

# Urban Agglomeration (Criteria of 2017)

## Préambule

In Russia, unlike most other highly urbanized countries, there is still no officially established methodology for determining the composition of Urban Agglomeration (Antonov, 2020).

Basic methods with predominance of the so-called functional settlement approach were developed long ago (Listengurt, 1975; Polyán, 2014; Polyán et al., 1988), But given the lack of statistical information about relationships within an identified Agglomeration, including commuter flows, these methods were forced to use simplified models based on calculated transport accessibility isochrons.

The matching carried out by **E. V. Antonov and A. G. Makhrova** in this study allows a convincing analysis on the observation of urban space and its functionalities as it can be perceived in Russia.

## Processing

According to the methodology, based on the functional and settlement pattern approach and the isochrons of transport accessibility of agglomeration cores, the boundaries were delimited and the population dynamics and development coefficient of Russia's 36 largest urban agglomerations (with cores in cities or in a group (for several geographically close centers) having populations close to 500 000 people). The calculation results are presented for four delimitation variants, from minimum to maximum, the latter based on E.E. Leizerovich's microzoning grid. For the given period, the number of urban agglomerations was not redistributed between the classes of development and the number of developed agglomerations remains low. The study reveals the trends of continued population concentration in the largest agglomerations and their cores. The case study of the Moscow metropolitan agglomeration illustrates the monocentric character of most of the largest agglomerations. A study of the higher supra-agglomeration structure—of the Central Russian Megalopolis—revealed its fragmentation and the lack of development of lower-level agglomeration formations.

**Table 1. Criteria for delimiting Urban Agglomerations for different variants**

No.	Variant name	Criterion for inclusion of municipality in agglomeration
1	Minimum	Territorial adjacency of municipality to agglomeration core(s)
2	Basic	Localization of majority of population of municipality within 2-h isochron of transport accessibility from core
3	Expanded	Part of population of municipality living within 2-h isochron of transport accessibility from core
4	Maximum	Belonging to "area of attraction of large cities or their intergrowths" according to E.E. Leizerovich

**Table 2. Population as of October 31, 2018 of Urban Agglomerations:**

Rank	Entity	Population	Rank	Entity	Population
1	Moscow	20 833 100	19	Tula–Novomoskovsk	1 123 400
2	St, Petersburg	6 861 100	20	Naberezhnye Chelny	1 109 400
3	Yekaterinburg	2 538 800	21	Novokuznetsk	1 044 700
4	Samara–Tolyatti	2 530 900	22	Irkutsk	1 055 100
5	Rostov-on-Don	2 530 600	23	Izhevsk	997 800
6	Nizhny Novgorod	2 205 100	24	Caucasus Mineralnye Vody	952 800
7	Novosibirsk	2 124 200	25	Tyumen	927 300
8	Chelyabinsk	1 786 400	26	Barnaul	889 300
9	Kazan	1 695 500	27	Yaroslavl	871 100
10	Volgograd	1 589 600	28	Stavropol	864 600
11	Ufa	1 523 700	29	Vladivostok	812 200

12	Omsk	1 424 000	30	Cheboksary	812 200
13	Krasnodar	1 373 200	31	Astrakhan	811 600
14	Voronezh	1 317 400	32	Ulyanovsk	793 500
15	Makhachkala	1 276 600	33	Tomsk	784 200
16	Krasnoyarsk	1 257 800	34	Orenburg	733 300
17	Saratov	1 247 300	35	Khabarovsk	709 500
18	Perm	1 245 400	36	Kemerovo	697 200

**Table 3. Population as of October 14, 2010 of Urban Agglomerations:**

Rank	Entity	Population	Rank	Entity	Population
1	Moscow	18 830 900	19	Naberezhnye Chelny	1 081 600
2	St, Petersburg	5 946 200	20	Tula–Novomoskovsk	1 081 400
3	Samara–Tolyatti	2 483 800	21	Novokuznetsk	1 062 300
4	Rostov-on-Don	2 446 100	22	Izhevsk	959 800
5	Yekaterinburg	2 380 800	23	Irkutsk	958 600
6	Nizhny Novgorod	2 183 700	24	Caucasus Mineralnye Vody	937 700
7	Novosibirsk	1 918 800	25	Barnaul	842 200
8	Chelyabinsk	1 679 900	26	Yaroslavl	841 500
9	Volgograd	1 580 800	27	Stavropol	802 500
10	Kazan	1 557 700	28	Vladivostok	775 900
11	Ufa	1 419 700	29	Astrakhan	778 000
12	Omsk	1 368 500	30	Ulyanovsk	777 300
13	Voronezh	1 220 500	31	Cheboksary	771 300
14	Saratov	1 194 400	32	Tyumen	735 700
15	Makhachkala	1 183 400	33	Tomsk	721 600
16	Krasnodar	1 165 400	34	Orenburg	683 500
17	Perm	1 162 800	35	Kemerovo	662 300
18	Krasnoyarsk	1 105 300	36	Khabarovsk	634 100

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