



INVITATION FOR PARTICIPATION

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About competition



ABOUT COMPETITION

Format of the Competition

- open;
- international;
- two-stage.

Object of the Competition

Territory of the Competition - southern and central part of Astrakhan region: Municipal Unit “City of Astrakhan” and 7 municipal districts (Privolzhsky, Volodarsky, Kazymyaksky, Ikryaninsky, Limansky, Narimanovsky, and Krasnoyarsky).

Purpose of the competition

Selection of the optimal master plan for the Astrakhan agglomeration that implements the scenario of the development of the territory, taking into account the identifying capacities and promising avenues for integration.

Participants

Professional organizations in the integrated territory development, master planning, city planning, architecture, engineering and design, and development of public space concepts that work in the territory of Russia and are capable of involving a team of specialists in economy, finance, content programming.

Jury

Representatives of authorities, development institutes, experts in architecture, urban development, integrated territory development, cultural heritage, as well economy and space planning, marketing and communications, technology and innovation.



Finalists

According to the first stage results, on the basis of the relevant portfolio and essay, 3 finalists will be selected to develop the competition proposals.

Winner

The winner will be an author of the best competitive bid selected by the intersectoral jury.

Prize fund

Three finalists that will develop the final competition proposals receive a compensation in the amount of RUB 2,000,000 each (including all taxes and fees).

According to the jury's decision and awarding the winning places, additional payment in the corresponding amount (including all taxes and fees) will be made:

1st place - RUB 4,500,000;

2nd place - RUB 3,000,000;

3rd place - RUB 2,000,000.

Total prize fund makes RUB 15,500,000 (including all taxes and fees).

Schedule¹

March 17, 2021	Press conference devoted to the start of the Competition
April 01, 2021	Kick-off webinar for the Competition Participants
April 07, 2021	Deadline for accepting Applications
April 16, 2021	Meeting of the Judging panel
April 19, 2021	Meeting of the Jury Selection of Finalists
May 18-19, 2021	Kick-off seminar for Finalists
July 09, 2021	Deadline for accepting Competition proposals
July 20, 2021	Meeting of the Judging panel
July 22, 2021	Meeting of the Jury Selection of the Winner of the Competition
July 22, 2021	Final press conference/press approach

¹ The organizer can make changes to the schedule of the competition.



Initiator and organizer

Initiator of the Competition: government of Astrakhan region.

Operator of the Competition: Strategic Development Agency "CENTER".

Stages

At the first stage of the Competition, the participants will provide:

- the portfolio consisting of 5 relevant implemented projects²; essay with the description of key ideas of strategic development of the urban district and approaches to the master plan development with the stated spatial development approaches (4,000-6,000 characters);
- graphical part (visualization of solutions described in the essay) - schematic diagrams, models (optionally).

At the second stage of the Competition, the finalists will provide the materials according to the Terms of Reference:

- album, including explanatory note and visualization materials of the offered solutions;
- tablets;
- presentation;
- video with 3D-modeling elements;
- other materials at the participants' option necessary to substantiate the competitive ideas.

² Relevant expertise of the participant means the portfolio that includes the existing developed social and economic development strategies of the subjects of the Russian Federation and municipal units, land planning documents and master plans of urban agglomerations, urban districts and other municipal units. At this, at least 2 of 5 projects represented should be the master planning documents.



Context

This section has been prepared on the basis of the analytical research materials of the Strategic Development Agency "CENTER" "Comprehensive Assessment of Potential Development of Astrakhan Agglomeration, Astrakhan Region". The full text of research is available on <https://astr.expert>.

ASTRAKHAN REGION

Astrakhan region is located in the south-east of the European part of Russia, is a part of the Southern Federal District (hereinafter - the SFD) (Fig. 1). The eastern boundary coincides with the state boundary of Russia and Kazakhstan. The region has direct outlet to the Caspian Sea and maritime regions of Azerbaijan, Iran, Kazakhstan, and Turkmenistan.

The finely divided settlement system with densely populated regional center has been formed in the region. 67% of urban population live in 1% of the territory of Astrakhan region. The region consists of 143 municipal units, including 11 municipal districts, 2 urban districts, 119 villages and 11 cities ³(Fig. 2).

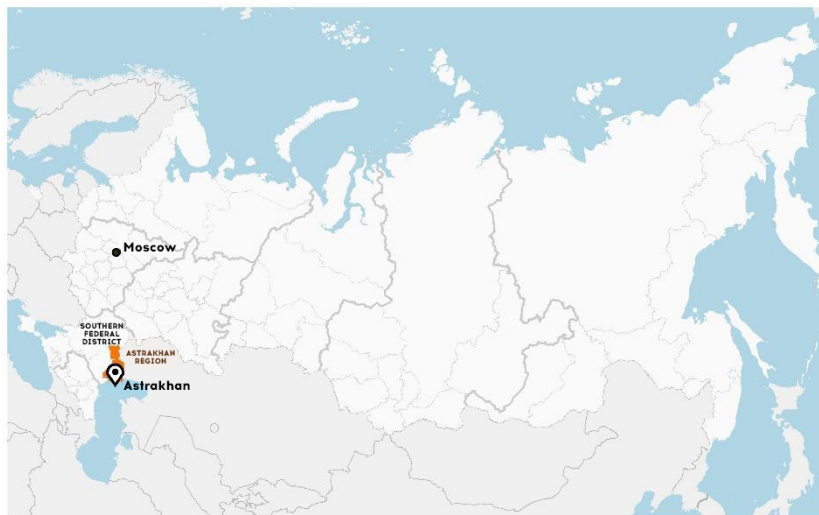


Fig. 1. Astrakhan region in the Russian Federation

52.9
ths.km²

area of Astrakhan region

998 ths.
people

number of population of Astrakhan region as of 01/01/2021

18.9
person/km²

density of population

143

municipal units of Astrakhan region

« Astrakhan not only has the glorious past and unique historical heritage but also has sufficient resources. All these allow it to become a regional center pointing in the right development for other cities.



Igor Babushkin,
Governor of Astrakhan
region

³ According to Law of Astrakhan region No. 67/2006-O3 dated October 04, 2006 "On administrative and territorial structure of Astrakhan region".



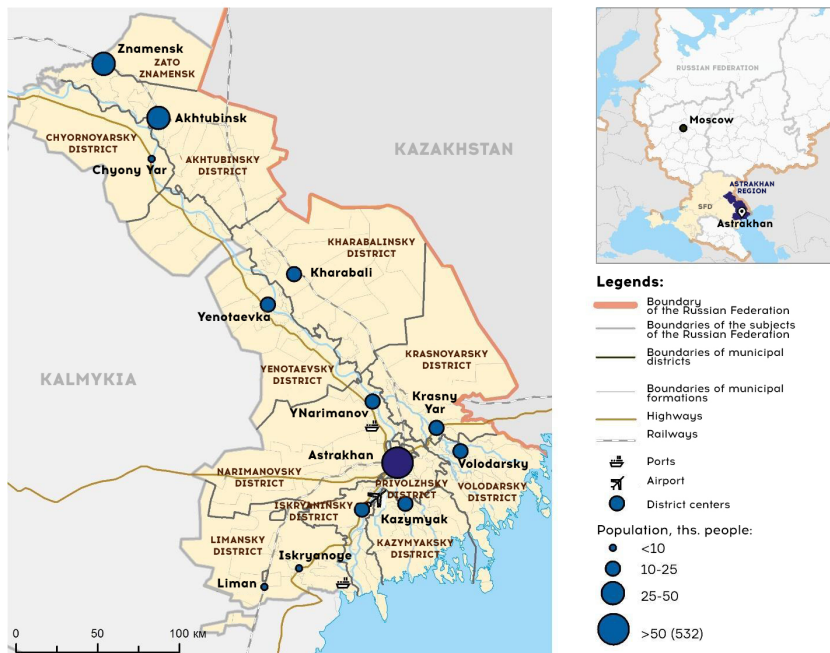


Fig. 2. Location and administrative geography map of Astrakhan region

Location of Astrakhan region

Astrakhan region has unusual geographical location (Fig. 3):

- at the junction of Europe and Asia that defined a wide ethnic geographical and sociocultural variety of the region;
- at the Caspian sea that is the inland water reservoir which international and legal status is determined by the Convention on the legal status of the Caspian Sea (Fig. 3);
- at the mouth of the largest European river, Volga, connecting the Caspian Sea region with “inland” Russia;
- at the intersection of the international transport corridors that provides for high transit potential of the region:
 - “North-South”; connects Europe with Iran, Middle East and India;
 - “West-East», with exits to Kazakhstan, China, Central Asia, as well as to Europe via the Black Sea and Ukraine.

The spatial development strategy of the Russian Federation for up to 2025 sees Astrakhan region as near-border geostrategic territories of the Russian Federation being the subject of the Russian Federation bordering with the countries-members of the Eurasian Economic Union.

5th place

by population in the Southern Federal District

96.3%

the territory of rural MUs

0.29%

of the Russian area is occupied by Astrakhan region





Fig. 3. Location of Astrakhan region in the Caspian region

Brief physical and geographical characteristics

Astrakhan region is located in the territory of the Caspian Plain in the lower course of Volga. The most part of the territory is below the level of the World ocean in the semidesert and desert zones which landscapes are represented by droughty lands with extensive development of poor and saline soils. The semidesert and desert landscapes stand in sharp contrast to the those of the Volga-Akhtubinsk Flood Plain and the Volga Delta. The Volga-Akhtubinsk Flood Plain is one of the most productive areas of Russia with annual phytomass gain of up to 30 t/ha per annum, and within the delta - up to 50 t/ha per annum.

The water bodies of Astrakhan region belong to the inland drainage - the Caspian Sea and a number of lakes of the Caspian drainless area. The Caspian Sea level fluctuation is an important factor of personal and social life in the region. The river net of Astrakhan region is represented by 935 water flows of total length of 13,327 km (the river net density is 0.27 km/km²), and the most of them are represented by arms and branches of the Volga Delta and the Volga-Akhtubinsk Flood Plain.

The climate of Astrakhan region is markedly continental with frosty windy winter and hot torrid summer, wide range of annual and daily temperature. The average temperature in January varies from -10C in the north to -6C in the south, and in July - about +25C. Precipitations make about 200 mm per annum (Fig. 4). Hot dry winds are often in spring



390 km

the length of Astrakhan region from the north-west to the south-east



and summer (Fig. 5). The vegetation period (with the temperature above +5°C) lasts 201–216 days (Fig. 4).

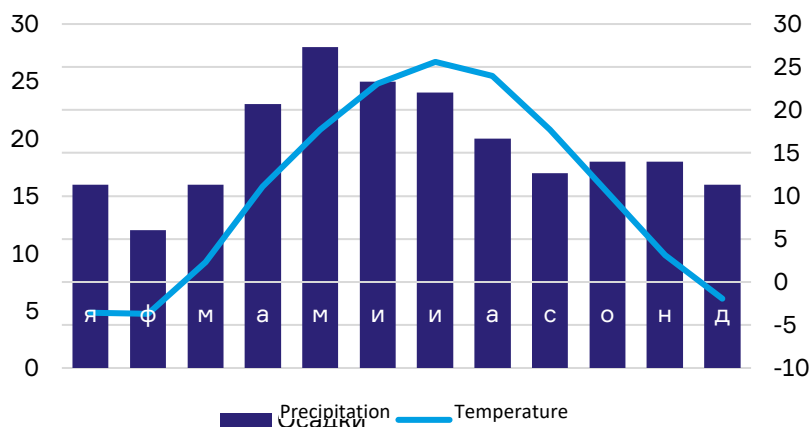


Fig. 4. Climatogram of Astrakhan region

The territory of Astrakhan region is unique by its biological and landscape variety. The existing zonal and azonal components provide for a great number of unique natural components requiring specific preservation activities.

Unfavorable physical and geographical features:

- climatic phenomena: extremely high or low air temperature, perennial and seasonal variability in atmospheric precipitations;
- hydrological phenomena: flooding, river bed deformations, unstable level of the Caspian Sea;
- exogenic process: landslides, landfalls, river lateral and gully erosion, karst, suffosion and subsidental processes, underflooding, eolation.

Natural resources potential

Astrakhan region has high natural resources potential (Fig. 6). Its territory concentrates:

- significant hydrocarbon reserves: oil, gas and gas condensate explored in the territory of the region and in the Russian part of the Caspian Sea bottom;
- other resources: sulfur, salt, bromine, iodine, common minerals (gaize, gypsum, clay, sands, and so on);
- fresh underground waters, mineral waters;
- unique agroclimatic resources of the Volga-Akhtubinsk Flood Plain and the Volga Delta;
- biological resources of the water area of the Volga-Caspian Fish Basin;
- unique outdoor recreational resources related to the landscape diversity.

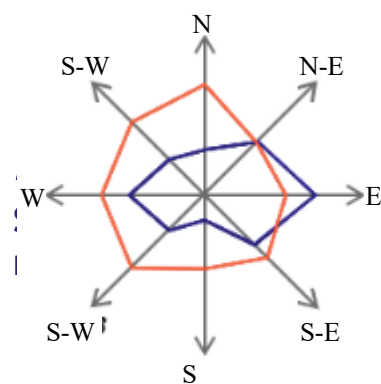


Fig. 5. Windrose in Astrakhan region

7.95%

share of the specially protected natural reservation territories in the region

10

raw hydrocarbon deposits in the territory of Astrakhan region with oil and gas condensate reserves of 1.1 bln. ton, gas reserves of 5.3 tln. m³



Fig. 6. Landscape zone plan of Astrakhan region and main mineral deposits

The Volga Delta is a unique geosystem having great natural reserves, rich history of development and research, combined diversity of natural and cultural-economic elements. The Volga Delta has several ship- and raceways laid <https://water-ru.ru/%D0%93%D0%BB%D0%BE%D1%81%D1%81%D0%B0%D1%80%D0%B8%D0%B9/1379/%D0%9A%D0%B0%D0%BD%D0%B0%D0%BB>, the largest one is the Volga-Caspian Canal.

20%

of gas condensate reserves in the Russian Federation

90%

of gas sulfur of the Russian Federation

80%

of sodium salt of the Russian Federation (Lake Baskunchak)

35 species

of commercial fish

6 species

of sturgeons



Socio-demographic characteristics

The region shows a common trend towards depopulation (Fig. 7), natural population decrease and its negative indicators, positive dynamics of migration outflow and total population decline, prevalence of the young active population at the age of 15-24 years old in general migration outflow. This results in the increased demographic burden by older working-age population (Fig. 8).

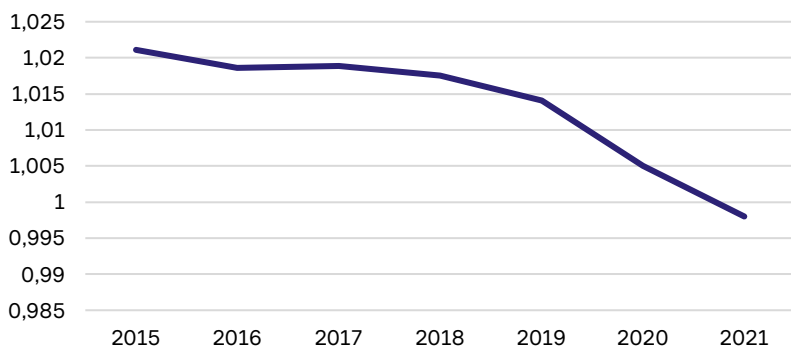


Fig. 7. Dynamics of population of Astrakhan region, 2015–2021, mln. people

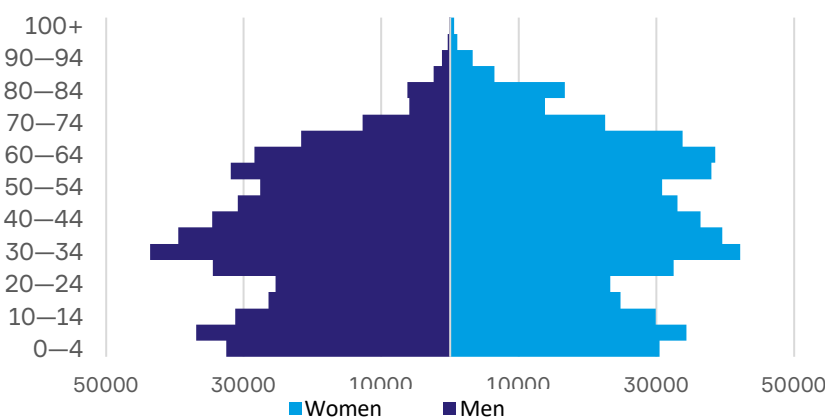


Fig. 8. Population makeup according to sex and age in Astrakhan region, 2019

>140

of nationalities

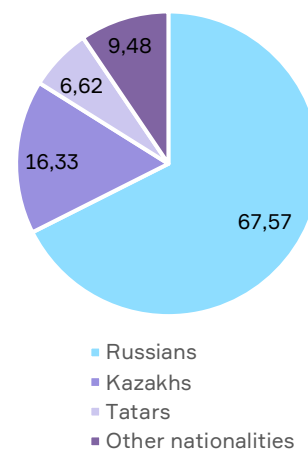


Fig. 9. Ethnic composition of population, %

Astrakhan region is the multinational and multiconfessional region (Fig. 9)

For the last 5 years, Astrakhan region has shown a stably high unemployment rate in the area, being above the average Russian indicator, demonstrating a general downtrend (Fig. 10). At this, a sharp increase in the official unemployment rate in the second half 2020 confirms the existing latent unemployment in Astrakhan region (Fig. 11).

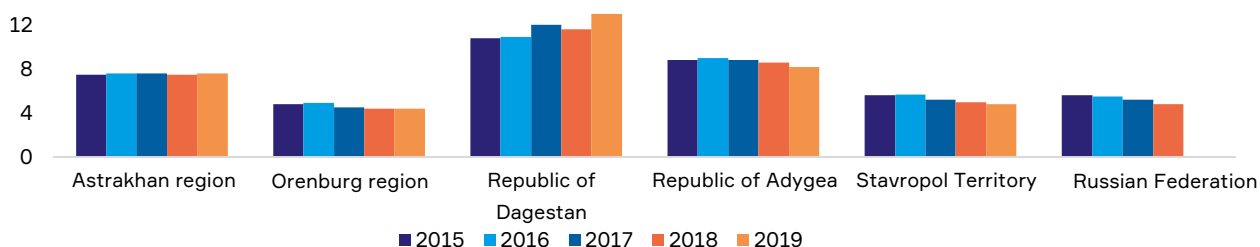


Fig. 10. Comparative unemployment dynamics (according to the minimum monthly rate of labour payment), 2015–2019, %



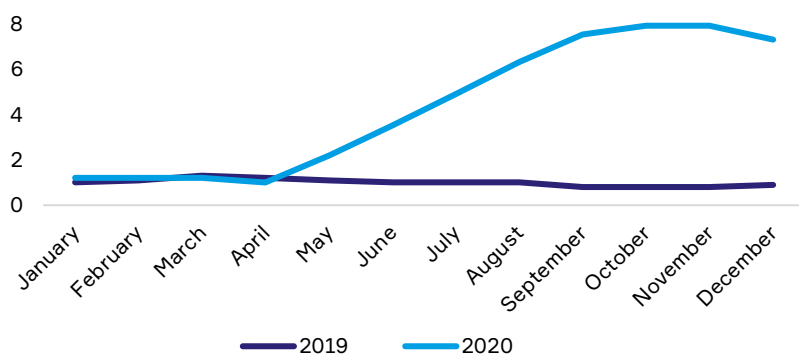


Fig. 11. Registered unemployment dynamics in Astrakhan region, 2019–2020, %

Socio-demographic characteristics

The prevailing share in the GRP belongs to the extractive industry of the economy (47.9%). The budgetary service sector (12.4%) is also a significant factor of employment and income generation of population in the region (Fig. 12).

- Agriculture, fishery and fishing
- Mineral extraction
- Processing
- Power energy, gas and water generation and distribution
- Trade
- Transport and communication
- Budgetary sphere
- Other spheres

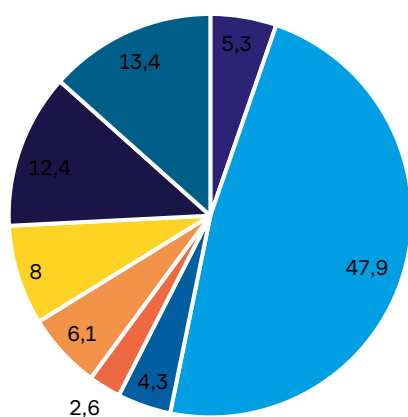


Fig. 12. GRP sectoral makeup in Astrakhan region, 2018

The GRP per capita is notably higher than in the reference group areas⁴(Fig. 13–14), however, it does not provide for proportional growth of the average income indicator that evidences the absence of mechanisms of conversion of oil and gas related income of the region to the quality of life of the population.

55th place

by older working-age population in the Russian Federation

62nd place

by average income of population among the subjects of the Russian Federation

21st place

GRP per capita among the subjects of the Russian Federation according to the results of 2019

⁴ A group of the subjects of the Southern and North Caucasian Federal Districts of the Russian Federation was considered as a reference group, and Orenburg region as a subject of the Russian Federation with the extractive industry dependent economy.



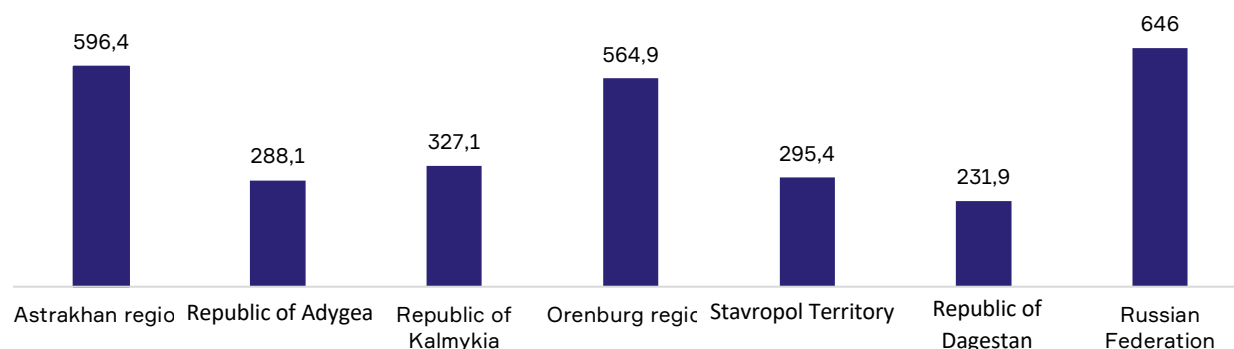


Fig. 13. GRP per capita in 2019, ths. RUB

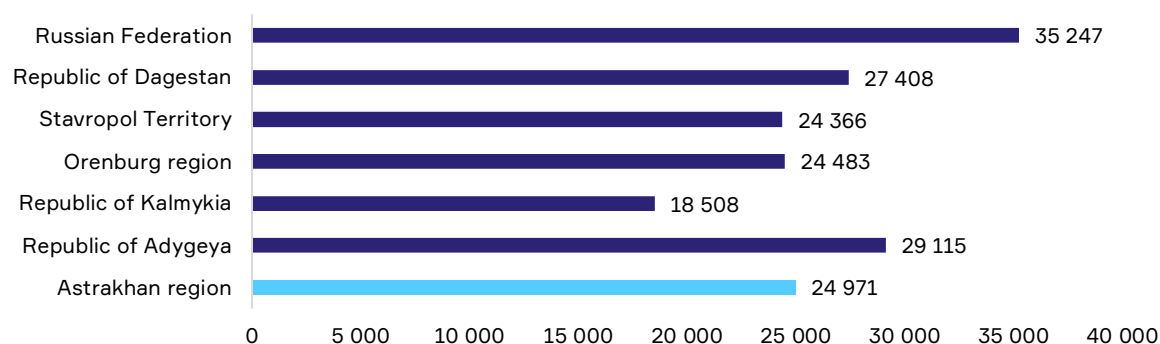


Fig. 14. Average income of population per month in 2019, RUB

Sociocultural development aspects

A particular relevance of symbolic capital resources in the territory of Astrakhan region is due to the competitive field of interest by tourists, investment, creative potential and adaptivity to dynamic processes of the present time.

According to the Socio-Economic Development Strategy 2035, among the competitive advantages of Astrakhan region in terms of its symbolic capital capable of having favorable impact on socio-economic development of the region are the following:

- strategic location in the Caspian region;
- inclusion in the ancient trade route “Great Silk Way” being the world heritage;
- rich historical and cultural heritage, including traditions of national handicraftsmanship of peoples living in the territory of Astrakhan region;
- unique tourist recreational potential, including resort zones (Tinaki, Baskunchak);
- ethnocultural traditions;
- natural historical preconditions for development of various kinds of tourism (fishing, hunting, culture-related, primary wellness tourism);
- accumulated experience of cultural and business events of different scale in the territory of the region.

Municipal districts of Astrakhan region considerably differ by the quality of historical and urban development environment due to climatic and historical peculiarities. The architectural monuments are primarily

>200

of regional tourist routes in Astrakhan region

1.6 ths. people

tourist flow to Astrakhan region

885

architectural, historical and cultural monuments in the territory of Astrakhan region

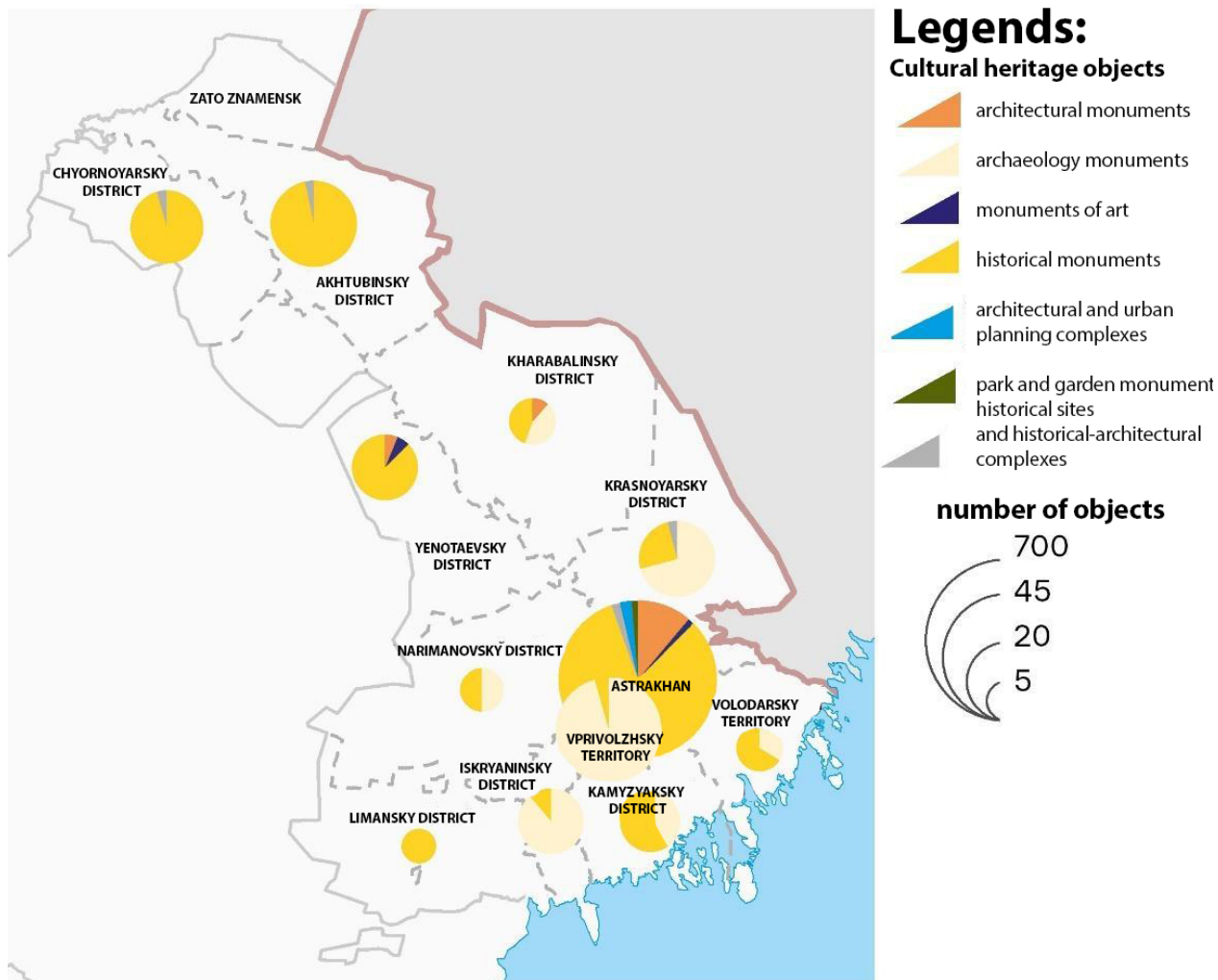
among them, 141

of federal significance



concentrated in Astrakhan, the monuments of archaeology, history and arts are primarily in the territory of Privolzhsky, Krasnoyarsky, Ikryaninsky and Kazymyasky districts (Fig. 15).

In total, the material traces of the cities of the Golden Horde in the territory of the region and the main economic-cultural types of peoples of the Volga Delta reflect the “Astrakhan-specific” territory, philosophy of the “unity in variety” and prospective image of Astrakhan region formulated as motto: “Astrakhan region is open for a dignified life”⁵.



The greatest tourist recreational activity is concentrated in the fishing and hunting tourism. This is due to the unique water biological reserves of the Volga Delta and coastal area of the North Caspian adjacent to Astrakhan region.

⁵ Strategic vision (mission) of the Socio-Economic Development Strategy 2035



MUNICIPAL UNIT “CITY OF ASTRAKHAN”

Astrakhan is an administrative center of Astrakhan region located in the Caspian Plain, in the upper part of the Volga Delta, 1,534 km to the south-east from Moscow. The city has a unique economic-geographical location, is a large river and sea port located in the Lower Volga.

Modern Astrakhan is located on 11 islands and actually divided into 4 territorial districts: Kirovsky, Leninsky, Sovetsky, and Trusovsky.



1558

year of foundation

208 2^m

area of Municipal Unit “City of Astrakhan”

529,739 persons

population of MU “City of Astrakhan” as of 01/01/2020

2,540 ths. people

density of population of Astrakhan

Demographic population

The characteristic feature is high concentration of population of the region in the regional center in contrast to the compared subjects that causes disproportions in the territorial and economic development of the region (Fig. 16).

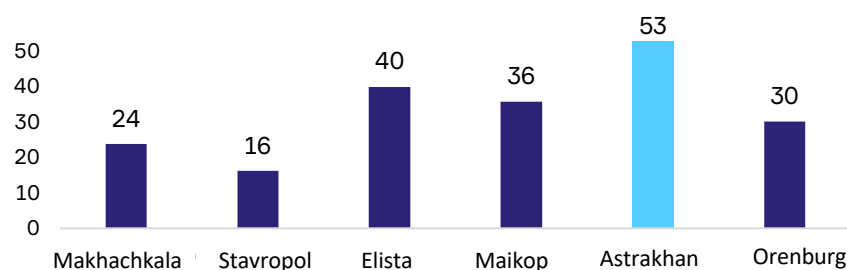


Fig. 16. Share of population of the capital cities of the reference group relative to the total number of population of the regions, %

In general migration outflow from the regional center, the young active population prevail, that is the students and young specialists at the age of 20-24 years (Fig. 17). This creates a risk of decrease in the human capital - reduction of urban population, decrease in intellectual and cultural potential.

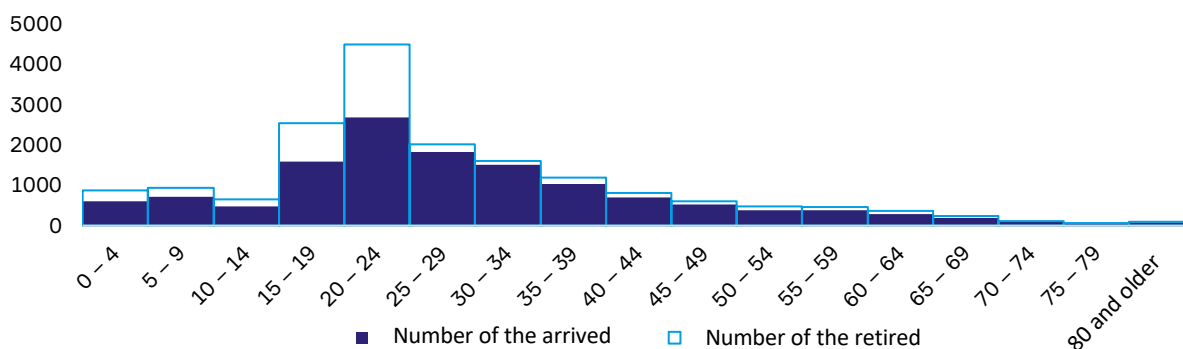


Fig. 17. Age pattern of migration in Astrakhan

Socio-demographic characteristics

The average monthly salary of a worker of the large and medium enterprises in Astrakhan is lower than in Russia on the average, but in general, it is at the level of the reference cities ⁶(Fig. 18).

60%
engaged in the budgetary sector

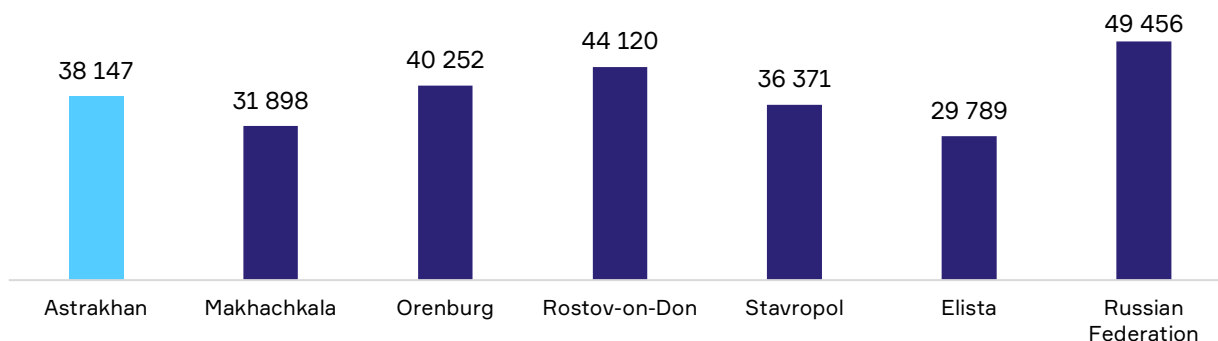


Fig. 18. Average monthly salary of employees of organizations (without small businesses), RUB (average for 2017-2019)

The current retail turnover per capita is considerably lower in contrast to the reference cities and almost thrice less than the average Russian indicator (Fig. 19) that evidences the underused development potential of this sector.

38,147 RUB
average monthly salary

⁶ The capitals of the subjects of the Southern and North Caucasian Federal Districts of the Russian Federation were considered as reference cities, and Orenburg region as a subject of the Russian Federation with the extractive industry dependent economy.



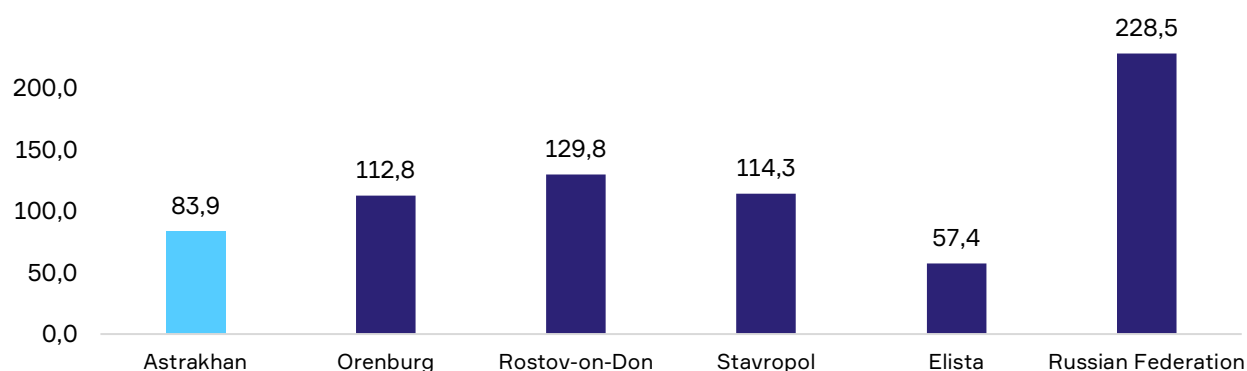


Fig. 19. Retail turnover per capita in 2019, ths. RUB

The number of individual entrepreneurs of Astrakhan per 1,000 persons of population is 47; this is an average value among the reference cities. The small and medium business is mainly represented by individual entrepreneurs. Over 60% of small businesses is concentrated in Astrakhan.

Sociocultural development aspects

Astrakhan is the oldest city of Lower Volga region; it is included in the list of historical settlements of federal significance⁷. Astrakhan was first mentioned by historians, scientists and travelers in the 13th century. The old city was a part of the Golden Horde. It was situated 12 km above modern Astrakhan, on the right bank of Volga.

The city-planning of Astrakhan is inextricably intertwined with the development of the main city core - "The Ensemble of the Kremlin of the 16th-19th centuries". Today, the Astrakhan Kremlin is not only a symbol of Astrakhan but also a unique sample of the Russian Medieval architecture pretending to be the UNESCO⁸ World Heritage Site.

The functional typology of Astrakhan is distinguished by the variety of real estate units of 2 historical periods: the pre-revolutionary city development before 1917 and the city development of 1920-2000s, including multi-family residential houses of 1920-1950 and peripheral workers' settlements of the late constructivism and early soviet neoclassicism.

About 640 cultural heritage objects are registered in the city (the cultural and historical monuments of the Russian Federation),⁹ but only 12 cultural heritage objects are eligible for protection. Considering the primarily private form of ownership of the cultural heritage objects, the lacking eligible for protection hinders the activities on preservation, adaptation of the objects for modern use and exercise of full right to use the objects, including the object lease.

1,400 ha

total area within the historical settlement

640

cultural heritage objects (historical and architectural monuments) in the territory of Astrakhan, including the discovered

41

cultural heritage objects of federal significance - architectural monuments

⁷ Order of the Ministry of Culture of the Russian Federation, Ministry of Regional Development of the Russian Federation No. 418/339 dated July 29, 2010,

⁸ <https://www.culture.ru/institutes/10076/ansambl-astrahanskogo-kremlya>

⁹ According to the data specified in the framework of the research. According to Unified State Register of Cultural Heritage Objects, 635 objects; <http://www.astrgorod.ru/podrazdeleniya/svedeniya-o-629-obektah-kulturnogo-naslediya-vneseny-v-egrn>

To make an illustrative scheme of the identity pattern of the city, the statistics of search requests was analyzed,¹⁰ the list of the most popular places for residents and tourist destinations was drawn up, as well as the associations of visitors related to these destinations were determined (Fig. 20).



Fig. 20. Illustrative scheme of the identity components of Astrakhan

The key features of tourist attractiveness for overall development of Astrakhan are the following combinations of characteristics of and ideas about the city:

- uniqueness of the city consists in the unique cultural models of the city way of living (“Merchant Astrakhan”, “Theatrical Astrakhan”, “Poetic Astrakhan”);
- identity of perception of the city - city belonging to any external categories on the basis of general valuables (“I live in the coastal city”, “Venice of Volga”);
- positivity and internal loyalty - the degree of love and affection of the citizens to their cities, interest in the history and culture;
- a sense of belonging of the community - common interests of the citizens, ability to be aware of the general development problems, readiness for implementation of joint initiatives;
- practical potential of identity - level of social activity, actual striving of the community for strengthening the identity, common understandable and supported idea, city development strategy

4.2 ths. people

tourist flows to Astrakhan

0.2 mln. people

number of people engaged in tourism in the territory of Astrakhan region

¹⁰ <https://wordstat.yandex.ru/>



ASTRAKHAN AGGLOMERATION

Boundaries of Astrakhan agglomeration

The existing displacement makeup of Astrakhan agglomeration (Fig. 21) is characterized by confinedness of local territorial systems to the main city-forming axis stretching from the north-west to the south-east along the Volga-Akhtubinsk Flood Plain and the fan-like system of water flows of the Volga Delta.

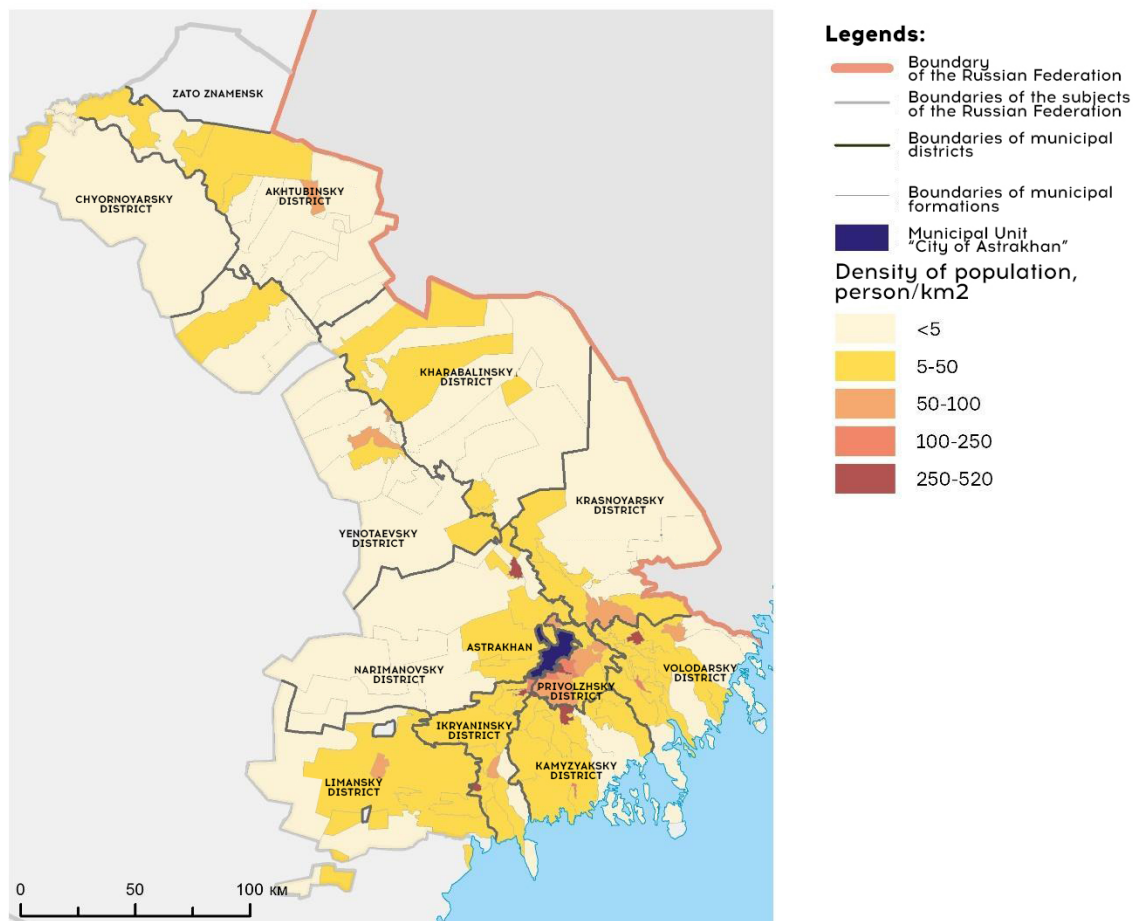


Fig. 21. Characteristics of distribution of population density in the territory of Astrakhan region

On the basis of the existing system of sociocultural, economic and labor relations, their nature, intensity and focus, as well as taking into account the formed support displacement frame, it is offered to consider the territory of Astrakhan agglomeration as urban rural agglomeration.

The agglomeration spatial pattern in Astrakhan region is not only the form of placement and existing support frame but also the form of the territorial industrial organization, resources and management.

As a result of the industrial development and substantiated territorial growth, disproportions appeared in the territorial-sectoral structure. Among the main ones is the concentration of the basic industries in the south districts of Astrakhan region within the Astrakhan resource industrial agglomeration.

It is offered to include 7 districts of Astrakhan region, in addition to the regional center, in the urban rural agglomeration, and each of them has a potential for development of key specializations and available resources of the agglomeration (Fig. 22):

- Volodarsky;
- Ikryaninsky;
- Limansky;
- Narimanovsky;
- Kazymyaksky;
- Krasnoyarsky;
- Privolzhsky.

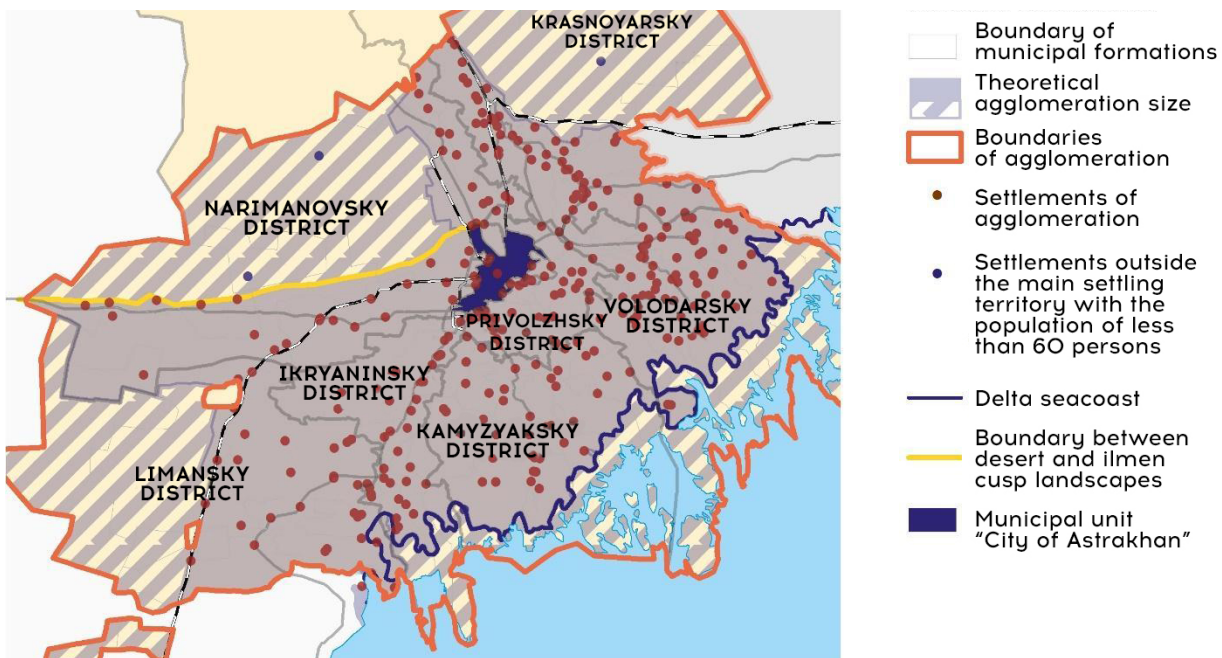


Fig. 22. Territory of Astrakhan agglomeration

26.3 ths.km²

area of the agglomeration

837,1 ths. people

population of the agglomeration

31.8 person/km²

density of population of the agglomeration



Preliminary model of agglomeration

Prospective model of Astrakhan agglomeration is monocentric and represents a “center-satellite” system. The core of the agglomeration is Astrakhan, and among the satellites are the subcenters of the first and second order (Fig. 23).

The priority is the integrated development of the regional center and adjacent cross-border territories of Privolzhsky and Narimanovsky districts.

Key elements of the planning structure of the agglomeration:

- The core of the agglomeration is Astrakhan.
- The territory of the suburban area of the regional center: Privolzhsky district, a part of Narimanovsky district.
- The subcenters of the first order: Narimanov, Kazymyak.
- The subcenters of the second order: other district centers of the municipal units of Astrakhan agglomeration (Krasny Yar, Volodarsky, Nachalovo, Liman, Iskryanoe).
- Industrial production and production logistics centers: Lotos Special Economic Zone and Krasnye Barrikady (territory of the Southern Center of Shipbuilding and Ship Repair JSC), Krasny Yar, planned Olya Special Economic Zone.



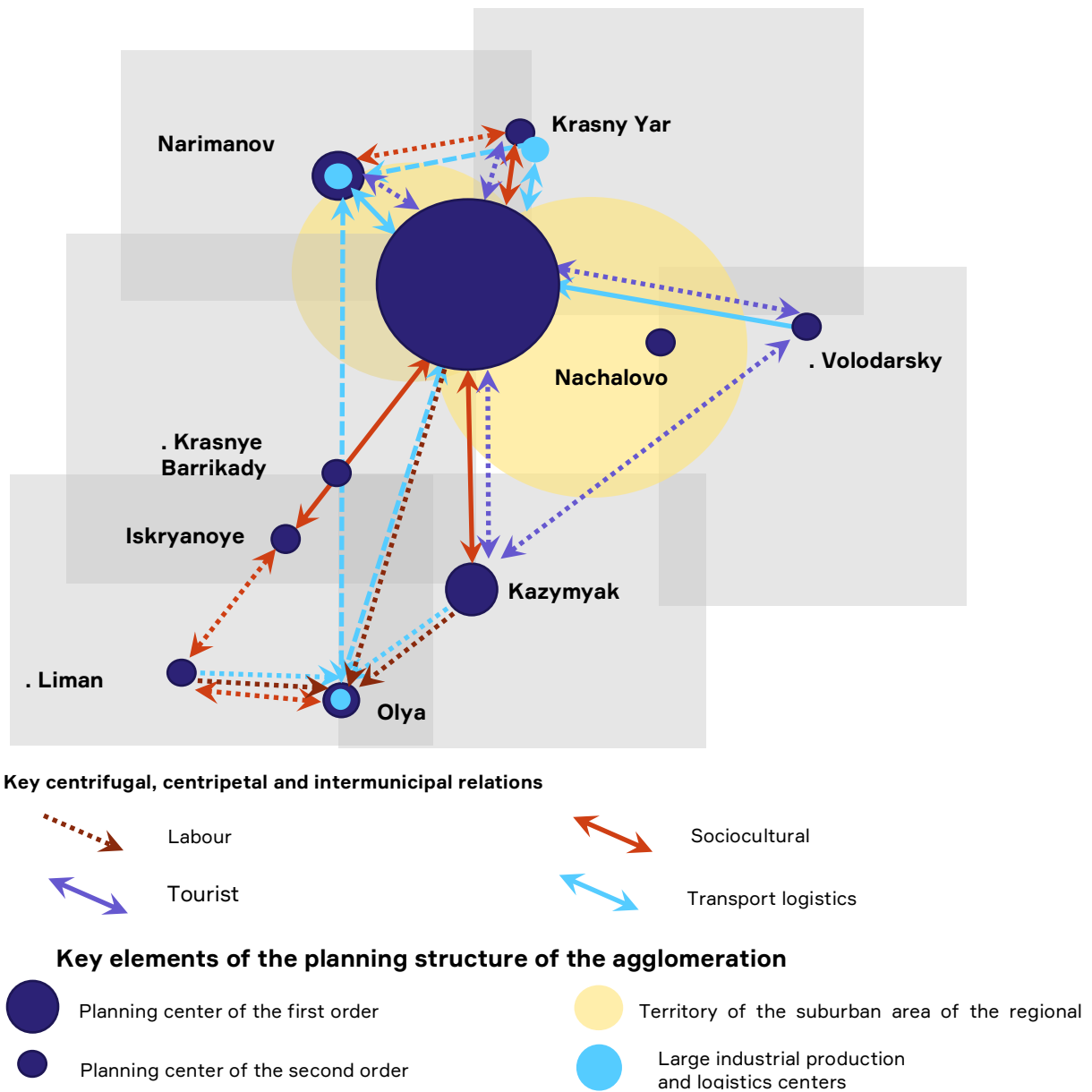


Fig. 23. Schematic spatial model of Astrakhan agglomeration



Socioeconomic characteristics of the agglomeration

According to the current employment distribution in the large organizations in the territory of the agglomeration, the main center of workplaces is Astrakhan. In the other municipal districts, the employment rate in the large organizations makes less than 20% of the working-age population. This evidences a considerable employment rate in small business, private subsidiary plot, as well as high level of shuttle migration preliminary to Astrakhan and high level of open and latent unemployment.

75%

of working places are concentrated in Astrakhan

The share of employees involved in the budgetary sphere prevails in the employment pattern of Astrakhan agglomeration. The share of employees involved in the transport and communications sphere prevails in Limansky and Narimanovsky districts and in Astrakhan. The employment pattern of Krasnoyarsky district is mainly formed by the extractive industry (Fig. 24).

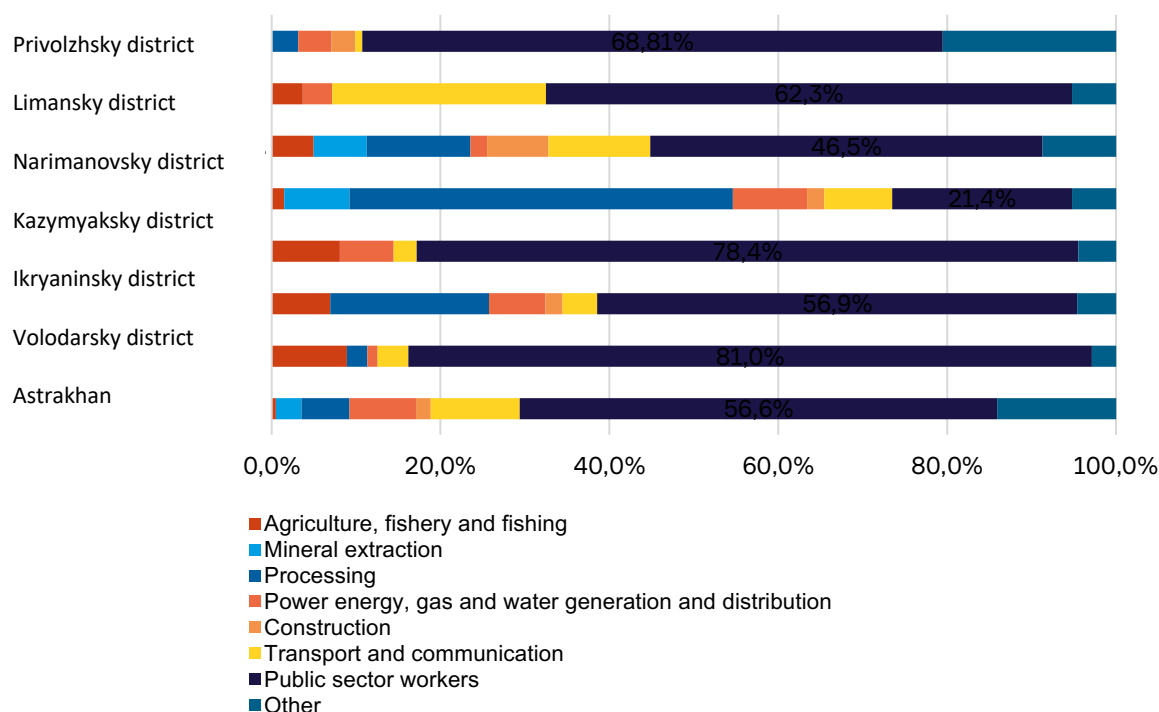


Fig. 24. Employment pattern of Municipal Unit "City of Astrakhan" and municipal districts of Astrakhan agglomeration (without consideration of small businesses)

The entrepreneurial activity in the territory of Astrakhan agglomeration is concentrated in its core. The shares of small and medium businesses in the territory of the adjacent districts are distributed relatively uniform (Fig. 25).

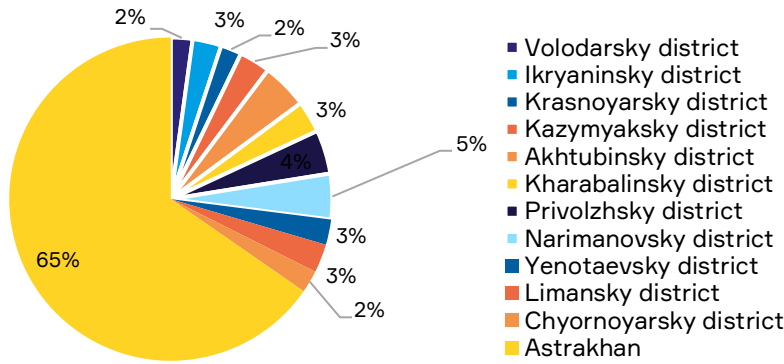


Fig. 25. Number of small and medium businesses per 10 ths. persons of population of Astrakhan agglomeration in 2019, units

The intensity of positive (negative) migration does not correlate with the average monthly salaries: Krasnoyarsky district with the highest average salary level has the migration outflow, and Privolzhsky district, the most successful from the point of view of the migration and natural population increase, is distinguished by one of the lowest average monthly salaries (Fig. 26-27).

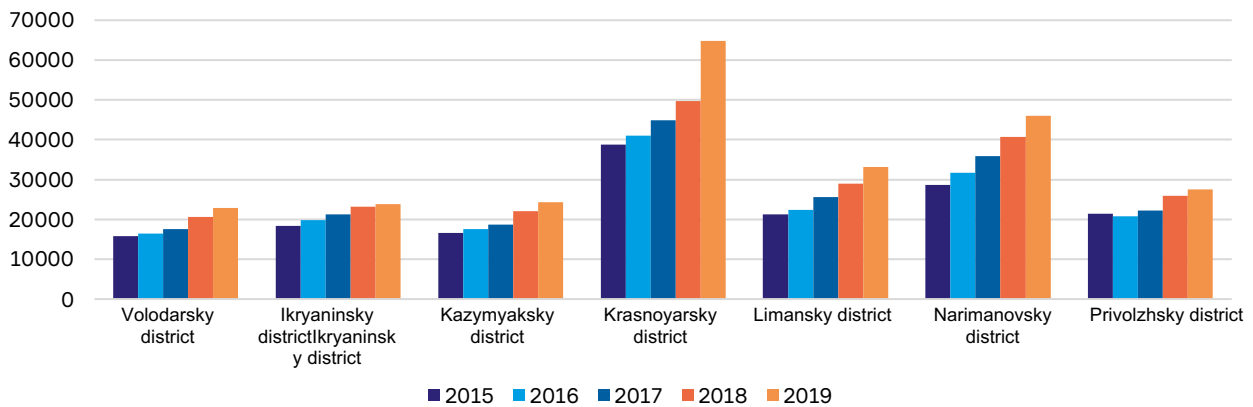


Fig. 26. Dynamics of the average monthly salary of employees of organizations in the territory of Astrakhan agglomeration, RUB

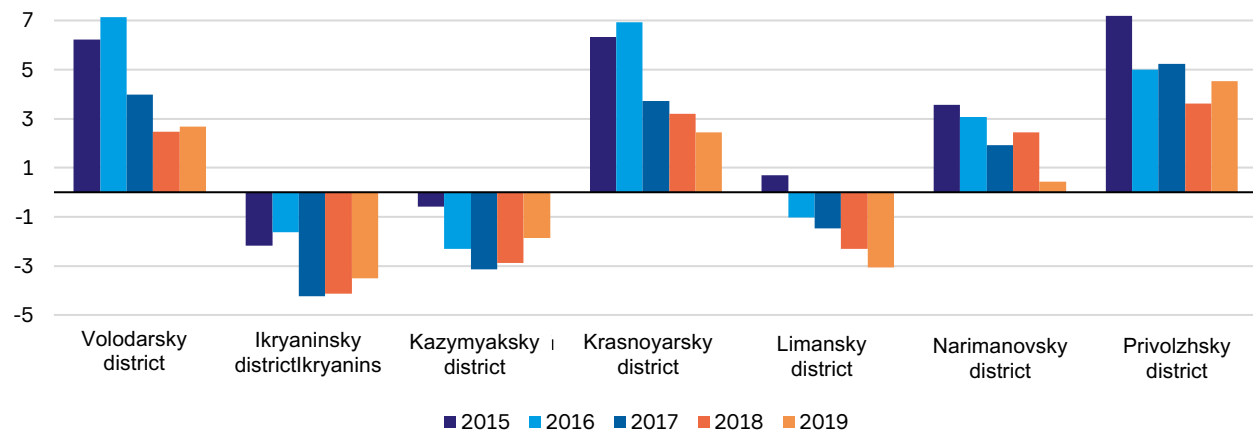


Fig. 27. Natural population increase (decline) in the territory of Astrakhan agglomeration, ths. persons



Demographic population

Except Astrakhan, among the largest centers of displacement in the territory of Astrakhan agglomeration are the district centers and other urban and rural settlements, including:

- settlements with the population of 10 ths. people and more: Kazymyak, Narimanov, Krasny Yar, Iskryanoye, Volodarsky;
- settlements with the population less than 10 ths. people: Liman, Krasnye Barrikady, Starokucherganovka, Nachalovo, Solyanka, Ilyinka;

Outside the regional center, Astrakhan agglomeration is primarily characterized by rural population.

Due to the migration outflow, the most of the districts demonstrate depopulation (Fig. 28), the exclusions are Krasnoyarsky and Narimanovsky districts with the relatively stable number of population and Privolzhsky district with the stable population growth.

21%

share of urban population of the agglomeration outside Astrakhan

20%

increased industrial production index in the power generating industry for 2012–2020.

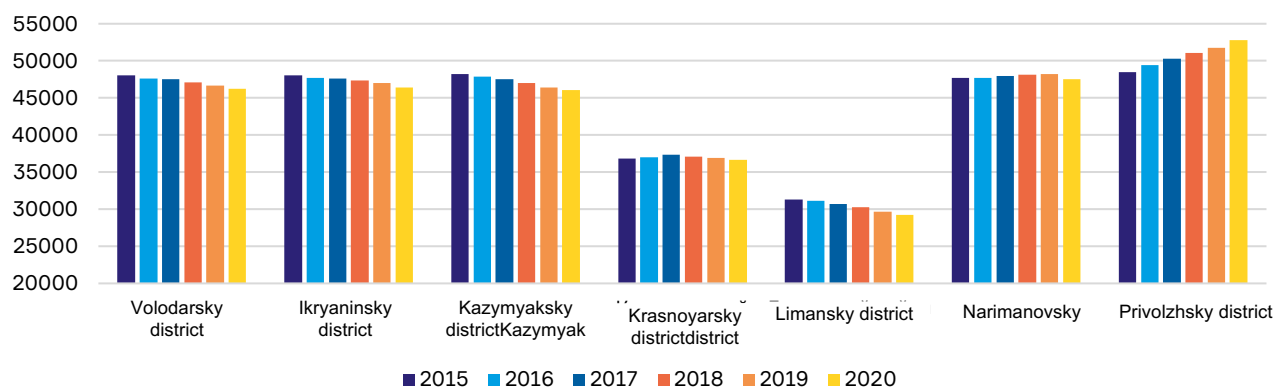


Fig. 28. Dynamics of population in the territory of Astrakhan agglomeration, persons

Fuel and energy complex

Astrakhan industrial agglomeration has a unique geographical location, it belongs to one of the richest and economically promising resource and raw materials regions of Russia (Fig. 29).

The natural gas production is the basic modern industry in Astrakhan industrial agglomeration that predetermined quick growth of fuel and gas chemistry sector for the last decade (Fig. 30).



Legends:

Raw hydrocarbon deposits:

- under industrial development
- in pilot industrial operation
- being prepared for industrial operation
- being prepared for development
- being explored

Large companies:

- Lukoil Corporate Training Center
- Southern Center of Shipbuilding and Ship Repair JSC
- Large production companies

Fig. 29 Scheme of raw hydrocarbon deposits

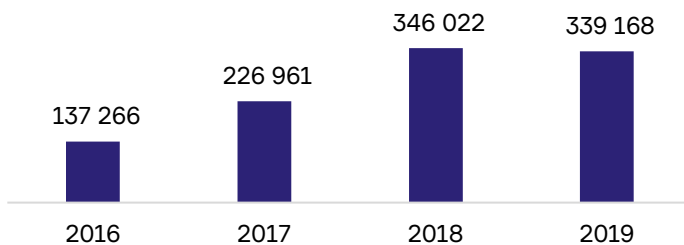


Fig. 30. Volume of own-produced shipped goods by the kind of economic activity "Mineral extraction", mln. RUB

5th place

on energy, gas and steam supply; air conditioning in the SFD in 2018

4.3%

share of processing companies in the GRP in 2019, in the GRP in 2018

12

solar power facilities put into operation with total power of 285 MW



The alternative energy is actively developing in the territory of Astrakhan region. Thus, today, the solar energy makes 6% of the power consumed by Astrakhan region and takes the 10th place on retail sales of the Russian solar modules¹¹. In total, 12 solar power plants of total power of 285 MW was built and put into operation for 2017-2020.

Processing companies: specializations of districts

A considerable share in the processing companies belongs to such kinds of economic activity as “oil production” and “production of chemical substances and chemical products”. 45% of processing companies of Astrakhan region is accounted for by the districts of Astrakhan agglomeration, among them, the largest part (42.4%) is accounted for by Krasnoyarsky district (Astrakhan Gas Processing Plant LLC), 1.8% - by Narimanovsky district (shipbuilding); 1.3% - by Kazymyasky, Volodarsky and Ikryaninsky districts (agricultural and fish products processing) (Fig. 31).

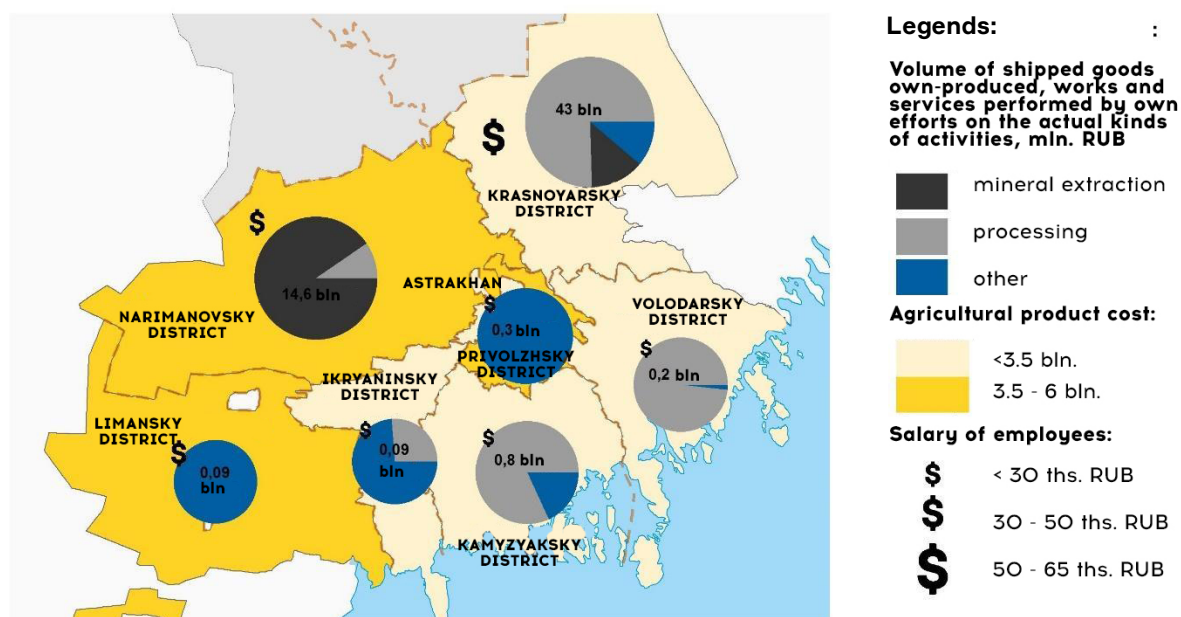


Fig. 31. Scheme of processing companies differentiation in Astrakhan agglomeration

¹¹ <https://www.hevelsolar.com/kz/about/news/top-15-rossiiskikh-regionov-po-razvitiyu-solnechnoi-mikrogeneracii/>

Fishery and fishing

The traditional leaders in fishery and fishing are Ikryaninsky, Kazymyaksky (fishing) and Volodarsky districts (fishery) (Fig. 32). The scientific competences in fishing are concentrated in Astrakhan.

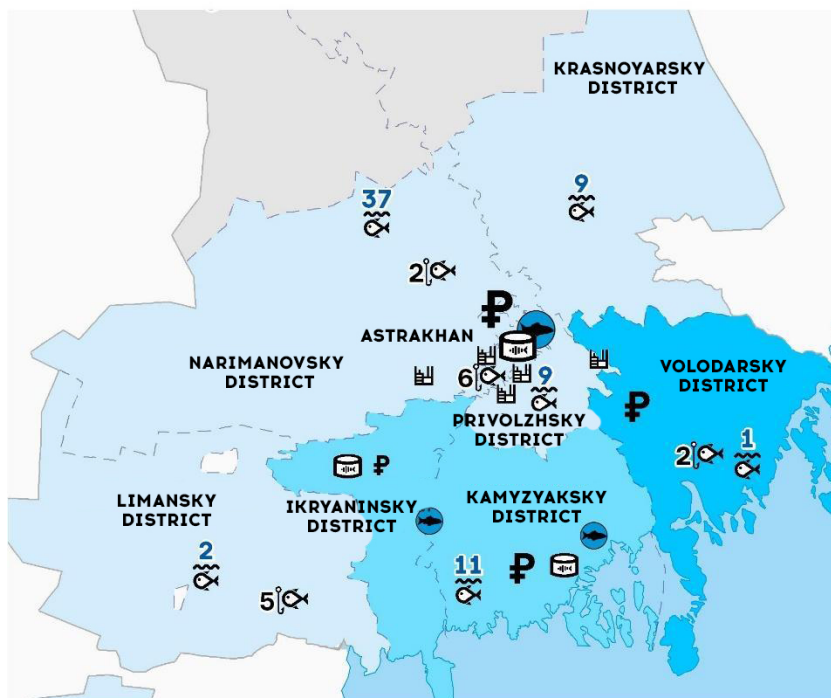


Fig. 32. Scheme of districts differentiation by concentration of production facilities of fish-farming organizations and total fishery revenue

>200

of business entities are engaged in fishery and fishing in the territory of the region

Legends:

Large agricultural companies

Availability of production facilities of fish-farming organizations engaged in artificial reproduction of aquatic bioresources

Revenue of fish-farming organizations, mln. RUB

< 30
 70-120
 > 529

Total revenue from fishery, mln. RUB

<100
 100-400
 400-750

Number of individual entrepreneurs and heads of agricultural (farming) enterprises:

fish-farming
 fishery



Agricultural sector: crop production

- Relatively similar contribution of the districts of the agglomeration to the agricultural development (Fig. 33).
- Insufficient investment to the agricultural sector of Privolzhsky, Limansky and Ikryaninsky districts in contrast to Volodarsky and Krasnoyarsky districts. Perspectives for further strengthening of the agricultural sector in Limansky district irrespective of the better motor vehicle accessibility of the other districts of the agglomeration and their less remoteness from Astrakhan.

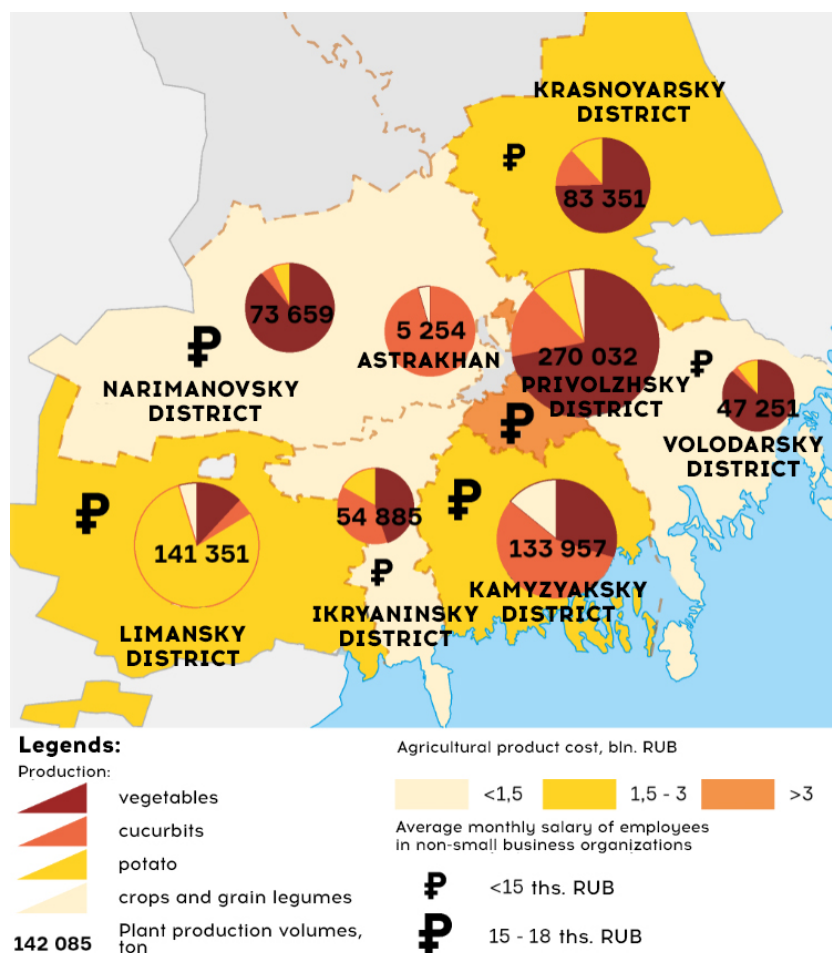


Fig. 33. Scheme of differentiation of districts of the agglomeration by cost and agricultural production volumes.

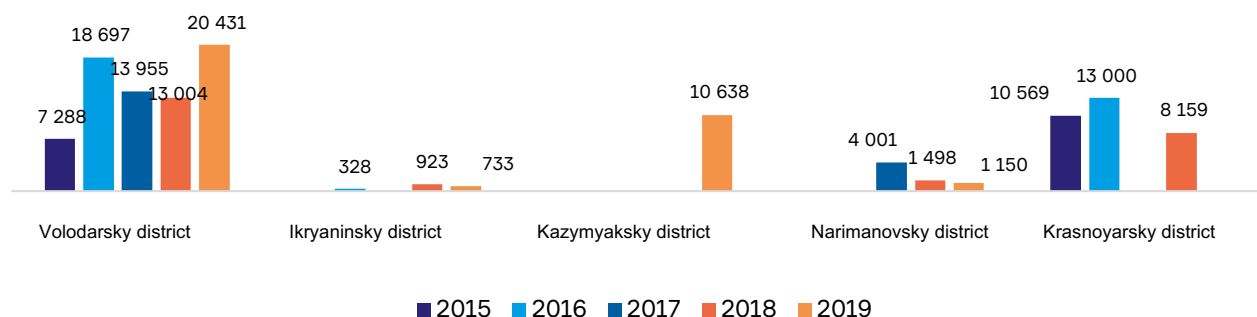


Fig. 34. Investments to the capital asset in the agriculture, ths. RUB

Fig. 35. Reserves of increase in the volume of the vegetable processing products, 2020–2031, ton.

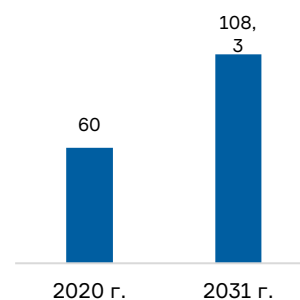
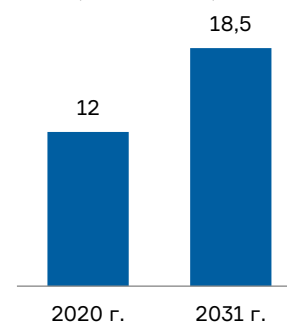


Fig. 36. Reserves of increase in the volume of the shipped crop products, 2021–2031, bln. RUB



Transport logistics complex

The low cargo turnover of the sea ports of Astrakhan region in contrast to the other ports of the Caspian Sea is observed (Fig. 37–38).

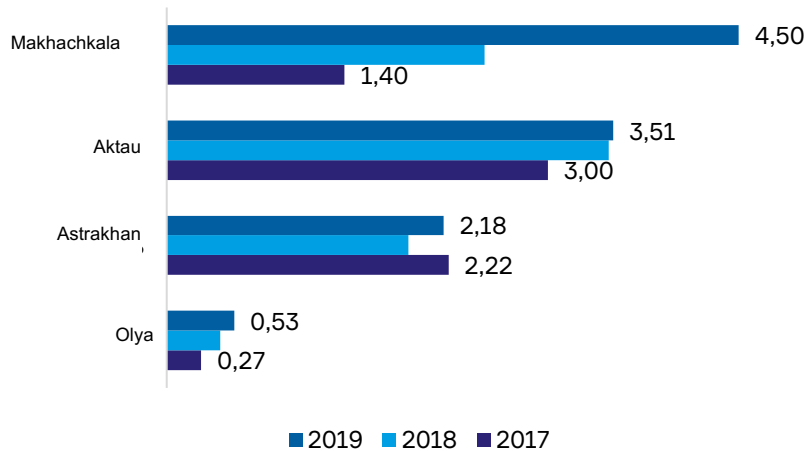


Fig. 37. Dynamics of the cargo turnover of the Caspian Sea ports for 2017–2019, mln. t

The foreign trade geography is represented by 70 countries, including:

- countries of the Caspian Sea region: Iran, Turkmenistan, Azerbaijan, Kazakhstan;
- CIS countries: Armenia, Belarus, Kirghizia, Uzbekistan.

Anchor project of the port SPE - construction of the modern container terminal for processing of cargoes to be delivered to the ITC “North-South”.

7% of GRP

forms the transport

16.4 mln. t

total current capacity of Astrakhan and Olya ports

8 mln. t

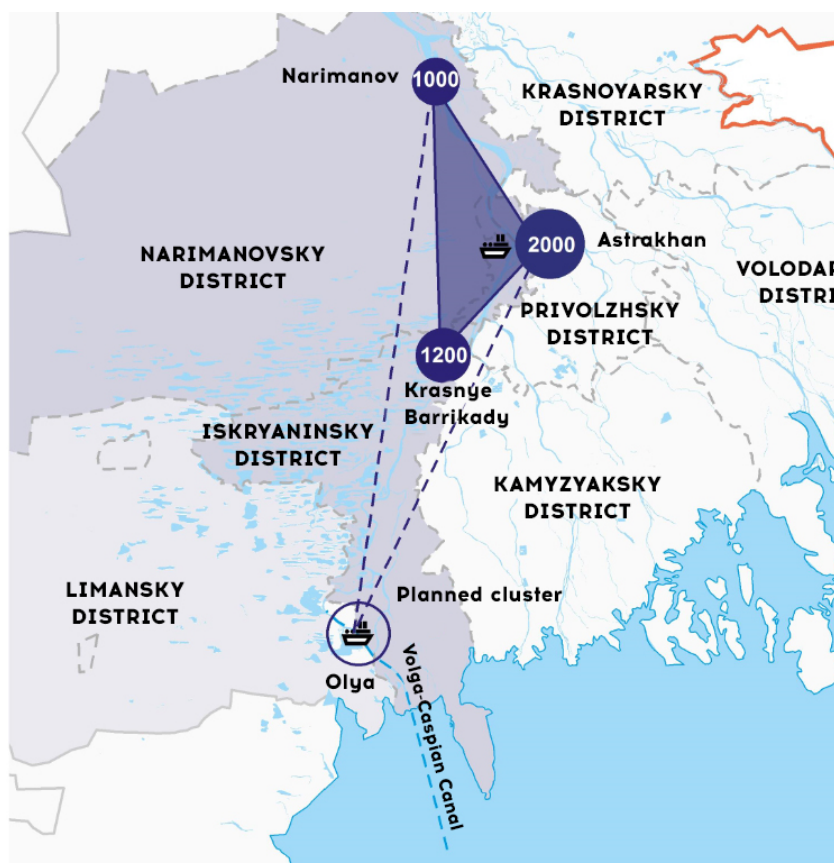
planned capacity gain of Olya port



Legends:
Sea ports:

- frozen water
- year-round
- International routes
- FEZ
- Планируемая ОАЭ





Legends:

- 1000 Number of employees of shipbuilding and ship-repair companies
- Districts with the developed shipbuilding and ship-repair

Fig. 40. Schematic operating model of the Caspian Cluster

Machine building: shipbuilding.

- Geographical distribution of machine building and metal working competences.
- No obvious center for concentration of competences (Fig. 39).

Tourist recreational complex

Key development areas of tourism in the territory of Astrakhan agglomeration:

- primary wellness;
- culture-related;
- event tourism.

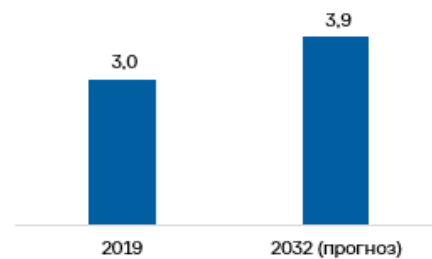


Fig. 38. Revenue of shipbuilding companies of Astrakhan agglomeration, bln. RUB

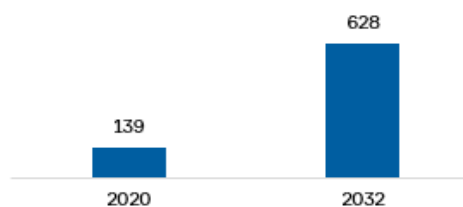


Fig. 39. Output of civil ships and marine facilities in value terms, % of volume for 2018.



The development of growth points with the formation of the diversified tourist route map on the basis of qualitative characteristics of the symbolic capital of the territory (Fig. 41) will make it possible to improve the total socioeconomic efficiency of Astrakhan agglomeration.

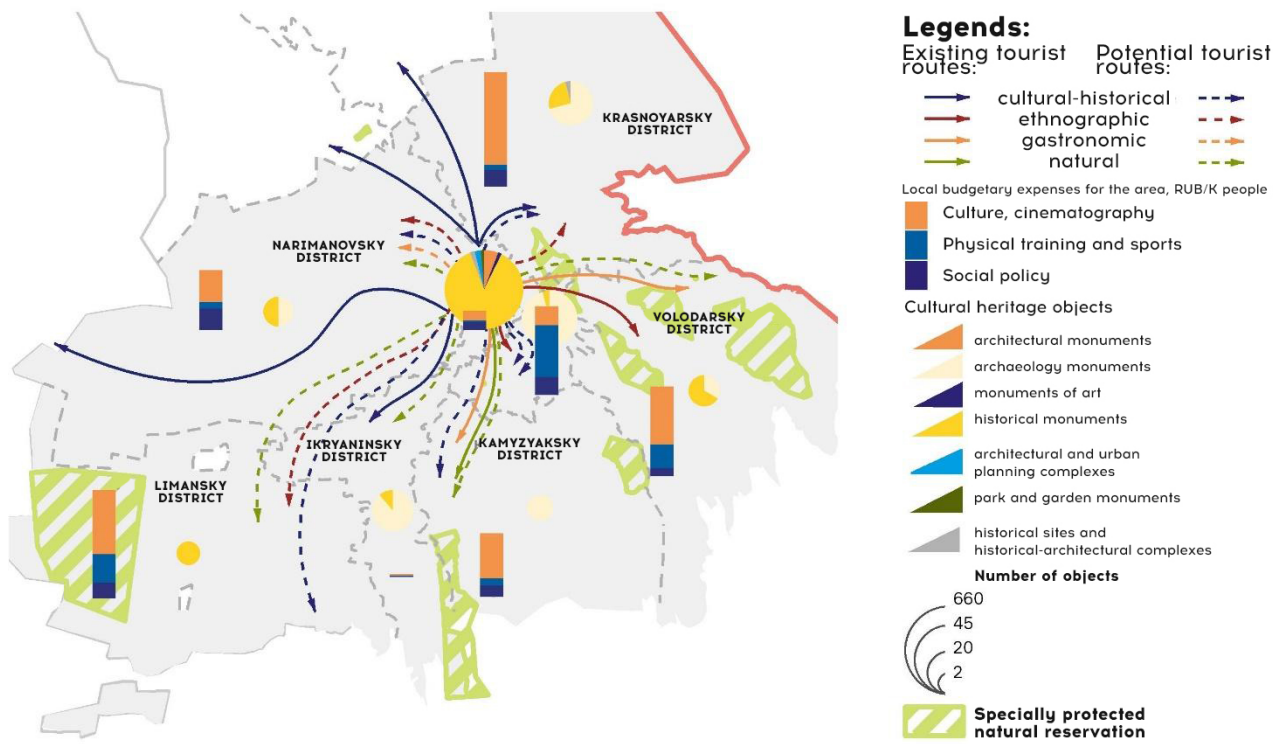


Fig. 41. Sociocultural potential for creation of the integrated tourism product



Scientific and innovative technological complex

In the territory of Astrakhan region, about 1,000 ha is currently occupied by technology parks and industrial parks with the officially approved status (Fig. 42).

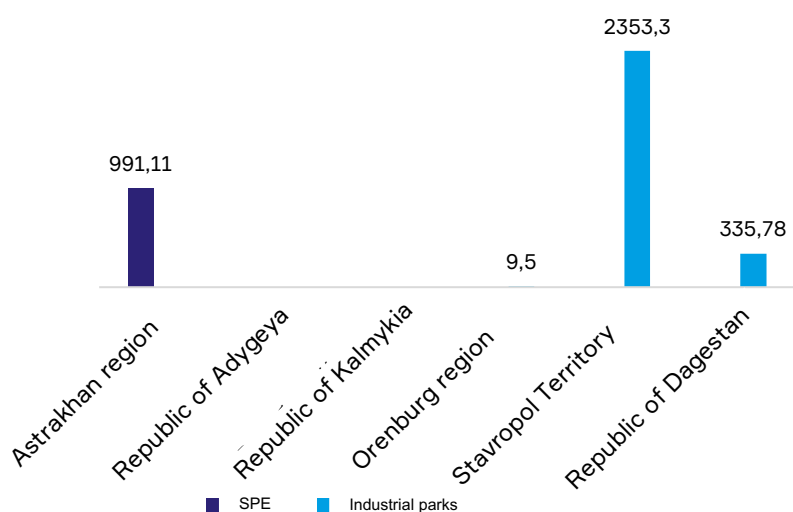


Fig. 42. Area of technology parks and industrial parks having the formalized status, ha

The share of the innovative organizations evidences good potential of Astrakhan region for introduction of new knowledge into business (Fig. 43).

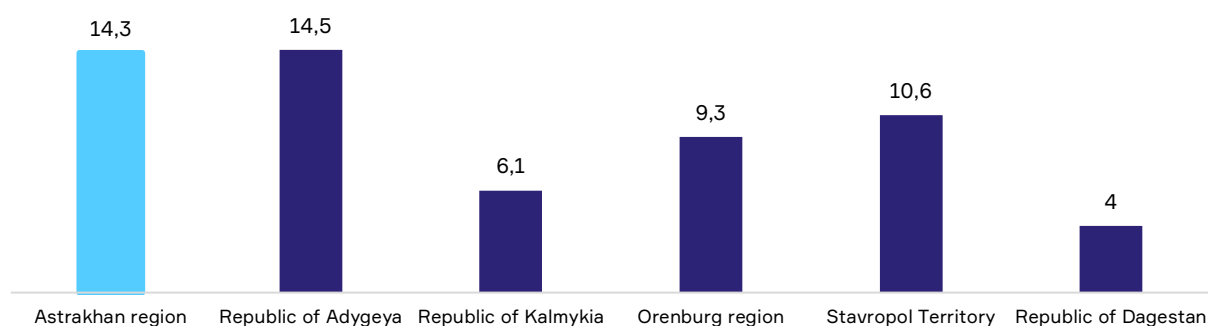


Fig. 43. Percentage of organizations engaged in technology innovations in the total volume of the studied organizations in 2019, %

6

R&D institutes and scientific centers in the region

407

patents of scientific organizations

Differentiation of the socioeconomic development of the municipal units included into Astrakhan agglomeration

Krasnoyarsky, Limansky and Privolzhsky districts are among the most favorable ones from the point of view of the socioeconomic assessment. At the same time, Krasnoyarsky and Limansky districts are characterized by the existing (Astrakhan GPP) and prospective (Olya Port SPE) growth points. The peculiarity of development of Privolzhsky district is the available infrastructure of the regional center, including the workplaces.

Volodarsky and Kazymyasky districts are characterized by low socioeconomic development in contrast to the considered neighboring districts of Astrakhan agglomeration (Fig. 44).

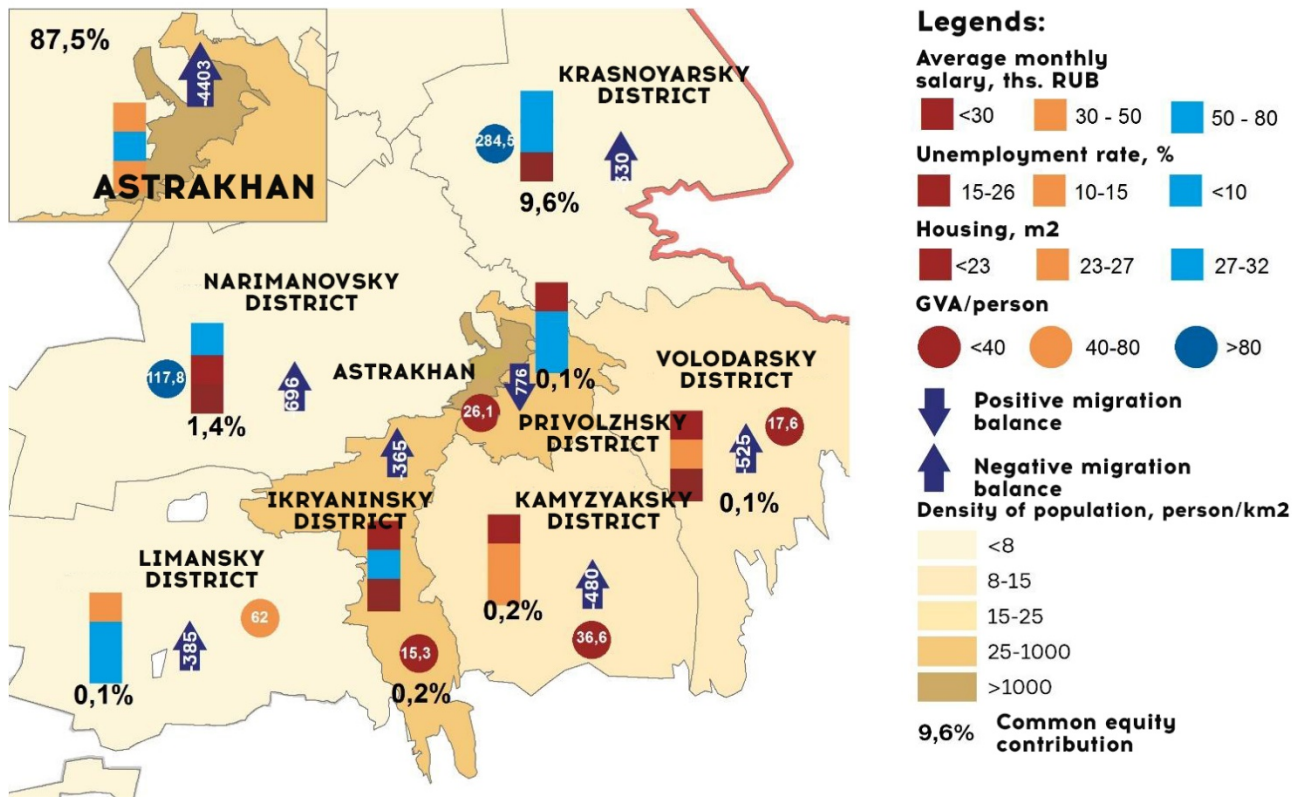


Fig. 44. Differentiation of the socioeconomic characteristics in the territory of Astrakhan agglomeration



Differentiation of the infrastructure support of the municipal units included into Astrakhan agglomeration

- Astrakhan, Volodarsky and Privolzhsky districts are distinguished by maximum deficits in terms of availability of the social infrastructure.
- Volodarsky district is distinguished by the lowest availability of the infrastructure, the large share of the old housing stock
- Limansky district is characterized by the lowest road network density in contrast to the other districts of the agglomeration.
- Volodarsky district is distinguished by the lowest percentage of hard-surfaced roads of the total road network length in the district, and Privolzhsky district - by the highest one (Fig. 45).

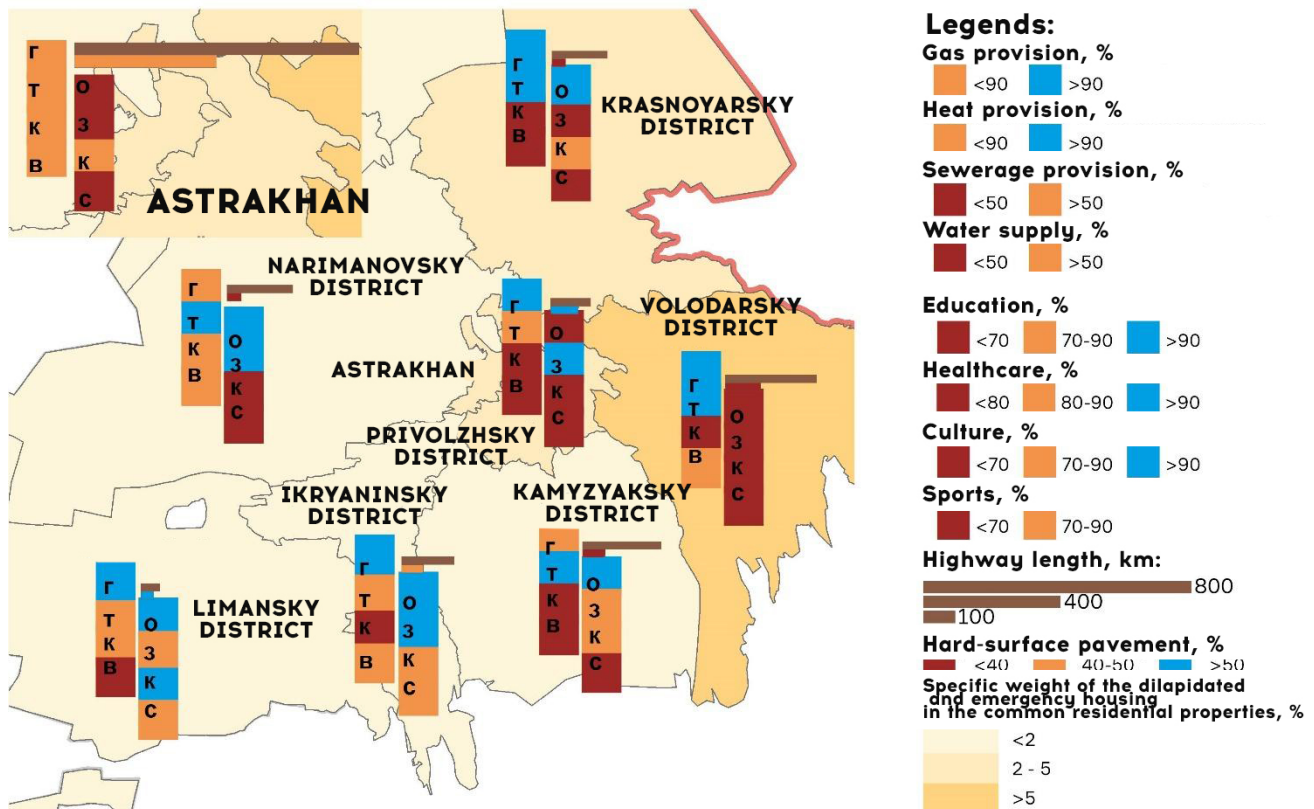


Fig. 45. Differentiation of the infrastructure support in the territory of Astrakhan agglomeration

City-planning use of the territories of the municipal units

The peculiarity of Astrakhan agglomeration is the prevalence of the individual city development in the general structure of the housing stock that is the reason for the medium level of the housing provision. The high share of the individual housing construction is a feature of the low population density and, as a result, of the low land use efficiency. In the conditions of the limited consumer demand, this leads to the low availability of the infrastructure and quality of the individual construction environment.

In addition to Astrakhan, Narimanov, Kazymyak and Krasnye Barrikady are distinguished by an important role of urban development. In the background of low employment in the agrarian sector and small division of land plots, the individual housing construction of Astrakhan and directly adjacent territories, that is rural by its form, is actually the continuation of the urban pattern in the framework of the suburbanization process.

>60%

of the total area of the housing stock of the agglomeration is located in Astrakhan

25.7 m²/person

average level of housing provision

Intermunicipal routes

A specific feature of the road network of Astrakhan agglomeration is its location in the Volga Delta and, as a consequence, its radial construction - there are practically no cross connections that is restrained by complex hydrographic network and low population density in the Volga Delta. There are no fixed bridges, there are pontoon bridges and ferry lines.

The most significant site without any fixed road connection is the western part of Kazymytsky district in the Karagali-Volga-Caspian-Zhitnoe direction connected with the road network by ferry lines in the area of Volga-Kaspiysky and Ikryanoe.

Fig. 46 illustrates the characteristics of the existing differentiation of the territory of the agglomeration by the degree of interconnection by means of public passenger transport that has been made on the basis of analysis of the official register of intermunicipal routes for regular transportation in Astrakhan region¹².

¹² <https://mintrans.astrobl.ru/document/reestr-mezhmunicipalnykh-marshrutov-regulyarnykh-perevozok>



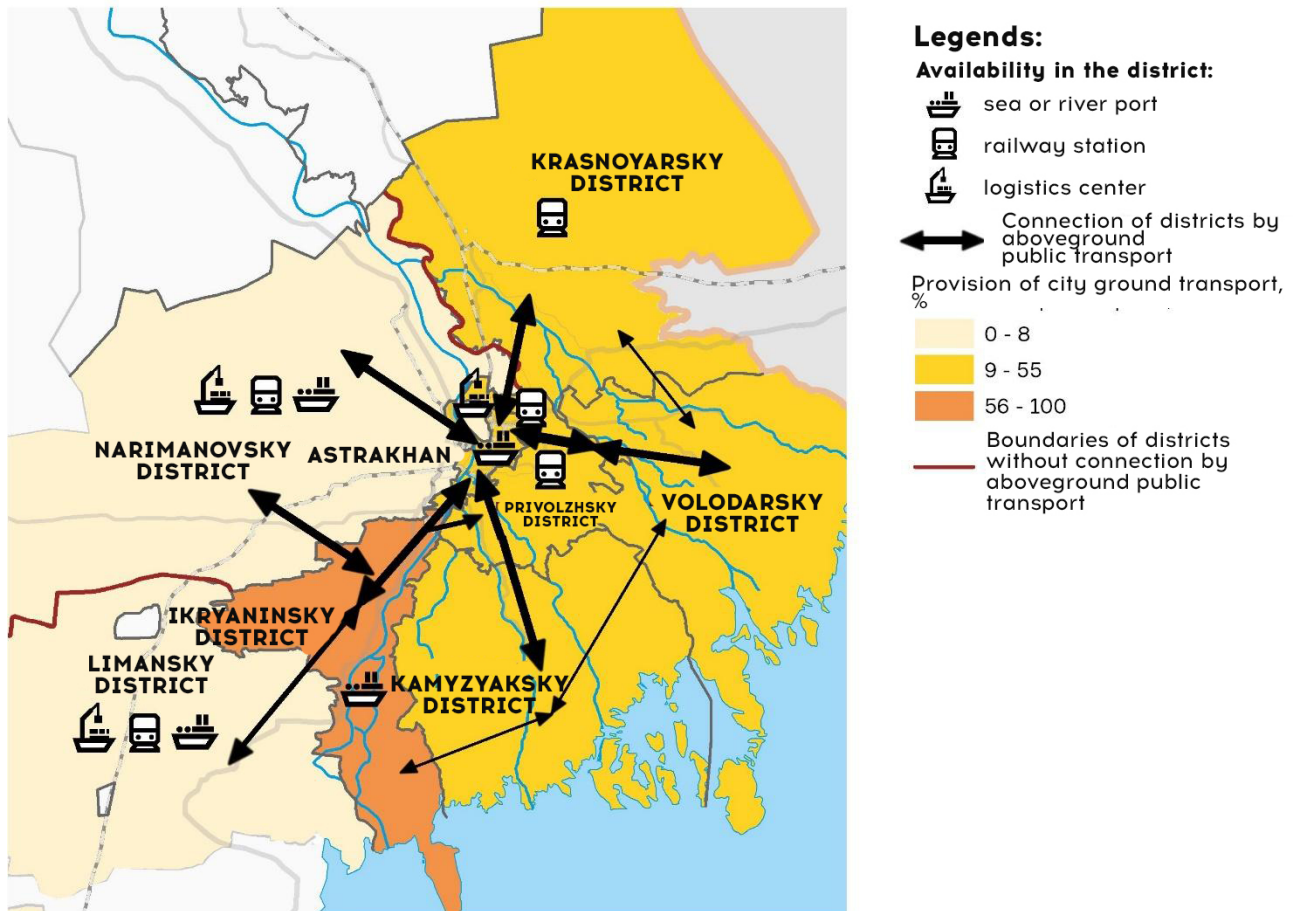


Fig. 46. Differentiation of the territory of the agglomeration by the degree of interconnection by means of public passenger transport

Main problems of the municipal units included in the agglomeration

Among the main problems of the municipal units included in Astrakhan agglomeration and requiring for joint decisions, the following can be determined:

- insufficient intermunicipal communication;
- required reorganization of management and institutional spheres;
- resource-oriented economy;
- lacking efficient interaction of science and business;
- lacking efficient tools for implementation of innovations and advanced technology into traditional spheres;
- poor promotion of the regional product in the Russian and international markets;
- lacking competitive tourist product;
- monocentricity (including in terms of formation of the transport logistics frame and spatial distribution of sociocultural centers in the territory of the agglomeration);
- compromised degradation of the human potential and intangible values;
- low and medium quality of living environment in the territory of the agglomeration, including high level of differentiation between the quality of the environment of the urban and rural settlements;

- not high service level;
- low image positioning;
- undeveloped territorial identity;
- poor international communication and integration.

Among the main problems and deterrents of the spatial development of the municipal units of the agglomeration, the following can be additionally determined:

1. Low infrastructure support, including:

- transport provision (poor quality of road infrastructure, bridges and ferry lines in disrepair, as well as transport facilities being on the balance sheet of the individuals and legal entities);
- engineering provision (some settlements of the agglomeration are not provided with the central water supply and water discharge, the utility infrastructure and headwork lines are heavily worn out);
- social provision.

2. Poor intermunicipal communication in terms of implementation of joint projects in transport and utility infrastructure, including:

- absence of rational network of the intermunicipal passenger transport;
- absence of stable relations between workplaces and residential places, and first of all, between the agglomeration core and adjacent territories of Privolzhsky and Narimanovsky districts.



Strategic development goals of Astrakhan agglomeration

On the basis of the comprehensive analysis of potential, problems and perspectives of socioeconomic development of Astrakhan agglomeration, peculiarities of spatial development of the study territory and opportunities of development, 4 strategic development areas were determined:

1 Active center of influence in Caspian region.

2 Astrakhan agglomeration - the territory of dynamic development.



3 Astrakhan - the city of opportunities, active and multifunctional.

4 Demonstration site of ecosystemic interaction technology.

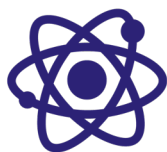
⚡ The city of opportunities: the basis is the structure of economy, the differentiator are the specific opportunities for self-fulfillment.



T.A. Gibson

Prospective areas of integration and related development of the municipal units of Astrakhan agglomeration

Below are the consolidated areas of integration and related development of the municipal units of Astrakhan agglomeration.



Adjustment of disproportion in the development of the districts of the agglomeration, including the territorial economic integration of the urban and rural municipal units of the agglomeration for the purposes of activation of commodity and cash flows and knowledge exchange between the districts.



Strengthening the centripetal and centrifugal relations of the territory of the municipal units with the agglomeration core.



Strengthening the intermunicipal relations, including implementation of infrastructure projects (tourist, engineering, transport, including optimization of routes between the main centers of the agglomeration (the core and subcenters of the first and second order¹³).



Creation of new workplaces in the district centers and on other prospective sites.



Creation of new sociocultural and public business centers of regional/international level.



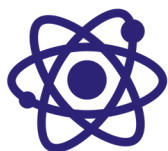
Strengthening the transport logistics frame in the territory of Astrakhan agglomeration.

¹³ Subsection 4.5 Studies - determination of the agglomeration model.

Areas of strengthening the agglomeration core

A particular role in the agglomeration development belongs to the regional center, the city of Astrakhan as the most important international strategically contact center of the south of the Russian Federation and multifunctional core of Astrakhan agglomeration.

According to the conducted analysis of the socioeconomic position, sociodemographic characteristics and infrastructure support of Astrakhan, the key development factors of Astrakhan as the core of Astrakhan agglomeration have been determined.



Re-positioning of Astrakhan at the level of the Russian Federation and internationally as the center of the Caspian cooperation.



Strengthening the role of the city as the center of innovative development of the historical competences.



Improved quality of urban environment on a short-term horizon.



Creation of the most favorable environment in the city for youth self-fulfillment (institutional, financial support, creation of the modern urban spaces, etc.).



Improved investment attractiveness.

Agglomeration development scenarios

As the development scenarios for Astrakhan agglomeration, it is offered to consider the optimization and acceleration scenarios (Fig. 47) that are different by the development indicators in the time reference points (Appendix 1).

Optimization scenario is aimed at improving the efficient use of the already available resources and capital, optimizing the land use, eliminating the infrastructure deficits and problems that hinder the intermunicipal interaction, as well as at forming an inquiry for change agents.

Acceleration scenario is aimed at forming the competitive advantages of the agglomeration being in demand in the Caspian macroregion both from the point of view of the output products, and from the point of view of the level and quality of living.

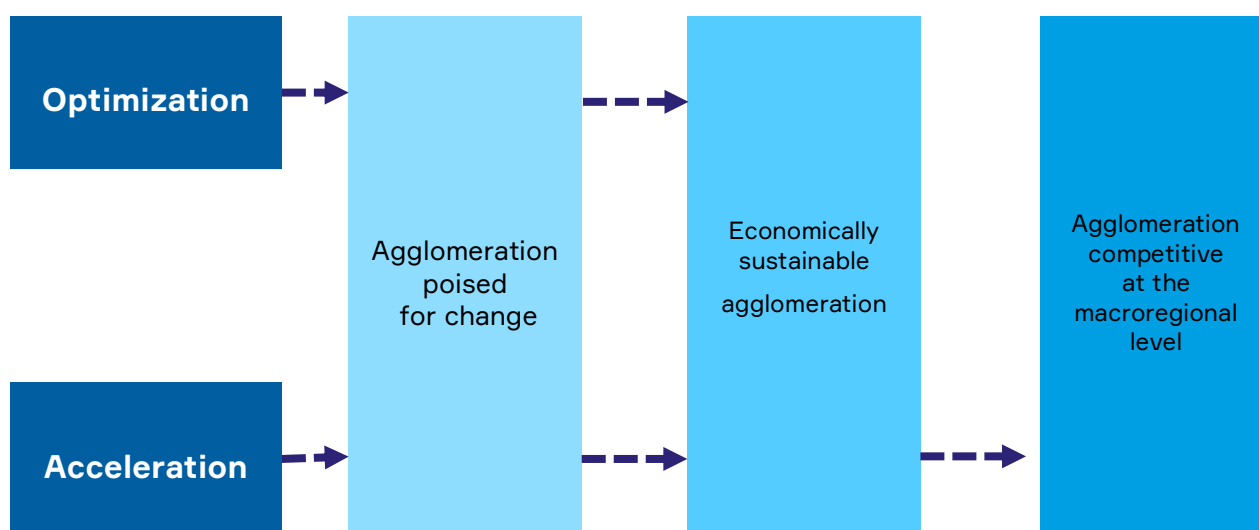


Fig. 47. Possible scenario of socioeconomic development of the territory of Astrakhan agglomeration

Key development indicators of Astrakhan agglomeration

The main factors determining the development of Astrakhan agglomeration and promoting for its rapid prospective development for 2023 can be divided into the following groups - agglomeration development indicators:

- living-attractive environment;
- youth-attractive environment;
- business-attractive environment;
- diversification of economy;
- innovative economy and economy of knowledge.



Formation of the living-attractive environment:

- extensive provision of recreation and other public spaces of shared use;
- affordable and quality school and preschool education, healthcare;
- reasonable location of social infrastructure facilities;
- formation of complex housing quarters with various types of buildings and creation of new workplaces;
- efficient mechanisms of historical environment regeneration and industrial property development reorganization;
- high level of provision with quality engineering infrastructure;
- high quality road network, reasonable public transport route plan.



Formation of the youth-attractive environment:

- creation of new format of quality of living environment;
- formation of active urban communities;
- formation of single sociocultural space;
- strengthening the intangible values;
- improvement of the service level;
- creation of conditions for youth entrepreneurship;
- creation of hightech well-paid working places.



Formation of the business-attractive environment:

- agreement of economic and spatial development;
- stimulation of high level business activity;
- efficient and transparent real estate market;
- current and forecast provision with labor resources.



Diversification of economy:

- reorganization of management and institutional spheres;
- Efficient implementation of the resource potential due to introduction of advanced technology into traditional spheres;
- rapid development in the sustainable agriculture, ecosystemic and green technology;
- strengthening the intermunicipal communication;
- efficient infrastructure investment;
- strengthening the transport logistics frame.



Formation of the innovative economy and economy of knowledge:

- transformation of the scientific and educational sphere;
- development of economy of knowledge at the existing universities and R&D institutes;
- introduction of innovations into traditional spheres.

Prospective areas of integration and related development of the municipal units included in the agglomeration will allow for achieving synergy in future.

Separate areas of development of Astrakhan agglomeration established by strategic documents at the regional and federal levels are the international integration and strengthening as the center of the Caspian macroregion.









International integration:

- repositioning of the region on the basis of the real development potential;
- strengthening the international interaction and the Caspian integration;
- formation of the competitive tourist product;
- promotion of the regional product in the Russian and international markets.

The conceptual agglomeration development model with due regard to these factors can be represented as the illustrative scheme (Table 1).



Table 1. Conceptual agglomeration development model

	Living- attractive environment		Youth- attractive environment		Business- attractive environment
<ul style="list-style-type: none"> ▪ quality living environment in the urban and rural settlements; ▪ normative provision of the infrastructure. 	<ul style="list-style-type: none"> ▪ new formats of the environment and housing; ▪ favorable conditions for youth entrepreneurship; ▪ high service level; ▪ favorable conditions for youth entrepreneurship; ▪ hightech well-paid working places; ▪ unique and diversified symbolic capital of the territory; ▪ unique tourist product; 	<ul style="list-style-type: none"> ▪ high level business activity; ▪ favorable conditions for entrepreneurship; ▪ attractive investment sites; ▪ considerable competences in traditional and innovative areas; ▪ high logistics potential. 			
	Diversification of economy		Innovative economy Economy of knowledge		International integration
<ul style="list-style-type: none"> ▪ collaboration of science and business; ▪ developed high marginality spheres; ▪ introduction of innovations into traditional spheres; ▪ high transport logistics potential; 	<ul style="list-style-type: none"> ▪ successful commercialization of knowledge; ▪ introduction of innovations into traditional spheres. 	<ul style="list-style-type: none"> ▪ quality of environment and quality of living being attractive for people from neighboring regions and states; ▪ demand in the unique regional product in the foreign market; ▪ demand in the unique tourist product in the foreign market. 			

Finalist's Competitive Bid



General requirements for competitive bid development

1. Compliance with the Terms of Reference.
2. Compliance with strategic socioeconomic development documents, documents on land planning and urban development zoning of Astrakhan region.
3. Compliance of the master plan concept with strategic purposes and objectives of the agglomeration development, including:
 - formation of Astrakhan agglomeration as the active center of influence in the Caspian region;
 - dynamic development of the territory of Astrakhan agglomeration;
 - positioning of Astrakhan as the city of opportunities and active multifunctional center of the south of Russia;
 - Astrakhan agglomeration as the demonstration site of the ecosystemic interaction.
4. The development scenarios of the priority zones in the territory of the agglomeration, including in the territory of the municipal unit “City of Astrakhan” and other settlements, provided by the master plan should provide for activation of the available resources and synergy of the agglomeration development.
5. Integrated approach to and reasonable use of the territory of Astrakhan agglomeration with the formation of the tourist route system, diversified entertainment-recreational and service infrastructure being attractive for various target audiences.
6. The scenarios of priority zones for development of the historical center of Astrakhan provided by the master plan should provide for active use of the cultural heritage objects and capitalization of the historical environment as a whole.
7. The practicability of the master plan proposals, availability of particular measures and mechanisms of its implementation as the parts of the competitive bid.
8. Investment attractiveness, socioeconomic and budget effectiveness of the solutions provided by the master plan for 2021-2032.



Principles of development of the competitive bid according to the master plan of Astrakhan agglomeration

When developing the competitive bid according to the master plan of Astrakhan agglomeration, the following basic principles should be taken into account.

1. compliance with the documents on strategic planning of the Russian Federation, Southern Federal District, Astrakhan region and MU "City of Astrakhan".

The competition proposals should correspond to the strategic development priorities of Astrakhan region set out by the following documents:

- Spatial Development Strategy of the Russian Federation 2025;
- Tourism Development Strategy of the Russian Federation 2035;
- Socioeconomic Development Strategy of the Southern Federal District 2020;
- Socioeconomic Development Strategy of Astrakhan region 2035;
- Development Strategy of the MU "City of Astrakhan" 2021.

2. Approach to master planning as to the mechanism of development.

The competition proposals should be based on understanding the spatial development as a system of actions determining the allocation, intensity and efficiency of spatial use of the tangible and intangible resources by means implementing the policies aimed at creating the environment for the human vital activity.

Such approach to spatial development in the master plan implementation requires not only the proposals on land planning and on material infrastructure provision but also on institutional activities and mechanisms of their implementation.

3. Use of agglomeration development benefits.

The competition proposals should provide for optimal use of the available territorial, natural (including agroclimatic), financial resources, accumulated scientific and symbolic capital, transport logistics and tourist potential of Astrakhan agglomeration.

The master plan concept of Astrakhan agglomeration should provide for improving the quality of environment in the urban and rural settlements of the agglomeration, efficient joint operation of transport and utility infrastructure, create the conditions for development of the competitive industries and improve the investment climate, activate the use of the attractions (growth points) in the territory of Astrakhan agglomeration that generally should lead to decrease in disproportions of the spatial and socioeconomic development.

4. Strengthening the role of Astrakhan as the multifunctional agglomeration center.

The competition proposals should provide for strengthening the role of the core of Astrakhan agglomeration as the active multifunctional economic and innovative center, site for efficient interaction of the



authorities, business and community, making Astrakhan as the active center of the south of the Russian Federation and Caspian region.

The master plan should include the activities to ensure development of Astrakhan as the center of innovation technology in various spheres that generates cash flows in the territory of the agglomeration and the region, create the comfort sociocultural space for development of human capital and public institutions successfully functioning and demanded by economy.

The competition proposals should provide for creating the environment of new quality, conditions for active use of the unique cultural heritage, historical settlement of federal significance of Astrakhan.

5. Creation of conditions for diversification of economy.

The competition proposals should create conditions for diversification of economy of Astrakhan agglomeration and provide for activities to ensure development of the prospective sectors of economy in the nearest future, including modernization of the sectors that are traditional for the region, formation of the postindustrial sector of economy, with priority of creation of conditions for the sectors of economy having maximum agglomeration effect.

The master plan should provide for a complex of interrelated organizational, institutional, financial and urban development solutions that jointly ensure the creation of investment sites, optimization of transport logistics frame and utilities, specialized infrastructure and other necessary activities.

6. Preservation of the universal integrity of the Volga Delta landscapes and reduction of anthropogenic load on the vulnerable desert, semi-desert, plain and delta landscapes.

The competition proposals should be developed taking into account the conservation significance of the geosystem of the Volga Delta, formed system of specially protected natural territories and vulnerability of the landscapes of Astrakhan region.

The master plan should provide for reduction of anthropogenic load on the ecosystems in any kinds of activity, as well as offer the land development solutions allowing for maintaining the balance between the economy and economic situation. The offered infrastructure and other solutions should meet the world ecological standards.

The competition proposals should include the activities to ensure formation of the demonstration site of the ecosystemic interaction within Astrakhan agglomeration as a new image component of the region.

7. Preservation of integrity and origin of the historical environment.

The competition proposals should meet the world trends in handling with the cultural heritage and symbolic capital of the territory combined with the development of the institutional environment, use of mechanisms of the public and private partnership, integration with thematic tourist routes and image events.

8. Stages of achieving the strategic goals and tasks of development.

The competition proposals should provide for stage-by-stage implementation of the activities that lead to consistent solving of the following tasks in the course of formation of:

- by 2024 - agglomeration poised for change;
- by 2027 - economically sustainable agglomeration;
- by 2032 - agglomeration competitive at the macroregional level¹⁴.

Contents of the competitive bid

1. Schematic development model of Astrakhan agglomeration on the basis of the specified agglomeration development potential.

1.1. Sociocultural, urban development and other prerequisites determining potentials and constrains for development of Astrakhan agglomeration and MU "City of Astrakhan"

1.2. Assessment of the resource potential of development.

1.3. Assessment of the provision of infrastructure of Astrakhan and other municipal units of the agglomeration, including utilities and transport services.

1.4. Analysis of residents' proposals¹⁵ on development of the MU "City of Astrakhan" and Astrakhan agglomeration.

1.5. Key problems of socioeconomic and territorial development of the agglomeration, including key problems of development of the municipal units included.

1.6. Consolidated problems of spatial development of the MU "City of Astrakhan" as the agglomeration center.

1.7. Existing and potential growth points.

1.8. Schematic development model of Astrakhan agglomeration.

2. Spatial development scenario of Astrakhan agglomeration for 2021–2032.

2.1. Specification of the key idea of spatial development of the agglomeration based on the offered agglomeration development model, resources, socioeconomic and spatial restrictions for development, external and internal risks, opinions and proposals received from the residents of Astrakhan agglomeration, stakeholders.

2.2. Priorities and tasks of spatial development of the agglomeration as a whole and its municipal units in particular,¹⁶ including:

¹⁴ The implementation of the acceleration scenario is recommended as basic. Once reasonably justified, the participant can offer an alternative.

¹⁵ The results of interrogation of residents of Astrakhan agglomeration are given in Appendices 2 and 3.

¹⁶ The list of preliminary activities on agglomeration development, including with due regard to the approved Socio-Economic Development Strategy of Astrakhan region 2035 and other



- agglomeration development;
- development of the municipal units of the agglomeration;
- intermunicipal development.

2.3. Priorities and tasks of spatial development of the MU “City of Astrakhan” as the agglomeration core.

2.4. Areas of strengthening the internal agglomeration relations, including economic, transport, economic, sociocultural

2.5. Activities to implement the development scenario of the agglomeration ¹⁷in the following areas:

- formation of the living-attractive environment;
- formation of the youth-attractive environment;
- formation of the business-attractive environment;
- creation of conditions for diversification of economy;
- changes in the management system and institutional sphere;
- creation of conditions for formation of the innovative economy and economy of knowledge;
- development of tourist destinations, a system of integrated routes and recreational complex with the creation of the basic and commercial support infrastructure;
- international integration.

2.6. Activities to ensure strengthening the agglomeration core, the MU “City of Astrakhan”, in the framework of implementation of the development scenario.

2.7. Proposals on formation of the unique event program for image promotion of symbolic and cultural capital of the districts of the agglomeration at the international and interregional levels.

2.8. Proposals on comprehensive development of the tourist product of the territory of the agglomeration.

2.9. Proposals on optimization of management and maintenance of the territory of the historical settlement of federal significance of Astrakhan, including institutional activities and activities in the public and private partnership.

2.10. Determination of the prospective development indicators of the agglomeration as a whole and its municipal units in particular, by the chosen areas with the stage reference:

- 2021-2022¹⁸;
- 2022-2024;
- 2024-2027;
- 2027-2032.

2.11. Determination of the prospective development indicators MU “City of Astrakhan” as the agglomeration development center.

materials and documents provided by the executive authorities of the region as the source information is given in Appendix 1 to the Terms of Reference.

¹⁷ The list of basic activities on the agglomeration development, including strengthening the agglomeration core, is given in Appendix 2 to the Terms of Reference.

¹⁸ The spatial, institutional and other activities that should and can be implemented in the first years of the master plan implementation should be provided for in the competitive bid.



2.12. Summary list of activities on implementation of the adopted development scenario of Astrakhan agglomeration with breakdown by stages and reference to the development indicators.

3. Land planning activities to implement the offered spatial development scenario of Astrakhan agglomeration for 2021–2032.

3.1. Land planning activities for the agglomeration as a whole and its particular municipal units, including the MU “City of Astrakhan”, with due regard to the chosen spatial development scenario, aimed at forming the living-, youth- and business attractive environment; creation of conditions for diversification of economy, formation of the innovative economy and international integration, by the following areas:

- development of transport, utility and other infrastructure of regional and interregional significance;
- development of transport and utility infrastructure, sociocultural and municipal-domestic service infrastructure of municipal and intermunicipal significance;
- optimization of the road traffic and transport service system, including modernization of the street and off-street passenger transport system;
- housing development;
- optimized use of the natural and recreational potential;
- preservation of the historical and cultural heritage;
- development of the system of public spaces;
- development of tourist infrastructure;
- environmental measures;
- other areas of the agglomeration development.

3.2. Assessment of the urban development potential of the territory of the agglomeration with the allocated prospective development sites and sites for the facilities of various functional purpose which implementation will provide for the planned areas of the spatial development and have maximum agglomeration effect.

3.3. Assessment of the urban development potential of the territory of the MU “City of Astrakhan” with the allocated prospective development sites and sites for the facilities of various functional purpose which implementation will provide for strengthening the agglomeration core and achieving the maximum agglomeration effect in future.

3.4. Proposals on location of the prospective development territories, including location of the innovative, industrial and logistics sites, tourist and recreational infrastructure facilities, street retail facilities and other significant commercial facilities and small business infrastructure.

3.5. Proposals on amendments to the land planning documents of Astrakhan region necessary to implement the activities provided by the master plan.

3.6. Proposals on amendments to functional zoning and boundary development parameters of the MU “City of Astrakhan” according to the effective General Layout of the MU “City of Astrakhan” for the purposes of further accounting in preparation of the new General Layout of the city.

4. Proposals on architectural and space-planning design of the key development territories and facilities of interregional and regional significance. Consistent approaches to organization of the environment of the settlements of the agglomeration (typical situations).



4.1. Justification of the selection of the key territories and facilities of interregional and regional significance for development of the architectural and space-planning and landscape architectural decisions setting out the directions for transformation of urban development environment within Astrakhan agglomeration.

4.2. Consistent approaches to architectural and space-planning and landscape architectural design of the key development territories and facilities of interregional and regional significance with visualization of the architectural and space-planning decisions of the development territories and location of the key facilities (locations of 3-5 facilities, at 2 of them are located in Astrakhan).

4.3. Detailed space-planning decisions by the territories of the prospective sites to be developed (2-3 decisions) with the representation of the functional space-planning decisions by the capital facilities and their location territories, conceptual decisions on creation of the architectural and urban development image, design solutions, etc.

4.4. Consistent decisions on development of the system of public spaces in the territory of the Municipal Unit "City of Astrakhan" (1-2 decisions with the representation of the key idea and the used landscape-architectural techniques).

4.5. Typology of settlements of the agglomeration. Consistent approaches to organization of the environment of the settlements of the agglomeration (at least 3 typical situations).

5. Financial and economic development model of the agglomeration ensuring sustainable development of the territory with the use of the efficient finance mechanisms promoting for future creation of the multiplier effect in different sectors of economy.

5.1. Organizational operational scheme of the agglomeration: legal status of the agglomeration, management body and legal form of organization, finance scheme of the management body of the agglomeration.

5.2. Feasibility study and assessment of investment attractiveness of the "breakthrough" growth points of economy of the territory, the most significant priority projects capable of attracting stable investment flow and improving the competitiveness of the territory in the conditions of diversification of economy.

5.3. Financial and economic development model of the territory of the agglomeration ensuring sustainable development of the territory with the use of the efficient co-finance mechanisms¹⁹, promoting for future creation of the multiplier effect in different sectors of economy.

5.4. Priority industry and inter-industry projects aimed at master plan implementation, with the specified amount of investments, incomes and

¹⁹ It is recommended widely to use the most efficient and modern financial instruments and mechanisms to implement the bid solutions, namely, to use the mechanisms of private-public partnership, inclusion into additional public programs, national projects, federal and regional support activities, bank financing, use of financial mechanisms initiated by the Development Institutes (ДОМ.РФ "Infrastructure Bonds", ВЭБ.РФ - bond-secured loans, financing of high-technology industry projects, Russian Expert Center, MSP Corporation, WEB Infrastructure, National Center for PPP), and so on.



operating expenditures of the project, payback period and expected positive socioeconomic effects on the agglomeration.

5.5. Road map and network schedule of the stage-by-stage implementation of the master plan activities for 2021-2032 with the specification of the activities implemented during 2021-2024, 2025-2028, 2029-2032 and of the possible mechanisms of implementation and finance source (public programs, development institutions, national projects, federal and regional support activities, federal and regional development institutions, bank financing, PPP schemes).

5.6. Assessment of economic, social and budgetary effects from the project implementation (increase in the working-age population, decrease in migration outflow, GRP growth and change in the GRP structure, job growth, small business development indicators in the framework of the agglomeration, gain in innovative production, tax revenues, etc.) and economic, social and budgetary efficiency of implementation of the offered developed scenarios for:

- 2021-2024;
- 2024-2027;
- 2027-2032.

5.7. Budget and finance sources, including calculation of the amount of investments to the master plan activities, including capital expenditures, management and operating costs, etc.

5.8. Broad estimates of the socioeconomic and budgetary efficiency of development of the first-step site.



Contents of the bid materials

Landscape orientation album, including explanatory note with visualization materials

Illustrative, table and other materials according to the contents of the Competitive Bid compiled by the master plan sections.

Explanatory note containing detailed description of the Competitive Bid according to the contents of the master plan sections.



Tablets

Tablets (minimum 6 - maximum 9) containing the information revealing the content of the Competitive Bid
Format - 1000x1400 mm, portrait orientation.



Presentation

It contains a brief version of the materials of the Album (max 100 slides, landscape orientation): key schemes, illustrations, visualization, tables, infographic.

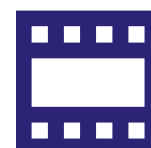
The presentation should detail the Competitive Bid to the maximum extent, it is demonstrated during the Jury session.



Video with 3D-modeling elements;

(duration is from 2 to 5 minutes)

3D visualizations of the territory of Astrakhan agglomeration that illustrate the schematic spatial development model of Astrakhan agglomeration with the represented key activities, including the proposed development drivers with reference to the stages of implementation. The video should include 3D visualizations representing the key activities on the land development of the municipal units of the agglomeration and MU "City of Astrakhan" and consistent architectural and urban development decisions. The video should include the infographic by key economic, social and budgetary efficiency indicators of the offered development scenario.



Other materials at the participants' option



Content of the initial data

- Spatial Development Strategy of the Russian Federation 2025.²⁰
- Tourism Development Strategy of the Russian Federation 2035.²¹
- Socioeconomic Development Strategy of the Southern Federal District 2020.²²
- Socioeconomic Development Strategy of Astrakhan region 2035.²³
- Development Strategy of the Municipal Unit “City of Astrakhan” 2021²⁴
- Draft Federal Law “On Urban Agglomerations”.²⁵
- Town-Planning Code of the Russian Federation No. 190-FZ dated 29/12/2004 (rev. on 30/12/2020) (amended on 10/01/2021).
- Law of Astrakhan region No. 67/2006-O3 dated October 04, 2006 “On administrative and territorial structure of Astrakhan region”.
- Resolution of the Government of Astrakhan region No. 184-P dated 01/06/2006 “On approval of the State Cadastre of Specially Protected Natural Areas of Astrakhan Region”.
- Law of Astrakhan region No. 67/2006-O3 dated October 04, 2006 N 67/2006-O3 “On administrative and territorial structure of Astrakhan region”.
- Territorial waste management scheme, including solid household waste in the territory of Astrakhan region.²⁶
- Law of Astrakhan region No. 67/2006-O3 dated February 10, 2020 “On agricultural development in the territory of Astrakhan region”.
- The Government of Astrakhan region, Ministry of Natural Resources and Ecology of the Russian Federation, Resolution No. 353-Пp/57-p dated October 14, 2009 “On delimitation and approval of Statement on the wetland “The Volga Delta, including the state biosphere reserve “Astrakhan” that is of international significance mainly as the swimming bird habitat area”.
- Resolution of the Government of Astrakhan region No. 138-П dated May 03, 2006 “On the concept of the industry-specific purpose-oriented program”.
- Municipal program of the MU “City of Astrakhan” No. 177 dated March 14, 2018 “Formation of the modern urban environment for 2018-2022” approved by the administration of the MU “City of Astrakhan”.
- Forest management regulations of the urban forests of Astrakhan.²⁷
- Municipal program of the municipal unit “City of Astrakhan” “Development of small and medium businesses and improvement of investment attractiveness of Astrakhan”.²⁸

²⁰ Approved by Resolution of the Government of the Russian Federation No. 207-p dated February 13, 2019

²¹ Approved by Resolution of the Government of the Russian Federation No. 2129-p dated Friday, September 20, 2019

²² Approved by Resolution of the Government of the Russian Federation No. 1538-p dated September 05, 2011.

²³ Approved by Duma of Astrakhan region on December 22, 2020.

²⁴ Approved by Resolution of the Mayor of Astrakhan No. 12412-m dated December 29, 2011.

²⁵ <https://regulation.gov.ru/projects#departments=6&npa=107906>.

²⁶ <https://minstroy.astrobl.ru/site-page/territorialnaya-shema-obrashcheniya-s-othodami-v-tom-chisle-tverdymi-kommunalnymi-othodami>.

²⁷ <http://www.astrgorod.ru/podrazdeleniya/raznoe>.

²⁸ Approved by Resolution of the administration of the municipal unit “City of Astrakhan” No. 88 dated April 13, 2020



- Geological study of Astrakhan region, scale 1:100 000. (Standards materials, *tab).
- Electronic layers in *tab format for the territory of the MU “City of Astrakhan” with the following elements represented:
 - functional zones of the General Layout
 - effective red lines
 - land plot boundaries
 - buildings, constructions and facilities
 - housing stock in distress
 - boundaries of the land plot development plan
 - territories of the cultural heritage object
 - boundaries of the integrated sustainable development territories and prospective development territories
 - territories of the use-restricted zones (including water conservation zones, sanitary protection zones II, belts, aerodrome environs and strip boundaries, acoustic airport environment, hygiene and protection zones).
- Tablets representing the topographic base in *jpg format (archive physiography M 1:1000) for the territories of the prospective development sites of the MU “City of Astrakhan”.²⁹
- Standards materials on the MU of the agglomeration (jpg, pdf, Doc), including the Standards of the MU “Narimanovsky district” in *tab, *wor formats.
- Passports of municipal units of Astrakhan agglomeration.
- Design documents, statistical, analytical and other data provided by the executive authorities of Astrakhan region, MU “City of Astrakhan” and other municipal units of the agglomeration.³⁰
- Integrated Analytical Research of the Strategic Development Agency “CENTER” “Comprehensive Assessment of Potential Development of Astrakhan Agglomeration, Astrakhan Region”.

²⁹ according to the list given in Appendix 1.

³⁰ Register of initial data is given in Appendix 20 of the Integrated Analytical Research.



Appendices



Appendices 1. Time reference points of the agglomeration development scenarios

Table 1. Time reference points of implementation of the optimization development scenario of Astrakhan agglomeration

Development indicators	Optimization scenario		
	2024	2027	2032
Quality of life	The quality of life reaches the living standard of the reference cities.	New quality of life in the cities and villages. Decreased disproportion between the urban and rural settlements and the districts of the agglomeration.	The quality of life corresponds to the that of the leaders of the SFD and NCFD.
Youth-attractive environment	Hightech well-paid working places. Creation of conditions for youth entrepreneurship.	New housing format. New quality of youth environment.	The environment attracts youth from neighboring regions and states.
Business-attractive environment	Creation of conditions for the small business development: tax and financial incentives. Preparation of investment sites for large business.	Availability of qualified specialists. Involvement of change agents.	Successful functioning of change agents.
Diversification of economy	Creation of incentives for collaboration of science and business. Development of high marginality spheres (processing, tourism).	Introduction of advanced technology into traditional spheres. Development of advanced technology (construction).	Sustainable postindustrial sector of economy. Sustainable functioning of the Industry 4.0.
Innovative economy Economy of knowledge	Integrated acceleration of the existing initiatives via external positioning and introduction into the regional economy.	Successful commercialization of knowledge in the regional and interregional markets.	Successful commercialization of knowledge at the Russian level.

Table 2. Time reference points of implementation of the acceleration development scenario of Astrakhan agglomeration

Development indicators	Acceleration scenario		
	2024	2027	2032
Quality of life	New quality of life in the cities and villages. Decreased disproportion between the urban and rural settlements and the districts of the agglomeration.	The quality of life corresponds to the that of the leaders of the SFD and NCFD.	The quality of life attracts people from neighboring regions and Caspian states.
Youth-attractive environment	Hightech well-paid working places. New housing format.	The environment attracts youth from neighboring regions and states.	
Business-attractive environment	Creation of conditions for the small business development: tax and financial incentives. Preparation of investment sites for large business. Availability of qualified specialists. Involvement of change agents.	Successful functioning of change agents.	Creation of conditions for successful functioning at the macroregional level.
Diversification of economy	Creation of incentives for collaboration of science and business. Development of high marginality spheres (processing, tourism). Introduction of advanced technology into traditional spheres. Development of advanced technology (construction).	Sustainable postindustrial sector of economy. Sustainable functioning of the Industry 4.0.	
Innovative economy Economy of knowledge	Integrated acceleration of the existing initiatives via external positioning and introduction into the regional economy. Successful commercialization of knowledge at the regional and interregional levels.	Successful commercialization of knowledge at the Russian level.	Successful commercialization of knowledge at the macroregional level.



Appendix 2. Summary of the results of interrogation of residents of Astrakhan agglomeration on the platform Яндекс.Формы

For the purposes of identifying the specific problems of the provision of infrastructure, satisfaction with the quality of social services, opinions of the residents concerning positioning of the region and its capital city, as well as concerning tourist attractiveness of Astrakhan region, the interrogation was conducted on the platform Яндекс.Формы that involved 1,638 respondents. Among them 33% were the residents of Astrakhan, 22% were the residents of the district centers of the municipal units, and the most active participants (45%) were the residents of the other settlements of Astrakhan agglomeration. Of the total number of the interviewed, about 70% is made up by the age-working population from 26 to 50 years old.

The interrogation methodology was based on two key features:

- age of respondents;
- place of residence.

The following age groups were determined:

- under 18 years old;
- 19-25 years old;
- 26-35 years old;
- 36-50 years old;
- 51-70 years old;
- over 70 years old.

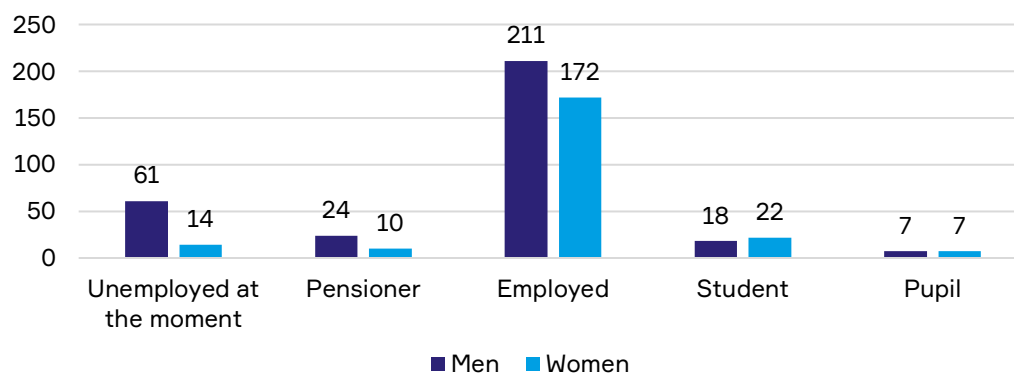
Place of residence:

- Astrakhan;
- district centers of the municipal units;
- other settlements of Astrakhan agglomeration.

Results of interrogation of the residents of Astrakhan

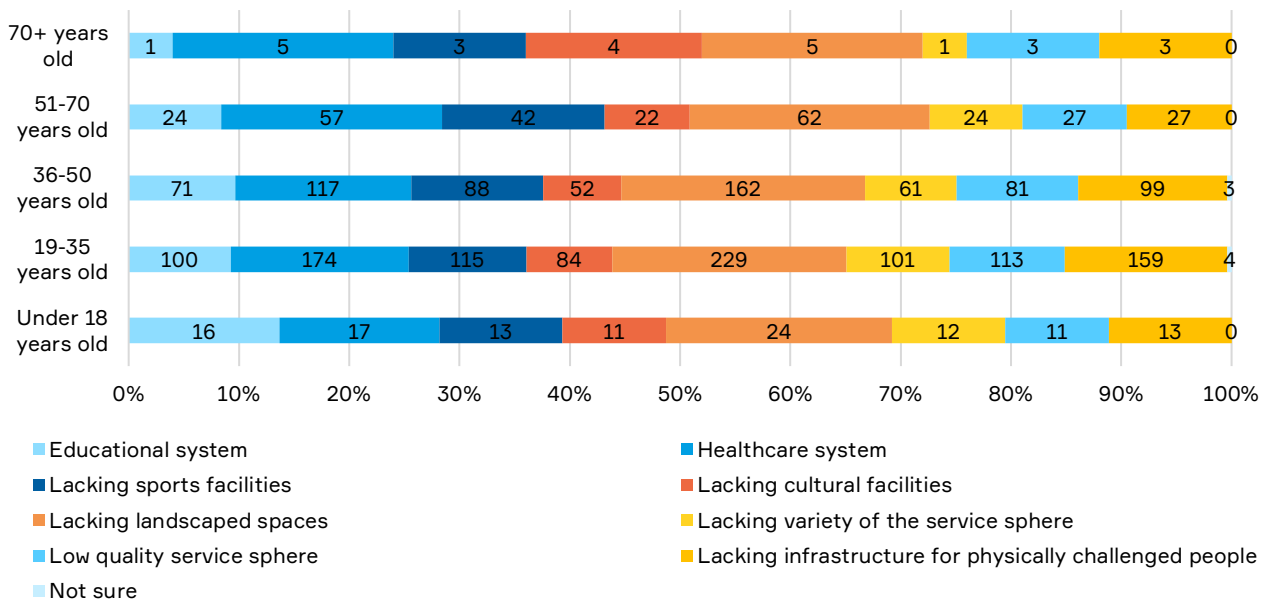
Among the interviewed respondents of Astrakhan, the most active was the age-working population from 25 to 50 years old. At this, 383 respondents (70% of the total number) noted that they had the work at the moment, and 75 respondents (about 14%) did not (Fig. 48).

Fig. 48. Distribution of the respondents by gender and activities



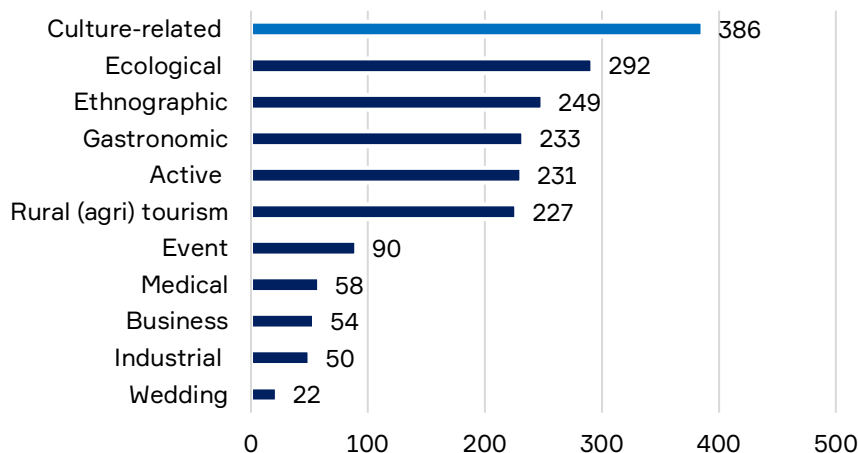
According to the residents of all age groups, the most characteristic problem in the social sphere for Astrakhan is the lacking landscaped spaces, and the second one is the healthcare. Also, many respondents noted lacking infrastructure for physically challenged people. At this, this problem was named as characteristic for the city primarily by the young participants aged from 19 to 35 years old and middle-aged people from 36 to 50 years old. For the age group of 51–70 years old, the third place was given to the lacking sports facilities, and for the respondents aged up to 18 years old - the education system (Fig. 49).

Fig. 49. Distribution of answers on characteristic problems of social support by age groups



The most prospective development kind of tourism in the territory of Astrakhan is the **culture-related**. Also, the ecological, ethnographic, gastronomic, active and rural (agri) tourism were noted. The development of the wedding, business, medical and industrial areas are considered to be in demand (Fig. 50).

Fig. 50. Residents' opinion on the most promising kinds of tourism for development in the territory of Astrakhan

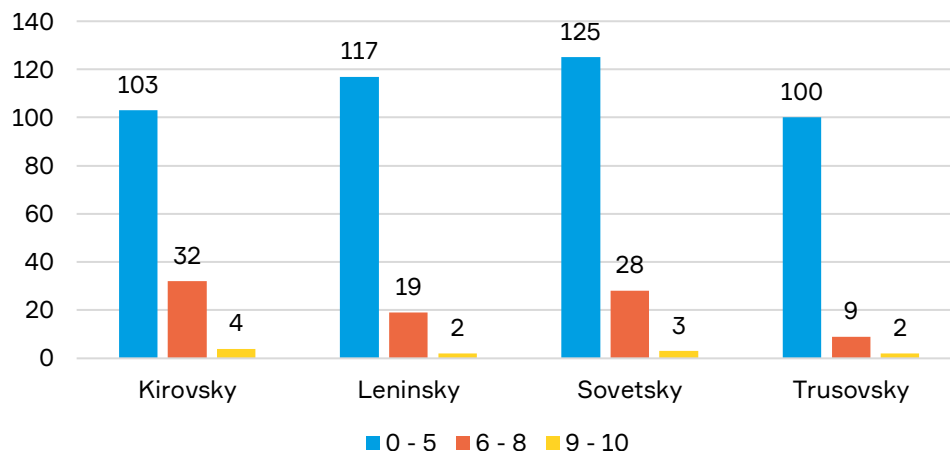


The distribution of the respondents among the districts of residence are approximately similar. At this, the percentage of people working in the district of residence is the highest among the residents of Kirovsky



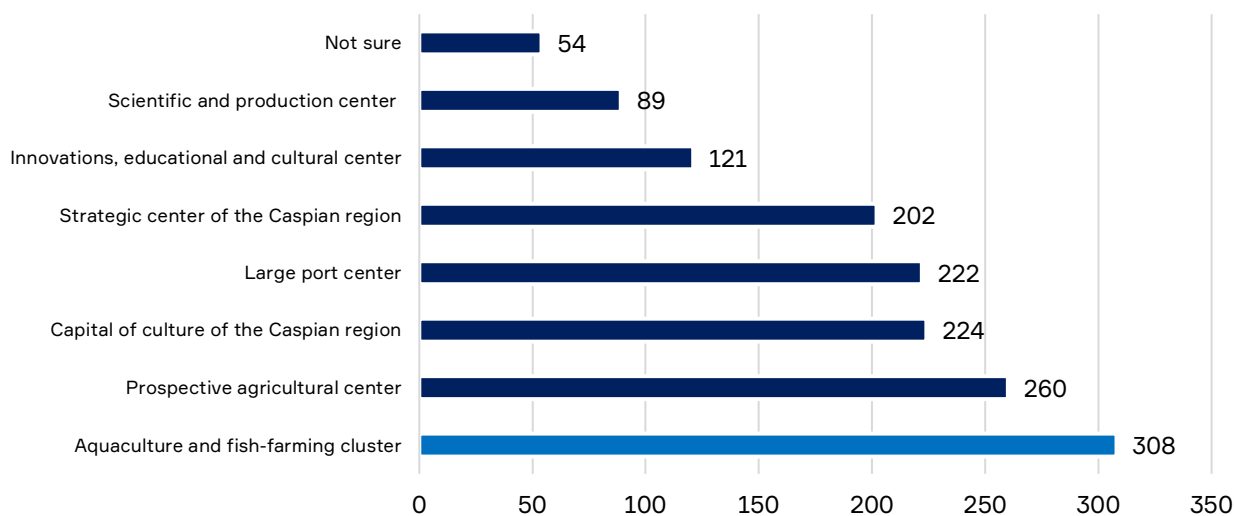
district (43%), and the lowest among the residents of Sovetsky district (21%). In general, the residents assess the living standard of all urban districts as 0-5 points. Sovetsky is considered to be the most unfavorable district by the living standard with the average point of 2, and the other districts are estimated primarily at 3 points. The general urban living standard is currently within 3 points (Fig. 51).

Fig. 51. Rating of the living standard in the districts of Astrakhan



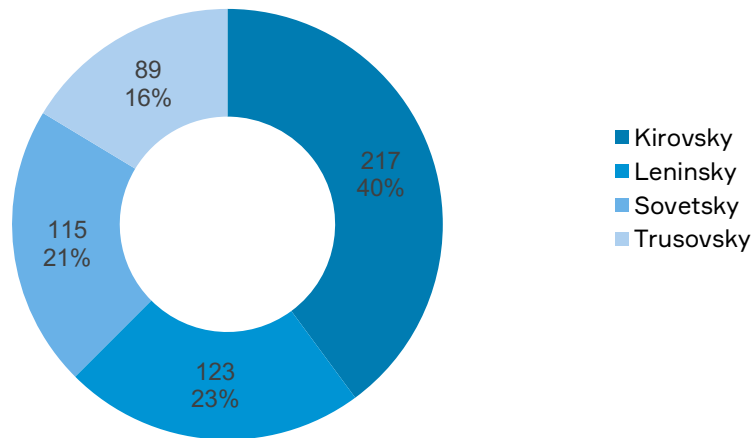
According to the residents, the key area of the city development is related to the image positioning as the aquaculture and fish-farming cluster (Fig. 52).

Fig. 52. Residents' opinion on the characteristic key development area for Astrakhan



The most **prospective development district** in the city territory is **Kirovsky**, and the most unpopular is Trusovsky (Fig. 53).

Fig. 53. Division of the residents' opinion on the most prospective development area

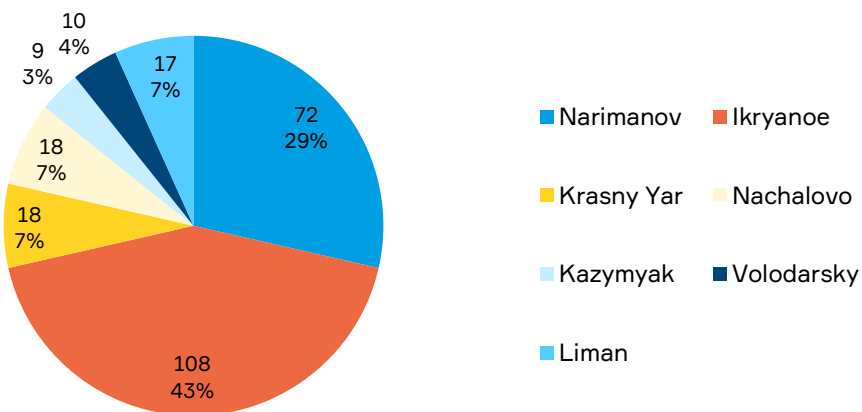


Results of interrogation of the residents of the district centers of the municipal units of Astrakhan agglomeration

The total number of questionnaires made 360. Among them 108 (30%) of questionnaires were filled in by the residents of the other settlements of Astrakhan agglomeration, that's why they are not considered in this section.

90% of respondents taking part in the interrogation made the representatives of the working population. The most active participations showed the residents of Ikryanoe - 43%, also, many questionnaires were received from the residents of Narimanov (29%), the least number of the questionnaires were received from the residents of Kazymyak - 3.5% (Fig. 54)

Fig. 54. Places of residence of the respondents

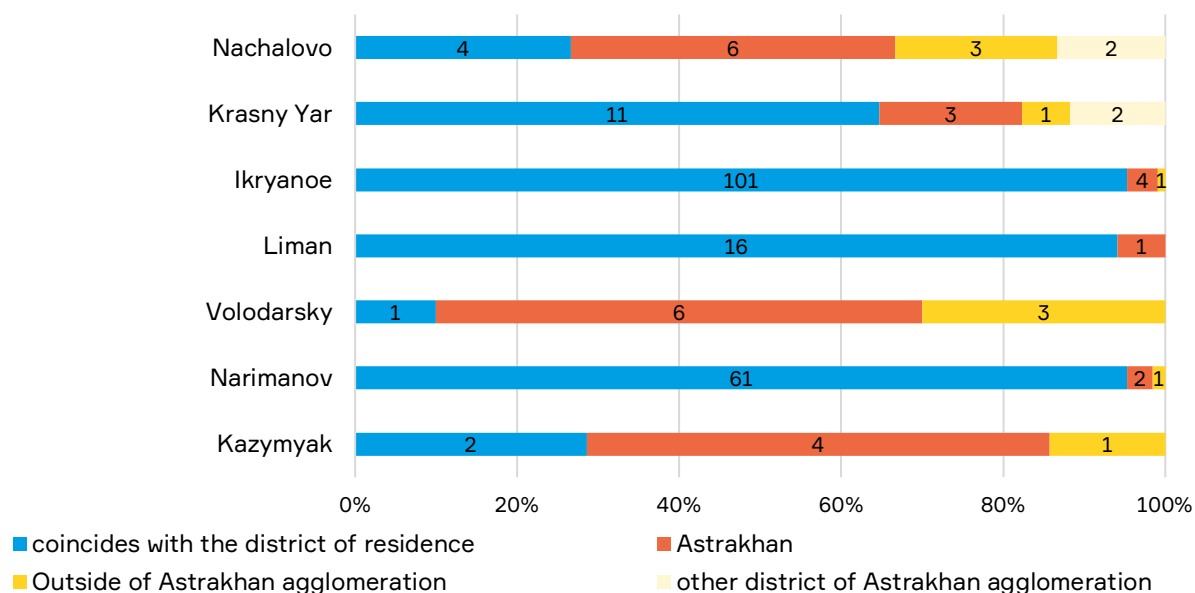


Among the working population, the most of the interviewed noted that the district of their residence and work coincided. 10% of respondents



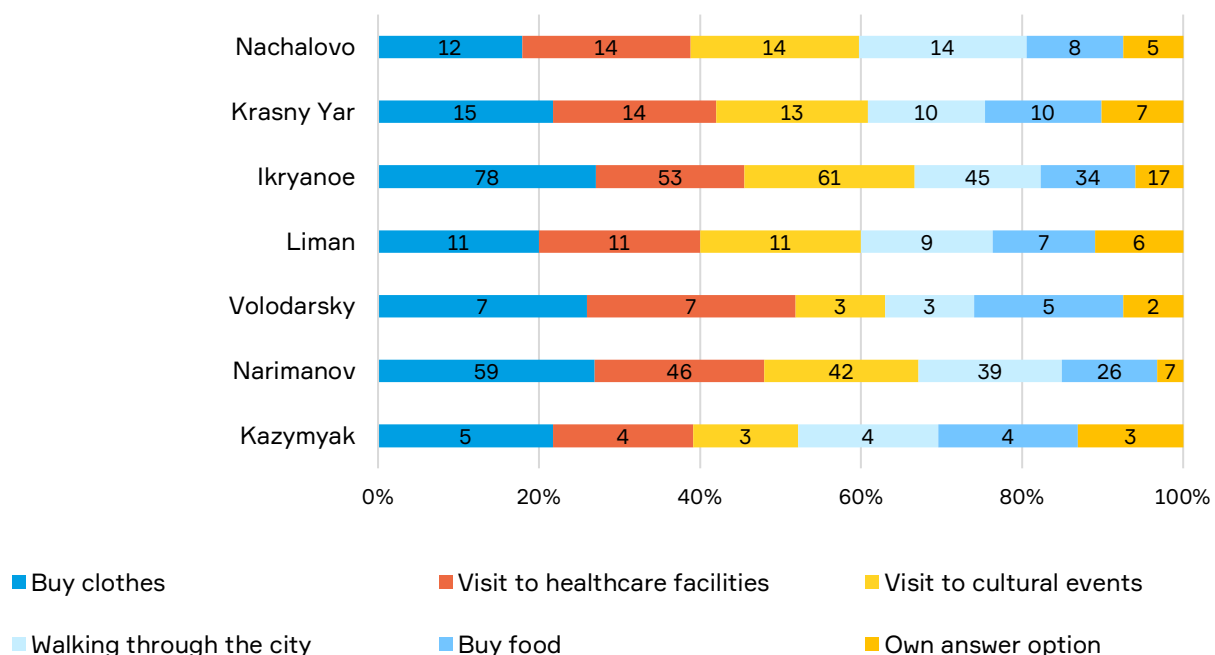
work in Astrakhan, 2% - in the other district of Astrakhan agglomeration, and 4.5% - outside Astrakhan agglomeration (Fig. 55).

Fig. 55. Places of work of the respondents depending on the district of living



The most popular purpose of visit to Astrakhan is to buy clothes. The sole district center where this purpose is not the top one is Nachalovo. The least popular purpose among all districts is to buy food. The respondents also noted that they often came to the capital for visiting the healthcare institutions and cultural events. The option "Walking through the city" had the least number of votes. Among own answer options, "Visiting relatives" was the most often (7 answers) (Fig. 56).

Fig. 56. Purposes of visit to Astrakhan among the respondents



The most of the respondents prefer to go to the regional capital by personal car (59%), 38% choose the public transport and 2% use the

other means. The public transport is most popular among the age groups of up to 18 and 51-70 years old.

At this, the satisfaction with the quality of transport accessibility to Astrakhan is generally positive. Among the middle-aged people from 36 to 50 years old, the most frequent rating was 10 points.

The respondents of the age groups 19-25 years old and 51-70 years old estimated the satisfaction at 5 points. The satisfaction with the quality of transport accessibility to the other settlements of Astrakhan agglomeration is lower than to the regional capital, at average, it is estimated at 5 points, and the respondents of 51-70 years old estimated it at 2 points (Fig. 57-58).

Depending on the place of residence, the high satisfaction with the transport infrastructure showed the respondents who indicated Narimanov and Liman settlements as the place of residence (8-10 points)/ The residents of Ikryanoe generally estimated the satisfaction with the transport infrastructure at 5 points. It should be noted that the quality of the transport infrastructure to Astrakhan, according to the most of the respondents of all district centers, was higher than to the other settlements of Astrakhan agglomeration.

Fig. 57. Rating of the level of satisfaction with transport accessibility from the place of residence to Astrakhan

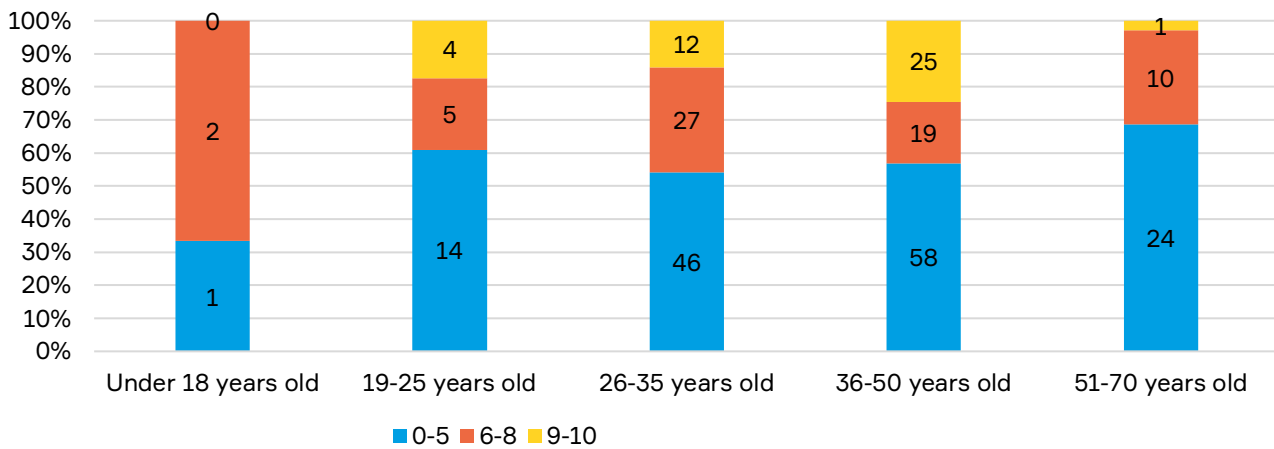
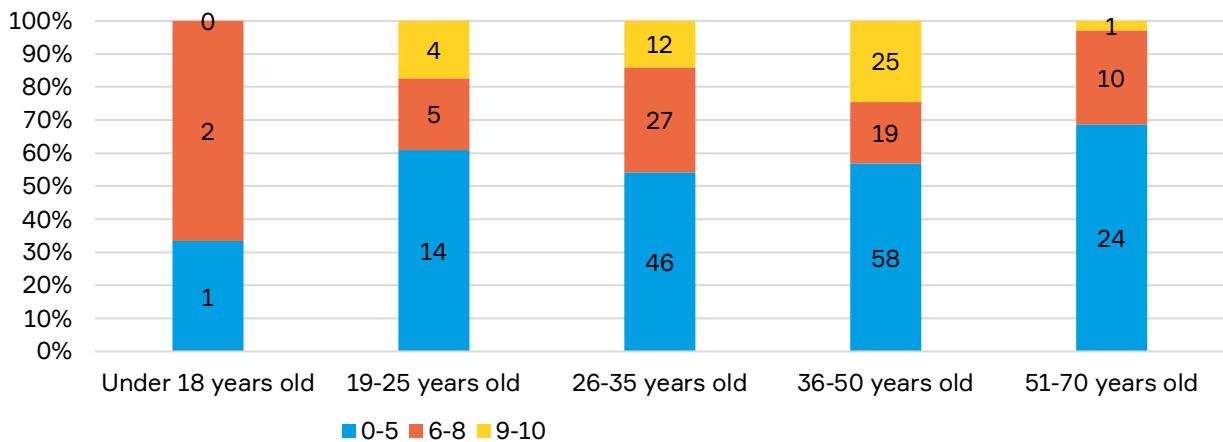
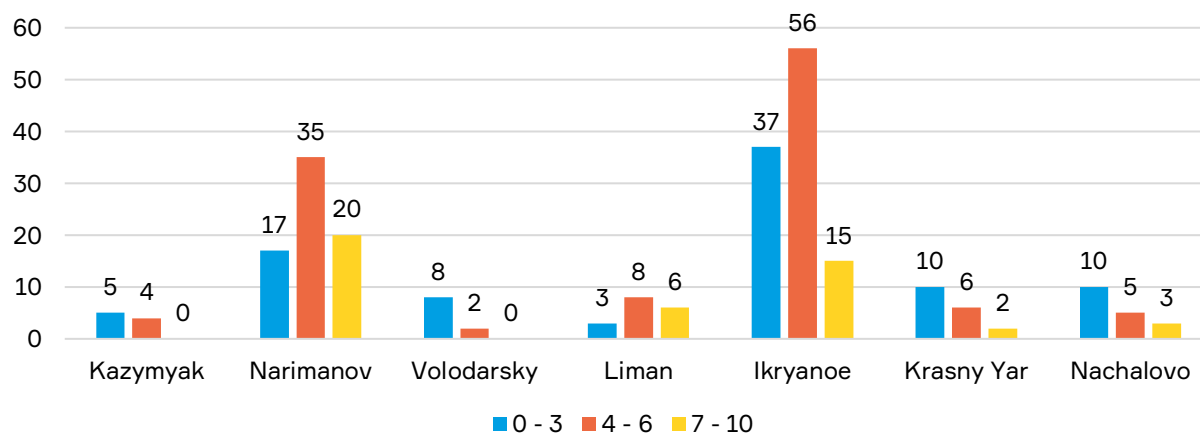


Fig. 58. Rating of the level of satisfaction with transport accessibility from the place of residence to other settlements



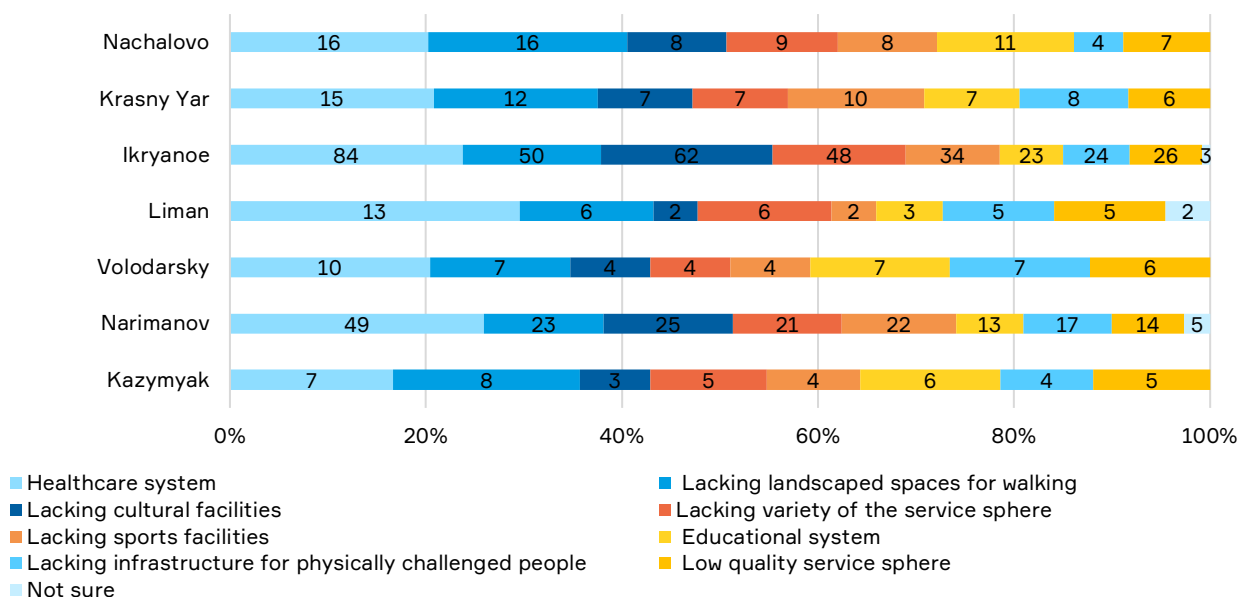
The residents of the district centers estimate the existing quality of life in the cities and districts of Astrakhan region as low (to 3 points) and medium (5-7 points). The lowest rating was given by the residents of Volodasky, Krasny Yar and Nachalovo (Fig. 59).

Fig. 59. Rating of the living standard in the cities and districts of Astrakhan region



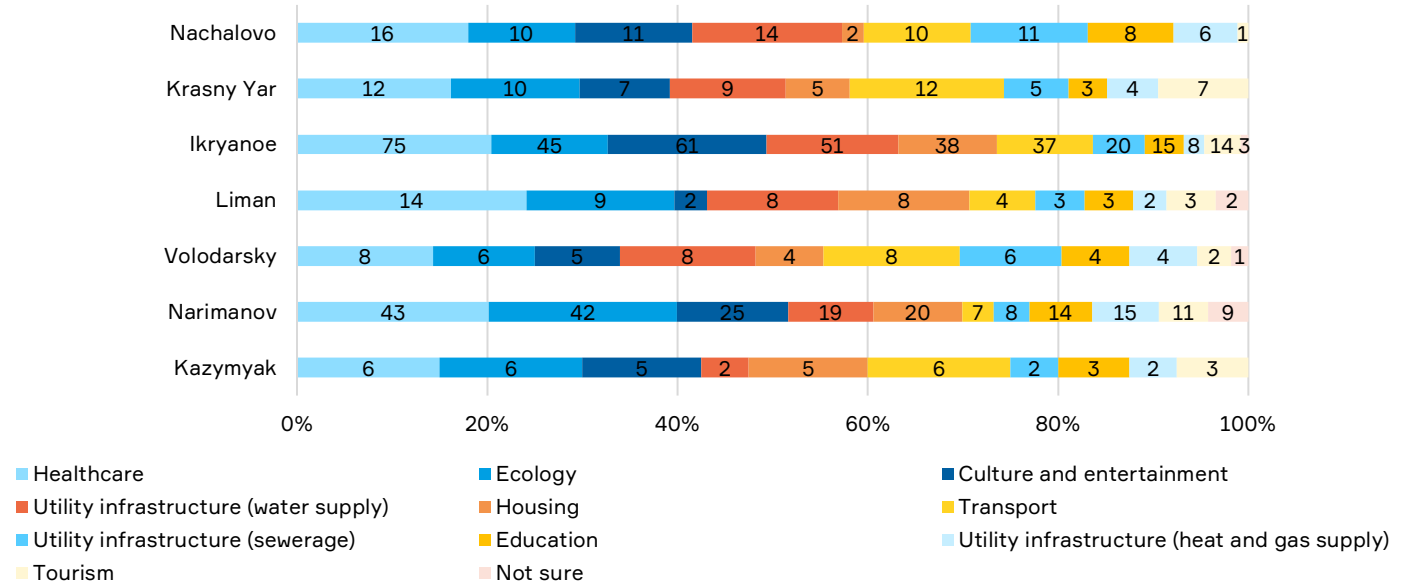
For all district centers, the most characteristic problem in the social sphere of the place of residence was the existing healthcare system. Also, many respondents noted the lacking landscaped spaces for walking and insufficient cultural objects. According to the results, the residents of Nachalovo noted the healthcare system as one of the main problems, the residents of Liman - lacking variety of the service sphere, and the residents of Krasny Yar - lacking sports facilities (Fig. 60).

Fig. 60. Distribution of answers on characteristic problems of social support



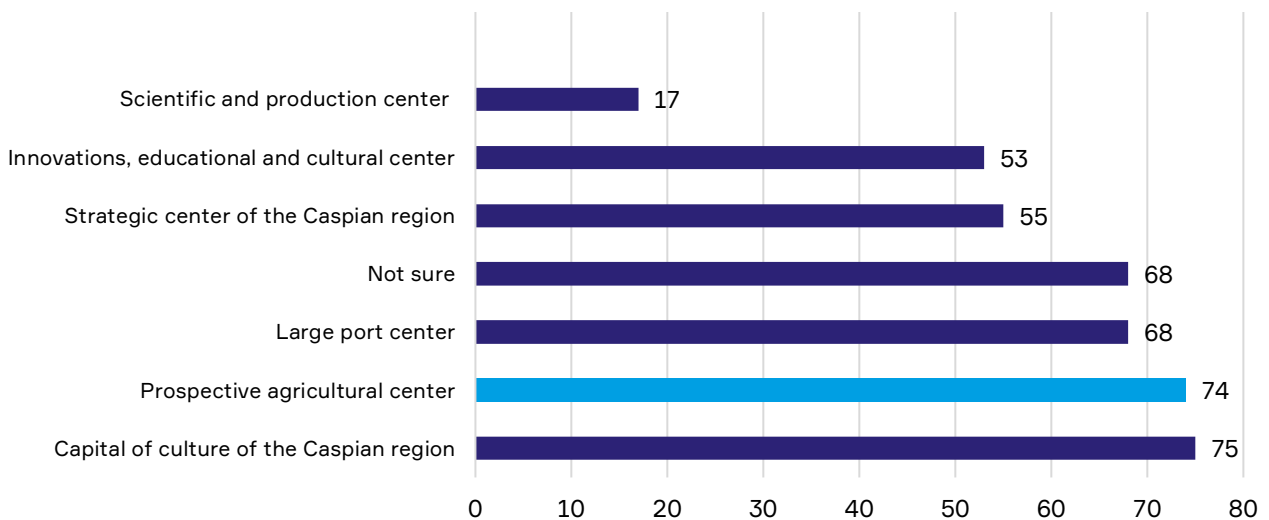
The most problematic spheres of infrastructure for the district centers are healthcare, ecology, culture and entertainment, as well as water supply. The residents of Krasny Yar also noted dissatisfaction with the transport infrastructure (Fig. 61).

Fig. 61. Distribution of answers on characteristic problems of infrastructure support



According to the residents of the district centers, the key development area of Astrakhan is related to the image positioning as the capital of culture of the Caspian region (75 answers). Only 3% of the residents of the district centers who participated in the interrogation consider the development of the scientific and production center as prospective area (Fig. 62).

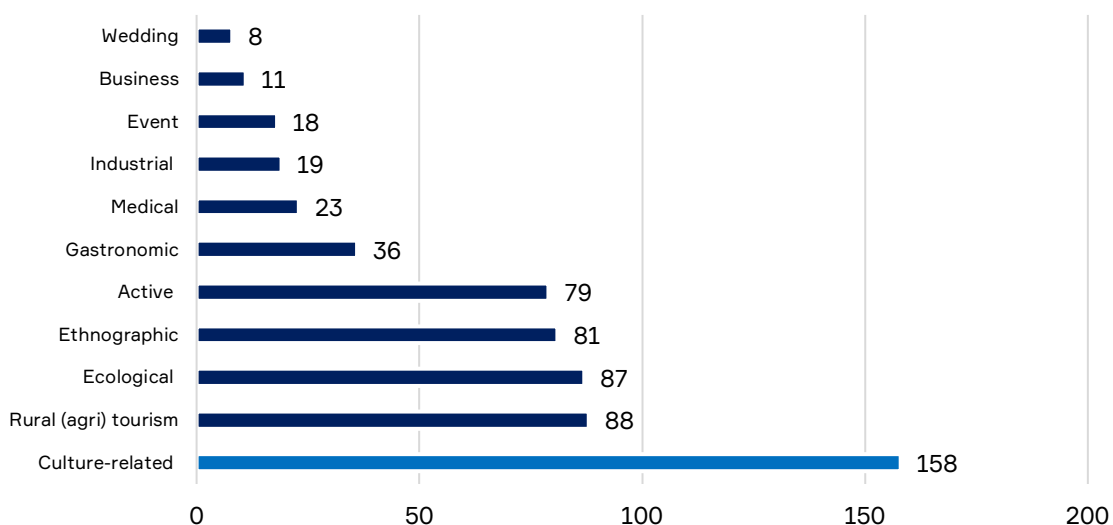
Fig. 62. Residents' opinion on characteristic key development area for Astrakhan



The most prospective development area of tourism in the territory of Astrakhan agglomeration is the culture-related, and the wedding tourism is least demanded (1%) (Fig. 63).



Fig. 63. Residents' opinion on the most promising kinds of tourism for development in the territory of Astrakhan agglomeration

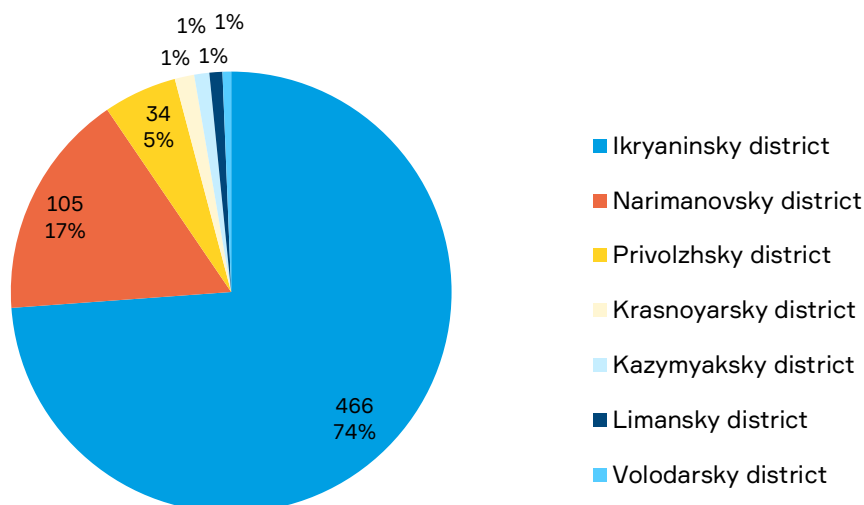


Results of interrogation of the residents of the other settlements of Astrakhan agglomeration

The total number of questionnaires made 731. Among them 99 (14%) of questionnaires were filled in by the residents of the district centers of Astrakhan agglomeration, Astrakhan and other settlements of Astrakhan region, that's why they are not considered in this section.

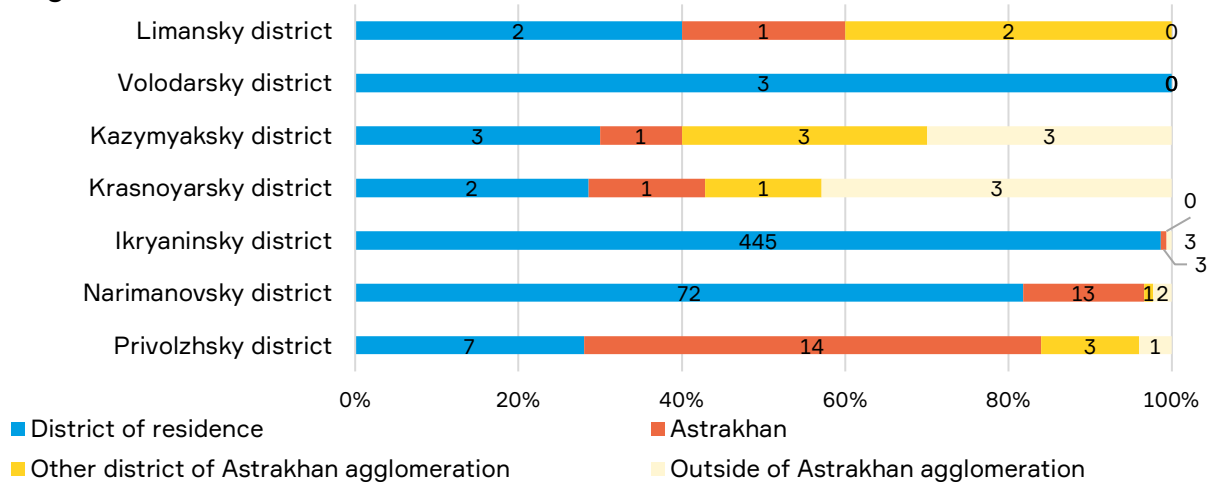
89% of respondents taking part in the interrogation made the representatives of the working population. The residents of Ikryaninsky district were the most active participants making 43%, 17% of questionnaires were received from the residents of Narimanovsky district, and 5% - from the residents of Privolzhsky district. Too small number of questionnaires were received from the residents of Volodarsky, Kazymyaksky, Krasnoyarsky and Limansky districts, each making only 1% of the total number of participants (Fig. 64).

Fig. 64. District of residence of respondents



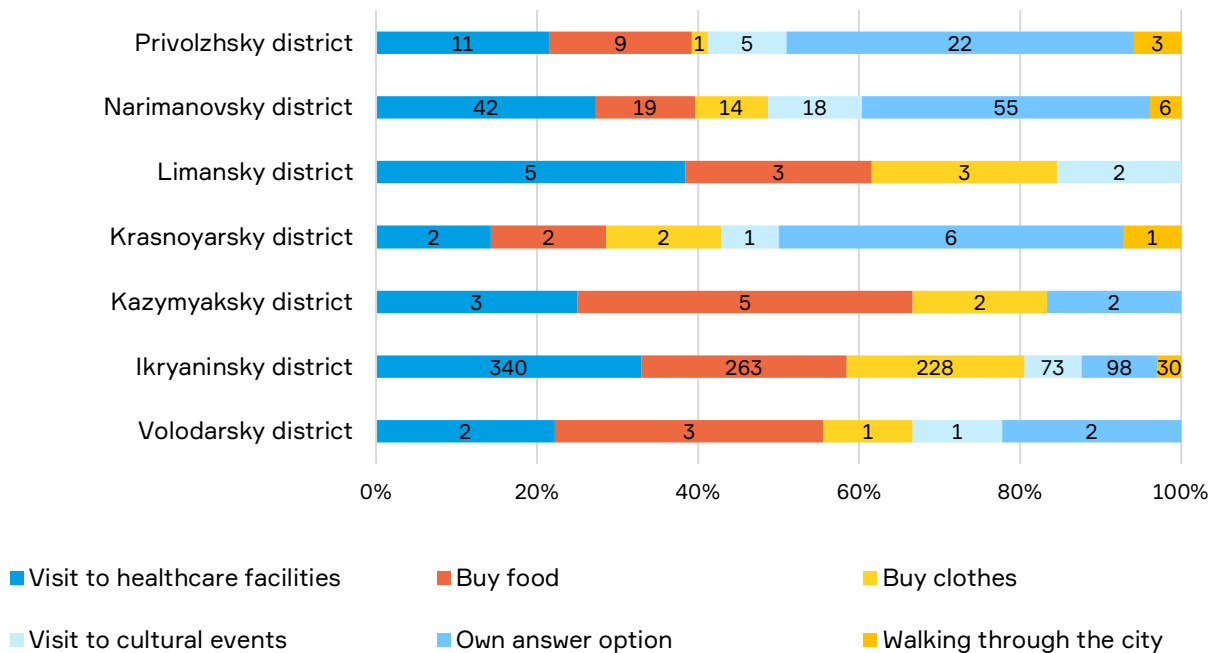
Among the working population, the overwhelming majority of the interviews (92%) work in the district of residence. 6% of respondents work in Astrakhan, 2% - in the other district of Astrakhan agglomeration, and 2% - outside Astrakhan agglomeration. For the residents of Privolzhsky district, a distinctive feature was the work place located in the regional capital (Fig. 65).

Fig. 65. Places of work of the respondents depending on the district of living



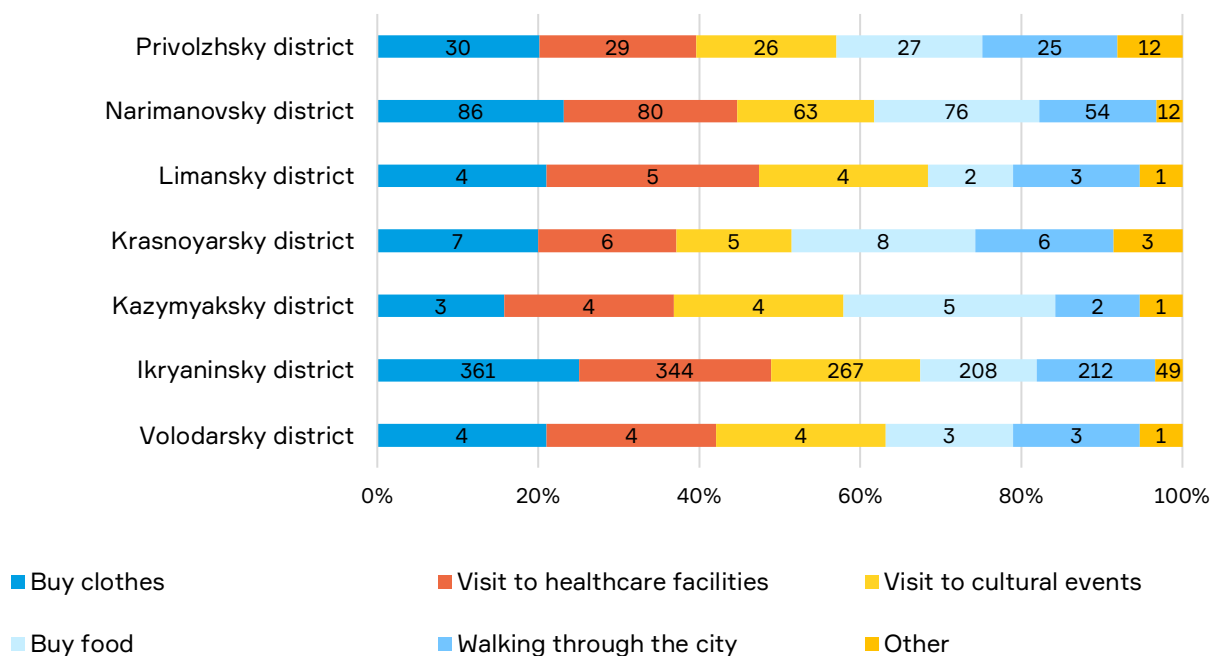
The most popular purpose for visiting the district centers for the residents of the other settlements of Astrakhan agglomeration is the visit to the healthcare facilities (405 answers). The least popular purpose is walking through the city. The respondents also noted that they often visited the district centers to buy food and clothes. Among own answer options, "Work purposes" was the most often (24 answers) (Fig. 66).

Fig. 66. Purposes of visit to district centers among the respondents



The most popular purposes for visiting the regional capital is to buy clothes (495 answers) and visit to healthcare facilities (472 answers) (Fig. 67).

Fig. 67. Purposes of visit to Astrakhan among the respondents



In case of necessity to visit the other settlement of Astrakhan agglomeration, the most of people prefer to go by personal car (49%), 43% choose the public transport and 8% use the other means.

In general, the residents of the settlements of Astrakhan agglomeration estimate the satisfaction with the transport accessibility to the district centers and to Astrakhan at 5 points. The residents of Narimanovsky district estimated it as low: the most frequent answer was 0 point. The residents of Privolzhsky district estimated the transport accessibility to Astrakhan a little bit higher than that to the district center. In the first case, the most frequent rating was 5 points, and in the second case - 0 point (Fig. 68-69).

Fig. 68. Rating of the level of satisfaction with transport accessibility from the place of residence to Astrakhan

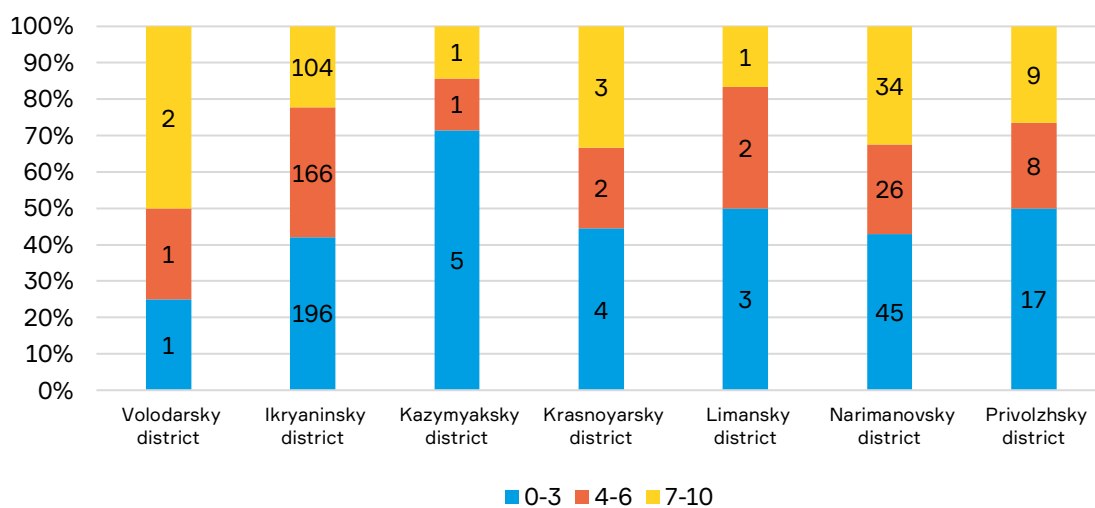
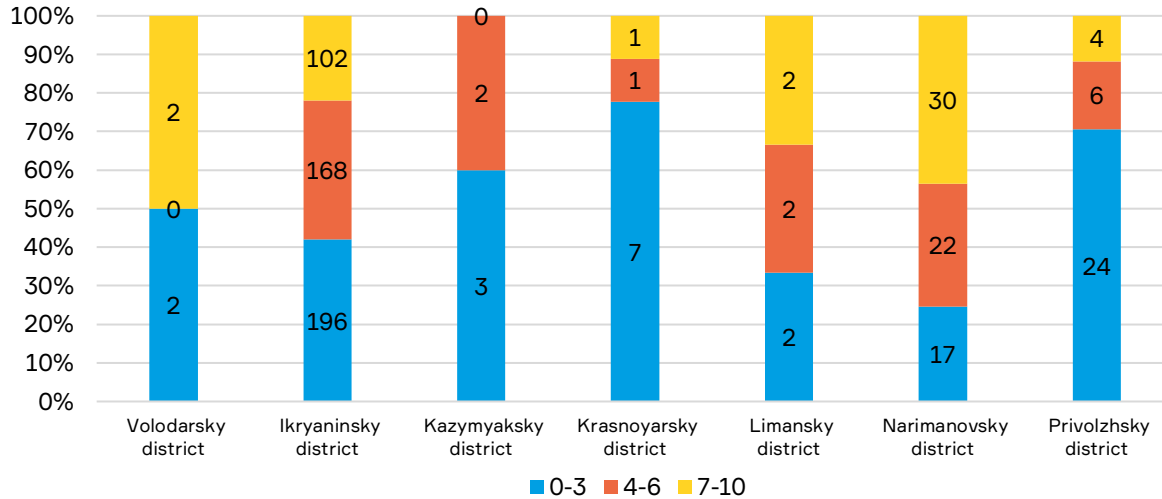
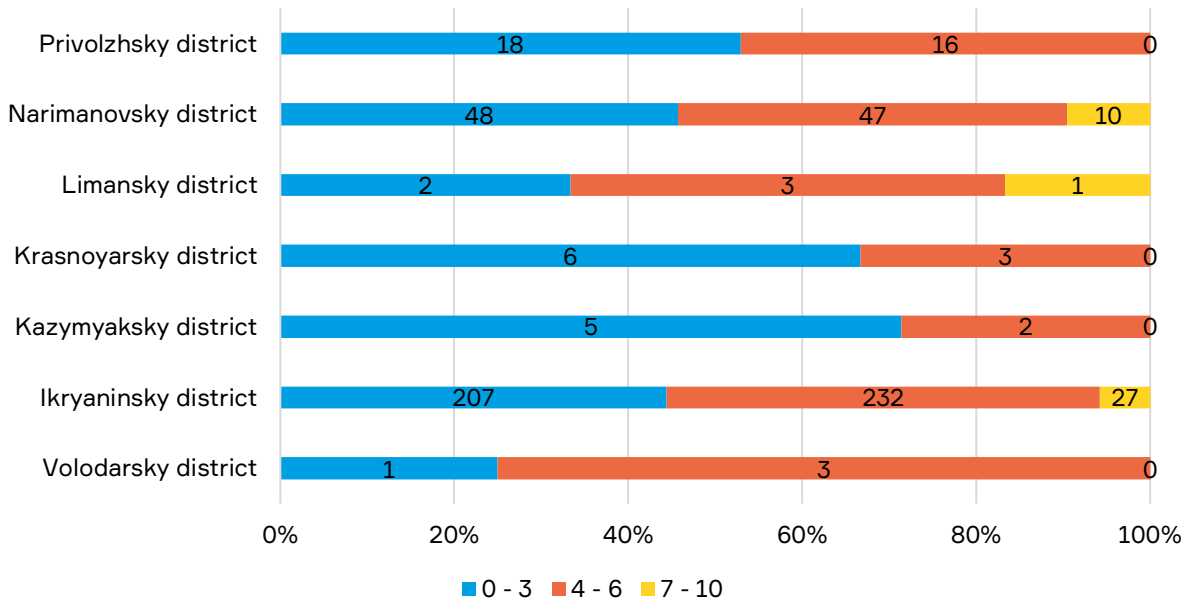


Fig. 69. Rating of the level of satisfaction with transport accessibility from the place of residence to other settlements



The residents of the settlements estimate the existing quality of life in the cities and districts of Astrakhan region, based on the place of residence, as low (to 3 points) and medium (5-7 points). The lowest estimate was given by the residents of Kazymyaksky and Krasnoyarsky districts (Fig. 70).

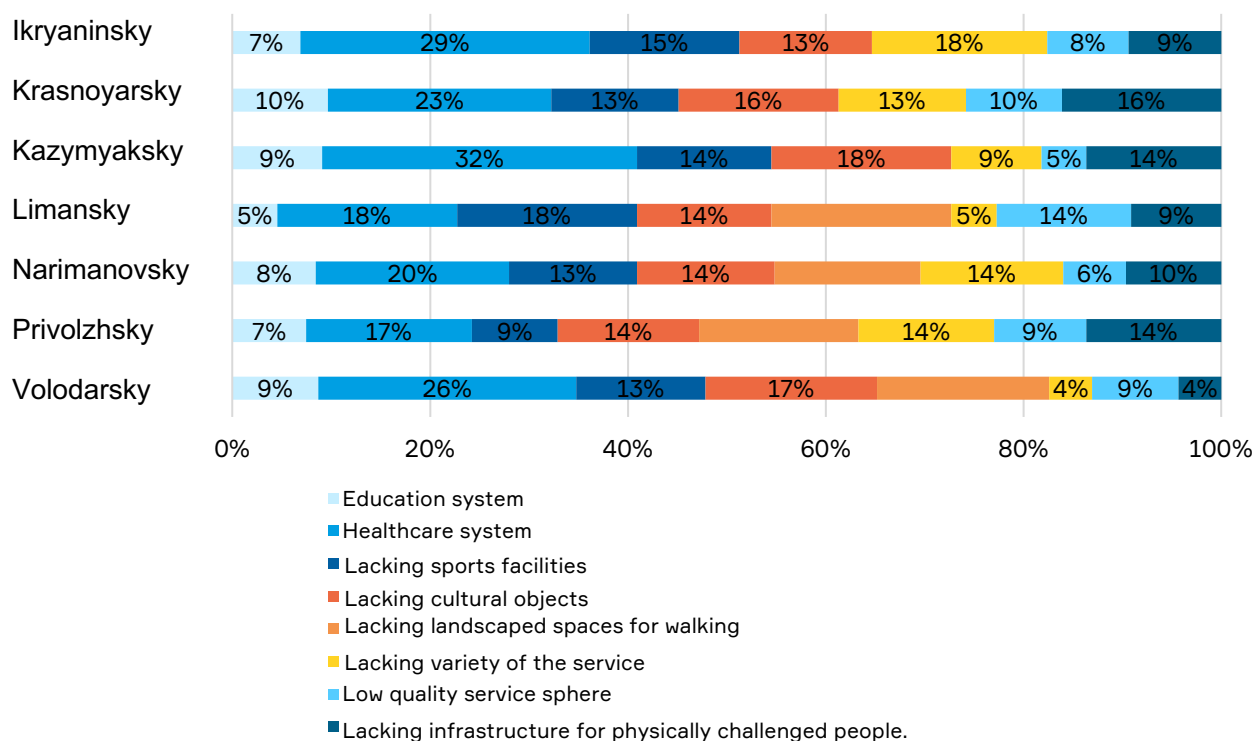
Fig. 70. Rating of the living standard in the cities and districts of Astrakhan region



The main problem of social support for the residents of all districts is the existing healthcare system. The second place is the lacking cultural and sports facilities. Also, the main problem was the lacking landscaped spaces for walking, excluding Ikryaninsky, Krasnoyarsky and Kazymyaksky districts where none of the respondents chose this answer option (Fig. 71).

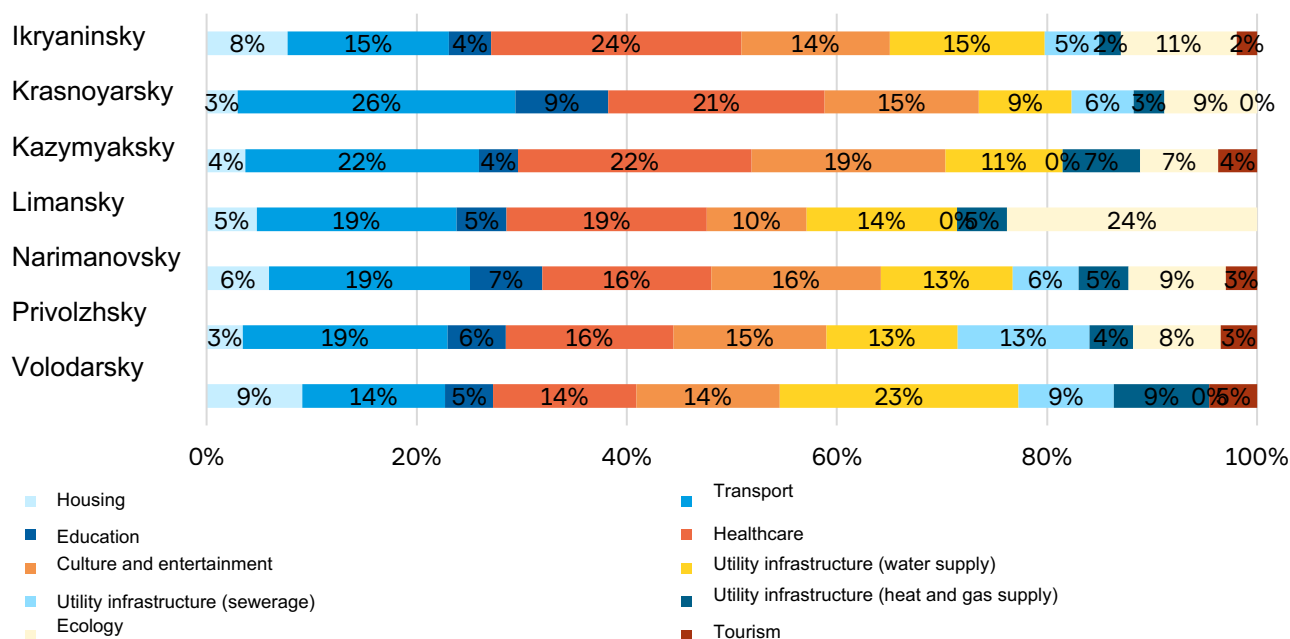


Fig. 71. Distribution of answers on characteristic problems of social support



Among the infrastructure, the most problematic is thought to be the transport infrastructure followed closely by the healthcare infrastructure. The next significant problems for the residents are culture and entertainment, and water supply. Liman district should be particularly noted as the problem of ecology was the most important for its residents (Fig. 72).

Fig. 72. Distribution of answers on characteristic infrastructure problems



Appendix 3. Summary of results of interrogation on otmetky.com

The interrogation was conducted from the 15th till 28th of February. The total number of site visitors for this period makes 3,182 that corresponds to 0.4% of population of the agglomeration. The number of visitors who gave answers to questions is 101. Among the participants of the interrogation, 66% are men and 34% are women. The age of participants ranged from 17 to 64 years old. 79% of answers were received from the residents aged from 18 to 39 years old.

In total, 391 answers were received, among them 327 were the proposals. 19% of proposals related to the operation, maintenance and current repairs. As this interrogation was conducted for the purposes of collection of the residents' proposals on development of the territory of Astrakhan agglomeration, they are not considered in the further summary analysis.

Summary analysis of the residents' proposals

For structuring, analysis and graphic representation of the data obtained, the territory was divided into the following districts (Fig. 73).

- Historical settlement of Astrakhan (central part of the city, Kirovsky district).
- Kirovsky district, excluding the historical settlement.
- Babayevsky microdistrict, Leninsky district.
- Leninsky district, excluding Babayevsky microdistrict.
- Island part (Gorodskoy Island and Oblivnoy Island).
- Sovetsky district.
- Northern part of Trusovsky district.
- Central part of Trusovsky district.
- Southern part of Trusovsky district.
- Brick Works Settlement No. 1.

The proposals were divided into the following categories.



Cultural objects



Bridges and ferry lines



Sports facilities



Walking and tourist routes



Public transport stations



Unused territories



Public spaces



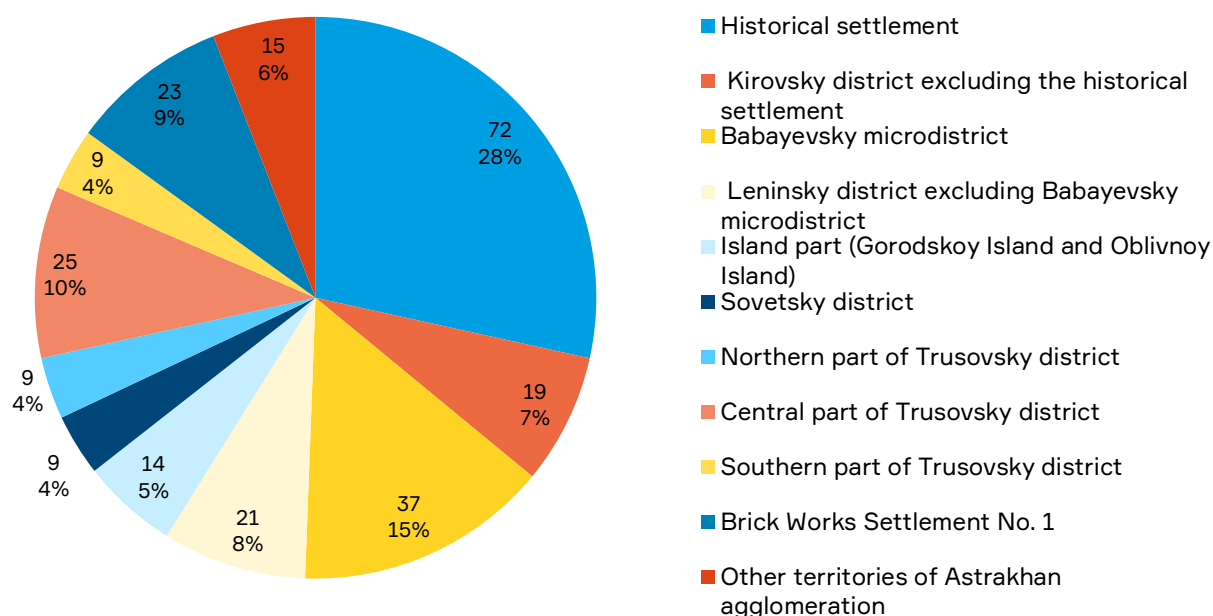
Revitalization objects



Historical and architectural monuments



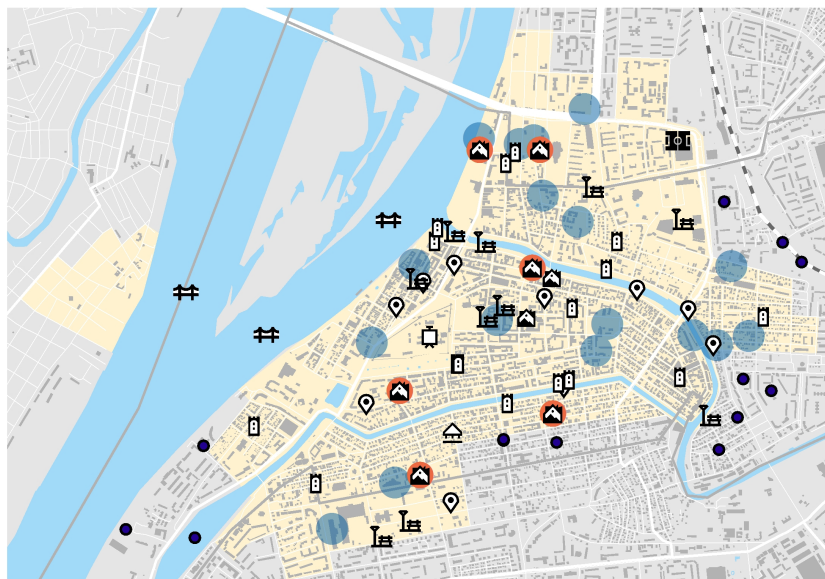
Fig. 73. Distribution of answers by the specified territories





The majority of the proposals received related to the development of the historical settlement territory - 28% of the total number.

Historical settlement territory. The majority of the proposals received from the residents related to the development of the historical-cultural and tourist spheres, including the revitalization and reconstruction objects with the change of their function - creation of cultural and exhibition centers, creative clusters, office spaces instead. The proposals on reorganization of multifunctional space instead of the former cargo port were given. Among the main wishes on the public space development were the creation of parks in the unoccupied territories, pedestrian street (Akhmatovskaya, Nikolskaya, and a part of Kirova Street) and water-based leisure areas, including reconstruction of Krasnaya embankment. 11 abandoned, 4 unused and 5 misused territories were noted. Also, 3 proposals on construction of bridges for transport communication with Gorodskoy Island were received. A local cultural center was offered to create near Tatarskaya Sloboda. In the sports infrastructure development, there were the wishes to build a stadium and sport venue near Vokzalnaya Square. The most of the other proposals are related to the public transport development (return of tram and trolleybus routes) and traffic regulation. There were the proposals on limitation of the number of floors in construction of new buildings, relocation of the correction facility outside the central part and general wishes on improvement of the quality of the urban environment (Fig. 74).





**Legends:**


 Historical settlement territory


 Boundaries of administrative districts


Residents' proposals on:


 Reorganization or creation of public


 Construction of bridges and ferry lines

 Organization of tourist routes


 Construction of new open sports facilities


 Revitalization objects

 including revitalization of historical heritage

 The most attractive objects from the point of view of history and architecture

 Walking routes

 New cultural objects

 Unused or abandoned territories


 Other proposals

Fig. 74. Proposals on the historical settlement development



Kirovsky district, excluding the historical settlement.

The residents see the main area (25% of proposals) in the development of the unused and/or misused, abandoned territories, the most of which are concentrated along the railways. Also, they noted the lacking landscaped modern public spaces, including landscaped embankments. Among the unique proposals are the proposal on arrangement of garden square on the roof of the “Three Cats” Shopping Center, the proposal on construction of the Cultural Centre in Vareriya Barsoba Street. Yamgurcheva Sloboda and Karl Marx Plant were noted as the most attractive from the point of view of history and architecture.

The residents think that a sports and entertainment facility (water entertainment facility) would be good at the city exit, near Nachalovo highway, and sport venues in particular residential quarters (for example, in Sophia Perovskaya Street). Among the wishes on the urban environment connectivity is the proposal on construction of the highway-over crossing to connect Kulikov and Karl Marx streets. The residents ask to return the public transport stations in Kirov Street near the children’s polyclinic (Fig. 75).

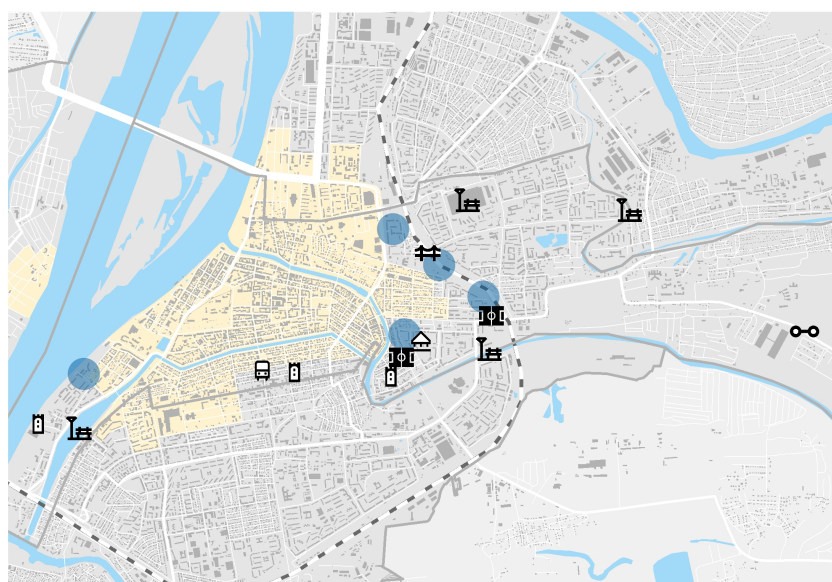


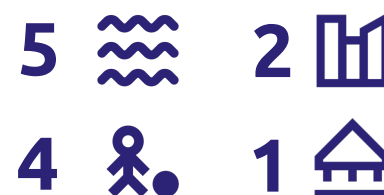
Fig. 75. Proposals on development of Kirovsky district, excluding the historical settlement

Babayevsky microdistrict, Leninsky district. In the territory of the microdistrict, the residents noted the lacking sports facilities and landscaped public spaces. Among the unique sports facilities noted by the residents are the closed skating rink and the stadium near Energeticheskaya Street and bow area. There were the proposals to arrange the football field and health and fitness complex near the pool, parks and garden squares, as well as the cultural objects - the cinema near school No. 28. 1 unused and 1 misused territories were noted. Also, the residents demonstrated an inquiry for re-commissioning of the building and restoration of the kindergarten in Aksakova Street, and construction of a new road connecting Zhilaya and Avtozapravochnaya streets (Fig. 76).



Legends:

- Historical settlement territory
- Boundaries of administrative districts
- Residents' proposals on:
 - Reorganization or creation of public
 - Construction of new open sports
 - Construction of new closed sports facilities
 - Arrangement of public transport stations
 - The most attractive objects from the point of view of history and architecture
 - New cultural objects
 - Unused or abandoned territories



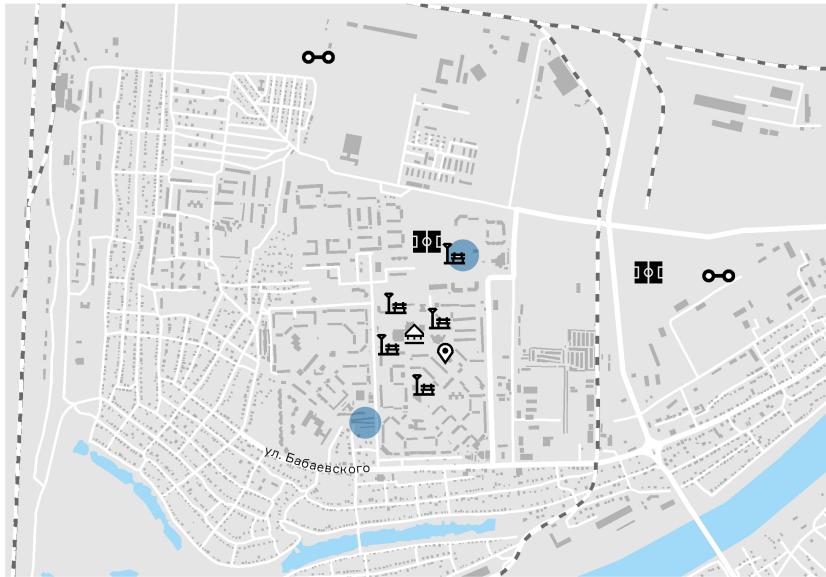








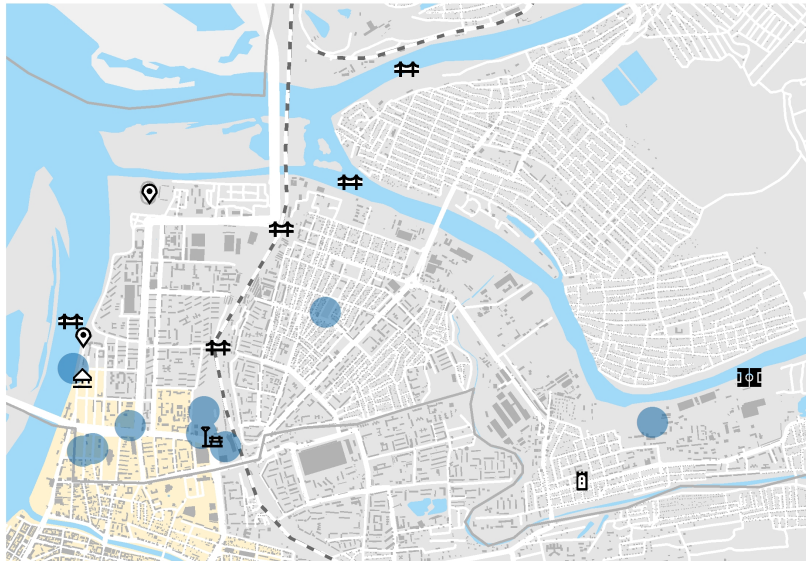
Fig. 76. Proposals on development of Babayevsky microdistrict

Legends:

- Residents' proposals on:
-  Reorganization or creation of
 -  Construction of new open sports facilities
 -  Construction of new closed sports facilities
 -  New cultural objects
 -  Unused or abandoned territories
 -  Other proposals

Leninsky district, excluding Babayevsky microdistrict. The residents see the main development (25% of proposals) of the territory in the development of the unused and/or misused, abandoned territories, the most of which are concentrated in the southern part, at the border with Kirovsky district. 2 proposals related to the development of the unoccupied territory near the railway station. The residents consider that the main vector of development of this district is the improvement of transport communication by means of construction of bridges: 2 railway overhead roads, 1 - for communication with Gorodskoy Island, 2 — over rivers Krivaya Bolda and Pryamaya Poyma. The residents indicated the building of the military department of Astrakhan Cossack Host as the most attractive from the point of view of history and architecture. Among the wishes on the new sports facilities are the proposals on construction of the rowing boat facility for Kazachy Yerik microdistrict, on public spaces - reconstruction of the railway station forecourt and land improvement of Timiryazev embankment. Also, the residents offer to consider an opportunity to extend public transport route No. 19 to the head of Karagalinskaya Street and relocate the Central Stadium to Sovetsky district and to provide the existing building for the ASU students for physical training and sporting competitions (Fig. 77).



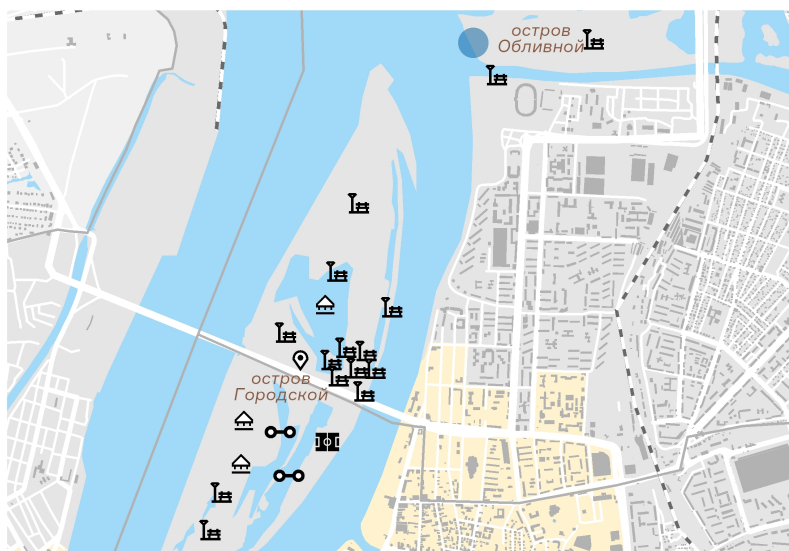


Legends:

- Historical settlement territory
- Boundary of administrative districts
- Residents' proposals on:
- Reorganization or creation of public spaces
- Construction of new open sports facilities
- Construction of bridges and ferry lines
- The most attractive objects from the territory
- New cultural objects
- Unused or abandoned territories
- Other proposals

Fig. 77. Proposals on development of Leninsky district, excluding Babayevsky microdistrict

Island part (Gorodskoy Island and Oblivnoy Island). According to the residents, this territory is the most attractive from the point of view of the recreational development. The overwhelming majority of proposals related to the creation of the public spaces - parks and ecoparks in the entire territory of islands and water-based leisure areas. Among the unique facilities is the arrangement of zoo in the southern part of Gorodskoy Island. Among the wishes on the cultural objects is the arrangement of the university campus and replica of the wood theater complex "Arkadiya", on sports facilities - construction of central stadium, closed rowing canal and open water sports complex. Also, the residents noted useless traffic organization in the territory of Gorodskoy Island, that is fully to prohibit it and leave only the existing parking spaces (Fig. 78).



Legends:

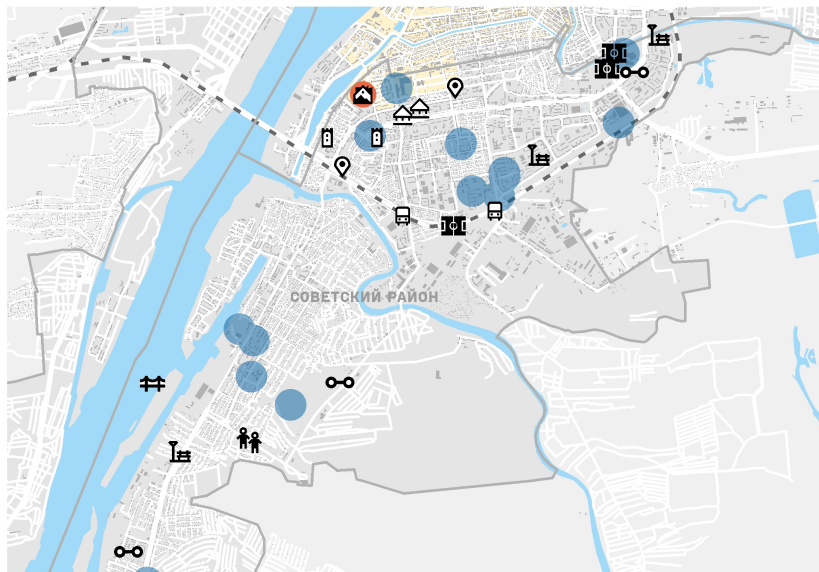
- Historical settlement territory
- Boundary of administrative districts
- Residents' proposals on:
- Reorganization or creation of public spaces
- Construction of new open sports facilities
- Construction of new closed sports facilities
- New cultural objects
- Unused or abandoned territories
- Other proposals

Fig. 78. Proposals on development of the island part (Gorodskoy Island and Oblivnoy Island).

Sovetsky district. The main part of the territories the residents offer to develop is located in the 1st, 2nd and 3rd South-East microdistricts, and also along Admiral Nakhimov Street. The main development is the unused and/or misused, abandoned territories. The lacking sports facilities are also noted. Among the typical objects are 2 health and fitness complexes, among the unique ones are open aqua park, new central stadium, closed ice palace near Zvezdny Sporting Complex and comfort running route along the railway from Kubansky bridge to Admiral Nakhimov Street. Among the wishes on the public spaces - garden square in the 1st South-East microdistrict, walking embankment along Kutum river and pedestrian street.

At the border with the historical settlement, it is offered to develop the territory in the historical-cultural and tourist areas: construction of the Cultural Centre, reconstruction of the boiler facility in Menzhinsky Street to arrange the local cultural center. According to the residents, Tsarevskaya Sloboda and Porokhovye Sklady in Nikolay Ostrovsky Street are the most attractive from the point of view of the history and architecture.

For better communication in the city and unloading of the other transport routes, there were 2 proposals on construction of new bridge over Volga. Among the other wishes are the creation of walking route from Admiral Nakhimov Street to the airport, arrangement of public rail bus stations and construction of new road line to connect the New and Old bridges (Fig. 79).



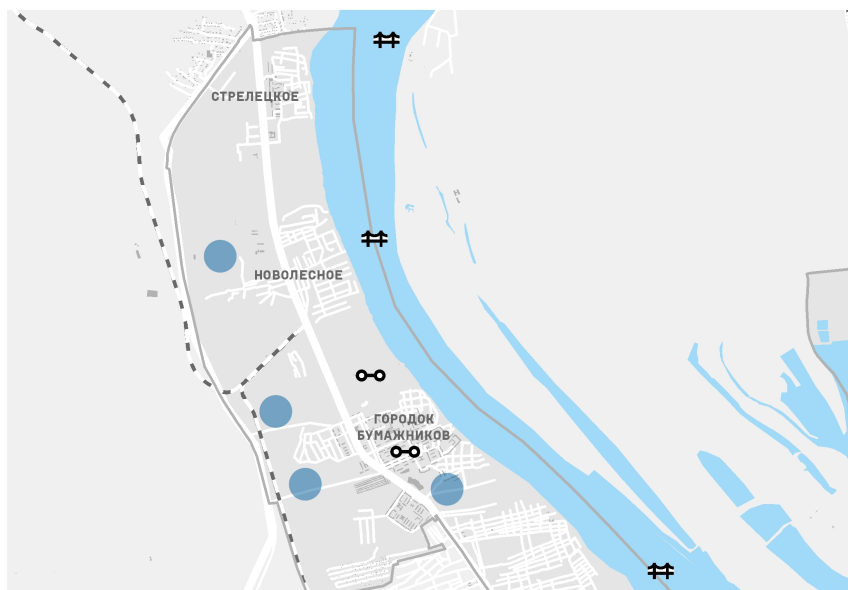
Legends:

- Historical settlement territory
- Boundary of administrative Residents' proposals on:
- Reorganization or creation of
- construction of bridges and
- Construction of new open sports facilities
- Construction of new closed sports facilities
- Arrangement of public transport stations
- Revitalization objects of historical
- The most attractive objects from the point of view of history and architecture
- Walking routes
- New cultural objects
- Unused or abandoned territories
- Other proposals

Fig. 79. Proposals on development of Sovetsky district



Northern part of Trusovsky district. The main area is the development of the unused and/or misused, abandoned territories, construction of health and fitness complexes and bridges over Volga (Fig. 80).



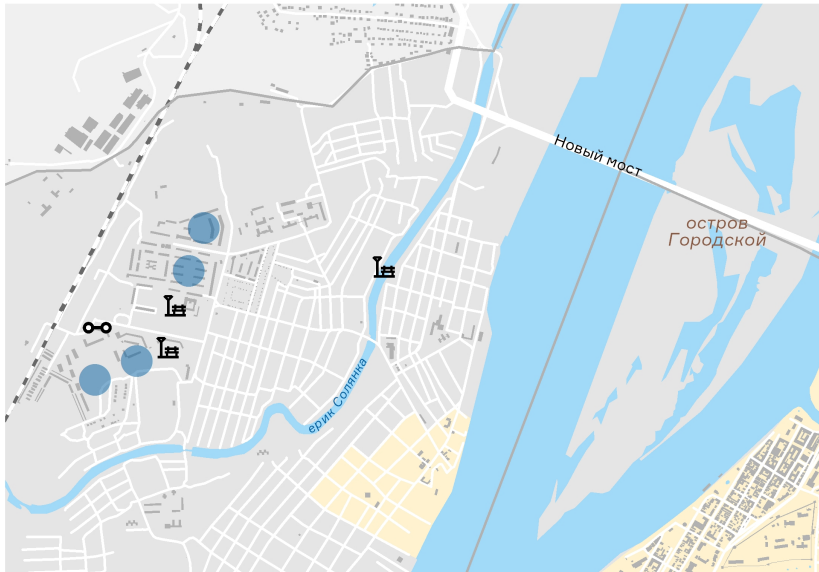
Legends:

- Boundary of administrative
- Residents' proposals on:
Construction of bridges and
- Construction of new closed sports facilities
- Unused or abandoned territories

Fig. 80. Proposals on development of the northern part of Trusovsky district

Central part of Trusovsky district. Improvement of the quality of environment in this territory is achieved by arrangement of the landscaped spaces and development of the abandoned and unused territories. Among the proposal on the recreational objects are the construction of embankment along Yerik Solyanka from the New bridge to the military community, arrangement of beach in canal Serebryanaya Volzhanka and 2 garden squares in the central part, and on the sports facilities - the construction of health and fitness complex (Fig. 81).



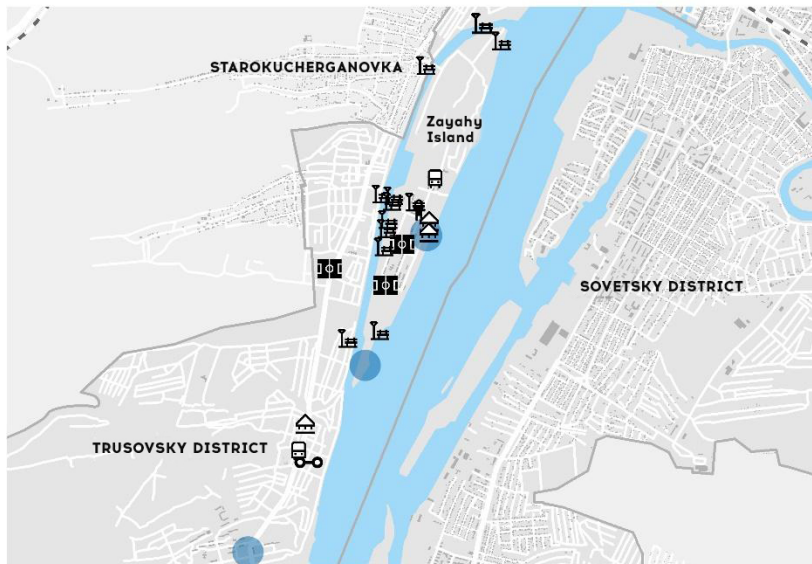


Legends:

- Historical settlement
- Boundary of administrative
- Residents' proposals on:
- Reorganization or creation of public
- Construction of new closed sports facilities
- Unused or abandoned territories

Fig. 81. Proposals on development of the central part of Trusovsky district

Southern part of Trusovsky district. The main development relates to the improvement of the quality of the environment in the territory of 20 Let Oktyabrya microdistrict and in the territory along Chkalov Street. The lacking landscaped public spaces, cultural and sports facilities, including stadium in Vodnukov Street, are noted. The residents offered to arrange 2 new public transport stations - in Ordzhonikidze settlement in Williams Street and in the central part of the Island in Nikolay Vetoshnikov Street, closer to the tax authority building. The walking route was also offered in the territory of 20 Let Oktyabrya microdistrict. In terms of development of the unused abandoned territories, the people noted the land plot and the building of the former Palace of Culture in Captain Krasnov Street, the territory of the former ship repair facility, and the land plot where the Palace of Culture of the Third International microdistrict had been located (Fig. 82).

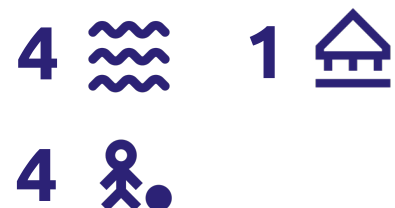


Legends:

- Boundary of administrative
- Residents' proposals on:
- Reorganization or creation of public spaces
- construction of new open sports infrastructure facilities
- construction of new closed sports infrastructure facilities
- reorganization of public transport stations
- Walking routes
- New cultural objects
- Unused or abandoned territories

Fig. 82. Proposals on development of the southern part of Trusovsky district

Brick Works Settlement No. 1. The main development of this territory consists in the provision with the sports facilities and public spaces. Among the recreational objects were the water-based leisure area, garden square in the central part of the settlement, and 2 proposals on creation of pedestrian street. Among the closed sports facilities were the pool and fitness center, and among the open ones - sport venue and



stadium. Also, the residents note the land plot in Chekhov Street as prospective for location of the Palace of Culture (Fig. 83).



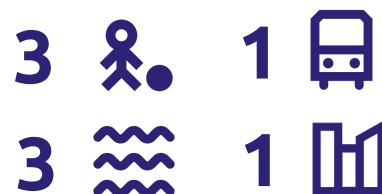
Legends:

-  Boundaries of administrative districts
- Residents' proposals on:
 -  Reorganization or creation of public spaces
 -  construction of new open sports infrastructure facilities
 -  construction of new closed sports infrastructure facilities
 -  New cultural objects

Fig. 83. Proposals on development of the territory of Brick Works Settlement No. 1

Other territories of Astrakhan agglomeration. In general, there were noted the lacking sport venues (Rastolupovka in Privolzhsky district, Starokucherganovka and Zelenga in Narimanovsky district) and recreational facilities (arrangement of the water side for swimming in Rastolupovka, park in Volodarsky and park near the Tinaki health center).

Also, the improvement of the quality of the environment is achieved by construction of new bridges - in Zelenga and near Volga-Kaspiysky in Kazymyasky district. Among the wishes on new cultural objects are cinema in Trusovo and Palace of Culture in Ikryanoe. Also, the residents offered to arrange new intermunicipal public transport station near the turn to Starovolzhskoe. Among the other proposals are the change of the borders of Kazymyasky and Privolzhsky districts in the area of Starovolzhskoe and the construction of social housing in Narimanovsky district near river Krivaya Bolda (Fig. 84).



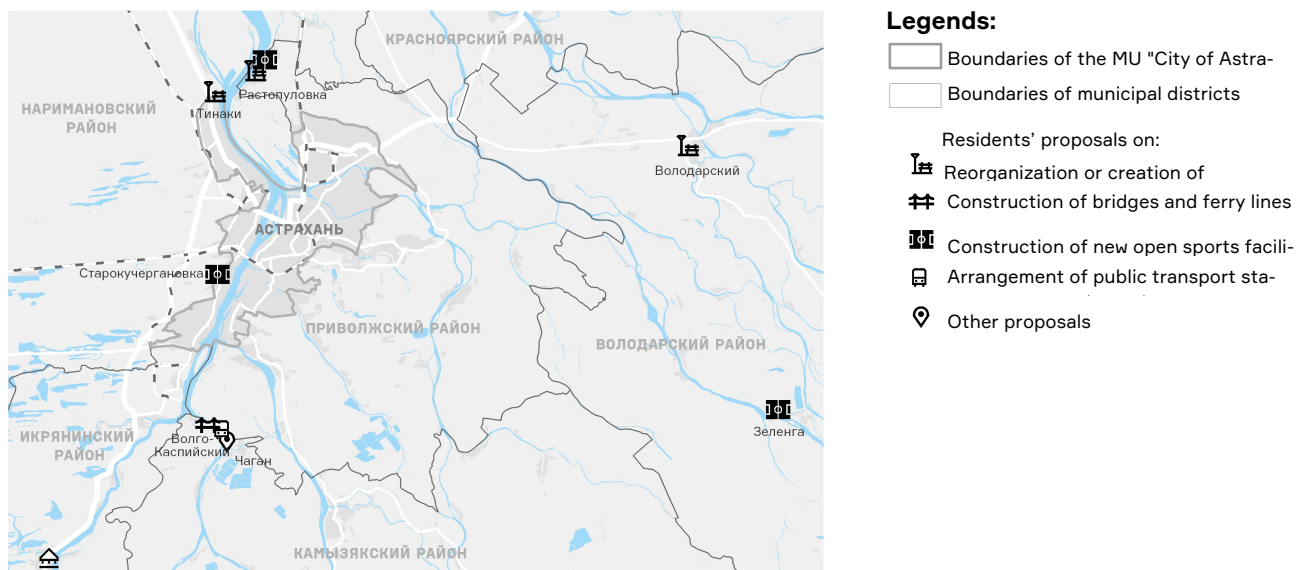


Fig. 84. Proposals on development of the other territories of Astrakhan agglomeration





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