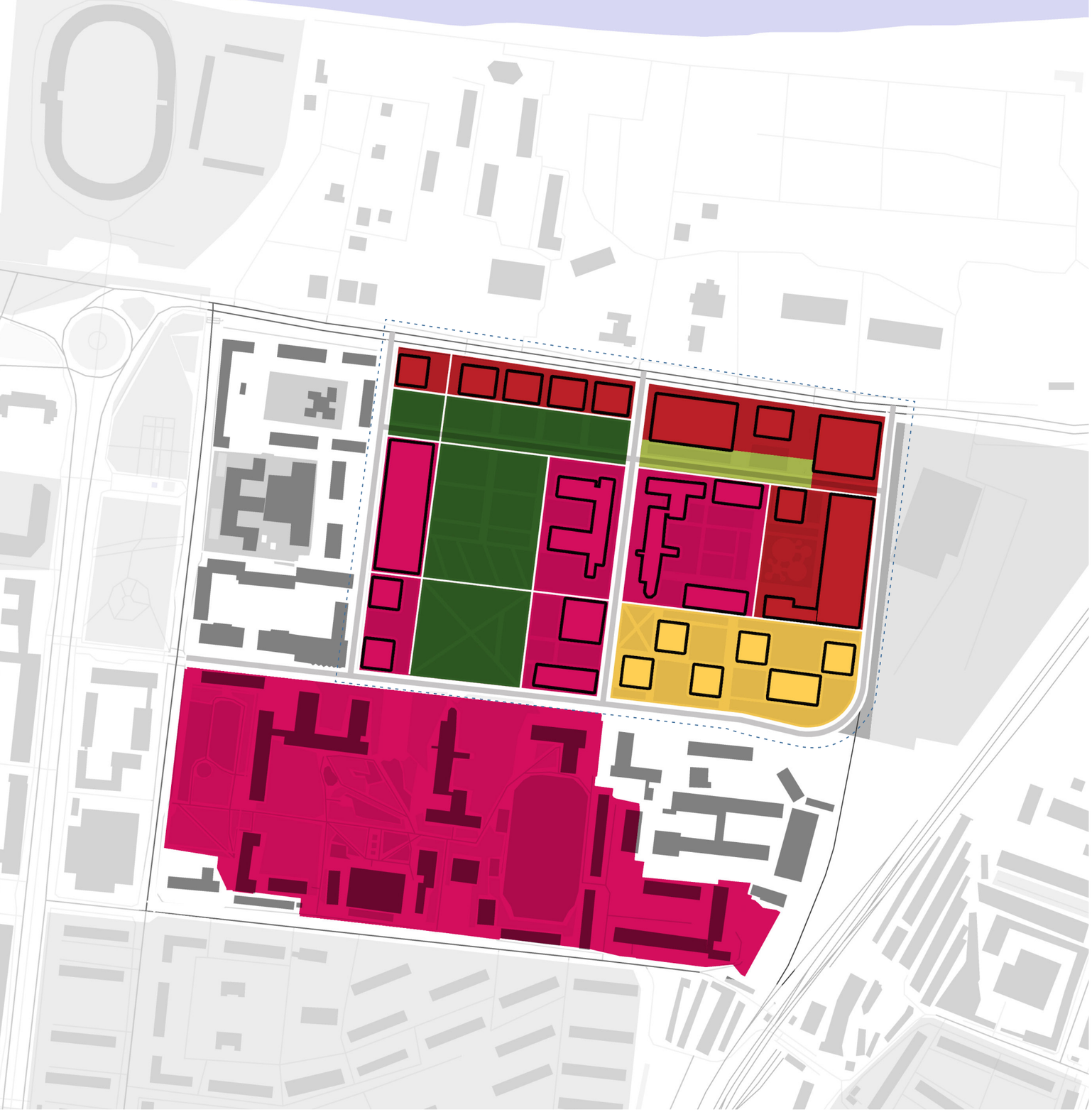
НЕ МОГУ

Existing cultural and leisure facilities

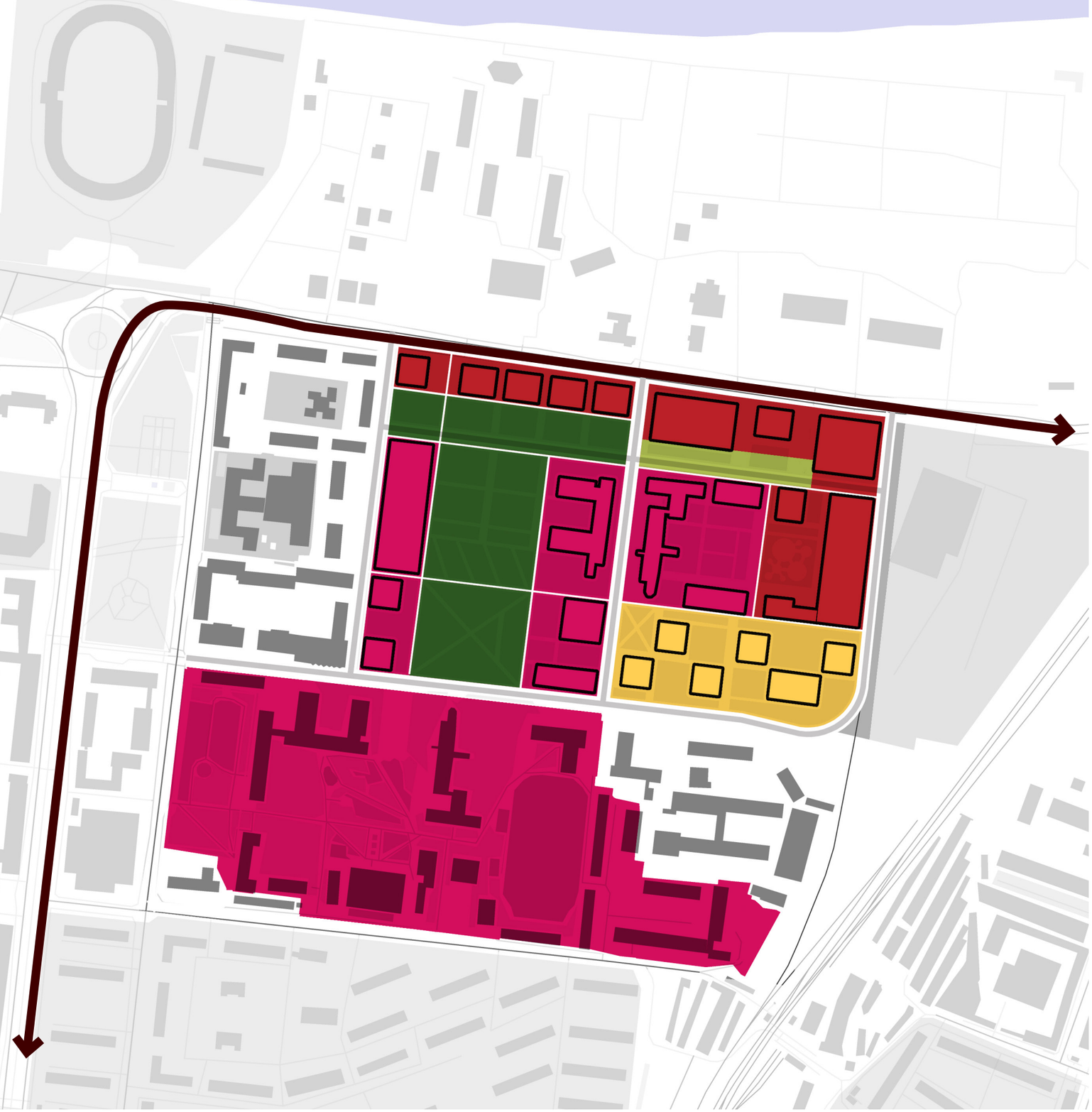
- cinemas
- museums and theaters
- libraries

- proposed multifunctional cultural center

A prerequisite for the placement of multifunctional cultural centers is the concentration of existing cultural and leisure institutions on one territory.



- public areas
- living areas
- mixed multifunctional zones (educational and research and production)
- recreational areas
- public and recreational areas



Territory transport frame

existing road network of city-wide significance

existing local road network

planned road traffic system of local significance

- The financial analysis was performed in Russian rubles using the discounted cash flow (DCF) method on a quarterly basis;

- The total area of new construction is 349,531 sq. M, including:

Apartments: 109,000 sq.m

Water park: 20,000 sq.m

AGASU buildings: 110 531 sq. M

Science school for children: 20,000 sq.m

Cultural objects: 90,000 sq.m

- The forecast period of the financial model is 20 years;

- As part of the development analysis, a cash flow model was developed for own and borrowed funds invested in the project;

- Share of debt financing - 60% (level of coverage of required investments);

- Estimated cost of borrowed funds for the apartment (loan rate) - 4% -8%.

- Estimated cost of borrowed funds for other facilities - 9%.

- Taxation is accounted for according to the base rates of the Tax Code of the Russian Federation

- Share of private investment - 100%

- Discount rate - 9.0% (CAPM), 7.9% (WACC)

- Calculation for commercial objects is made on the basis of the flow, taking into account the terminal value at the end of the forecast period, with a capitalization rate of 10%

- The financial analysis was performed in Russian rubles using the discounted cash flow (DCF) method on a quarterly basis;

- Total area of new construction and reconstruction - 2,286,333 sq. M, including:

Residential area: 1 461 675 sq.m

Social objects: 661 532 sq. m.

Shopping and entertainment center: 163 126 sq.m

- The forecast period of the financial model is 20 years;

- As part of the development analysis, a cash flow model was developed for own and borrowed funds invested in the project;

- Share of debt financing - 60% (level of coverage of required investments);

- Estimated cost of borrowed funds for residential development (loan rate) - 4% -8%.

- Estimated cost of borrowed funds for commercial facilities - 9%.

- Taxation is accounted for according to the base rates of the Tax Code of the Russian Federation

- Share of private investment - 100%

- Discount rate - 9.0% (CAPM), 7.9% (WACC)

- Calculation for commercial objects is made on the basis of the flow, taking into account the terminal value at the end of the forecast period, with a capitalization rate of 10%

High development potential

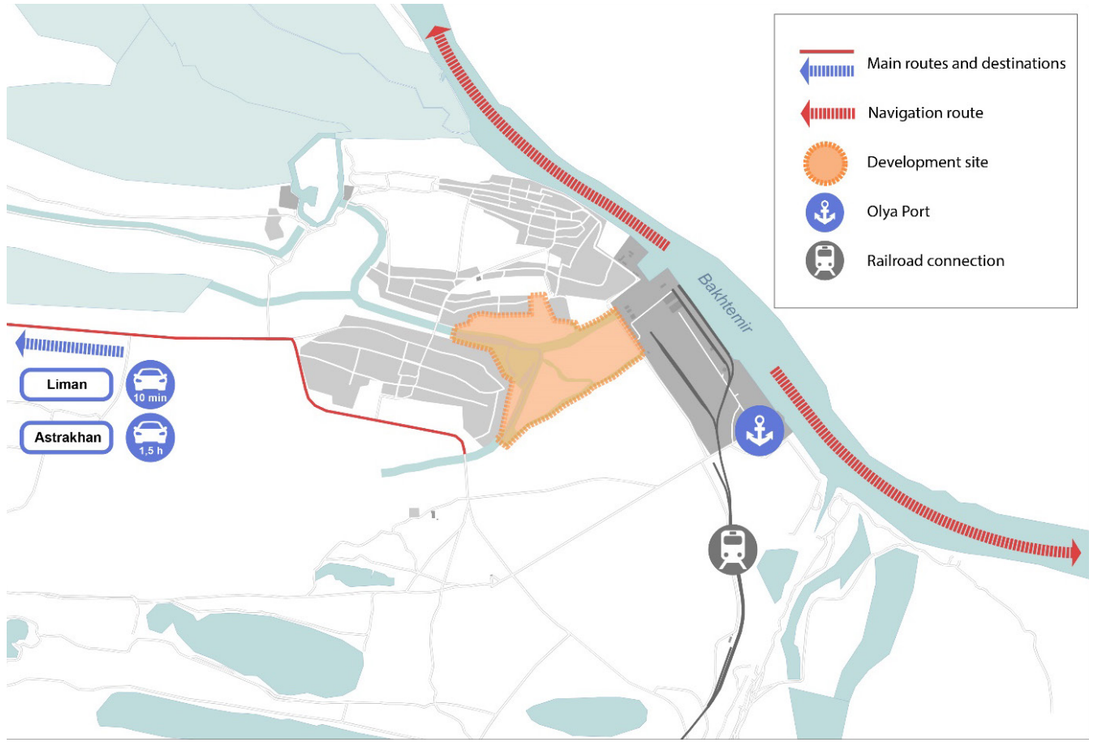
This is an area of prospective development, due to the growth possibilities of the activity in Port Olya, as well as potential for an SEZ.

High connectivity

The site forms part of the North-South axis connecting the Caspian Sea with inland Russia and Europe by road and railway. It is ten minutes away from Liman, a node in this corridor.

Example of a blue and green growth model

The site has great potential for an exemplary blue and green development, to introduce compacity and nature into a poorly structured settlement, and techniques for the management of swampy soils.



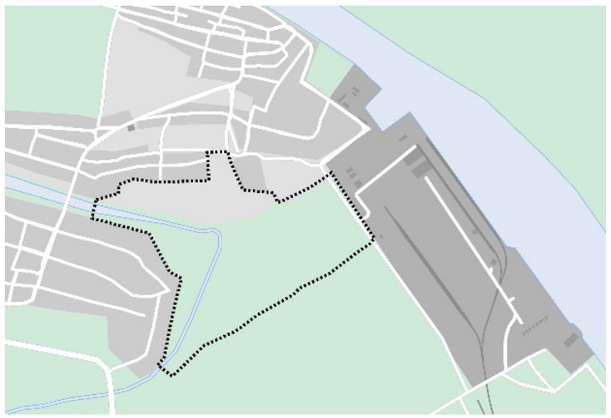
TOTAL SURFACE 143 HA

HIGH DEVELOPMENT POTENTIAL +
HIGH CONNECTIVITY +
EXAMPLE OF A BLUE AND GREEN GROWTH MODEL

The proposed plan for the layout of the Astrakhan plot embodies the key issues and opportunities in Olya, creating

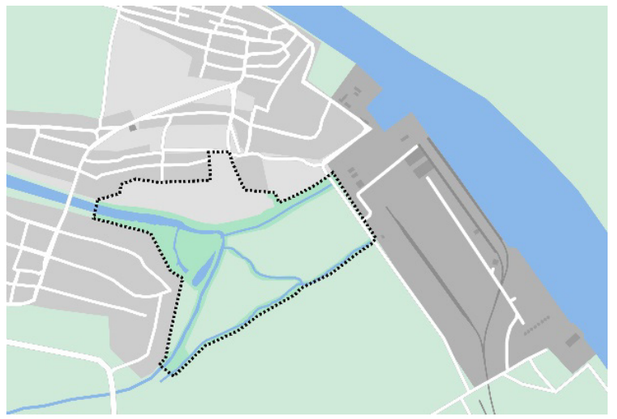
a neighbourhood that reconnects the habitat and territory, propped on a green and blue urban structure, that responds to Olya's potential for growth.

The resulting design relies in facilitating the natural hydrological processes. It uses green spaces not only for recreation and leisure, but also for managing excess soil moisture, flooding and biodiversity, thus building resiliency to adapt to climate change. The spatial grid is a flexible an standardised solution, that also allows planning for well-equipped and self-contained, construction stages.



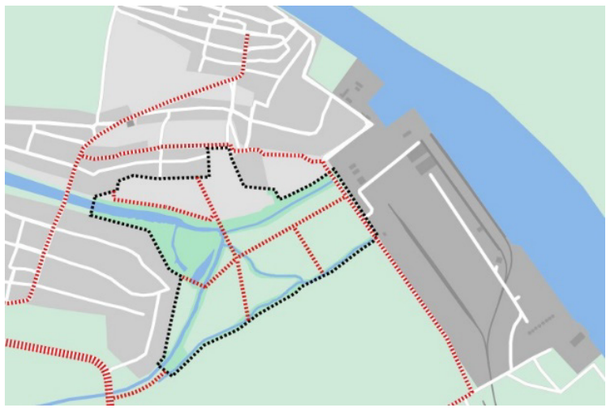
1 Site location

The identified development plot in Olya is located between the port and the two large urban sectors, which are poorly connected.



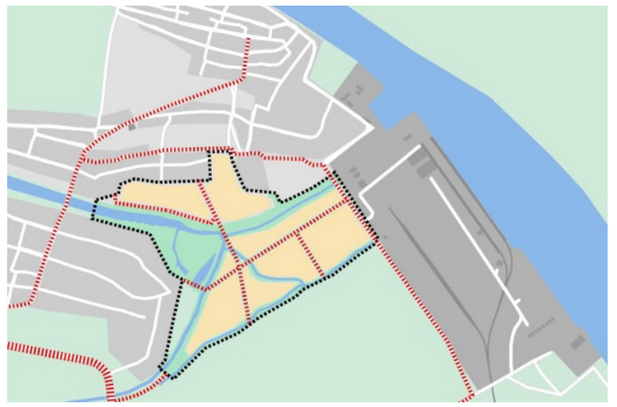
2 Green and Blue Network

There are clusters of low vegetation with potential for enhancement, a waterway and terrain drains that are maintained as a natural and scenic resource.



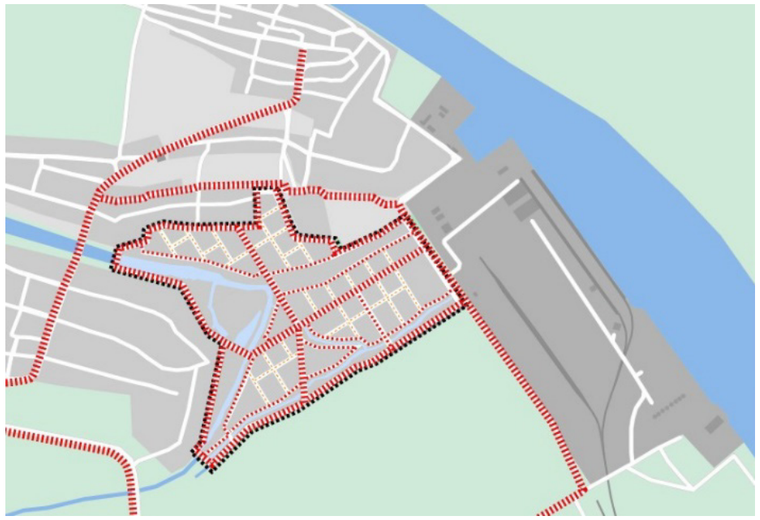
3 Main Mobility Network

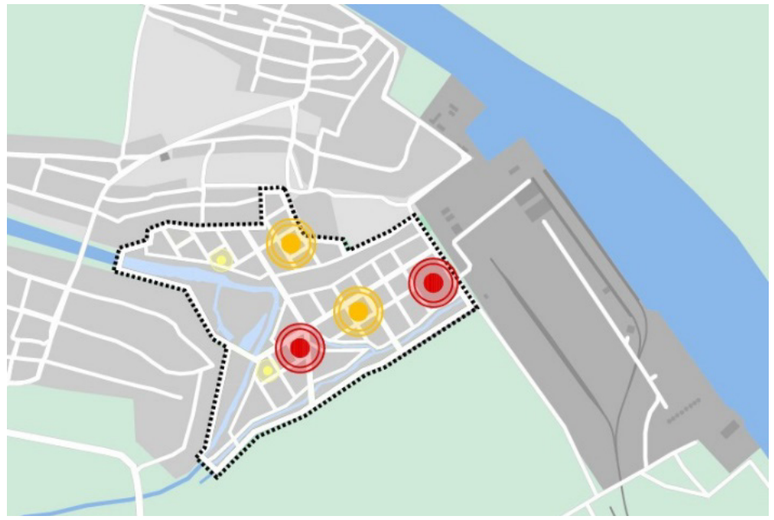
The project aims to create connections between the neighbourhoods, as well as to connect to the main road to Liman.



4 Homogenous Areas

Due to the existing green and blue areas of the site, and the existing mobility network, we can identify 6 areas with vacant, dry environment with the potential to locate new residential areas.





1 Green and Blue Spaces

The green and blue natural corridor helps us to structure the new design. The existing network of green and blue spaces are to be extended and connected, creating a continuous network of attractive public spaces, ecological connectivity and connections between the existing neighbourhoods.

2 Mobility Network

The mobility network is formed through a spatial grid system that creates a compact neighbourhood in accordance to its morphology, which connects the previous network and encourages residents to use more sustainable modes of transport such as walking and cycling.

3 Public Facilities and Amenities

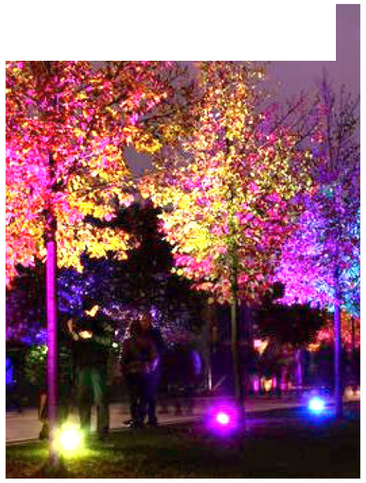
A variety of uses and activities are generated through the provision of public facilities and amenities strategically located around the development site, including tertiary uses and educational facilities, thus contributing to making Olya a compact and socially cohesive city.

ТЕРРИТОРИАЛЬНЫЙ БАЛАНС / TERRITORY BALANCE	Phase 1	Phase 2	Phase 3	Total
	Площадь уч-ка (га) Plot area (ha)			
Общая площадь участка / Total plot area	62,4	44,4	36,5	143,3
Всего природных пространств — Сине-зеленая Стратегия Total natural spaces — Green and Blue Strategy	28,8	0	7,5	36,3
Чистая площадь застраиваемой территории Net planned area	33,1	42,5	31,3	107,0 (100%)
Зона зеленых насаждений общего пользования Green spaces network	1,6	3,6	7,3	12,51 (11,7%)
Линейный парк Longitudinal park	0,0	2,6	7,3	9,89 (9,2%)
Другие мелкие озелененные пространства и зоны отдыха Local green and recreational areas	1,6	1,0	0	2,63 (2,5%)
Зона объектов транспортной инфраструктуры Mobility network	13,4	12,2	11,3	36,9 (34,5%)
Уровень 1 Tier 1	11,2	6,93	6,99	25,09 (23,4%)
Уровень 2 Tier 2	2,3	5,22	4,30	11,78 (11%)
Зона многофункциональной общественно-деловой застройки Amenities	1,6	5,6	1,5	8,93 (8,3%)
Объекты административно-делового и торгового назначения Tertiary and commercial areas	0	4,64	0,6	5,27 (4,9%)
Объекты учебно-образовательного назначения Educational Use	1,8	1,0	0,9	3,66 (3,4%)
Зона жилой застройки Residential	16,3	21,1	11,3	48,7 (45,5%)
Закрытые кварталы Enclosed blocks	1,1	2,15	1,0	4,24 (4%)
Открытые кварталы Open blocks	6,6	12,52	3,09	22,17 (20,7%)
Многоэтажная застройка High-rise	4,1	2,13	5,09	11,35 (10,6%)
Внутриквартальная коммуникационная система (проезды) Mobility	4,5	4,34	2,08	10,93 (10,2%)

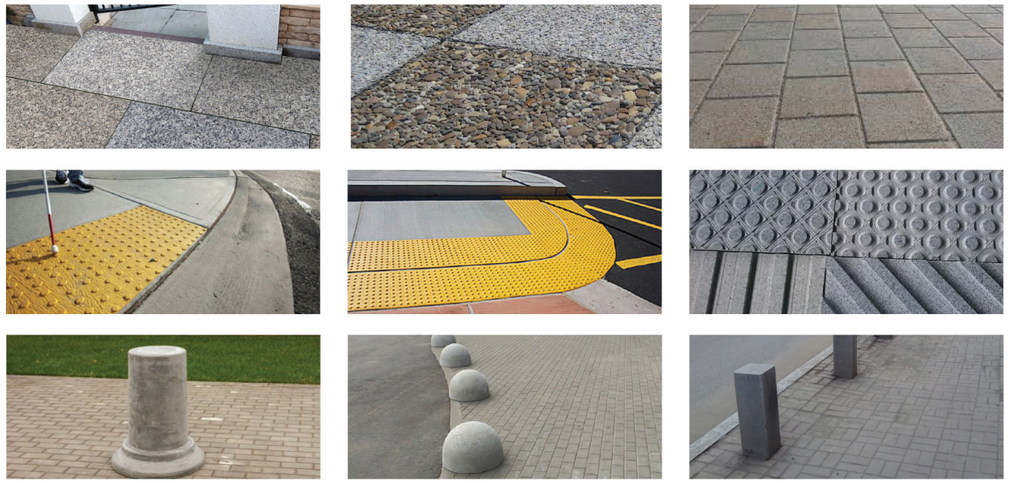
ИНСТИТУТ ГЕНПЛАНА МОСКВЫ | citythinking by eddea | ASADOV_ | ID ARCHITECTS АРХИТЕКТУРНОЕ БЮРО | Knight Frank | НЕ МОГУ урбанистика и здравый смысл

OLYA VILLAGE - 3D VISUALIZATION OF CONCEPTUAL SPACE-PLANNING SOLUTIONS

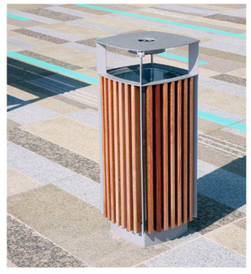
Lamp Pole Design



Material recommendations



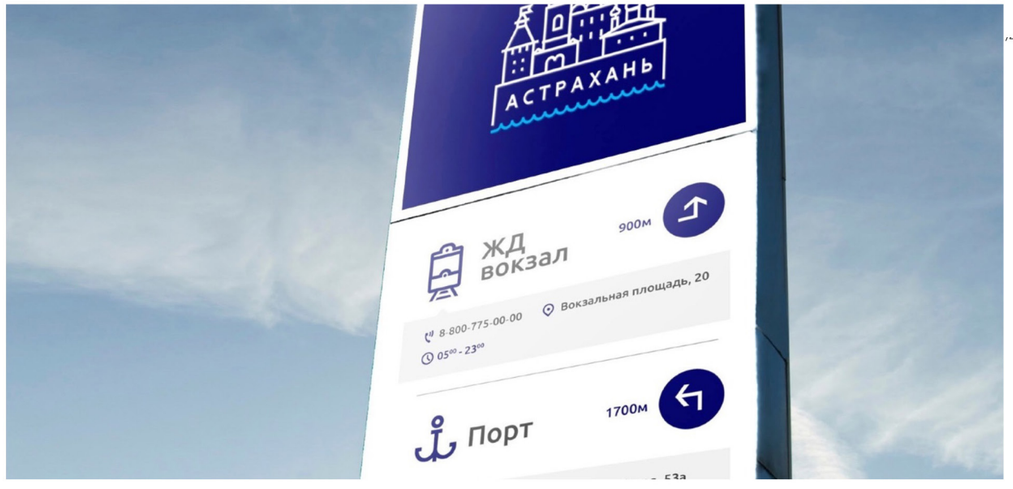
Bench design



MAF design

Signs design (AO brand book)

Navigation design (AO brand book)



- Financial analysis was performed in Russian rubles using the discounted cash flow (DCF) method on a quarterly basis;
- The total area of new construction is 127,180 sq. M, including:

Residential area: 85 990 sq.m

Educational facilities: 6 660 sq.m

Administrative and business facilities: 30 840 sq.m

Transport infrastructure facilities: 3 690 sq.m.

- The forecast period of the financial model is 20 years;
- As part of the development analysis, a cash flow model was developed for own and borrowed funds invested in the project;
- Share of debt financing - 60% (level of coverage of required investments);
- Estimated cost of borrowed funds for residential development (loan rate) - 4% -8%.
- Estimated cost of borrowed funds for commercial facilities - 9%.
- Taxation is accounted for according to the base rates of the Tax Code of the Russian Federation
- Share of private investment - 87.7%
- Share of federal funding - 8.1% (educational facilities)
- Share of financing by the Entity - 4.2% (transport infrastructure)
- Discount rate - 9.0% (CAPM), 7.7% (WACC)
- Calculation for commercial objects is made on the basis of the flow, taking into account the terminal value at the end of the forecast period, with a capitalization rate of 10%

- Existing green areas
- green areas development zones
- streets of priority improvement
- streets with the need for priority measures to replace engineering networks (prospective improvement of the second stage)
- embankment development zones
- public pedestrian spaces
- Green Circle Route «Kosa - White City»
- Green Circle Route «Historical Center»

Theatre Opera

Arkady park

Brotherly garten

Lenin Square

Swan Lake

Big Isads

priority streets that need lighting
formation of a unified concept of river lighting front
illumination of monuments for the protection of cultural heritage
federal significance

СТОЛОВАЯ
КАСПЕР
ДЕТСКАЯ ОДЕЖДА
ПРОДАЮ
ТРЕБУЕТСЯ ВОДИТЕЛЬ

АПТЕКА
НА ЗДОРОВЬЕ

ШАХ
АПТЕКА

1916

Agglomeration center “Astrakhan”

1. Development of public spaces
1.1. Formation of a coherent water-green frame of boulevards and embankments.
1.2. Increasing the functional diversity of public spaces through outdoor furniture, infrastructure for sports and recreation with children.
1.3. Involvement of the first floors in the economic turnover by expanding and improving pedestrian sidewalks, placing public services in the first floors of the adjacent buildings.

2 Working with historical heritage
2.1. Comprehensive reconstruction of historical quarters, including the restoration of cultural heritage sites.
2.2. Creation of thematic cluster quarters (creative cluster, food market, innovation quarter, business quarter).
2.3. Elaboration of mechanisms for working with heritage objects using the example of 2-3 starting quarters.

Centers of the second order

1. Reconstruction of the existing building
1.1. Increasing the variety of available services through the integrated development of territories.
1.2. Formation of a recognizable appearance of the building, revealing local identity.
1.3. Development and implementation of a design code for the urban environment, including the rules for placing advertisements and signage, recommendations for the reconstruction of the facades of ordinary buildings.

2. Development of public transport
2.1. Improving the comfort of movement on public transport (dedicated traffic lanes on key highways, renewal of the vehicle fleet, comfortable stops).
2.2. Optimization of the route network and timetables, introduction of high-speed trunk routes.
2.3. Branding of urban transport using local identity.

Rural settlements points

1. Climatic comfort
1.1. Providing fresh air by creating green air corridors in new buildings, increasing the percentage and quality of greening in the existing urban development.
1.2. Provide shade with landscaping, sun protection pergolas and galleries along the facades to reduce overheating from May to September.
1.3. Use for landscaping local plants that are resistant to local climate conditions and unpretentious to care for.

2. Formation of communities of residents
2.1. Formation of neighborhood communities based on neighborhood centers / cultural centers / district libraries.
2.2. Conducting local events with the involvement of local communities.
2.3. Joint management of event content of public spaces and maintenance of improvement together with local communities.

5 FINANCIAL AND ECONOMIC AGGLOMERATION DEVELOPMENT MODEL

By Order of the Government of the Russian Federation of 13.02.2019 No. 207-r (hereinafter referred to as Order No. 207-r), which approved the Strategy for the Spatial Development of the Russian Federation for the period up to 2025, the city of Astrakhan and adjacent municipalities with a total population of more than 500 thousand. a person is given the status of an urban agglomeration (large urban agglomeration).

Clause 4 of Order No. 207-r recommends that the executive authorities of the constituent entities of the Russian Federation and local governments be guided by the provisions of the Strategy when developing and implementing strategies for the socio-economic development of constituent entities of the Russian Federation and municipalities and territorial planning documents provided for by the Urban Planning Code of the Russian Federation (hereinafter - the GrK RF).
Part 1 of Article 18 of the Civil Code of the Russian Federation provides for the development of territorial planning documents (RTA) in relation to individual municipalities:

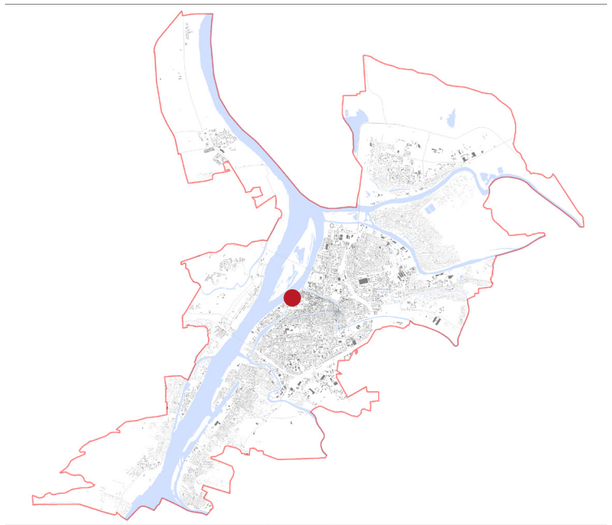
- territorial planning schemes for municipal districts;
- master plans of settlements;
- master plans of urban districts.

At the same time, part 2 of Article 18 of the Civil Code of the Russian Federation stipulates that the requirements for the composition, the procedure for preparing road accidents of municipalities, the procedure for preparing changes and introducing them into such documents, as well as the composition, procedure for preparing plans for the implementation of such documents are established by laws and other regulatory legal acts of the subjects Of the Russian Federation, regulatory legal acts of local governments.

Taking into account the foregoing, the development of a master plan for an urban district with the inclusion of territories of other settlements in the boundaries of its development, if such territories in aggregate constitute an agglomeration, is permissible if it is provided for and regulated by the legislation of a constituent entity of the Russian Federation, legal acts of local self-government bodies.

In the absence of obvious examples of approved master plans of agglomerations, so not lower, it is advisable to pay attention to the following analogs-acts:

- the decision of the Gorno-Altai City Council of Deputies dated 03.09.2009 No. 18-1 (run. dated 27.02.2019) «On the approval of the adjusted master plan of the municipal formation» City of Gorno-Altaisk «, from the text of which it follows that it was developed in relation to Gorno-Altaisk Altai agglomeration, including the city of Gorno-Altaysk and with. Maima;
- the decision of the Kazan City Duma of February 28, 2020 No. 5-38 «On approval of the General plan of the city district of Kazan» - certain provisions apply, among other things, to the Kazan agglomeration;
- the decision of the Duma of the city of Nizhnevartovsk dated December 24, 2019 No. 563 «On the general plan of the city of Nizhnevartovsk», which included the main provisions of the Concept for the development of the Nizhnevartovsk agglomeration;
- the decision of the Duma of the urban district «City of Chita» dated December 22, 2011 No. 282 «On approval of the General plan of the urban district «City of Chita»



Short description
The territory of the coastal area of the historical center of Astrakhan. With the careful preservation and restoration of cultural heritage sites, it is proposed to fill in orphaned voids in order to accommodate commensurate residential and public buildings.

The construction of the ACS is accompanied by the improvement of streets and the reconstruction of engineering networks.

211,5 ths. m²
Total area of new construction and reconstruction

104,7 ths. m²
residential area

37,4 ths. m²
area of hotels

16 ths. m²
area of cultural objects

53,4 ths. m²
area of trade objects

60 %
Share of borrowed financing

100 %
Share of private investment

756 units
Number of new jobs

Index	Units	FCFF	FCFE
Investment activities		**Project**	**on equity**
Development budget	rub.	(8 589 356 400)	(8 589 356 400)
Development budget (federal funding)	rub.	-	-
Development budget (subject)	rub.	-	-
Development budget (investor)	**rub.**	**(8 589 356 400)**	**(8 589 356 400)**
Loan interest (construction stage)	rub.		(51 401 097)
Income from the investment sale of the object	rub.	10 240 529 018	10 240 529 018
Operating activities			
Revenues from sales	rub.	25 414 938 368	25 414 938 368
Operating expenses	rub.	(3 924 347 746)	(3 924 347 746)
Loan interest (exploitation stage)	rub.		(1 607 957 737)
NOI / EBITDA	rub.	21 490 590 623	21 490 590 623
Income tax	rub.	(3 940 418 657)	(3 618 827 109)
Net profit	rub.	15 761 674 626	14 475 308 436
VAT refund	rub.	989 637 403	989 637 403

Performance indicators		Project	on equity
Net cash flow	rub.	20 190 981 987	18 853 214 700
NPV Project	rub.	4 578 999 295	3 733 831 467
Payback period (PP)	years	8,3	10,2
IRR Project	%	16,1%	20,2%

Indicators of budgetary and social performance

	Units	2 021	2 022	2 023	2 024	2 025	2 026	2 027	2 028	2 029	2 030	2 031	2 032
Total payments to the budget and extra-budgetary funds	**RUB million**	**-**	**87**	**402**	**501**	**978**	**510**	**292**	**320**	**348**	**376**	**399**	**414**
1. Total taxes	**RUB million**	**-**	**87**	**402**	**501**	**967**	**499**	**281**	**308**	**335**	**363**	**386**	**400**
Corporate income tax	RUB million	-	-	-	-	825	309	72	93	114	135	151	158
Property tax	RUB million	-	-	-	-	40	40	40	40	40	40	40	40
VAT	RUB million	-	87	402	501	97	144	163	169	175	182	188	195
Personal income tax	RUB million	-	-	-	-	5	5	5	5	5	6	6	6
Other taxes	RUB million	-	-	-	-	1	1	1	1	1	1	1	1
2. Insurance contributions to off-budget funds	**RUB million**	**-**	**-**	**-**	**-**	**11**	**11**	**11**	**12**	**12**	**13**	**13**	**14**
Total receipts from the budget and extrabudgetary funds	RUB million	-	-	87	402	501	-	-	-	-	-	-	-
Infrastructure creation (subject)	RUB million	-	-	-	-	-	-	-	-	-	-	-	-
Federal funding	RUB million	-	-	-	-	-	-	-	-	-	-	-	-
Compensation from the budget	RUB million												
VAT refund	**RUB million**	**-**	**-**	**87**	**402**	**501**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Total budgetary cash flow from the project	**RUB million**	**-**	**87**	**315**	**98**	**478**	**510**	**292**	**320**	**348**	**376**	**399**	**414**
Total budgetary effect	3637			501			1 280				1 857		
including the subject's budget	2041			-			1 223				818		
incl. federal budget	1596			501			57				1 038		
Employment Impact Assessment													
Average number of employees	people	-	-	-	-	753	756	756	756	756	756	756	756
Wages fund (excluding personal income tax and social contributions)	RUB million	-	-	-	-	31	32	33	34	36	37	38	40
Employed (at the end of the forecast period)	people	756											

- The cumulative budgetary effect from the realization of the growth point is 3.6 bln. rub, within the forecast period, incl. 2.0 bln. rub for the subject's budget.
- Number of new jobs ~ 756

Short description
On the site of the former port, a multifunctional development is proposed, which includes the organization of a new embankment capable of uniting the river front of the city into a single whole. The project allows you to place investment-attractive comfort class housing.

On the territories of historical quarters, buildings are being rehabilitated, which have fallen into disrepair after the fire, and new cultural objects in the style of historical buildings are being formed in its place.

620,9 ths. m²
Total area of new construction and reconstruction
incl. 1st stage - 242.3 thousand m²

202,4 ths. m²
residential area
incl. 1st stage - 135.6 thousand m²

106,7 ths. m²
area of trade objects
incl. 1st stage - 106.7 thousand m²

80,3 ths. m²
area of cultural objects

231,5 ths. m²
hotel and restaurant business

60 %
Share of borrowed financing

100 %
Share of private investment

3095 units
Number of new jobs

Index	Units	FCFF	FCFE	The area of the former port, part 1 (Hotels, accommodation, culture) FCFF	FCFE	Former port area part 2 (Hotels, culture, housing and trade) FCFF	FCFE	Incl. 1st stage (Housing and trade on 14.7 ha) FCFF	FCFE
Investment activities		Project	on equity	Project	on equity	Project	on equity	Project	on equity
Development budget	rub.	33 273 437 674	33 273 437 674	8 041 639 629	8 041 639 629	25 231 798 045	25 231 798 045	9 306 592 778	9 306 592 778
Development budget (federal funding)	rub.								
Development budget (subject)	rub.	474 206 971	474 206 971	474 206 971	474 206 971				
Development budget (investor)	rub.	32 799 230 703	32 799 230 703	7 567 432 658	7 567 432 658	25 231 798 045	25 231 798 045	9 306 592 778	9 306 592 778
Loan interest (construction stage)	rub.		413 693 719		304 468 543		109 225 175		109 225 175
Income from the investment sale of the object	rub.	30 491 188 976	30 491 188 976	5 779 953 043	5 779 953 043	24 711 235 933	24 711 235 933	11 813 278 620	11 813 278 620
Operating activities									
Revenues from sales	rub.	70 538 433 020	70 538 433 020	11 449 375 977	11 449 375 977	59 089 057 043	59 089 057 043	16 883 131 589	16 883 131 589
Operating expenses	rub.	18 829 365 288	18 829 365 288	4 451 001 931	4 451 001 931	14 378 363 358	14 378 363 358	972 435 706	972 435 706
Loan interest (exploitation stage)	rub.		5 833 040 020		932 383 777		4 900 656 243		1 587 836 907
NOI / EBITDA	rub.	51 709 067 732	51 709 067 732	6 998 374 047	6 998 374 047	44 710 693 685	44 710 693 685	15 910 695 883	15 910 695 883
Income tax	rub.	8 880 329 418	7 735 211 524	1 184 001 886	1 019 015 240	7 696 327 533	6 716 196 284	3 072 074 263	2 754 506 881
Net profit	rub.	35 521 317 673	30 833 395 547	4 736 007 542	3 968 610 411	30 785 310 131	26 864 785 137	12 288 297 051	11 018 027 525
VAT refund	rub.	4 046 989 550	4 046 989 550	779 094 890	779 094 890	3 267 894 660	3 267 894 660	615 883 661	615 883 661
Performance indicators		Project	on equity	Project	on equity	Project	on equity	Project	on equity
Net cash flow	**rub.**	44 567 686 136	39 466 070 292	4 805 987 436	3 734 121 761	39 761 698 701	35 731 948 531	15 961 191 123	14 581 696 422
NPV Project	rub.	4 436 381 378	2 441 971 004	738 328 955	438 342 612	3 698 052 423	2 003 628 392	7 008 171 881	6 256 329 098

Показатели бюджетной и социальной эффективности

	Units	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Total payments to the budget and extra-budgetary funds	RUB million		468	2 113	2 529	1 947	1 059	969	1 090	1 234	1 326	1 397	1 442
1. Total taxes	RUB million		468	2 113	2 527	1 903	1 014	922	1 041	1 184	1 273	1 343	1 386
Corporate income tax	RUB million				463	1 285	276	112	177	301	370	419	440
Property tax	RUB million		0	1	22	256	253	250	246	243	240	236	233
VAT	RUB million		468	2 113	2 040	334	457	531	588	609	632	655	679
Personal income tax	RUB million				1	19	20	20	21	22	23	23	24
Other taxes	RUB million		0	0	1	9	9	9	9	9	9	9	9
2. Insurance contributions to off-budget funds	RUB million				2	44	45	47	49	51	53	54	56
Total receipts from the budget and extrabudgetary funds	RUB million		87	615	1 960	1 859							
Infrastructure creation (subject)	RUB million		87	248	140								
Federal funding	RUB million												
Compensation from the budget	RUB million												
VAT refund	RUB million			368	1 820	1 859							
Total budgetary cash flow from the project	RUB million		382	1 498	569	88	1 059	969	1 090	1 234	1 326	1 397	1 442
Total budgetary effect	11 054		2 449				2 116				6 489		
including the subject's budget	5188		56				2 350				2 894		
incl. federal budget	5866		2 504				234				3 596		
Assessment of the effect on employment (excluding reconstruction)													
Average number of employees	people				162	3 087	3 095	3 095	3 095	3 095	3 095	3 095	3 095
Wages fund (excluding personal income tax and social contributions)	RUB million				6	125	131	135	141	146	151	157	163
Employed (at the end of the forecast period)	people	3 095											

- The cumulative budgetary effect from the realization of the growth point will be 11.1 bln. rub, within the forecast period
- incl. 5.2 bln. rub for the subject's budget

- The number of new jobs - more than 3 095

Short description
A new interuniversity campus is located in the north of the city, which is also a platform for remote interaction with the country's leading universities.
Various facilities in the complex include office buildings, academic buildings, laboratories and rental housing for campus employees.
All facilities are united by the Green River - an active green park in the center of the campus.

706,6 ths. m²
Total area of new construction and reconstruction

4–8 %
Estimated cost of borrowed funds for residential development (loan rate)

9,0 % (CAPM)
Discount rate - for residential development

13,4 bln rub
Aggregate budgetary effect from the implementation of the growth point

5,3 %
The share of funding from the budget of the subject

35,6 %
Share of federal funding

59,1 %
Share of private investment

2478 un.
Number of new jobs

Indicators of budgetary and social performance

		2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Total payments to the budget and extra-budgetary funds	mln rub.	-	182	749	1406	208	565	768	603	854	1 083	969	834
1. Total taxes	mln rub.	-	182	749	1406	187	543	745	570	819	1 047	925	788
Corporate income tax	mln rub.	-	-	-	-	-	20	15	124	142	132	430	259
Property tax	mln rub.	-	-	-	-	10	10	10	47	47	47	47	47
VAT	mln rub.	-	182	749	1406	164	500	707	380	610	848	423	457
Personal income tax	mln rub.	-	-	-	-	9	10	10	14	15	15	19	19
Other taxes	mln rub.	-	-	-	-	3	3	3	5	5	5	6	6
2. Insurance contributions to off-budget funds	mln rub.	-	-	-	-	21	22	23	33	35	36	44	45
Total receipts from the budget and extrabudgetary funds	mln rub.	-	8	2997	5641	1409	1 067	3062	492	1 633	4 793	477	-
Infrastructure creation (subject)	mln rub.	-	8	179	718	3	3	3	1	293	1 190	-	-
Federal funding	mln rub.	-	-	2636	4 174	-	1 032	2745	-	1 306	3 350	-	-
Compensation from the budget	mln rub.												
VAT refund	mln rub.	-	-	182	749	1406	32	314	491	35	253	477	-
Total budgetary cash flow from the project	**mln rub.**	**-**	**174**	**-2 248**	**-4 236**	**-1 201**	**-502**	**-2 294**	**111**	**-780**	**-3 710**	**492**	**8364**
Total budgetary effect	-13 360	-6 309				-3 997			-3 053				
including the subject's budget	-975	-905				91			-161				
incl. federal budget	-12 385	-5 404				-4 088			-2 892				
Employment Impact Assessment													
Average number of employees	ppl	-	-	-	-	1515	1520	1520	2109	2110	2110	2477	2478
Wages fund (excluding personal income tax and social contributions)	mln rub.	-	-	-	-	62	64	67	96	99	103	126	130
Employed (at the end of the forecast period)	ppl	2478											

Indicator	**Units**	**FCFF**	**FCFE**
Investment activities		Project	on equity
Development budget	rub.	-42 482 671 542	-42 482 671 542
Development budget	rub.	-15 243 064 761	-15 243 064 761
(federal funding)	rub.	-2 398 053 524	(2 398 053 524)
Development budget	rub.	-24 841 553 257	-24 841 553 257
(subject)	**rub.**		**-282 892 102**
Development budget (investor)	rub.	25 251 804 721	25 251 804 721
Loan interest (construction stage)			
Income from the investment sale of the object	rub.	59 452 406 601	59 452 406 601
Operating activities	rub.	-21 947 333 020	-21 947 333 020
Revenues from sales	rub.		-8 650 053 357
Operating expenses	rub.	37 505 073 581	37 505 073 581
Loan interest (exploitation stage)	rub.	-6 799 128 382	-6 799 128 382
NOI / EBITDA	rub.	27 196 513 527	20 196 513 527
Income tax	rub.	3 937 266 041	3 937 266 041
Net profit		Project	on equity
VAT refund	rub.	35 053 462 704	27 850 527 917
Performance indicators	rub.	1 949 225 977	655 956 161
Net cash flow	years	15,9	19,0
NPV Project	%	9,1%	9,6%

- The aggregate budgetary effect from the realization of the growth point will be -13.4 bln. rub, within the forecast period, incl. - 1 bln. rub for the subject's budget.
- Development of the educational cluster will require budget funding. At the same time, there is an increase in the total budgetary effect by the end of the forecast period, which signals its surplus for a longer period.
- Number of new jobs ~ 2,478

Short description
The answer to the task of creating a sufficient supply for a new economy-class housing stock was the organization of a new residential area consisting of a more active center and quiet periphery (morphotype of houses on 3-4 floors). The development is accompanied by the necessary social infrastructure facilities.

2 165,4 ths. m²
Total area of new construction and reconstruction

1012 ths. m²
residential area

1 153 ths. m²
area of residential blockade and individual housing construction

4-8 %
Estimated cost of borrowed funds for multi-apartment residential development (loan rate)

9 %
Estimated cost of borrowed funds for blockedзастройке и ИЖС

60 %
Share of borrowed financing

38,5 bln. rub
Aggregate budgetary effect from the implementation of the growth point

435 un.
Number of new jobs

Indicator	Units	FCFF	FCFE	Многоквартирная жилая застройка FCFF	Многоквартирная жилая застройка FCFE	Блокированная застройка и ИЖС FCFF	Блокированная застройка и ИЖС FCFE
Investment activities		Project	on equity	project	on equity	project	on equity
Development budget	rub.	-90 525 783 673	-90 525 783 673	-28 532 895 296	-28 532 895 296	-61 992 888 378	-61 992 888 378
Loan interest (construction stage)	rub.		-3 286 298 351		-448 142 003		-2 838 156 348
	rub.	4 713 204 905	4 713 204 905	3 975 121 349	3 975 121 349	738 083 557	738 083 557
Operating activities							
Revenues from sales	rub.	135 233 240 575	135 233 240 575	43 460 045 729	43 460 045 729	91 773 194 846	91 773 194 846
Operating expenses	rub.	-6 842 988 690	-6 842 988 690	-2 216 916 292	-2 216 916 292	-4 626 072 399	-4 626 072 39
Loan interest (exploitation stage)	rub.		-6 182 016 099	-	-3 327 450 388	-	-2 854 565 711
NOI / EBITDA	rub.	128 390 251 884	128 390 251 884	41 243 129 437	41 243 129 437	87 147 122 447	87 147 122 447
Income tax	rub.	-25 574 860 244	-24 433 609 963	-8 179 907 682	-7 609 570 544	-17 394 952 561	-16 824 039 419
Net profit	rub.	102 043 974 097	97 003 208 279	32 464 163 852	29 707 050 603	69 579 810 244	67 296 157 676
VAT refund	rub.	-	-	-	-	-	-
Performance indicators		Project	on equity	Project	on equity	Project	on equity
Net cash flow	**rub.**	17 002 812 873	8 675 748 704	8 505 447 808	5 300 192 556	8 497 365 065	3 375 556 148
NPV Project	rub.	2 510 307 839	217 491 033	1 030 451 984	-258 692 243	1 479 855 855	476 183 276
Payback period (PP)	years			7,3	16,5	6,3	7,0
IRR Project	%			7,5%	8,1%	12,0%	13,2%

- The cumulative budgetary effect from the realization of the growth point will be 38.5 bln. rub, within the forecast period.
- Incl. 21.0 bln. rub for the subject's budget

Short description
At the last stage of the implementation, a new hotel and business cluster is proposed, combined with a promising residential area, organized in accordance with with the principles of ecosystem urbanism.

In the center of the district, a picturesque lake is expected, around which objects of agglomeration and international importance are concentrated (representations and consulates of potential development interests.

2254,7 ths. m²
Total area of new construction and reconstruction

1655,4 ths. m²
residential area

599,3 ths. m²
Hotel and business cluster

4-8 %
Estimated cost of borrowed funds for residential development (loan rate)

9,0 % (CAPM)
Discount rate

60 %
Share of borrowed financing

100 %
Share of private investment

2961 units
Number of new jobs

Index	Units	FCFF	FCFE
Investment activities		project	on equity
Development budget	rub.	128 291 475 212	128 291 475 212
Development budget (federal funding)	rub.		
Development budget (subject)	rub.		
Development budget (investor)	**rub.**	**128 291 475 212**	**128 291 475 212**
Loan interest (construction stage)	rub.		1 057 760 351
Income from the investment sale of the object	rub.	34 689 935 023	34 689 935 023
Operating activities			
Revenues from sales	rub.	209 698 492 862	209 698 492 862
Operating expenses	**rub.**	**34 971 814 547**	**34 971 814 547**
Loan interest (exploitation stage)	rub.		22 766 361 342
NOI / EBITDA	rub.	174 726 678 315	174 726 678 315
Income tax	rub.	33 593 573 720	29 040 301 451
Net profit	rub.	134 374 294 879	116 161 205 806
VAT refund	rub.	11 178 345 872	11 178 345 872
Performance indicators		**Project**	**on equity**
Net cash flow	rub.	58 709 910 279	39 439 060 854
NPV Project	rub.	1 713 168 149	148 920 708
Payback period (PP)	years	12,4	18,6
IRR Project	%	8,30%	9,10%

Indicators of budgetary and social performance

	Units	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Total payments to the budget and extra-budgetary funds	**mln rub.**	**-**	**-**	**-**	**-**	**897**	**1 816**	**5 170**	**7 372**	**3 761**	**4 357**	**9 075**	**3 384**
1. Total taxes	**mln rub.**	**-**	**-**	**-**	**-**	**897**	**1 816**	**5 170**	**7 331**	**3 719**	**4 313**	**9 023**	**3 330**
Corporate income tax	mln rub.	-	-	-	-	-	-	-	6 008	1 789	1 859	8 092	2 374
Property tax	mln rub.	-	-	-	-	-	-	-	194	194	194	194	194
VAT	mln rub.	-	-	-	-	897	1 816	5 170	1 063	1 669	2 192	640	664
Personal income tax	mln rub.	-	-	-	-	-	-	-	18	18	19	22	23
Other taxes	mln rub.	-	-	-	-	-	-	-	49	49	49	75	75
2. Insurance contributions to off-budget funds	**mln rub.**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**41**	**43**	**44**	**52**	**54**
Total receipts from the budget and extrabudgetary funds	**mln rub.**	**-**	**-**	**-**	**-**	**-**	**897**	**1 816**	**5 170**	**627**	**1 094**	**1 575**	**-**
Infrastructure creation (subject)	mln rub.	-	-	-	-	-	-	-	-	-	-	-	-
Federal funding	mln rub.	-	-	-	-	-	-	-	-	-	-	-	-
Compensation from the budget	mln rub.												
VAT refund	mln rub.	-	-	-	-	-	897	1 816	5 170	627	1 094	1 575	-
Aggregate budgetary monetary	**mln rub.**	**-**	**-**	**-**	**-**	**897**	**919**	**3 354**	**2 202**	**3 135**	**3 263**	**7 500**	**3 384**
flow from the project	**24 654**	**-**					**5 170**				**19 484**		
Total budgetary effect	**19 475**	**-**					**-**				**19 475**		
including the subject's budget	**5 179**	**-**					**5 170**				**9**		
incl. federal budget													
Employment Impact Assessment	ppl	-	-	-	-	-	-	-	2 607	2 608	2 608	2 960	2 961
Average number of employees	mln rub.	-	-	-	-	-	-	-	118	123	128	150	156
Wages fund (excluding personal income tax and social contributions)	**ppl**	**2 961**											
Employed													
(at the end of the forecast period)													

- The aggregate budgetary effect from the realization of the growth point will be 15.1 bln. rub, within the forecast period, incl. 11.9 bln. rub for the subject's budget.
- Number of new jobs ~ 953

Short description
On the territory along Latysheva Street, it is planned to build a number of public facilities of urban and regional significance: a new water park, additional buildings of the AGASU, a scientific school for middle school children and a new modern house of culture.

The complex includes apartments for AGASU employees and the proposed public facilities.

349,5 ths. m²
Total area of new construction and reconstruction

109 ths. m²
apartment area

20 ths. m²
water park area

110,5 ths. m²
area of additional buildings of higher educational institutions and scientific and laboratory buildings

20 ths. m²
the area of the scientific school for children

60 %
Share of borrowed financing

100 %
Share of private investment

658 un.
Number of new jobs

Index	Units	FCFF	FCFE
Investment activities		**Project**	**on equity**
Development budget	rub.	(19 517 811 780)	(19 517 811 780)
Development budget (federal funding)	rub.	-	-
Development budget (subject)	rub.	-	-
Development budget (investor)	**rub.**	**(19 517 811 780)**	**(19 517 811 780)**
Loan interest (construction stage)	rub.		(87 797 366)
Income from the investment sale of the object	rub.	16 535 409 703	16 535 409 703
Operating activities			
Revenues from sales	rub.	50 504 483 945	50 504 483 945
Operating expenses	rub.	(18 631 501 113)	(18 631 501 113)
Loan interest (exploitation stage)	rub.		(3 937 961 303)
NOI / EBITDA	rub.	31 872 982 832	31 872 982 832
Income tax	rub.	(6 244 341 622)	(5 456 749 361)
Net profit	rub.	24 977 366 488	21 826 997 446
VAT refund	rub.	2 502 129 808	2 502 129 808

Performance indicators		Project	on equity
Net cash flow	rub.	25 148 368 941	21 910 202 532
NPV Project	rub.	1 114 442 744	66 626 294
Payback period (PP)	years	14,3	16,6
IRR Project	%	8,7%	9,1%

Indicators of budgetary and social performance

	Units	2 021	2 022	2 023	2 024	2 025	2 026	2 027	2 028	2 029	2 030	2 031	2 032
Total payments to the budget and extra-budgetary funds	**mln rub.**	**-**	**150**	**1 112**	**1 260**	**1 275**	**357**	**412**	**468**	**524**	**582**	**626**	**648**
1. Total taxes	**mln rub.**	**-**	**150**	**1 112**	**1 260**	**1 265**	**347**	**402**	**457**	**514**	**570**	**614**	**636**
Corporate income tax	mln rub.	-	-	-	-	987	60	106	151	198	244	278	288
Property tax	mln rub.	-	-	6	13	40	40	40	40	40	40	40	40
VAT	mln rub.	-	150	1 106	1 247	233	241	250	260	270	280	290	301
Personal income tax	mln rub.	-	-	-	-	4	4	4	4	5	5	5	5
Other taxes	mln rub.	-	-	1	1	2	2	2	2	2	2	2	2
2. Insurance contributions to off-budget funds	**mln rub.**	**-**	**-**	**-**	**-**	**9**	**10**	**10**	**10**	**11**	**11**	**12**	**12**
Total receipts from the budget and extrabudgetary funds	**mln rub.**	**-**	**-**	**150**	**1 106**	**1 247**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Infrastructure creation (subject)	mln rub.	-	-	-	-	-	-	-	-	-	-	-	-
Federal funding	mln rub.	-	-	-	-	-	-	-	-	-	-	-	-
Compensation from the budget	mln rub.												
VAT refund	mln rub.	-	-	150	1 106	1 247	-	-	-	-	-	-	-
Total budgetary cash flow from the project	**mln rub.**	**-**	**150**	**963**	**155**	**28**	**357**	**412**	**468**	**524**	**582**	**626**	**648**
Total budgetary effect	**4 911**		**1 267**				**797**				**2 847**		
including the subject's budget	**2 471**		**21**				**1 175**				**1 275**		
incl. federal budget	**2 441**		**1 247**				**-378**				**1 572**		
Employment Impact Assessment													
Average number of employees	ppl	-	-	-	-	656	658	658	658	658	658	658	658
Wages fund (excluding personal income tax and social contributions)	mln rub.	-	-	-	-	27	28	29	30	31	32	33	35
Employed (at the end of the forecast period)	ppl	658											

- The cumulative budgetary effect from the realization of the growth point will be 4.9 bln. rub, within the forecast period, incl. 2.4 bln. rub for the subject's budget.
- Number of new jobs ~ 658

Short description
A large-scale project for the integrated development of the territory in the south of the historical center of Astrakhan. The project offers residential development of 12-16 floors of standard class with social infrastructure facilities.

2286 ths. m²
Total area of new construction and reconstruction

1461 ,6 ths. m²
residential area

661,5 ths. m²
area of social infrastructure facilities

163,1 ths. m²
Shopping and entertainment center

21,3 bln. rub
Aggregate budgetary effect from the implementation of the growth point

60 %
Share of borrowed financing

100 %
Share of private investment

2 775 un.
Number of new jobs

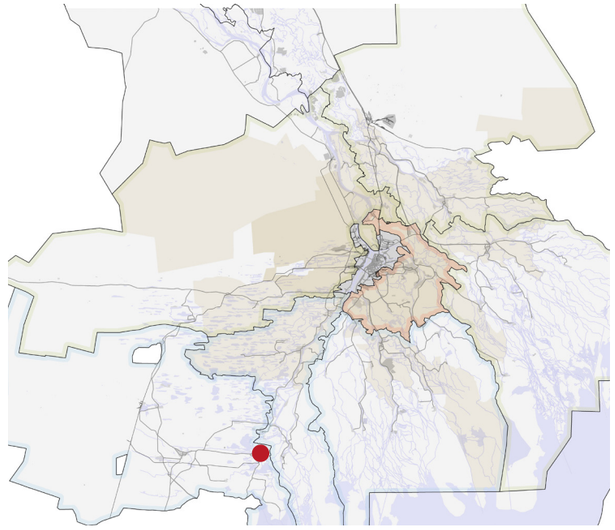
Index	Units	FCFF	FCFE
Investment activities		**Project**	**on equity**
Development budget	rub.	(86 140 376 522)	(86 140 376 522)
Development budget (federal funding)	rub.	-	-
Development budget (subject)	rub.	-	-
Development budget (investor)	**rub.**	**(86 140 376 522)**	**(86 140 376 522)**
Loan interest (construction stage)	rub.		(1 003 056 249)
Income from the investment sale of the object	rub.	21 229 066 999	21 229 066 999
Operating activities			
Revenues from sales	rub.	135 919 354 566	135 919 354 566
Operating expenses	rub.	(7 025 411 607)	(7 025 411 607)
Loan interest (exploitation stage)	rub.		(7 740 405 954)
NOI / EBITDA	rub.	128 893 942 959	128 893 942 959
Income tax	rub.	(25 440 164 090)	(23 892 082 899)
Net profit	rub.	101 760 656 360	95 568 331 597
VAT refund	rub.	894 554 385	894 554 385

Performance indicators		Project	on equity
Net cash flow	rub.	39 437 023 731	32 241 642 719
NPV Project	rub.	1 107 854 335	61 675 941
Payback period (PP)	years	11,7	12,1
IRR Project	%	8,4%	9,0%

Indicators of budgetary and social performance

	Units	2 021	2 022	2 023	2 024	2 025	2 026	2 027	2 028	2 029	2 030	2 031	2 032
Total payments to the budget and extra-budgetary funds	**mln rub.**	**-**	**-**	**2**	**4**	**3 241**	**1 580**	**3 294**	**1 120**	**3 182**	**3 537**	**4 114**	**2 134**
1. Total taxes	**mln rub.**	**-**	**-**	**2**	**4**	**3 232**	**1 571**	**3 277**	**1 094**	**3 149**	**3 496**	**4 065**	**2 084**
Corporate income tax	mln rub.	-	-	-	-	3 220	1 113	2 803	836	2 762	3 077	3 625	1 627
Property tax	mln rub.	-	-	2	4	7	11	14	18	22	25	28	30
VAT	mln rub.	-	-	-	-	-	442	452	225	347	372	386	400
Personal income tax	mln rub.	-	-	-	-	4	4	7	11	14	18	21	22
Other taxes	mln rub.	-	-	0	0	0	1	1	5	5	5	5	5
2. Insurance contributions to off-budget funds	**mln rub.**	**-**	**-**	**-**	**-**	**9**	**9**	**16**	**26**	**33**	**41**	**49**	**51**
Total receipts from the budget and extrabudgetary funds	mln rub.	-	-	-	-	-	-	442	452	-	-	-	-
Infrastructure creation (subject)	mln rub.	-	-	-	-	-	-	-	-	-	-	-	-
Federal funding	mln rub.	-	-	-	-	-	-	-	-	-	-	-	-
Compensation from the budget	**mln rub.**												
VAT refund	**mln rub.**	**-**	**-**	**-**	**-**	**-**	**-**	**442**	**452**	**-**	**-**	**-**	**-**
Total budgetary cash flow from the project	mln rub.	-	-	2	4	3 241	1 580	2 851	668	3 182	3 537	4 114	2 134
Total budgetary effect	**21 315**			**6**			**7 672**				**13 636**		
including the subject's budget	17 446			6			6 472				10 967		
incl. federal budget	3 869			-			1 200				2 669		
Employment Impact Assessment													
Average number of employees	ppl	-	-	-	-	616	619	1 067	1 638	2 020	2 412	2 774	2 775
Wages fund (excluding personal income tax and social contributions)	mln rub.	-	-	-	-	25	26	47	74	95	118	141	146
Employed (at the end of the forecast period)	ppl	2 775											

- The cumulative budgetary effect from the realization of the growth point will be 21.3 bln. rub, within the forecast period, incl. 7.5 bln. rub for the subject's budget.
- Number of new jobs ~ 2 775



Short description
In conjunction with the development of the special economic zone of the port of Olya, it is proposed to place a new residential settlement with modern 3-4-storey buildings in accordance with the international principles of ecosystem urbanism.

The formed quality of the environment will allow attracting for work not only qualified specialists from other regions of the country, but also from abroad.

127,2 ths. m²
Total area of new construction and reconstruction

85,9 ths. m²
residential area

6,66 ths. m²
area of social infrastructure facilities

30,8 ths. m²
Shopping and entertainment center

3,7 ths. m²
Aggregate budgetary effect from the implementation of the growth point

60 %
Share of borrowed financing

87,7 %
Share of private investment

225 un.
Number of new jobs

Index	Un. ИЗМ	FCFF	FCFE
Investment activities		**Project**	**on equity**
Development budget	rub.	5 635 025 333	5 635 025 333
Development budget (federal funding)	rub.	448 230 836	448 230 836
Development budget (subject)	rub.	238 312 082	238 312 082
Development budget (investor)	**rub.**	**4 948 482 415**	**4 948 482 415**
Loan interest (construction stage)	rub.		49 111 402
Income from the investment sale of the object	rub.	2 689 185 453	2 689 185 453
Operating activities			
Revenues from sales	rub.	7 435 932 966	7 435 932 966
Operating expenses	rub.	353 136 617	353 136 617
Loan interest (exploitation stage)	rub.		783 624 829
NOI / EBITDA	rub.	7 082 796 350	7 082 796 350
Income tax	rub.	1 332 036 920	1 189 462 697
Net profit	rub.	5 314 711 848	4 673 661 242
VAT refund	rub.	358 081 976	358 081 976
Performance indicators		**Project**	**on equity**
Net cash flow	rub.	3 849 544 443	3 159 382 435
NPV Project	rub.	192 621 078	16 727 882
Payback period (PP)	years	15,4	18,2
IRR Project	%	8,60%	9,10%

Indicators of budgetary and social performance

		2 021	2 022	2 023	2 024	2 025	2 026	2 027	2 028	2 029	2 030	2 031	2 032
Total payments to the budget and extra-budgetary funds	**mln rub.**		**38**	**0**	**35**	**132**	**148**	**138**	**222**	**135**	**137**	**204**	**131**
1. Total taxes	**mln rub.**					**132**	**42**	**7**	**194**	**80**	**54**	**153**	**77**
Corporate income tax	mln rub.			0	0	0	1	1	1	1	2	2	2
Property tax	mln rub.		38		34		105	130	25	51	80	47	50
VAT	mln rub.					0	0	0	1	1	1	2	2
Personal income tax	mln rub.			0	0	0	0	0	0	0	0	0	0
Other taxes	mln rub.					0	0	0	3	3	3	4	4
2. Insurance contributions to off-budget funds	**mln rub.**		**38**	**0**	**35**	**132**	**148**	**138**	**222**	**135**	**137**	**204**	**131**
Total receipts from the budget and extrabudgetary funds	mln rub.			177	143	34	101	208	130	99	113	38	
Infrastructure creation (subject)	mln rub.			39	40		39	40		39	40		
Federal funding	mln rub.			100	103		62	63		60	61		
Compensation from the budget	**mln rub.**												
VAT refund	**mln rub.**			**38**		**34**		**105**	**130**		**12**	**38**	
Total budgetary cash flow from the project	mln rub.		38	-177	-109	98	47	-70	94	39	27	170	135
Total budgetary effect	**295**			**-247**			**76**				**466**		
including the subject's budget	447			-79			86				440		
incl. federal budget	-153			-168			-10				26		
Employment Impact Assessment													
Average number of employees	ppl					15	15	15	199	199	199	225	225
Wages fund (excluding personal income tax and social contributions)	mln rub.					1	1	1	9	9	10	11	12
Employed (at the end of the forecast period)	ppl	225											

- The cumulative budgetary effect from the realization of the growth point will be 0.4 bln. rub, within the forecast period, incl. 0.4 bln. rub for the subject's budget.
- Number of new jobs ~ 225

56,1 ths.

Number of new jobs
(incl. 13,4 ths. — 1 Stage)

2,5 ths.

Number of new jobsin small businesses
(incl. 312 ths.— 1 Stage)

91 bln. rub

Cumulative Fiscal Impact of Growth Points
(incl. 1,8 bln. rub- 1 Stage)

2,5 bln. rub

Budgetary effect of growth Personal income tax
incl. 108 mln rub. — 1 Stage

419 bln. rub

Growth BPII from investments in infrastructure
(incl. 59 bln. rub — 1 Stage)

439 bln. rub

Growth BPII from investments in fixed assets
(incl. 100 bln. rub — 1 Stage)

2 %

Regional export growth
(incl. 0,1 % — 1 Stage)

611 bln. rub

Increase in investments in fixed assets
(incl. 142 bln. rub — 1 Stage)

607 bln. rub

Investment in infrastructure facilities
(incl. 85 bln. rub — 1 Stage)

Indicators for the Project	**Project** 2021-2032	**1** Stage 2021–2024	**2** Stage 2024–2027	**3** Stage 2027–2032
Economic effect				
GRP growth caused by the Project, mln. rub., incl.	858 409	158 752	274 645	425 012
GRP growth caused by the Project, mln. rub. (multiplier effect of investments in infrastructure)	419 008	58 661	125 702	234 644
GRP growth caused by the Project, mln. rub. (multiplier effect from investments in fixed assets)	439 401	100 091	148 942	190 367
Growth in regional exports (the effect of the construction of new roads), %	2,00%	0,30%	0,60%	1,10%
Social effect				
Increase in employed, ppl, incl.	56 159	8 221	20 252	27 686
Increase in the number of employed in small enterprises (excluding micro-enterprises), ppl	2 507	312	780	1 415
Share of employed in small enterprises in jobs created under the Project,%	4,50%	3,80%	3,90%	5,10%
The share of employed in small enterprises in the region, taking into account the effect of the Project implementation,%	3,50%	2,40%	3,50%	4,50%
Budget effect				
Personal income tax growth, mln. rub.	2 533	108	503	1 923
Budget effect from Project's growth points, mln. rub.	90 974	1 811	24 598	64 565
including the subject's budget	67 044	584	16 498	49 962
incl. federal budget	23 929	1 226	8 100	14 603

Within the framework of the Project implementation, the following investments are envisaged for infrastructure facilities with a total volume **607 bln. rub**

Engineering infrastructure **600 bln. rub**

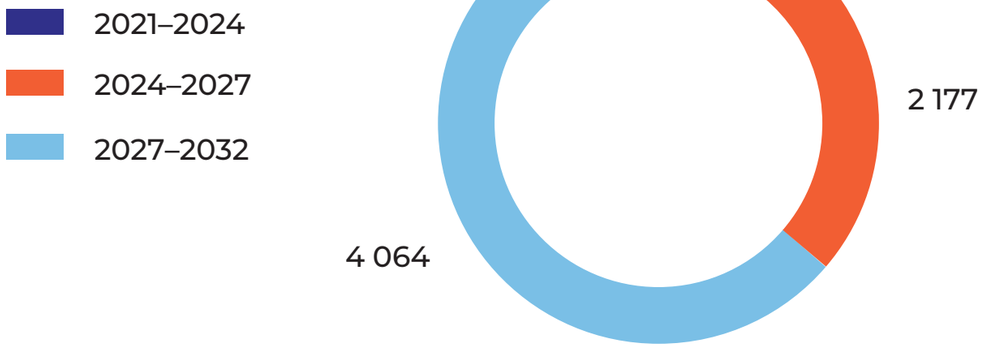
Road infrastructure **7,2 bln. rub**

Financing of the infrastructure component of the Project - transport and engineering infrastructure - is possible through the state program of the infrastructure menu.

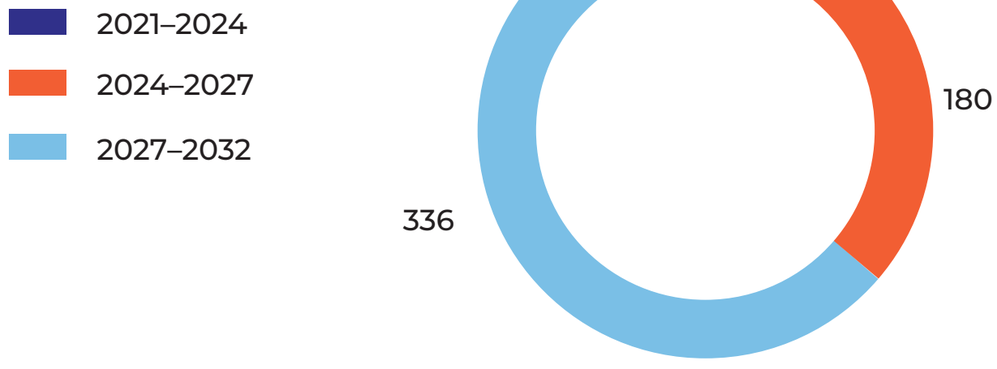
Currently, the infrastructure menu includes three general lines:

- preferential infrastructure loans for regions
- mechanism for writing off budget loans
- new instrument of infrastructure bonds with long-term concessional financing

The structure of investments in transport infrastructure, mln rub.

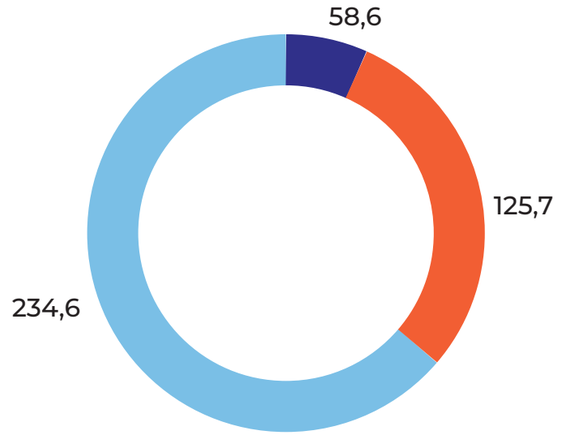


Structure of investments in engineering infrastructure, bln. rub.



The multiplier effect from investments in infrastructure, expressed in the growth of ВРП, may amount to including:

439 bln. rub



1 Stage
(2021–2024 гг)
58,6 bln. rub

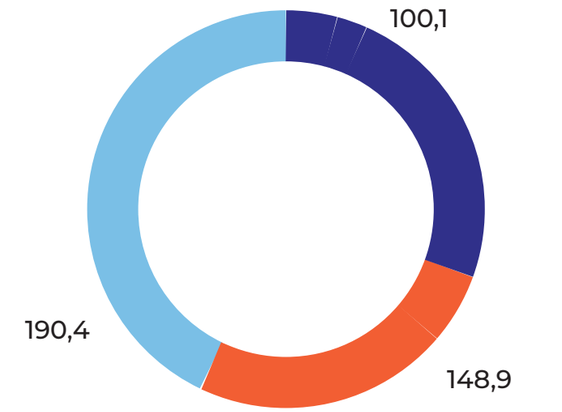
2 Stage
(2024–2027 гг)
125,7 bln. rub

3 Stage
(2027–2032 гг)
234,6 bln. rub

To calculate the economic effect from investments in infrastructure, the multiplier was used 1,15.

The multiplicative effect of investments in fixed assets, expressed in the growth of ВРП, may be including:

413 bln. rub



1 Stage
(2021–2024 гг)
100,1 bln. rub

2 Stage
(2024–2027 гг)
148,9 bln. rub

3 Stage
(2027–2032 гг)
190,4 bln. rub

To calculate the economic effect from investments in fixed assets, a multiplier of 1.3 was used, for investments in growth points - 1.15.

The aggregate growth of regional exports due to the multiplier effect from the construction of new roads will be about 2%, including taking into account the contribution of each stage of the Project:

Stage 1 (2021-2024) - 0.3%
Stage 2 (2024 - 2027) - 0.6%
Stage 3 (2027 - 2032) - 1.1%

To calculate the growth of regional exports, it was assumed that an increase in the length of roads by 10% leads to an increase in regional exports by 16.6%.

The volume of investments in fixed assets within the framework of the Project is planned at the level

611 bln. rub

After the construction of road infrastructure, the length of roads will increase by 1.2%, and in the agglomeration - by 4

The project will create **56,1 ths. jobs**

1 Stage
(2021–2024 гг)
8,2 ths. jobs

2 Stage
(2024–2027 гг)
20 ths. jobs

3 Stage
(2027–2032 гг)
27,7 ths. jobs

In the structure of new jobs, the increase in the number of employed in small enterprises will be **2,5 ths. ppl**

1 Stage
(2021–2024 гг)
312 jobs

2 Stage
(2024–2027 гг)
780 jobs

3 Stage
(2027–2032 гг)
1415 jobs

An increase in the share of employed in small enterprises is envisaged within the framework of new jobs created by the project

1 Stage
(2021–2024 гг)
3,8 %

2 Stage
(2024–2027 гг)
3,9 %

3 Stage
(2027–2032 гг)
5,1 %

The project will stimulate the growth of employed in small enterprises in the region as a whole from 1.2% to 3.5% on average

1 Stage
(2021–2024 гг)
2,4 %

2 Stage
(2024–2027 гг)
3,5 %

3 Stage
(2027–2032 гг)
4,5 %

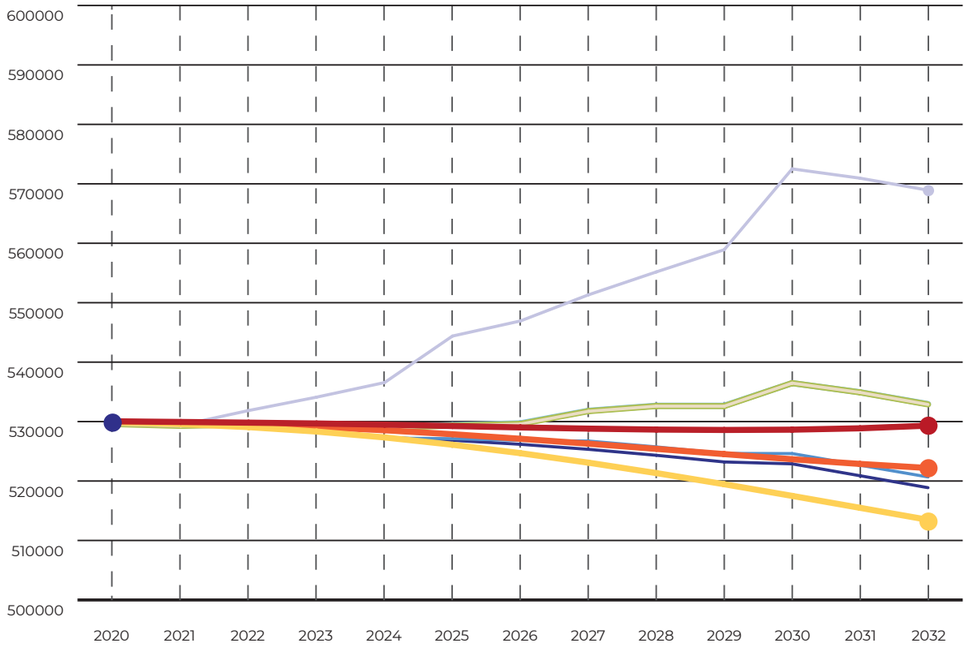
The budgetary effect from the implementation of the Project, expressed in the growth of personal income tax (PIT), will be **2,5 bln. rub**

1 Stage
(2021–2024 гг)
108 mln rub.

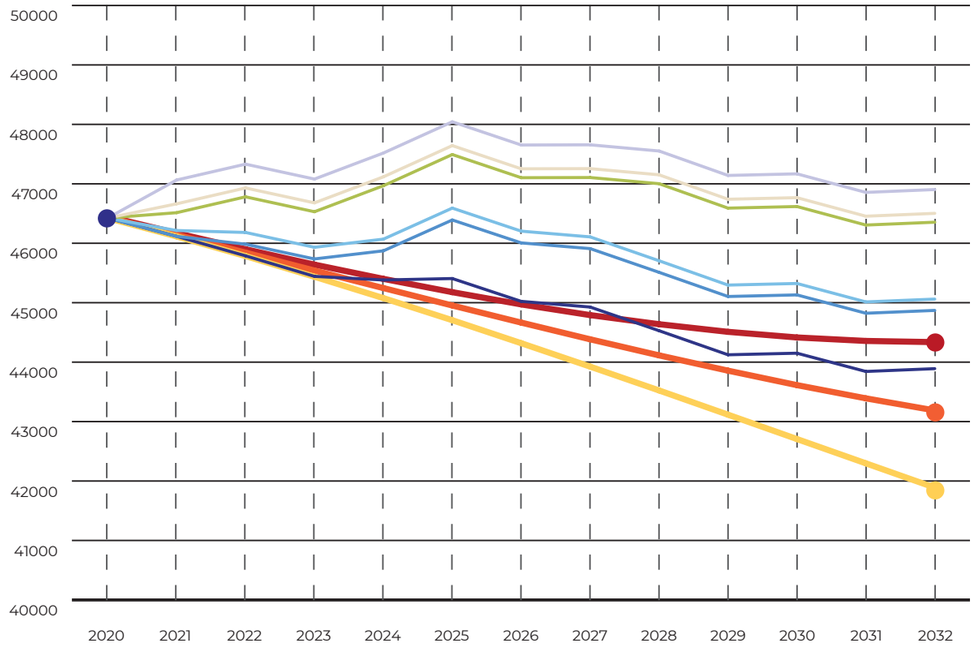
2 Stage
(2024–2027 гг)
503 mln rub.

3 Stage
(2027–2032 гг)
1 923 mln rub.

City Astrakhan



Ikryaninsky municipal district



Scenarios based on from the demographic trend:

Scenario 1

Scenario 2

Scenario 3

Population growth due to the development of economic sectors:

Scientific innovation, ecotechnology

Agrocomplex

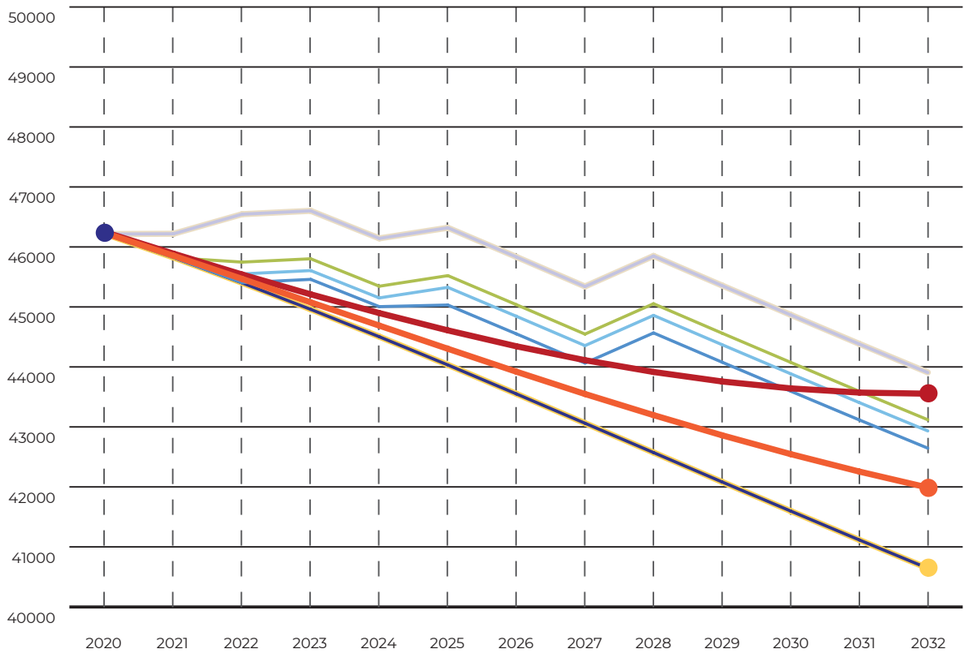
Fishery

Tourism

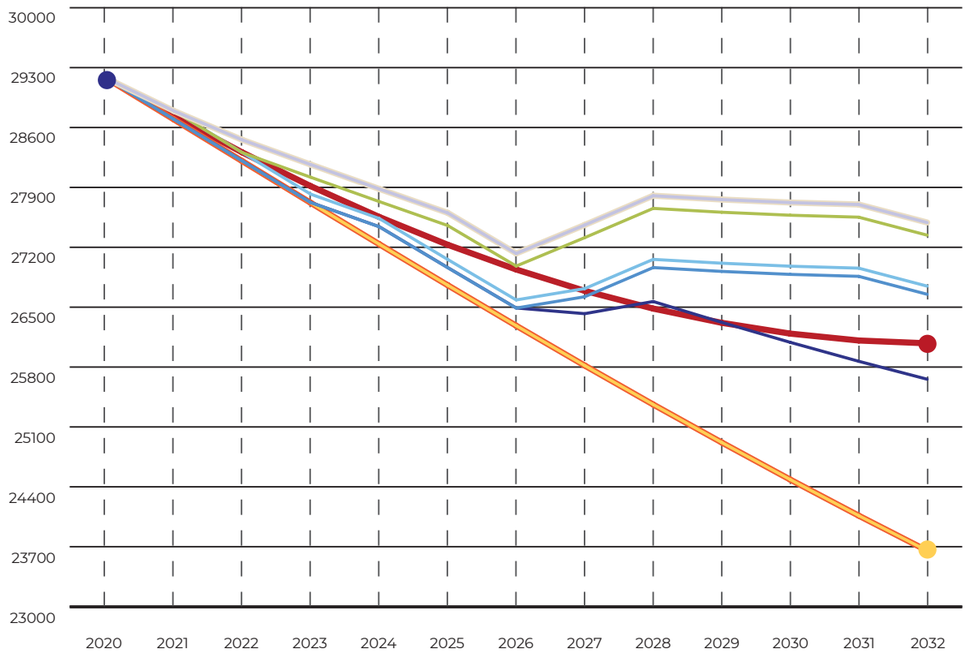
Logistics

Shipbuilding

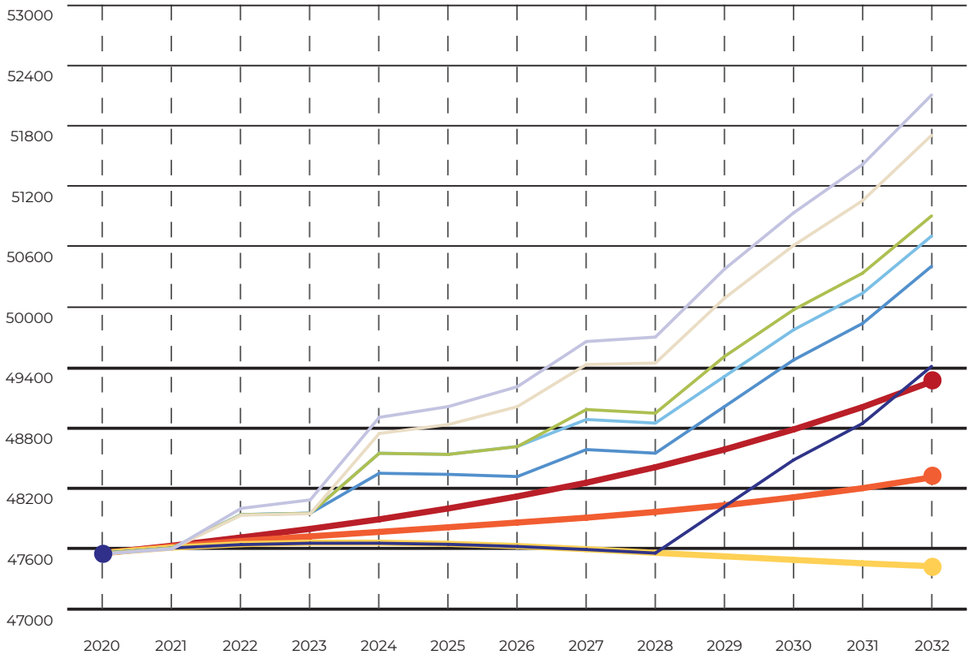
Volodarsky municipal district



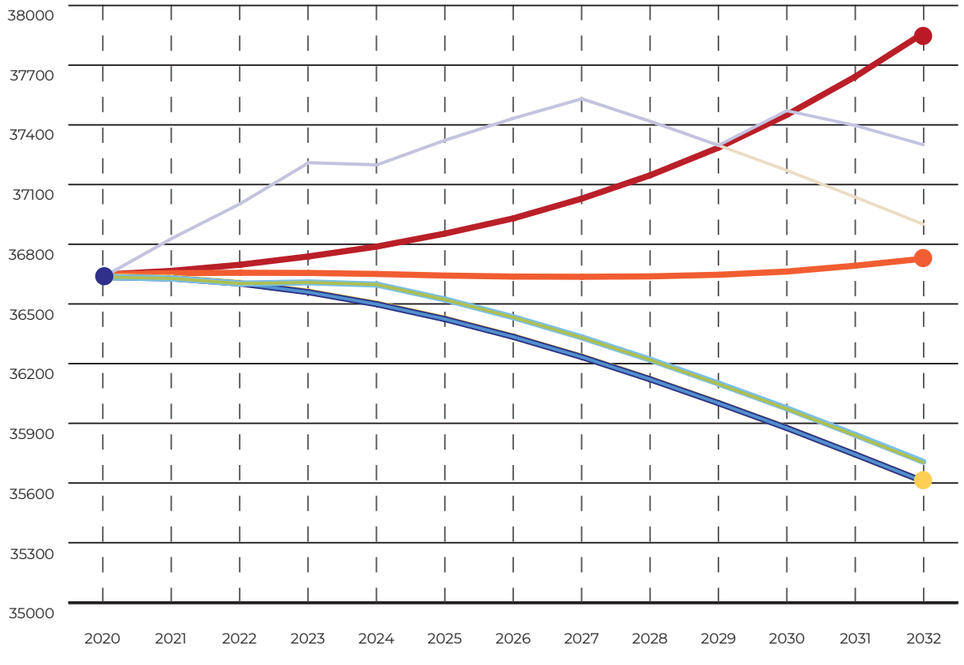
Limansky municipal district



Narimanovsky municipal district



Krasnoyarsky municipal district



Scenarios based on from the demographic trend:

Scenario 1

Scenario 2

Scenario 3

Population growth due to the development of economic sectors:

Scientific innovation, ecotechnology

Agrocomplex

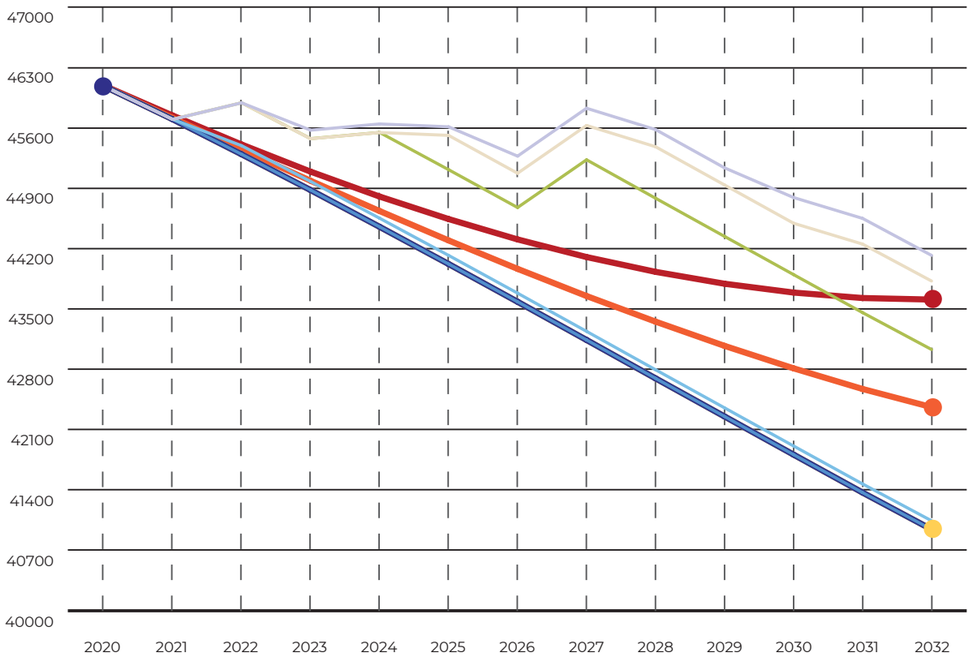
Fishery

Tourism

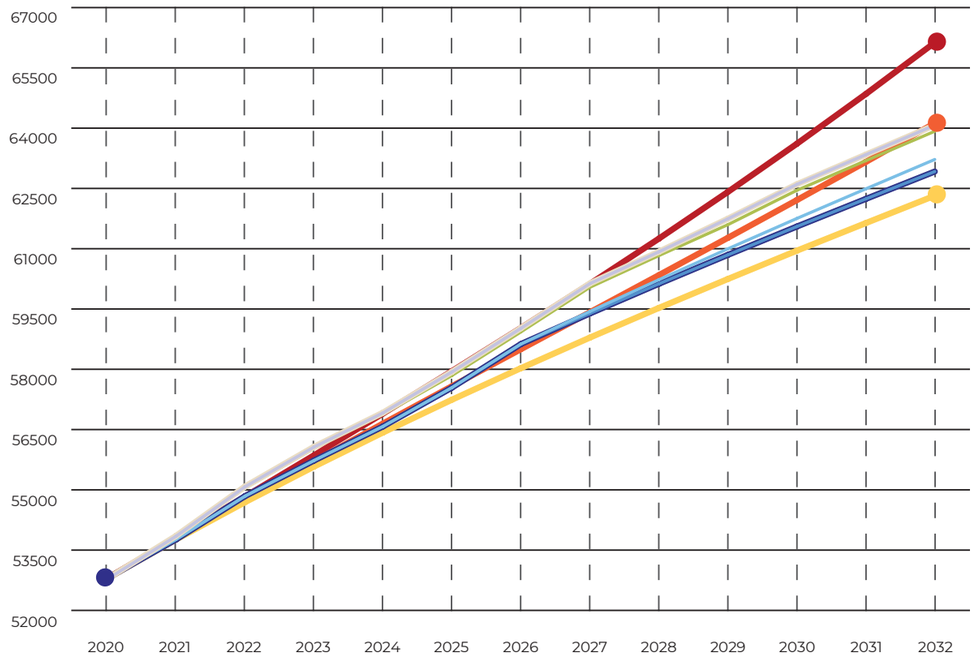
Logistics

Shipbuilding

Kamyzyaksky municipal district



Privoljsky municipal district



Russian venture company

PRIORITY DIRECTIONS:

Thematic areas of the NTI roadmaps are “end-to-end” digital technologies of the national program “Digital Economy of the Russian Federation”, which ensures the digital transformation of priority sectors of the economy and the social sphere of technology related to the implementation of the Strategy for Scientific and Technological Development of the Russian Federation.

TERMS OF PROVISION AND VOLUME OF INVESTMENTS:

The volume of investments depends on the category of the fund (classic venture funds, for young managers, late stages, early stages of NTI support, corporate, foreign venture funds), but no more than 50% of the fund and no more than 2 bln rub.

DOM.RF

PRIORITY DIRECTIONS:

Attracting investments in the housing construction industry is one of the key tasks of DOM.RF as a development institution. One of the ways to provide the mortgage market with financial flows is to place issues of mortgage-backed bonds (MBS).

TERMS OF PROVISION AND VOLUME OF INVESTMENTS:

DOM.RF Bank participates in project financing of investment and infrastructure projects worth over RUB 165 billion.

National Institute for Development, promoting the implementation of state socio-economic policy, increasing the competitiveness of the national economy and its modernization.

DEVELOPMENT INSTITUTIONS, MANAGED BY WEB.RF:

•Technological Development Agency
• Federal Corporation for the Development of Small and Medium Enterprises
• RUSNANO
• Russian Export Center
• State Specialized Russian Export-Import Bank
• Russian Agency for Credit and Investment Insurance
• Development Fund of the Center for the Development and Commercialization of New Technologies
• Russian Fund for Technological Development
• Fund for Assistance to Small Innovative Enterprises in Science and Technology
• Russian Fund for the Development of Information Technologies
• Fund for Infrastructure and Educational Programs

PRIORITY DIRECTIONS:

1. Infrastructure:
   • transport infrastructure;
   • energy infrastructure;
   • infrastructure for industrial sites;
   • high-tech healthcare infrastructure.

2. Industry of high limits: microelectronics, radio electronics, instrument making, power engineering, machine tools, new materials, IT, aviation, technology implementation, engine building, space, pharmaceuticals, rare earth metals.

3. Urban economy.

PROJECT REQUIREMENTS:

1. The total cost of the project is over 1 billion rubles.
2. The minimum aggregate amount of VEB.RF's participation is 500 million rubles.
3. The payback period of the project is more than 1 year.
4. Term of financing. VEB.RF provides mainly medium-term (from 1 to 3 years) and long-term (more than 3 years) financing on a repayable basis. Participates in the capital of a commercial organization - no more than 10 years (no more than 20 years - in the direction of «development of infrastructure and removal of infrastructural restrictions on economic growth»).
5. Compliance with the areas of investment or industry of the draft Strategy and the Memorandum.
6. Break-even project.

Managed by the state development corporation VEB.RF

Russian Fund for the Development of Information Technologies

PRIORITY DIRECTIONS:

- Projects for the development of domestic software.
- Projects for the introduction of digital technologies.

TERMS OF PROVISION AND VOLUME OF INVESTMENTS:

The total amount of grant funding in 2019 exceeded
16 billion rubles.

RUSNANO

PRIORITY DIRECTIONS:

- New materials (nanomaterials)
- Nanoelectronics and Photonics
- Innovative nanobiopharmaceuticals

TERMS OF PROVISION AND VOLUME OF INVESTMENTS:

The co-investor’s contribution to the authorized capital of the project company in the form of intangible assets is accepted at a discount to the market value of intangible assets;

- Financing projects by purchasing preferred shares of a project company;
- The target period for RUSNANO’s participation in the project is 4 years.

Fund for Infrastructure and Educational Programs

RUSNANO Group

PRIORITY DIRECTIONS:

- Nanotechnology and related high-tech sectors of the economy.

TERMS OF PROVISION AND VOLUME OF INVESTMENTS:

- The volume of extra-budgetary funds raised as a result of using the services of the Fund in 2021 -
200 million rubles.

Index*	Units	FCFF	FCFE	Incl. plots of the 1st stage FCFF	Incl. plots of the 1st stage FCFE
Investment activities		**PROJECT**	**on equity**	**PROJECT**	**on equity**
Development budget	rub.	414 455 938 137	414 455 938 137	120 599 649 875	120 599 649 875
Development budget (federal funding)	rub.	15 691 295 597	15 691 295 597	15 243 064 761	15 243 064 761
Development budget (subject)	rub.	3 110 572 577	3 110 572 577	2 872 260 495	2 872 260 495
Development budget (investor)	**rub.**	**395 654 069 963**	**395 654 069 963**	**102 484 324 619**	**102 484 324 619**
Loan interest (construction stage)	rub.		6 232 010 636		1 042 584 484
Income from the investment sale of the object	rub.	145 840 324 798	145 840 324 798	82 518 932 418	82 518 932 418
Operating activities					
Revenues from sales	rub.	694 197 282 903	694 197 282 903	232 753 406 315	232 753 406 315
Operating expenses	rub.	112 525 898 628	112 525 898 628	64 674 704 386	64 674 704 386
Loan interest (exploitation stage)	rub.		57 501 420 641		21 815 457 341
NOI / EBITDA	rub.	581 671 384 275	581 671 384 275	168 078 701 929	168 078 701 929
Income tax	rub.	111 804 853 052	100 435 362 715	30 964 415 511	26 748 190 390
Net profit	rub.	446 950 509 499	400 818 579 195	123 857 662 044	106 258 429 824
VAT refund	rub.	23 907 005 035	23 907 005 035	11 476 022 802	11 476 022 802
Performance indicators		**PROJECT**	**on equity**	**PROJECT**	**on equity**
Net cash flow	rub.	243 959 791 094	191 595 850 154	128 624 917 018	109 983 100 314
NPV Project	rub.	17 603 000 795	7 343 200 490	12 978 935 149	7 847 857 276

* Forecast period for Growth Points - up to 20 years

- The volume of attracted private investments within the framework of the implementation of growth points - 395.65 bln. rub (including 102.48 bln rub within the 1st stage sections)
- Federal funding is 15.69 bln. rub (including 15.24 bln rub within the 1st stage sections)
- Funding by Subject - 3.11 bln. rub (including 2.87 bln rub within the 1st stage sections)
- The total net cash flow from the Projects is 191.6 bln. rub (incl. 109.98 bln. rub - for sites of the 1st stage)
- Aggregate NPV of Projects - 7.34 bln. rub (including 7.85 bln rub - for 1st stage sites)

Indicators of budgetary and social performance

	Units	2 021	2 022	2 023	2 024	2 025	2 026	2 027	2 028	2 029	2 030	2 031	2 032
Total payments to the budget and extra-budgetary funds	**mln rub.**		**1 220**	**5 196**	**8 767**	**10 352**	**10 066**	**16 823**	**15 690**	**16 355**	**17 790**	**20 254**	**11 169**
1. Total taxes	**mln rub.**		**1 220**	**5 196**	**8 764**	**10 256**	**9 965**	**16 709**	**15 509**	**16 162**	**17 582**	**20 019**	**10 925**
Corporate income tax	mln rub.				2 325	6 628	4 122	6 235	10 814	9 315	9 417	15 900	7 343
Property tax	mln rub.		1	13	47	364	368	376	615	622	624	624	623
VAT	mln rub.		1 219	5 182	6 388	3 206	5 412	10 028	3 928	6 066	7 369	3 284	2 746
Personal income tax	mln rub.				1	41	43	49	78	83	89	101	105
Other taxes	mln rub.		0	1	3	18	20	21	75	75	83	110	108
2. Insurance contributions to off-budget funds	**mln rub.**				**3**	**95**	**101**	**113**	**180**	**194**	**208**	**235**	**244**
Total receipts from the budget and extrabudgetary funds	**mln rub.**		**94**	**4 026**	**9 253**	**5 049**	**2 065**	**5 528**	**6 245**	**2 359**	**6 000**	**2 089**	
Funding from the budget of the Subject	mln rub.		94	466	898	3	42	43	1	332	1 230		
Federal funding	mln rub.			2 735	4 278		1 094	2 808		1 365	3 411		
Compensation from the budget	mln rub.												
VAT refund	mln rub.			825	4 077	5 046	929	2 677	6 244	662	1 358	2 089	
Total budgetary cash flow from the project	**mln rub.**		**1 126**	**1 170**	**-486**	**5 303**	**8 001**	**11 295**	**9 445**	**13 996**	**11 790**	**18 165**	**11 169**
Total budgetary effect	**90 974**			**1 811**			**24 598**				**64 565**		
including the subject's budget	**67 044**			**584**			**16 498**				**49 962**		
incl. federal budget	**23 929**			**1 226**			**8 100**				**14 603**		
Employment Impact Assessment													
Average number of employees	ppl				221	6 761	6 900	7 466	11 440	11 833	12 240	13 373	13 384
Wages fund (excluding personal income tax and social contributions)	mln rub.				9	275	291	327	520	558	598	678	704
Employed (at the end of the forecast period)	ppl	13 384											

- The cumulative budgetary effect, within the forecast period, from growth points will be 91 bln. rub,
- The budgetary effect for the Subject is 67 bln. rub,
- Number of new jobs ~ 13 384

Participants / actors in the implementation of activities in the direction

FEDERAL

- Ministry of Education of the Russian Federation
- Ministry of Economic Development of the Russian Federation
- Ministry of Science and Higher Education of the Russian Federation
- Ministry of Labor and Social Development of the Russian Federation
- Federal Agency for Youth Affairs

MUNICIPAL

- Administrations of municipalities

OTHER ORGANIZATIONS

- Educational organizations state
- Enterprises and non-profit organizations
- Private organizations

FIELD OF ACTIVITY

- Coordination and support of the implementation of state programs, including the provision of educational facilities
- Providing access to municipal property
- Coordination of construction projects
- Development and implementation of additional programs. education, professional development, retraining
- Help in finding a job
- Related curricula and programs to the system of continuing education
- Organization of practices and internships
- The program «two diplomas»
- Implementation of design, coordination and construction of facilities
- Collaboration of business and science

SOURCES OF FINANCING

STATE PROGRAMS

Development of education

- Priority project

«Creation of a modern educational environment for schoolchildren»

- Scientific and technological development
- Promotion of employment for the population
- Economic development and innovative economy

FEDERAL DEVELOPMENT INSTITUTIONS

- VEB.RF (including the Fund for Infrastructure and Educational Programs,
- Russian Fund for the Development of Information Technologies)
- Russian venture company

OTHER PRIVATE INVESTMENTS

RESULT

- Interuniversity research and educational campus
- Business incubator
- Center for Applied Qualifications,

small business center (based on a business incubator)

- Children's Technopark
- Modular kindergartens
- Portable classes
- Educational laboratories and offsite courses

EFFECTS

- Creation of a unified cultural and educational space, allowing to identify and develop gifted children and youth
- Formation of professional staff
- Enhancing the role of Russia in the humanitarian space of the Caspian macro-region
- Promotion of entrepreneurship
- «Whitewashing» of the economy, solving employment issues
- Maintaining a system of collaboration between science and business
- Transition of all schools to one-shift education
- Creation of a system of social opportunities through obtaining high-quality applied education
- Return of the economically active population to the region
- Modernization of education

TARGETS

1. Increase in the proportion of graduates who were employed during the calendar year following the year of graduation to **63%**
2. An increase in the number of workshops equipped with a modern material and technical base in one of the competencies up to **85%**
3. An increase in the coverage of children aged 5 to 18 with additional education programs by more than **80%**
4. The share of children aged 2 months to 7 years, provided with places in preschool institutions **100%**
5. Number of created digital education centers for children IT-cube **5 un.**
6. The number of new places for the recreation of children and their recovery using the mechanism of public-private partnership **5 un.**
7. Index of availability and demand for scientific and scientific-technical infrastructure and information **85 %**
8. Growth of internal costs for research and development due to all sources of **50 %**
9. The share of employees who continue to work, among employees who have undergone retraining or upgraded their qualifications **85 %**
10. Unemployment rate for young people aged 25-29 **5 %**
11. Unemployment rate **5 %**
12. The share of the average number of employees (excluding external part-time workers) employed in micro-, small and medium-sized enterprises, and among individual entrepreneurs, in the total number of employed population **15 %**
13. Position in the overall ranking in terms of population engagement in small business **top 40**
14. Share of organizations implementing technological innovations in the total number of organizations **30 %**

PARTICIPANTS / ACTORS IN THE IMPLEMENTATION OF ACTIVITIES IN THE DIRECTION

FEDERAL

- Ministry of Energy of the Russian Federation
- Ministry of Natural Resources of the Russian Federation
- Ministry of Water Resources of the Russian Federation
- Ministry of Agriculture of the Russian Federation

MUNICIPAL

- Government of the Astrakhan region
- Regional Offices
- Administration

OTHER ORGANIZATIONS

- Government of the Astrakhan region
- Regional Offices
- Administration

FIELD OF ACTIVITY

- Support and assistance in organizing a stable network of tourist routes, collaboration with federal projects
- Maintenance and control of events in terms of cultural heritage objects

- Promoting the development of the tourism sector
- Provision of municipal facilities

SOURCES OF FINANCING

STATE PROGRAMS

- Energy development (development of the use of renewable energy sources)
- Development of the fishery complex (development of aquaculture, science and innovation, development of sturgeon farming)
- Agricultural development
- Effective involvement of agricultural land in the turnover and development of the ameliorative complex of the Russian Federation

federal development institutions

- VEB.RF (infrastructure projects, development of the city's economy, including projects of JSC Rusnano)
- Russian venture company

OTHER PRIVATE INVESTMENTS

RESULT

• The introduction of environmental technologies in the electric power industry (solar panels)

• Organization of measures to improve and increase the efficiency of agriculture in terms of creating a stable irrigation system, developing alternative sources of agriculture, including hydroponics, drip irrigation, eco-farming

EFFECTS

• Filling the economic niche at the federal level

• Solving the issues of disposal and processing of waste, including hazardous waste of spent solar batteries

• Improving the quality of the agricultural sector

TARGETS

1. The share of the installed capacity of generating facilities operating on the basis of the use of renewable energy sources in the total volume of generating capacities of the entity **15 %**
2. Commissioning of the installed capacity of generating facilities operating on the basis of the use of renewable energy sources (excluding hydroelectric power plants with an installed capacity of over 25 MW), in% relative to the current situation **200 %**
3. Growth in the volume of exports of fish products with a high degree of processing (relative to the current) **110 %**
4. Increase in the volume of production of commercial aquaculture products, including planting material (in relation to current indicators) **10 %**
5. The volume of the estimated potential of the raw material base of aquatic biological resources (annual value) **635 thousand tons**
6. Growth in the volume of exports of agricultural products (relative to the current one) **130 %**
7. Agricultural production index in farms of all categories to the level of the current year **120 %**
8. Ensuring the water regime of irrigation and drainage systems **85 %**
9. Involvement of agricultural land in turnover **95 %**

PARTICIPANTS / ACTORS IN THE IMPLEMENTATION OF ACTIVITIES IN THE DIRECTION

FEDERAL

- Ministry of Transport of the Russian Federation
- Fun. agency of sea and sea and river transport of the Russian Federation
- Fun. air transport agency
- Fun. About railway transport agency
- Fun. road agency

MUNICIPAL

- Government of the Astrakhan region
- Municipal and regional departments

OTHER ORGANIZATIONS

- JSC Russian Railways
- Management company
- Public transport operators

FIELD OF ACTIVITY

- Coordination of international interactions (ITC North-South, Caspian region)
- Regulation of customs restrictions and duties
- Coordination of transport hubs (Astrakhan International Airport (Narimanovo) and transport and logistics center)

Providing access to engineering and transport networks

Implementation of the functioning of the transport and logistics complex

Implementation of the development and functioning of the public transport system

SOURCES OF FINANCING

STATE PROGRAMS

- State programs
- Development of the transport system, incl. directions:
- Sea and river transport
- Railway transport
- Digital transport and logistics
- Comprehensive development of transport services
- Road facilities

FEDERAL DEVELOPMENT INSTITUTIONS

- VEB.RF (infrastructure projects, development of the city's economy)

At the moment, at the SPIEF in St. Petersburg in June 2021, a preliminary cooperation agreement was concluded with VEB.RF on the creation of a unified public transport operator for the region.

OTHER PRIVATE INVESTMENTS

RESULT:

- World-class transport and logistics complex
- Modernization of public transport in the region

EFFECTS:

- Filling the economic niche in the region
- Increase in the number of jobs
- Increasing the competitiveness of the region
- Improving the connectivity of the territory

TARGET INDICATORS:

- Transport mobility of the population is 9.5 thousand passenger-km per 1 inhabitant
- The share of the road network of urban agglomerations that meets the regulatory requirements 85%
- The share of regional roads that meet regulatory requirements is 50%
- Transport infrastructure quality index, up to 115%
- Increase in the number of public transport routes 150%

PARTICIPANTS / ACTORS IN THE IMPLEMENTATION OF ACTIVITIES IN THE DIRECTION

FEDERAL

- Ministry of Tourism of the Russian Federation
- Ministry of Culture of the Russian Federation
- Ministry of Protection of Cultural Heritage of the Russian Federation

MUNICIPAL

- Government of the Astrakhan region
- Administration of municipalities

OTHER ORGANIZATIONS

- Private investors, including transport companies
- Food manufacturers
- Hotel

FIELD OF ACTIVITY

- Support and assistance in organizing a stable network of tourist routes, collaboration with federal projects
- Maintenance and control of events in terms of cultural heritage objects

- Promotion of tourism development, provision of municipal facilities

- Organization, design and construction of facilities

SOURCES OF FINANCING

STATE PROGRAMS

- Development of culture, incl. direction tourism

FEDERAL DEVELOPMENT INSTITUTIONS

- VEB.RF (infrastructure projects, development of the city's economy)
- DOM.RF

OTHER PRIVATE INVESTMENTS

RESULT:

- Formation of the tourist center of the region and the Astrakhan historical center
- Cultural and Exhibition Center
- Hotel and business center
- Development of the hospitality industry
- Expansion of the infrastructure of service, services and entertainment,
- Development of health and water sports tourism

EFFECTS:

- Strengthening the international image of Russia as a country with a high level of culture, favorable for tourism
- «Whitewashing» of the economy
- Development of cultural, educational and gastro-tourism (eco-farming)
- Preservation of national culture
- Stimulating entrepreneurship. activity
- Increased traffic flow
- Increase in tax revenues to the budgets of municipalities
- Decrease in seasonal dependence of tourist flow
- Branding of the region

TARGET INDICATORS:

- Number of persons accommodated in collective accommodation facilities 500 ths. ppl
- The proportion of children involved in creative activities of the total number of children 150%
- Average number of exhibitions 7 per 10 thousand people
- The share of buildings of cultural institutions in satisfactory condition in the total number of buildings of these institutions is 83%

REGIONAL BRANCH PUSHKIN MUSEUM

MUSEUM'S BRANCHES IN FIVE CITIES

interaction experience between museum, power and sponsors

ASTRAKHAN STATE MUSEUM-RESERVE

permanent exhibition content

methodology / technology

exchange of exhibitions

logistics

strict storage requirements

AREA DEVELOPMENT «SOUTH PORT»

exhibition squares

inside restore wired buildings

outdoors

LARGE COMPANIES (GAZPROM / LUKOIL)

SUPPORT REGIONAL AUTHORITIES

SPONSORSHIP

EVENT PROGRAM

portability to the cultural and educational exhibition cluster

?

POTENTIALLY ENDANGERED MUSEUMS OF THE CENTRAL FEDERAL DISTRICT

PEAK PROJECT

THE TERMS OF PARTICIPATION IN THE BUILDING COMPLEX OF THE REGION

- territories of prospective development (landmarks)
- approximately 20% of the construction market

TERMS OF SALE DEVELOPMENT SITES

- balance of income / expenses - 1.25
- minimum territory encumbrances

INVESTMENT AGREEMENT

- 1 million m²/10 years 100 thousand m² per year

PEAK FRANCHISE

PLASTIC BAG TECHNOLOGICAL SOLUTIONS

- production technology
- quality standards
- software

LOCAL DEVELOPER

Indicators of budgetary and social performance

	Units	2 021	2 022	2 023	2 024	2 025	2 026	2 027	2 028	2 029	2 030	2 031	2 032
Total payments to the budget and extra-budgetary funds	**mln rub.**		**887**	**4 379**	**5 701**	**7 677**	**3 660**	**2 906**	**2 493**	**2 973**	**3 380**	**3 404**	**3 351**
1. Total taxes	**mln rub.**		**887**	**4 379**	**5 698**	**7 590**	**3 569**	**2 812**	**2 386**	**2 863**	**3 265**	**3 278**	**3 221**
Corporate income tax	mln rub.				463	6 358	1 821	757	545	755	881	1 277	1 145
Property tax	mln rub.		0	9	39	351	350	348	382	379	375	372	369
VAT	mln rub.		887	4 369	5 193	827	1 342	1 651	1 396	1 664	1 940	1 556	1 632
Personal income tax	mln rub.				1	37	39	40	46	48	49	54	56
Other taxes	mln rub.		0	1	2	16	17	17	18	18	18	19	19
2. Insurance contributions to off-budget funds	**mln rub.**				**2**	**87**	**91**	**94**	**107**	**111**	**115**	**126**	**130**
Total receipts from the budget and extrabudgetary funds	mln rub.		94	3 849	9 110	5 015	1 067	3 062	492	1 633	4 793	477	
Funding from the budget of the Subject	mln rub.		94	427	858	3	3	3	1	293	1 190		
Federal funding	mln rub.			2 636	4 174		1 032	2 745		1 306	3 350		
Compensation from the budget	mln rub.												
VAT refund	**mln rub.**			**786**	**4 077**	**5 012**	**32**	**314**	**491**	**35**	**253**	**477**	
Total budgetary cash flow from the project	**mln rub.**		**793**	**530**	**3 409**	**2 662**	**2 592**	**155**	**2 002**	**1 340**	**-1 414**	**2 927**	**3 351**
Total budgetary effect	**11 219**		**-2 086**				**5 099**				**8 207**		
including the subject's budget	14 790		-433				9 305				5 918		
incl. federal budget	-3 571		-1 653				-4 207				2 289		
Employment Impact Assessment													
Average number of employees	ppl				162	6 165	6 184	6 184	6 773	6 774	6 774	7 141	7 142
Wages fund (excluding personal income tax and social contributions)	mln rub.				6	251	261	271	308	319	331	362	375
Employed (at the end of the forecast period)	ppl	7 142											

- The cumulative budgetary effect, within the forecast period, from the development of the first stage sites will be 11.2 bln. rub,
- The budgetary effect for the Subject from the development of the plots of the first stage - 14.8 bln. rub,
- The number of new jobs, within the framework of the development of sections of the first stage ~ 7 142

Phase 1 plots

End of the development competition master plan agglomeration

Formation of an interdepartmental commission (IAC) chaired by the Governor Astrakhan region

Development of integrated development programs agglomeration

Accounting for the results of the competition as part of the PKR municipalities, including as part of a single document on the integrated development of territories that are part of agglomeration, with a clear algorithm:

- event
- source of financing
- implementation period
- indicator / indicator of project implementation

Formation project office for the development of the Astrakhan agglomeration

Invitation of AGASU graduates to the project office. Search for Astrakhan specialists in other regions

Participation of an international consortium in the creation of the office. Search for specialists, exchange of competencies

Alteration in legislation Astrakhan region

The law on a single advisory body for inter-municipal projects management (council of heads of agglomeration districts)

Law on the Regional Urban Planning Land Commission

Resolving issues organization and expertise, project approval / activities

Creation of a pilot project devices

Demonstration of the first victories to the public - a pilot project that will help unite people around itself

Formation of a pool of contractors (primarily local design organizations)

Preparation of the initial permissive documentation on investment lots

Launch of the tender procedure and selection of a design organization

Launch of project work, formation of estimates

Formation of a pool of contractors (primarily local design organizations)

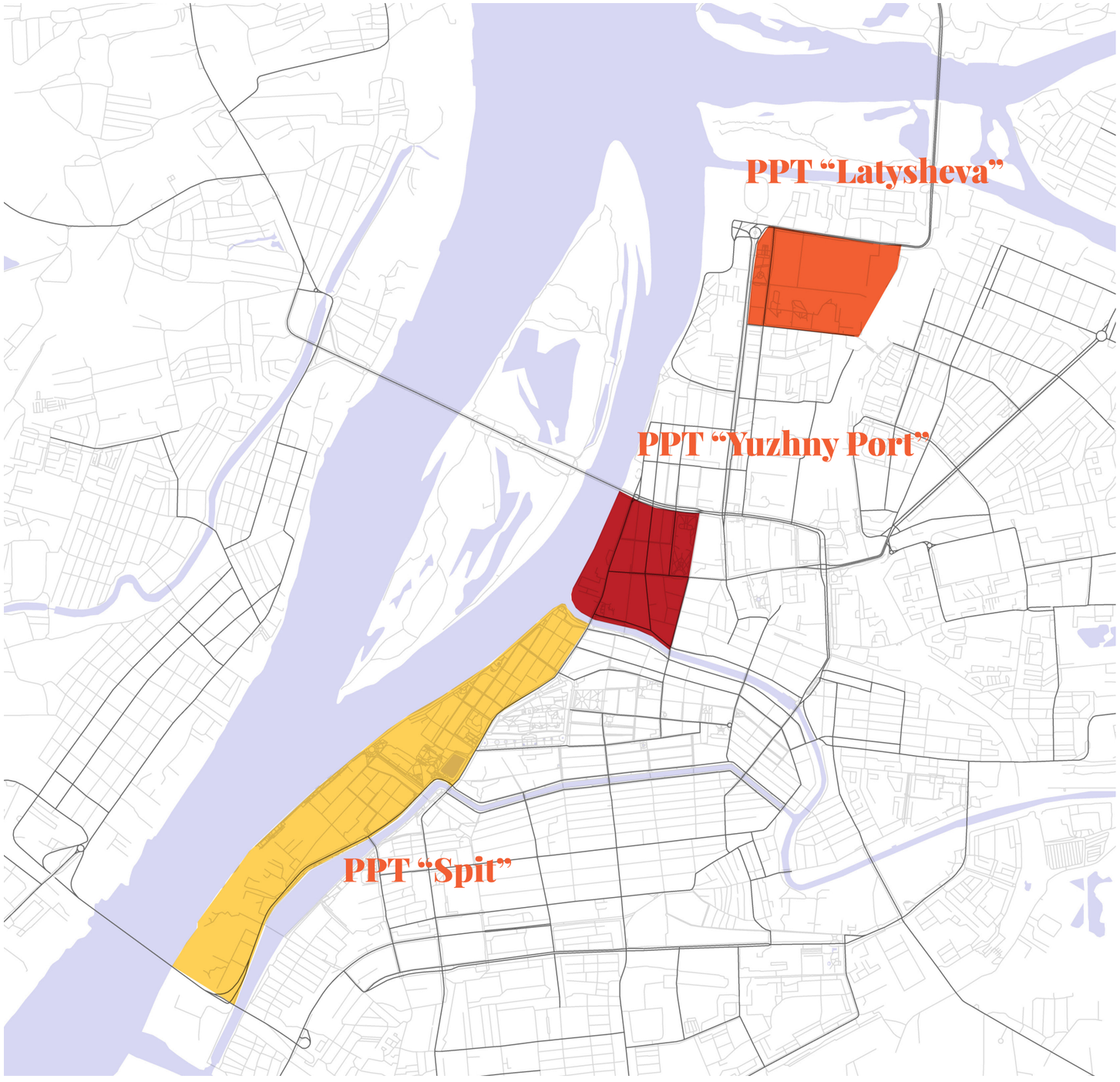
Alteration in the territorial planning scheme of the Astrakhan region

Changes to the Gene-regional plans of the municipalities of the Astrakhan areas of agglomeration

Activity	2021						2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
	7	8	9	10	11	12											
Formation of an interdepartmental commission (IAC) chaired by the Governor of the Astrakhan region																	
Creation of a public council to monitor and manage work on the implementation of the master plan activities, PR events																	
Coordination and monitoring by public councils of works on the implementation of activities of the master plan																	
Accounting for the results of the international competition as part of the program for the integrated development of municipalities, including as part of a single document on the integrated development of territories that make up the agglomeration, with a clear algorithm: event - source of funding - implementation period - indicator / indicator of project implementation																	
Formation of the investment plan of the project. Formation of packages of investment agreements for the development of investment lots proposed by the project of a new city. Search for potential investors.																	
Amendments to the territorial planning scheme of the Astrakhan region																	
Amendments to the Master plans of the municipalities of the Astrakhan region that are part of the agglomeration																	
Determination of the business model of the project (management structure, distribution of functions of participants), a mechanism with the involvement of non-budgetary sources of funding (House of the Russian Federation, VEB, federal grants, competitions, etc.)																	

Activity	2021						2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
	7	8	9	10	11	12											
Creation of a project office as an operator (municipal and inter-municipal level): solution of issues of organization and expertise, coordination of projects / events																	
Creation of a creative office (team of architects) as a structure accompanying the implementation of events, including: attracting left specialists, for whom Astrakhan is their home region, attracting graduates of local universities																	
Determination of the responsible for the blocks and types of activities of the integrated development program at the level of municipalities																	
First priority for quick accomplishment wins																	
Formation of a pool of contractors, primarily local design organizations																	
Preparation of initial permits for investment lots																	
Launch of the tender procedure and selection of a design organization																	
Design work, budgeting																	
Examination of estimates																	
Launch of the tender procedure and selection of a contractor																	
Implementation of construction works																	
Commissioning of facilities																	

Site name	Stage	2021-2024	2025-2028	2029-2032	Development targets	Brief description of the site
Site "Kosa area"	I. Infrastructure facilities, site preparation, landscaping	Budgetary allocations: 3 billion rubles, Coordinator - project office, Source of funding: region, development institutions			**221.5 thousand sq. m of development, including 104.7 thousand sq. m of residential development**	Development of the historical center of Astrakhan. With the careful preservation and restoration of cultural heritage objects, it is proposed to fill in the abandoned voids in order to accommodate commensurate residential and public buildings. The construction of the ACS is accompanied by the improvement of streets and the reconstruction of engineering networks. It is proposed to place new objects of trade, culture and recreation in the restored OKN. It is proposed to form the southern point of the Moscow-Astrakhan river route on the territory of the district (new berthing infrastructure in the area of the Azimut hotel).
	II. Implementation of the project		Investment volume, about 8.6 billion rubles, Coordinator - project office, Source of funding - investor			
"Cultural and Educational Exhibition Cluster (South Port)" site	I. Infrastructure facilities, site preparation, landscaping	The volume of budget allocations: determined at subsequent stages, Coordinator - project office, Source of funding: region, development institution			620.9 thousand sq. m of development, including 202.4 thousand sq. m of residential development	On the site of the former port, a multifunctional development is proposed, which includes the organization of a new embankment capable of uniting the river front of the city into a single whole. The project allows you to place investment-attractive comfort class housing.
	II. Implementation of the project		Investment volume, about 33.3 billion rubles, Coordinator - project office, Source of funding - investor			
Site "Territory of integrated development along Baku street"	I. Infrastructure facilities, site preparation, landscaping	The volume of budget allocations: determined at subsequent stages, Coordinator - project office, Source of funding: region, development institution			**2286 thousand sq. m of development, including 1,461.6 thousand sq. m of residential development**	A large-scale project for the integrated development of the territory in the south of the historical center of Astrakhan. The project offers residential development of 12-16 floors of standard class with social infrastructure facilities.
	II. Implementation of the project		Investment volume, about 86.1 billion rubles, Coordinator - project office, Source of funding - investor			
Site "Northern residential area"	I. Infrastructure facilities, site preparation, landscaping	The volume of budget allocations: determined at subsequent stages, Coordinator - project office, Source of funding: region, development institution			**2165.4 thousand sq. m of development, including 1,153 thousand sq. m of residential development**	The creation of a sufficient supply for a new economy class housing stock was the organization of a new residential area consisting of a more active center and a quiet periphery (morphotype of houses on 3-4 floors). The development is accompanied by the necessary social infrastructure facilities.
	II. Implementation of the project		Investment volume, about 90.5 billion rubles, Coordinator - project office, Source of funding - investor			
Hotel and Business Cluster site	I. Infrastructure facilities, site preparation, landscaping	The volume of budget allocations: determined at subsequent stages, Coordinator - project office, Source of funding: region, development institution			**2254.7 thousand sq. m of development, including 1,655.4 thousand sq. m of residential development**	The creation of a new habitat, organically integrated into the urban environment and intertwined with the natural environment, is a territory that disposes people to live, work and make plans for the future in Astrakhan. The result of the design solution is a network of urban corridors that guarantees the connectivity of natural objects and water flows, which minimizes the threat of floods in the city, supports biodiversity, facilitates access to green areas, and also increases the city's ability to adapt to climate change.
	II. Implementation of the project		Investment volume, about 128.3 billion rubles, Coordinator - project office, Source of funding - investor			
Olya Settlement site	I. Infrastructure facilities, site preparation, landscaping	The volume of budget allocations: determined at subsequent stages, Coordinator - project office, Source of funding: region, development institution			**127.2 thousand sq. m of development, including 85.9 thousand sq. m of residential development**	In conjunction with the development of the special economic zone of the port of Olya, it is proposed to place a new residential settlement with modern 3-4-storey buildings in accordance with the international principles of ecosystem urbanism.
	II. Implementation of the project		Investment volume, about 5.6 billion rubles, Coordinator - project office, Source of financing - investor, region, development institutions			



PPT “Latysheva”
45.9 – 196.2 hectares

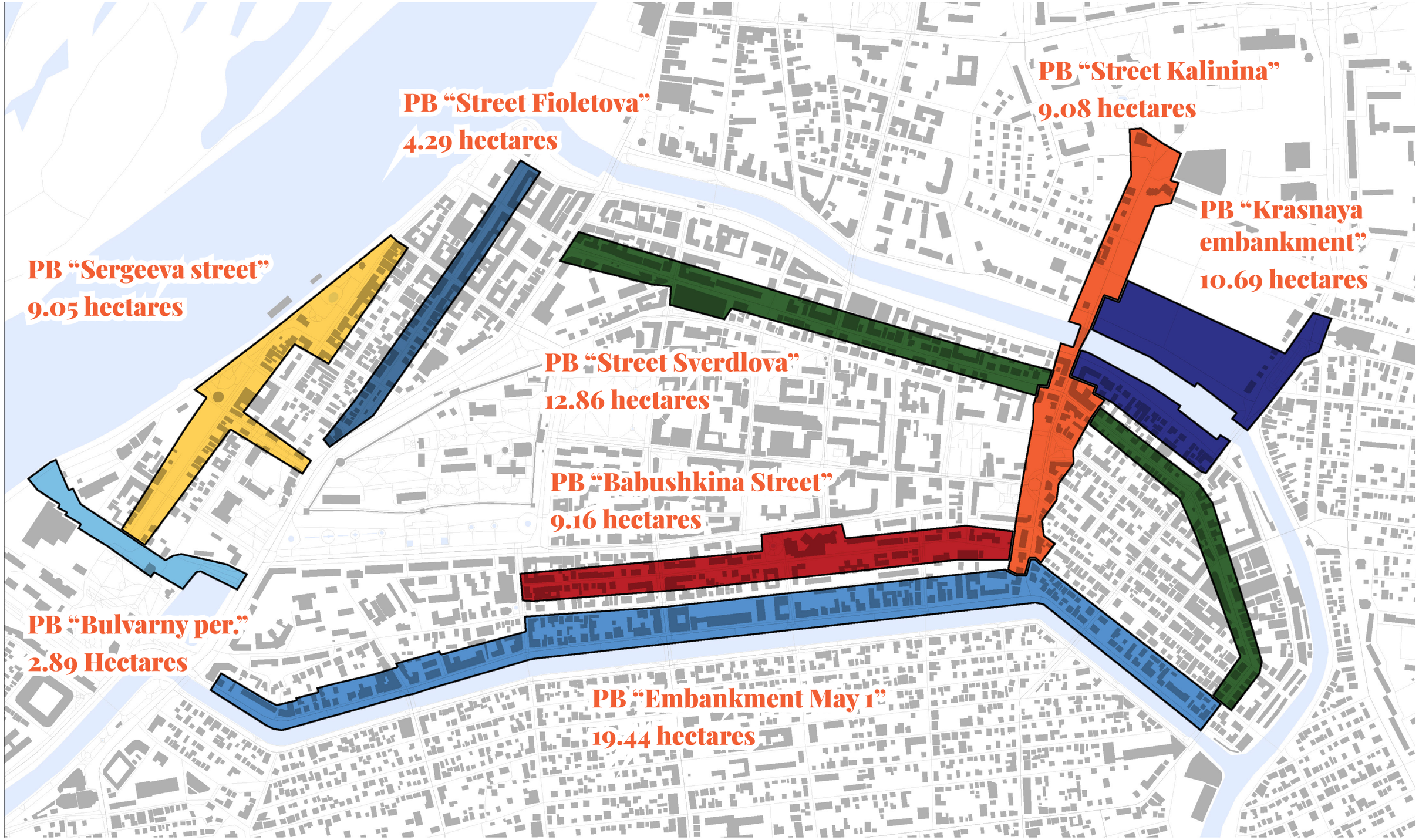
Tasks - study of the territory of the former factory’s KRT. Providing the territory with public facilities

PPT “Yuzhny Port”
107.2 – 153 hectares

Objectives - study of the territory of the former port of the KRT. Increase in building density due to the demolition of ruins and emergency buildings within the boundaries of residential areas

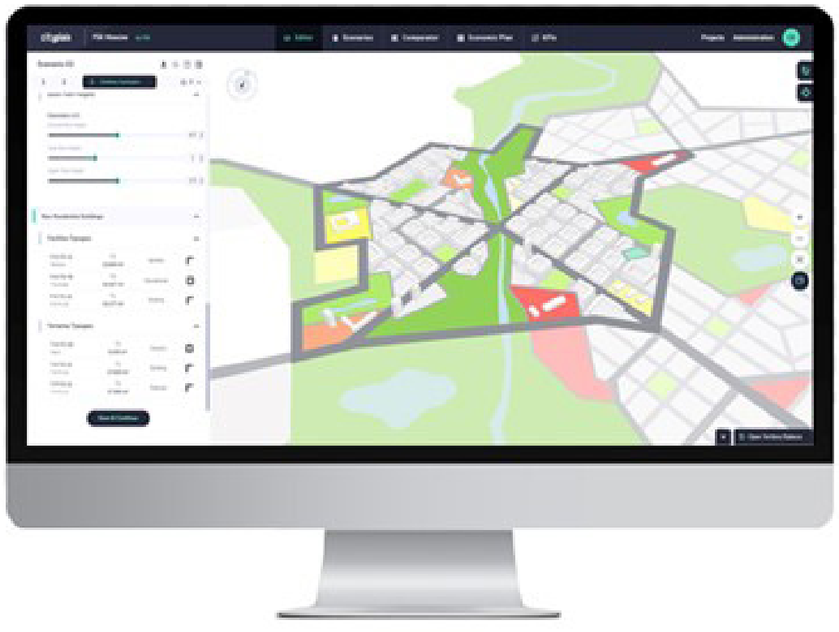
PPT “Spit”
327 – 370 hectares

Tasks - infrastructure balance of the territory (transport, engineering, social infrastructure). Synchronization of reconstruction of CHS and improvement of streets


PB “Street Fioletova”
4.29 hectares
PB “Street Kalinina”
9.08 hectares
PB “Krasnaya embankment”
10.69 hectares
PB “Sergeeva street”
9.05 hectares
PB “Street Sverdlova”
12.86 hectares
PB “Babushkina Street”
9.16 hectares
PB “Bulvarny per.”
2.89 Hectares
PB “Embankment May 1”
19.44 hectares

CITYPLAiN

Citythinking's AI-based tool for integral territorial, urban and architectural design, and for massive affordable housing construction (+100 ha).

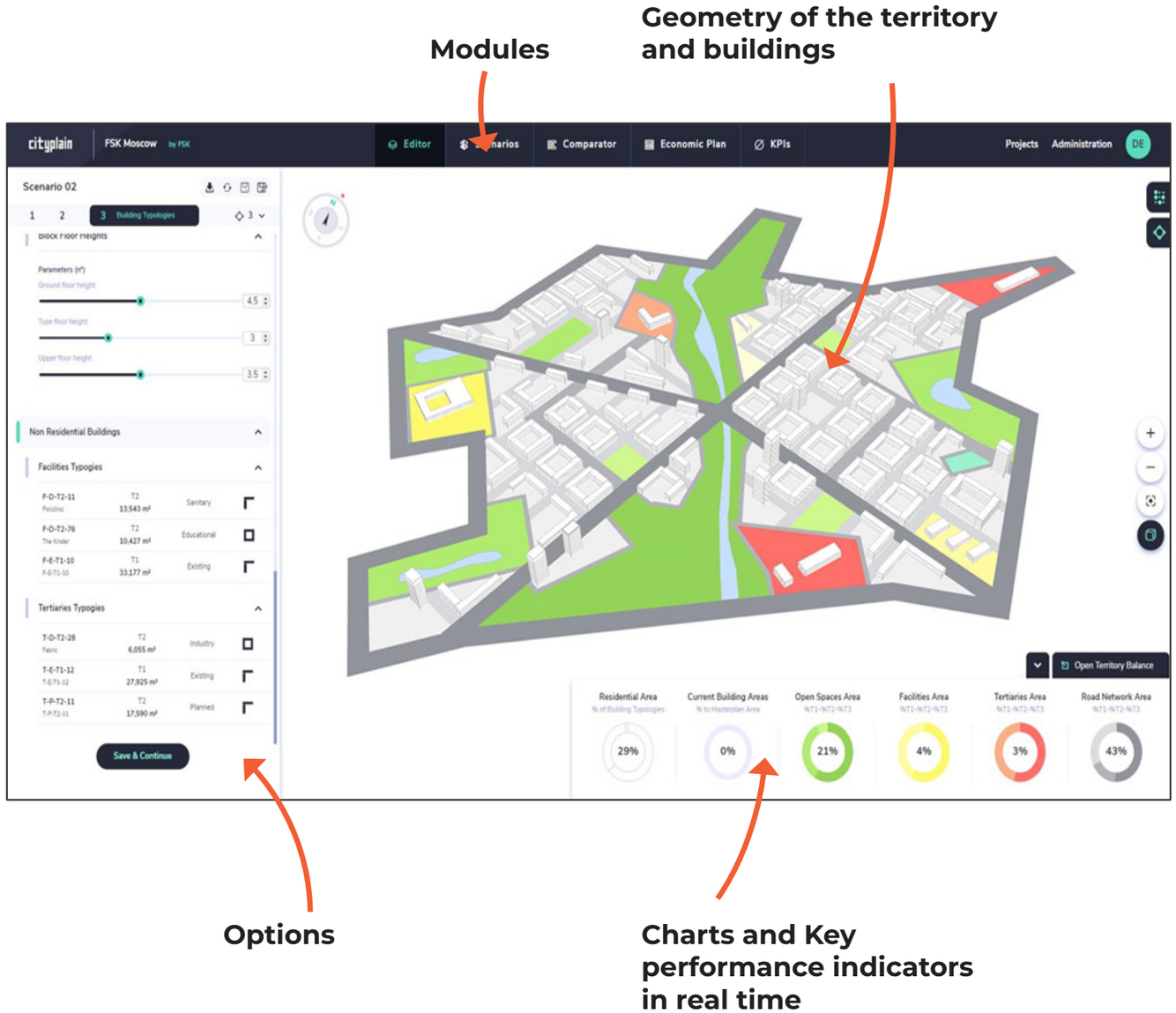


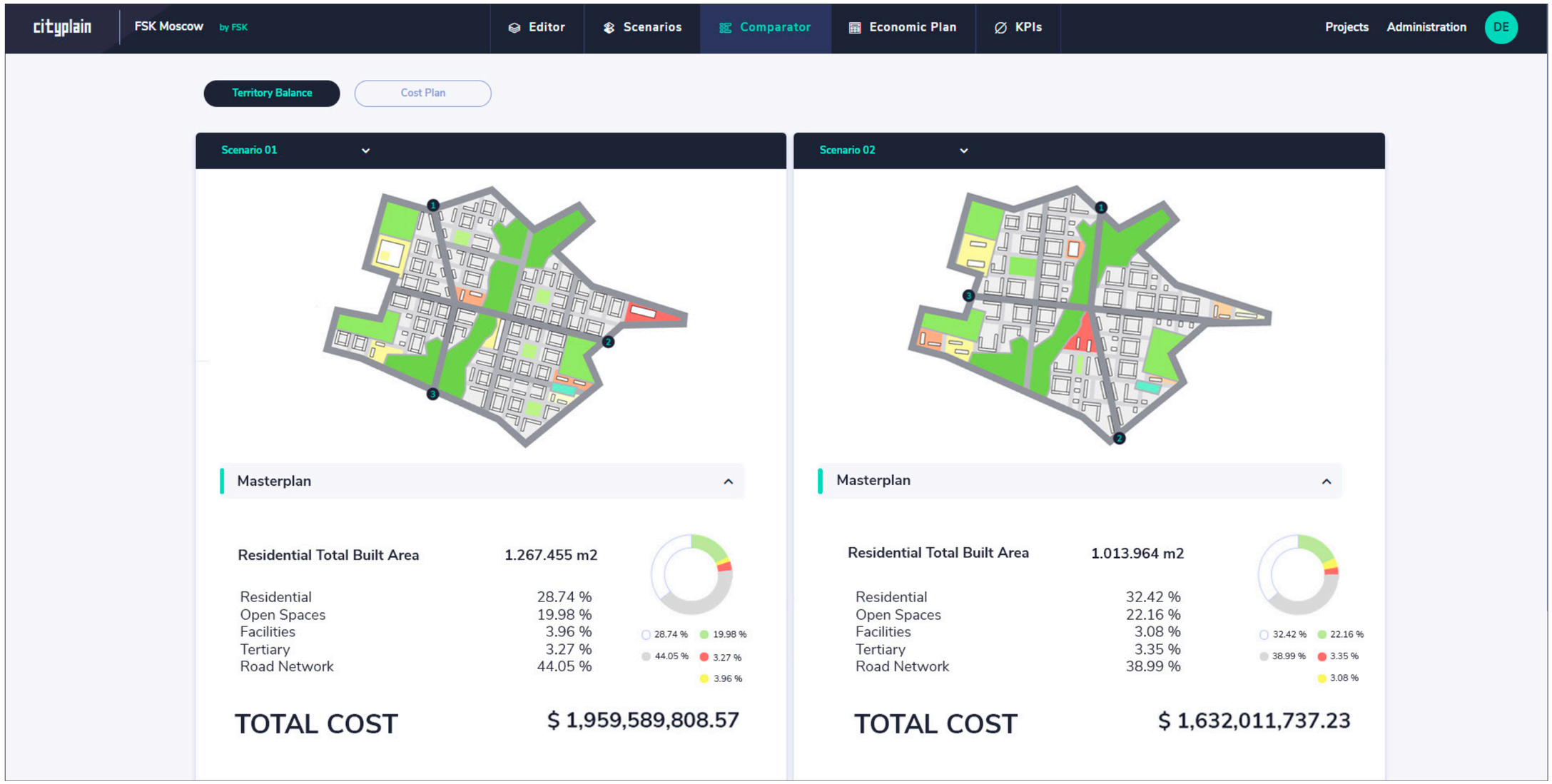
Industrialised process

Utilizing a set of KPI’s of the Ecosystemic Urbanism model, we will apply a unique series of industrialised construction elements that are used to design and build quality housing, including affordable housing, in a more integrated and quicker process.

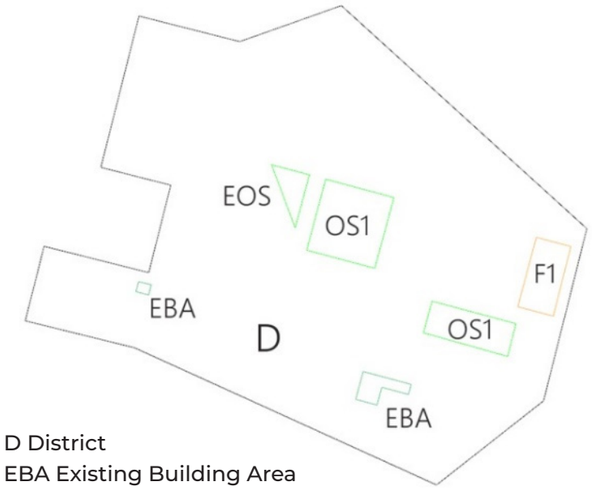
Parametric Smart Planning (PSP) innovative tool

The use of our PSP tool, called CITYPLAiN, embedded in the platform, generates a BIM model for the chosen design to optimize energy efficiency and achieve a net-zero carbon development



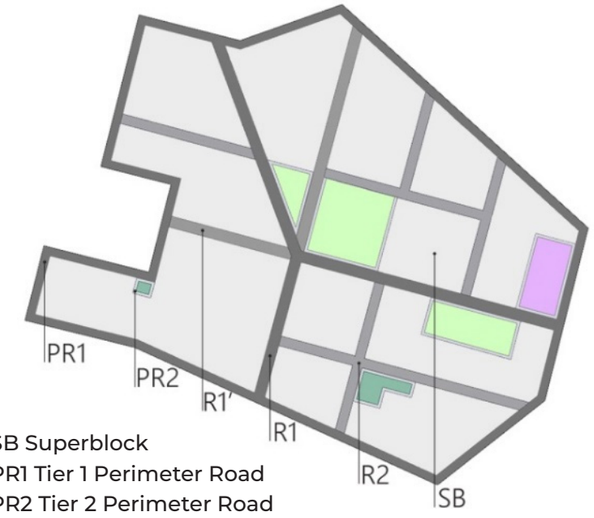

cityplain
FSK Moscow by FSK
Editor
Scenarios
Comparator
Economic Plan
KPIs
Projects
Administration
DE
Territory Balance
Cost Plan
Scenario 01
Masterplan
Residential Total Built Area
1.267.455 m2
Residential 28.74 %
Open Spaces 19.98 %
Facilities 3.96 %
Tertiary 3.27 %
Road Network 44.05 %
28.74 %
19.98 %
44.05 %
3.27 %
3.96 %
TOTAL COST
$ 1,959,589,808.57
Scenario 02
Masterplan
Residential Total Built Area
1.013.964 m2
Residential 32.42 %
Open Spaces 22.16 %
Facilities 3.08 %
Tertiary 3.35 %
Road Network 38.99 %
32.42 %
22.16 %
38.99 %
3.35 %
3.08 %
TOTAL COST
$ 1,632,011,737.23

0. Existing site



D District
EBA Existing Building Area
F1 Tier 1 Facility
OS1 Tier 1 Open Space

2. Masterplan wireframe

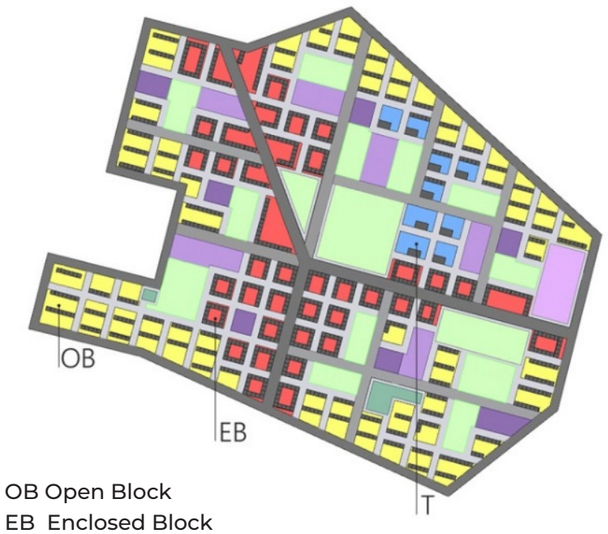


SB Superblock
PR1 Tier 1 Perimeter Road
PR2 Tier 2 Perimeter Road
R1 Tier 1 Road
R1' Secondary Tier 1 Road
R2 Tier 2 Road

3. Detailed master plan

B Block
R3 Tier 3 Road
OS2 Tier 2 Open Space
F2 Tier 2 Facility
F3 Tier 3 Facility

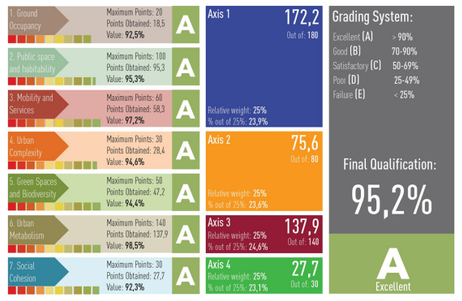
4. Quarter typology



OB Open Block
EB Enclosed Block
T Tower

5. Volume optimization

6. KPI



	WATER SYSTEM			
	Underground pipes			
1	Main water underground pipeline (street level 1)	m	50.000,00	KES
2	Secondary water underground pipeline (street level	m	5.000,00	KES
3	Tretiary water underground pipeline (street level 2)	m	5.000,00	KES
4	Water underground pipeline connection to the build	m	5.000,00	KES
5	Street hydrants	pcs	5.000,00	KES
6	Water chamber on the connetion with the building	pcs	5.000,00	KES
	Water treatment plant			
1	Water treatment plant technology	pcs	12.000,00	KES
2	Water treatment plant supporting construction works	pcs	30.200,00	KES
3	Storage water tank	m3	20.000,00	KES
	Water supply well 1			
1	Water presure pomp technology, 150 l/s	pcs	15.000,00	KES
2	Well pipe	m	20.000,00	KES
3	Water presure pomp supporting construction works	pcs	30.000,00	KES
4	Storage water tank	m3	45.000,00	KES

Plan costs

ADDITIONAL MATERIALS

ИНСТИТУТ ГЕНПЛАНА МОСКВЫ

citythinking by eddea

ASADOV_

ID ARCHITECTS
АРХИТЕКТУРНОЕ БЮРО

Knight Frank

НЕ МОГУ
урбанистика и здравый смысл

№ on map	Name	Type	Description of the characteristics of potential objects of display of the territory of the agglomeration
1	sanatorium "Tinaki"	Health tourism	1. Transport accessibility (auto, public transport), landscaped area, small parking. 2. Mud baths (balneology), close to the city of Astrakhan
2	from. Red Village	Cultural tourism	1. Transport accessibility (auto, ferry, pontoon ferry). Service objects are few. 2. Historical and cultural tourism, historical and arch. complex, historical route. Improvement of the embankment.
3	from. Ikryanoe fish farming, agricultural activities	Cognitive-event tourism	1. Transport. accessibility (close to the city, only by car). Bus station. Service objects are few. 2. Scientific-experimental complex of aquaculture "BIOS", Museum of the history of fisheries of the village Ikryanoe, fish farming, agricultural activities
4	"Astrakhan chip"	Cognitive tourism	1 Trans. accessibility (by car), close to Kamyzyak 2. Guided tours, sturgeon farm
5	the village of Yaksatovo	Cognitive-event tourism	1.Transport. accessibility (auto, public transport) not far from the city 2. Restoration / renovation of abandoned pioneer camps, Patriot park.
6	sanatorium "Tinaki", restoration of an abandoned resort complex	Health tourism	1. Transport accessibility (only by car). 2. Mud baths from the 19th century, OKN - a landscape gardening monument, protected areas, nature monuments, Lake Tinaki, an arboretum.
7	Akhmatova's house	Cultural tourism	1. Transport. accessibility (auto, public transport) 2. School of gardening, horticulture and viticulture
8	Astrakhan Kremlin, Trinity Cathedral	Cultural tourism	1. Located in the city center, parking, total. transport, pedestrian areas. Parking, service facilities. 2. Historical city center (public space)
9	Astrakhan State Opera and Ballet Theater	Cultural tourism	1. Located in the city center, parking, total. transport, railway station, pedestrian zones. Parking, service facilities. 2. Historical city center
10	Astrakhan Drama Theater	Cultural tourism	1. Located in the city center, parking, total. transport, pedestrian areas. Service facilities. 2. Historic city center
11	Astrakhan Puppet Theater	Cultural tourism	1. Located in the city center, parking, total. transport, pedestrian areas. Service facilities. 2. Historic city center
12	Theater of the Young Spectator	Cultural tourism	1. Located in the city center, parking, total. transport, pedestrian areas. Service facilities. 2. Historic city center
13	Lenin Square	Urban tourism	1. Located in the city center, parking, total. transport, pedestrian areas. Parking lots, service facilities 2. Public space (regional folklore and ethnographic holiday Maslenitsa "
14	Picture gallery named after Dogadin	Cultural tourism	1. Located in the city center, parking, total. transport, pedestrian areas. Service facilities. 2. Historic city center
15	House-Museum of Kustodiev	Cultural tourism	1. Located in the city center, parking, total. transport, pedestrian areas. Service facilities. 2. Historic city center
16	House-Museum of Khlebnikov	Cultural tourism	1. Located in the city center, parking, total. transport, pedestrian areas. Service facilities. 2. Historic city center
17	Museum of local lore	Cultural tourism	1. Located in the city center, parking, total. transport, pedestrian areas. Service facilities. 2. Historic city center
18	House of the merchant Tetyushinov	Cultural tourism	1. Located in the city center, parking, total. transport, pedestrian areas. Service facilities. 2. Historic city center
19	Museum of culture	Cultural tourism	1. Located in the city center, parking, total. transport, pedestrian areas. Service facilities. 2. Historic city center
20	City History Museum	Cultural tourism	1. Located in the city center, parking, total. transport, pedestrian areas. Service facilities. 2. Historic city center
21	Museum of Military Glory	Cultural tourism	1. Located in the city center, parking, total. transport, pedestrian areas. Service facilities. 2. Historic city center
22	Museum of the History of Fisheries of the Orangerie Village	Cultural tourism	1.c. Greenhouses, remote from the city, transp. availability of cars, there are pier 2. Fish farming, historical and architectural museum.
23	GBUK JSC _Astrakhan Regional Scientific Library named after N.K. Krupskaya_	Cultural tourism	1. Located in the city center, parking, total. transport, pedestrian areas. Service facilities. 2. Historic city center
24	House of Crafts and House of Friendship	Cultural tourism	1. Transport accessibility (auto, parking, general transport, railway station). 2. House of crafts, events, workshops, close to the center, easy to get to.
25	Fishing base Astra (Chagan village)	Fishing	1. Transport only by car, 20 km from the airport 2. Fishing, hunting. Landscaped territory, infrastructure
26	Recreation center Berezhok	Fishing	1. Transport only by car, 20 km from the airport 2. Fishing, hunting. Landscaped territory, infrastructure
27	motor ships "Elona", "Admiral", _Dolce Vita_, "Vityaz", "Preobrazhensky"	Cruise tourism	1.Transport. accessibility (auto, public transport, pedestrian, comfortable embankments). Service facilities (hotels) 2. Located near the city center, easy to get to
28	motor ships "Miami", "Ideal"	Cruise tourism	1. Transport. availability only by car 2. Mobile floating base for hunting and fishing
29	motor ships "Vostok", "Influential"	Cruise tourism	1. Transport availability of cars, total. transport (there are few parking lots). Close to the center. 2. Fishing and hunting. From service (cafe, hotel)
30	river yachts "Zuid-West", "Busma2	Cruise tourism	1. Transport accessibility of cars, next to the recreation center. 2. Fishing and hunting. Remote location from cities.
31	motor ship "Luchezarny"	Cruise tourism	1. Transport accessibility (by car to the nearest settlement, then by water) 2. Near tourist centers, fishing, hunting.
32	Fishing base "Laguna"	Fishing	1. Transport accessibility by car to the nearest us. point, then on the water. 2. Fishing, hunting. Near tourist centers
33	motor ships "Taurus", "Holy Mary"	Cruise tourism	1. Transport accessibility (only by car) 2. Fishing, hunting. Near the village of Marfino. Remote location from the city.
34	Recreation center "Dubravushka"	Fishing	the village of Yaksatovo, the development of health tourism (next to the Druzhba sanatorium, a water park), the restoration of children's camps (expansion / r
35	Club of fishermen and hunters Astoria	Fishing	located in the protected area wetlands "Delta of the Volgka River" including the biosphere reserve "Astrakhan", in the village. Ikryanoe (Ikryanoe BIOS production, museum of the history of rybolo
36	Venice on the Caspian	Fishing	located next to the Damchiksky sites of the Astrakhansok reserve (ENVIRONMENTAL TRAIL _BURGED DELTA_), to the south is a natural monument "spawning
37	Recreation center "Seven Islands"	Fishing	1. Transport accessibility (auto, public transport), landscaped area, small parking. 2. Mud baths (balneology), close to the city of Astrakhan
38	Recreation center "Ikra"	Fishing	1. Transport accessibility (auto, ferry, pontoon ferry, paid ??). Service objects are few. 2. Historical and cultural tourism, historical and arch. complex, historical route. Improvement of the embankment.
39	Recreation center "Dongar"	Fishing	1. Transport. accessibility (close to the city, only by car). Bus station. Service objects are few. 2. Scientific-experimental complex of aquaculture "BIOS", Museum of the history of fisheries of the village Ikryanoe, fish farming, agricultural activities
40	Fishing and hunting base _Zhitnoe_	Fishing	1 Trans. accessibility (by car), close to Kamyzyak 2. Guided tours, sturgeon farm

№ on map	Name	Type	Description of the characteristics of potential objects of display of the territory of the agglomeration
41	Fishing base "Cossack farm"	Fishing	1.Transport. accessibility (auto, public transport) not far from the city 2. Restoration / renovation of abandoned pioneer camps, Patriot park. Restoration / renovation of abandoned pioneer camps, park
42	Fishing recreation center _Castle_	Fishing	1. Transport accessibility (only by car). 2. Mud baths from the 19th century, OKN - a landscape gardening monument, protected areas, nature monuments, Lake Tinaki, an arboretum.
43	Recreation center "Nasha Fazenda"	Fishing	1. Transport. accessibility (auto, public transport) 2. School of gardening, horticulture and viticulture
44	Tourist base "Astra na Kalina"	Fishing	1. Located in the city center, parking, total. transport, pedestrian areas. Parking, service facilities. 2. Historical city center (public space)
45	Holiday House "Ladeynaya"	Fishing	1. Located in the city center, parking, total. transport, railway station, pedestrian zones. Parking, service facilities. 2. Historical city center
46	Fishing base "Vodniki"	Fishing	1. Located in the city center, parking, total. transport, pedestrian areas. Parking, service facilities. 2. Historic city center
47	Fishing base _Shingen_	Fishing	1. Located in the city center, parking, total. transport, pedestrian areas. Parking, service facilities. 2. Historic city center
48	Fishing and hunting base "Yulta"	Fishing	1. Located in the city center, parking, total. transport, pedestrian areas. Parking, service facilities. 2. Historical city center
49	Guest house "U Sasha"	Fishing	1. Located in the city center, parking, total. transport, pedestrian areas. Parking lots, service facilities 2. Public space (regional folklore and ethnographic holiday Maslenitsa "
50	Recreation center "Quiet"	Fishing	1. Located in the city center, parking, total. transport, pedestrian areas. Parking, service facilities. 2. Historic city center
51	Recreation center "Rybalkino"	Fishing	1. Located in the city center, parking, total. transport, pedestrian areas. Parking, service facilities. 2. Historic city center
52	Fishing recreation center _FISH-CLUB_ (Fish Club)	Fishing	1. Located in the city center, parking, total. transport, pedestrian areas. Parking, service facilities. 2. Historical city center
53	Fishing base _Fortuna_	Fishing	1. Located in the city center, parking, total. transport, pedestrian areas. Parking, service facilities. 2. Historic city center
54	Tourist base Prokosta	Fishing	1. Located in the city center, parking, total. transport, pedestrian areas. Parking, service facilities. 2. Historic city center
55	Fishing base _Rybatsky Stan_	Fishing	1. Located in the city center, parking, total. transport, pedestrian areas. Parking, service facilities. 2. Historic city center
56	Fishing base _Fish place_	Fishing	1. Located in the city center, parking, total. transport, pedestrian areas. Parking, service facilities. 2. Historical city center
57	Fishing base _Capitan_	Fishing	1. Located in the city center, parking, total. transport, pedestrian areas. Parking, service facilities. 2. Historical city center
58	Fishing base _Borozdinovskaya Estate_	Fishing	1.c. Greenhouses, remote from the city, transp. availability of cars, there are pier 2. Fish farming, historical and architectural museum.
59	Fishing base _Gose Lapchaty_	Fishing	1. Located in the city center, parking, total. transport, pedestrian areas. Parking, service facilities. 2. Historic city center
60	Fishing recreation center _Etel_	Fishing	1. Transport accessibility (auto, parking, general transport, railway station). 2. House of crafts, events, workshops, close to the center, easy to get to.
61	Recreation center _The Kuzmich Estate_	Fishing	1. Transport only by car, 20 km from the airport 2. Fishing, hunting. Landscaped territory, infrastructure
62	Fishing and hunting base Anchor	Fishing	1. Transport only by car, 20 km from the airport 2. Fishing, hunting. Landscaped territory, infrastructure
63	_Guest house in Karaulny_	Fishing	1.Transport. accessibility (auto, public transport, pedestrian, comfortable embankments). Service facilities (hotels) 2. Located near the city center, easy to get to
64	_Guest House_	Fishing	1. Transport. availability only by car 2. Mobile floating base for hunting and fishing
65	Fishing base _Ded Shchukar_	Fishing	1. Transport availability of cars, total. transport (there are few parking lots). Close to the center. 2. Fishing and hunting. From service (cafe, hotel)
66	Fishing base _Delta Trophy_	Fishing	1. Transport accessibility of cars, next to the recreation center. 2. Fishing and hunting. Remote location from cities.
67	Fishing base "Tutinka"	Fishing	1. Transport accessibility (by car to the nearest settlement, then by water) 2. Near tourist centers, fishing, hunting.
68	Fishing and hunting family recreation center "On Kalinovka"	Fishing	1. Transport accessibility by car to the nearest us. point, then on the water. 2. Fishing, hunting. Near tourist centers
69	Fishing base _Khutorok_	Fishing	1. Transport accessibility (only by car) 2. Fishing, hunting. Near the village of Marfino. Remote location from the city.
70	Fishing and hunting base "Fishing Hall"	Fishing	the village of Yaksatovo, the development of health tourism (next to the Druzhba sanatorium, a water park), the restoration of children's camps (expansion / r
71	Fishing base "Karalat"	Fishing	located in the protected area wetlands "Delta of the Volgka River" including the biosphere reserve "Astrakhan", in the village. Ikryanoe (Ikryanoe BIOS production, museum of the history of rybolo
72	Fishing base _Kolochny Island_	Fishing	located next to the Damchiksky sites of the Astrakhansok reserve (ENVIRONMENTAL TRAIL _BURGED DELTA_), to the south is a natural monument "spawning
73	Fishing and hunting base "Zapovednaya Skazka"	Fishing	located in the specially protected natural area wetlands "Delta of the Volgka River", close to the main natural reserve "Krestovy" (biodiversity)
74	Recreation center _Night Flight Delta_	Fishing	located in the specially protected natural area wetlands "Delta of the Volgka River", close to the main natural reserve "Krestovy" (biodiversity)
75	Recreation center "Astrakhanskaya"	Fishing	close location with a natural monument
76	Fishing base "Maki"	Fishing	close location with a natural monument
77	Fishing base "Penei"	Fishing	close location with a natural monument
78	Fishing house "Predator"	Fishing	close location with a natural monument
79	Fishing base _Fisherman's house_	Fishing	1. Auto transport, Tsvetnoe village, remote location, there are stops in total. transport. 2. Fishing base
80	tourist complex "Druzhba" s. Yaksatovo	Health tourism	1.Transport. accessibility (auto, public transport) not far from the city 2. Sanatorium "Astrakhan Zori", "Zarya Kaspiya" sports, construction of a water park, sports base
81	Fishing base _Nerestina_	Fishing	located in the specially protected natural area wetlands "Delta of the Volga River", next to the Trekhzibinsky section of the Astrakhan reserve
82	Fishing base _Fisherman's Island_ (Former name of the base "Abdulkin Yerik")	Fishing	located in the specially protected natural area wetlands "Delta of the Volga River", next to the Trekhzibinsky section of the Astrakhan reserve
83	Fishing base _Verb_	Fishing	located in the specially protected natural area wetlands "Delta of the Volgka River"

№ on map	Name	Type	Description of the characteristics of potential objects of display of the territory of the agglomeration
84	Fishing base _Piranha Delta_	Fishing	located in the specially protected natural area wetlands "Delta of the Volgka River"
85	Fishing base _Karay_	Fishing	located in the specially protected natural area wetlands "Delta of the Volgka River"
86	Fishing base "Seven"	Fishing	located in the specially protected natural area wetlands "Delta of the Volgka River"
87	Fishing base "Fishka"	Fishing	located in the specially protected natural area wetlands "Delta of the Volgka River"
88	Fishing base "Tsar-fish"	Fishing	1. Transport by car, from the village of Zelenga by boat. Remote location 2. Fishing base, landing stage,
89	Fishing base "Tortuga"	Fishing	1. Transport only by car, close to the sea, difficult to reach, landscaped area 2. Vyshka village, located next to the historical landmark Mayak (potential in the development of historical tourism)
90	Fishing base "Raskaty"	Fishing	1. Transport only by car, close to the sea, difficult to reach, landscaped area 2. Vyshka village, located next to the historical landmark Mayak (potential in the development of historical tourism)
91	Fishing base "Kovcheg"	Fishing	1. Transport only by car, close to the sea, difficult to reach, landscaped area 2. Vyshka village, located next to the historical landmark Mayak (potential in the development of historical tourism)
92	Fishing base "Limanskaya"	Fishing	1. Transport only by car, close to the sea, difficult to reach, landscaped area 2. Vyshka village, located next to the historical landmark Mayak (potential in the development of historical tourism)
93	Fishing base "Mayak"	Fishing	1. Transport only by car, close to the sea, difficult to reach, landscaped area 2. Vyshka village, located next to the historical landmark Mayak (potential in the development of historical tourism)
94	Fishing base "Sazanya Bukhia"	Fishing	nearby is Bolshoi Mogoi (historical route), Churkinskaya desert, archaeological park
95	Bolshoy Mogoi, Churkinskaya desert	Cultural tourism	1. Not far from the village. Volodarsky, accessible by car and ferry 2. Territory rich in history and archeology, historical route
96	from. Tumak	Cultural tourism	1. Transport accessibility by car, ferry. From service facilities, pharmacies, shops. 2. Archaeological excavations, passing the historical route
97	Kamyzyak	Cultural tourism	1. Transport accessibility of cars, total. transport, there are service facilities (hotels, cafes, parking lots, pharmacies ..) Park, embankment (seemingly uncomfortable) 2. Passing the historical route
98	from. Tower, Lighthouse	Cultural tourism	1. Close to the sea, far from cities, transport accessibility only by car. 2. Historical site Mayak, expensive recreation centers
99	pos. Volodarsky	Cultural tourism	1. Auto transport, total. transport, there is a service facility (shops, cafes, pharmacies, few parking lots, a hotel) 2. Passing the historical route
100	Dune "big brother"	Ecological tourism	1. Natural monument
101	Altynzhar	Cultural tourism	1.cultural and ethnic center of the Kazakh ethnos
102	Sturgeon breeding center "BIOS"	Gastronomic tourism	1. Located 30 minutes from Astrakhan
103	Damchik biosphere reserve	Ecological tourism	1. Unique reserve - part of the Astrakhan biosphere reserve
104	Trehizbinsky Biosphere Reserve	Ecological tourism	1. Unique reserve - part of the Astrakhan biosphere reserve
105	Obzhorovsky Biosphere Reserve	Ecological tourism	1. Unique reserve - part of the Astrakhan biosphere reserve
106	Zakaznik Stepnoy / Tinguta	Ecological tourism	-
107	Lotuses	Ecological tourism	-
108	Limansky khurul	Cultural tourism	-
109	an ancient city of the 9th century with a large number of surviving household items	Cultural tourism	-
110	Zoo of exotic animals "Baba Frosya"	Cognitive tourism	-
111	Excavations near the village of Semibugry	Cultural tourism	-
112	Matrimonial Palace	Cultural tourism	-
113	Churkinsky monastery	Cultural tourism	-