

Foundation and Development of the Regular Saint Petersburg Agglomeration in the 1703 to 1910s

Sergey Sementsov

Saint Petersburg State University of Architecture and Civil Engineering
Saint Petersburg, Russia
E-mail: s.sementsov@mail.ru

Nadezhda Akulova

Saint Petersburg State University of Architecture and Civil Engineering
Saint Petersburg, Russia
E-mail: naroma@list.ru

Abstract—The relevance of the topic of the article is predetermined by the beginning of the professional development of the project of territorial development of the Saint Petersburg agglomeration for the period up to the 2030s. The article briefly describes the stages of the historical formation of the agglomeration, starting from the 1700s to the beginning of the 20th century, in those centuries when it was still the Russian metropolitan agglomeration. During the research on this topic, an integrated town-planning, territorial-functional, natural-landscape, socio-economic analysis was used, which combined the materials of a parallel study of historical cartography and archival materials. The main results were the conclusions that from the early 1700s, on the basis of the rural settlement system that had existed for centuries in these territories, the purposeful crystallization was carried out around Saint Petersburg with its principles of construction as the “ideal” capital city of the grandiose “regular type” urban agglomeration, which included three areas-belts: “external”, “middle”, and “nearby” (as areas of intensive agglomeration), in total geographically located from Yaroslavl (in the east) to Riga (in the west). By the 1910s, the nearby agglomeration belt (area of intensive agglomeration) united the structures of the encircling (around Saint Petersburg and the largest settlements and complexes), linear (along radial and ring highways) and nodal (around particular large settlements) structure. By this time, the formation of four subagglomerations in the spatial structure of this agglomeration was already underway: Kronstadt, Petergof, Tsarskoye Selo, Sestroretsk. This variant of the territorial formation and the unique structuring of the metropolitan Saint Petersburg agglomeration, with the parallel development of subagglomerations, are nonstandard for the world history of urban planning. The materials of the article can be useful for historians of urban planning, as well as for modern town-planners and urbanists.

Keywords—*spatial development in the 1700s to 1910s; “ideal” metropolitan Saint Petersburg and the “regular” metropolitan Saint Petersburg agglomeration; three belts of the agglomeration; subagglomerations; Kronstadt; Petergof; Tsarskoye Selo; Sestroretsk*

I. INTRODUCTION

The study of the patterns of formation of agglomerations in different regions of the planet is quite significant for modern urban planning, causing considerable interest in the

works of a wide range of specialists — from town-planners, urbanists, designers of the architectural environment to economic geography specialists, city-regionalists, social behavior specialists, landscape architects, etc. After all, each agglomeration is a completely harmonious combination of different social, environmental and landscape systems [1], [2], [3], [4], [5], [6]. And the traditions of the XX - early XXI centuries inextricably link the formation of agglomerations with the ideas of forming environmentally comfortable settlements and territorial landscapes for the human community, for example, “garden-cities”, Ecumenopolis (in the works of C. A. Doxiadis and his followers), urban planning regionalism, etc.[7], [8], [9].

Among the historical and modern agglomerations (megalopolises, conurbations), those are especially interesting, the origin and development of which does not fit the traditional “rules”. The monocentric Saint Petersburg agglomeration, with Saint Petersburg as its core, is also “included” in this group. This agglomeration belongs to few of them in the world with a clear chronological framework of the base and clear signs of formation according to the rules of “regularity” and “ensemble”. These ideas were specially formulated and purposefully implemented not only at the beginning of the agglomeration life during the reign of Peter the Great (in 1703–1724), but also during the subsequent decades of the XVIII - early XX centuries both in the metropolitan city itself and in its vast suburbs and surroundings. During this time, the unique “regular” agglomeration, ideal by its spatial-compositional principles, was created, which has no analogues in the world architecture. Nowadays, the development of Saint Petersburg and its agglomerations is also in the spotlight of modern town-planners [10].

II. METHODOLOGICAL FRAMEWORK

The research of the historical development of cities and urban agglomerations requires a parallel study of a wide range of cartographic, archival and bibliographic sources from different collections of Saint Petersburg, Stockholm, Berlin and other cities, both published and still waiting for publication. Such a parallel study of historical cartographic and archival materials made it possible to identify the features and development trends of both Saint Petersburg

and several belts of suburban territories, within the framework of the Saint Petersburg agglomeration, within the territorial boundaries of the historical Saint Petersburg Governorate, and also far beyond the administrative-territorial boundaries of the Governorate.

III. RESULTS

Stages of the formation of the Saint Petersburg agglomeration were in the XVIII - early XX century.

A. *Development of an Irregular Rural Settlement System Before the Foundation of Saint Petersburg*

According to the research, Saint Petersburg, its agglomeration and the whole Saint Petersburg Governorate were created not “from scratch”, but in territories that were densely inhabited for more than 1500 years, along the axis of which a single source fragment passed, belonging to the two largest historical transport corridors: the trade route from the Varangians to the Greeks (from Northern Europe via the Dnieper and the Black Sea to the Mediterranean countries) and the Volga trade route (from Northern Europe via the Volga to the Caspian Sea and then to the countries of Asia). This fragment connected the eastern extremity of the Baltic Sea — the Gulf of Finland — the Neva River — Lake Ladoga — the Volkhov River — Lake Ilmen and was further divided into two routes:

- To the west: the headwaters of the Dnieper River — along the Dnieper River towards the Black Sea and the Mediterranean Sea;
- To the east: the headwaters of the Volga River — along the Volga River towards the Caspian Sea and further to the eastern areas.

The zones of the Baltic Sea and the Gulf of Finland, the Neva River and the zone of Lake Ladoga were one of the most important unified elements in this transport system.

Even the most ancient historical written sources (Old Russian Chronicles, Scandinavian sagas and chronicles, etc.) included fragmentary information about these territories. Already from the 15th century in the Novgorod (until the 1490s), Moscow (1490s - 1580s) and Swedish (1580s - 1690s) books of land inventories, as well as in Swedish cartography (1640s - 1700s) it is possible to reveal in the nuances the system of rural settlement that has been stably existing during the 15th and 17th centuries. 900–1000 settlements existed for centuries (until the beginning of the 18th century) in territories where suburban districts of Saint Petersburg were formed from the 1700-s to the 1910-s. The number of the marked settlements reached 3000 on a larger scale of the future agglomeration. For centuries, hundreds of these settlements are constantly mentioned in historical sources, and regardless of whether these lands belong to a particular state, they first belonged to the Novgorod Republic, then — to the Grand Duchy of Moscow, after — to the Kingdom of Sweden, from 1702-1703 — to Russia again. During this time, the rural system of settlement, almost uniform in density, was formed on the territory of the future agglomeration with a dense network of roads of different

types (from local roads to state tracts), with thousands of settlements, with 4 cities and 6 fortresses. Naturally, there was no protoagglomeration here in the pre-Petersburg period [11], [12].

B. *Foundation of Saint Petersburg and the Saint Petersburg Agglomeration During the Reign of Peter the Great in 1703-1725*

On the basis of this rural system of settlement, which existed before the early 1700s, the Russian Tsar Peter the Great began the deliberate and conscious creation of the metropolitan Saint Petersburg agglomeration of the “regular type” (by combining the ancient Russian territories and the conquered territories by the Russian troops in 1702-1710). This formation had three phases during the period from 1703 to the 1720s:

1) *1703–1711*: The formation of a unified administrative and economic territory of the Saint Petersburg Governorate in its widest boundaries; according to the Regialedict of Peter the Great on December 18, 1708, a huge Ingermanland Governorate (from 1710 — Saint Petersburg Governorate) was formed, including the vast territories from Yaroslavl to Narva, with 29 cities and the area of 490,000 sq. km (for comparison: the territory of modern Germany — 357,021 sq. km) “Fig. 1”. Also began the gradual crystallization of Saint Petersburg as a conglomerate of rural settlements, then — as a fortress town, and finally, as the capital of the Governorate.

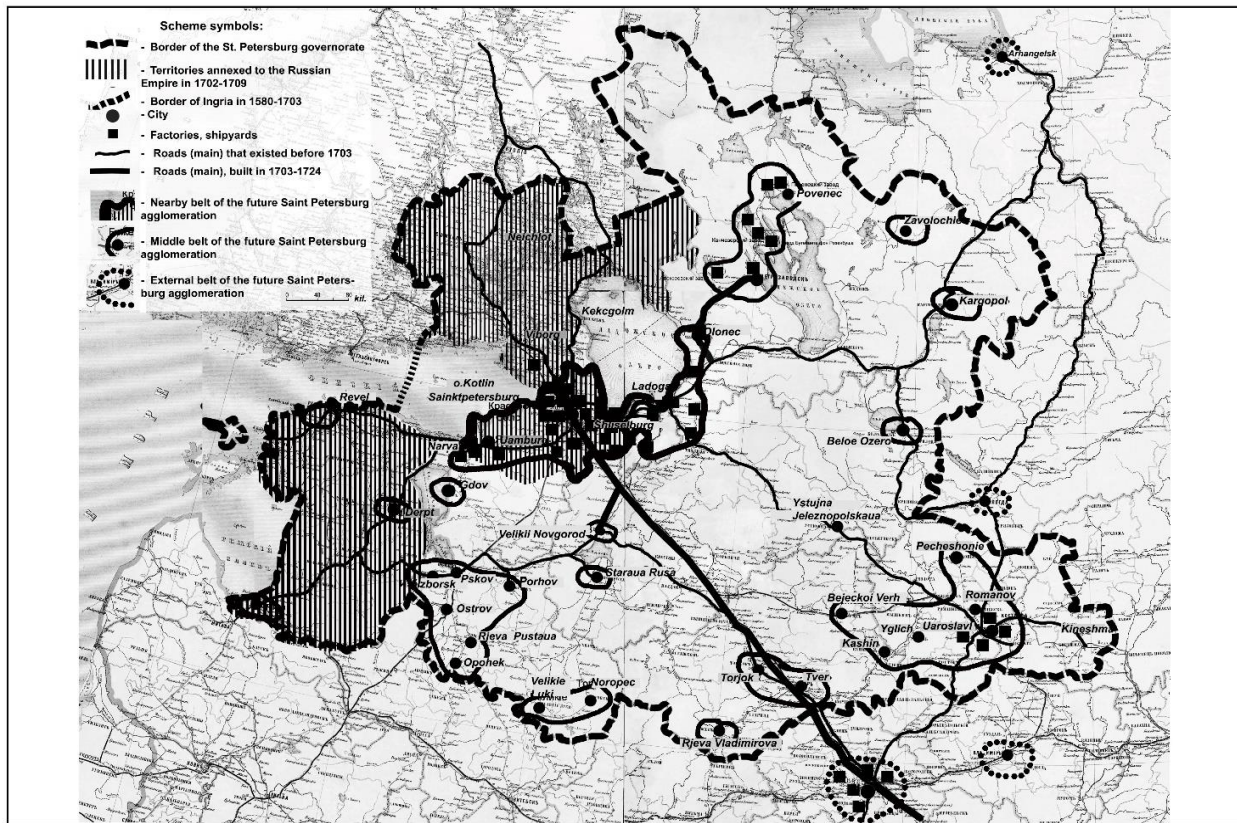


Fig. 1. 1710-1725. The largest multifunctional centers in the territory of the Saint Petersburg Governorate. Nearby and middle belts of the future Saint Petersburg agglomeration.

^a Reconstruction: S. V. Sementsov, E. V. Skogoreva, N. A. Akulova

^b The scheme is made on the topographic map of 1840.

2) 1712-1721: There is a socio-political perception of Saint Petersburg as the city of the Governorate (the “capital of the Governorate”), finally, the Russian capital, and, according to this, begins a massive phased reconstruction of the city in the spirit of “regularity” and “ensemble”, with its gradual transformation to the “perfect city”. Three possible belts of the future (?) agglomeration nodes began to appear around Saint Petersburg: the nearby belt (from Narva and Yamburg to Olonets), the middle belt (including zones of Gdov, Pskov, Staraya Russa, Torzhok — Tver, Yaroslavl — Uglich — Romanov, Kargopol, Zavolochie, Povenets — Petrozavodsk), the distant belt (Arkhangelsk, Vologda, Vladimir, etc.).

3) 1722-1724: Territorial and structural improvement of the full-fledged metropolitan Saint Petersburg agglomeration takes place, at the same time, by joint efforts they created consciously and in parallel:

- The metropolitan city of Saint Petersburg with its near suburbs and near country areas almost immediately on many islands and territories of the Neva delta;
- The highly developed fortification system, including several “ideal” fortresses, redoubts, forts, defensive

lines. This system has spatially spread nearly 100 km in diameter;

- The most extensive lanes and zones of the suburbs in the unity of “regularity” and “ensemble” (from Sestroretsk in the north to Gatchina in the south, from Oranienbaum in the west to Shlisselburg in the east), compositionally “ideal” by themselves and sequentially forming regular rectangular, star-shaped and radial compositions. This whole system of suburban lanes covered areas with a diameter of more than 150 km;
- The multikilometer system of communications (overland and water), providing optimal territorial links between all spatial elements;
- The system of visual, symbolic, iconic, cultural dominants in the entire developed area.

If we consider that huge suburban areas from Sestroretsk to Oranibaum and from Kronstadt to Shlisselburg were formed in a coordinated manner, then this area of unified regular spatial development will become absolutely grandiose. It will be a question of the territories of the unified regular development for hundreds of square kilometers at a time (with spatial span of more than 300x150

km), with the parallel creation of many compositional nodes

on this unified territory (see “Fig. 2”).

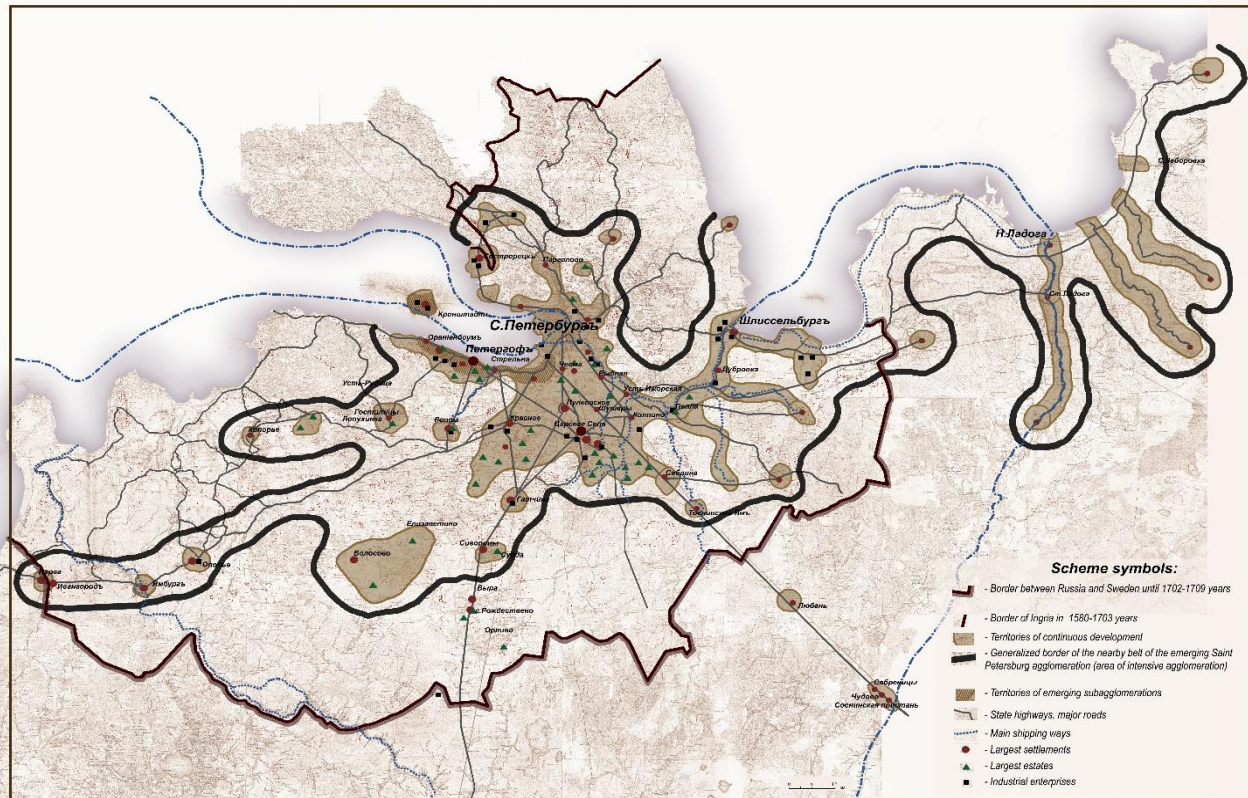


Fig. 2. 1710-1725. Nearby belt of the Saint Petersburg agglomeration.

These nodes have emerged practically under the single “ideal” strategic program for the development of the territory. At this stage, we can mark the beginning of the transformation of the emerging agglomeration into the “ideal agglomeration” on the principles of “regularity” (with straight and geometrically clear highways and a rectangular layout of cities, towns and settlements).

Moreover, the surprising fact was manifested that the territorial development of the Governorate and the agglomeration proceeded with a clear lead in comparison with the emergence and crystallization of their unified center. The future unified center of the agglomeration and the center of the Governorate — Saint Petersburg, the capital city of Russia, was formed with a certain chronological lag behind the development of the territories themselves [13], [14].

C. Features of the Development of Metropolitan Saint Petersburg and the Saint Petersburg Agglomeration in 1725-1800

The territories of the Saint Petersburg Governorate itself in these decades have declined significantly and now united “only” the area between Lake Chudskoe (Lake Peipus) and Lake Ladoga. At the same time, significant crystallization and expansion of metropolitan Saint Petersburg and the concomitant development of the Saint Petersburg agglomeration took place. By 1800, the external belt of the

a. Reconstruction: S. V. Sementsov, N. A. Akulova

b. [The scheme is made on the topographic map of 1916]

agglomeration continued to include particular nodes in areas far from the city (for example, Yaroslavl and Kostroma, which were removed from the province, continued to remain as elements of its agglomeration as the annual largest partners of Saint Petersburg in construction). The middle belt of the agglomeration continued to unite the territories from Pskov, Gdov, Torzhok to Vyborg and Kexholm, including already Riga, Derpt and other fortress and port cities of Estonia and Latvia. The nearby belt, the most intensive core of the agglomeration, acquired even more dense structure, “cementing” the territory along the Neva River, the lower reaches of the Laba River, Mga River, Nazia River, Tosno River, the middle reaches of the Luga River, and in the northern directions reaching the village of Medny Zavod. The farthest western point of the nearby belt was Ivan-Gorod and Narva (which were part of the Saint Petersburg Governorate); the eastern extremity reached the village of Ustye Sviri. The belt included the areas of Tsarskoye Selo and Gatchina, the territory along the southern coast of the Gulf of Finland to the settlements west of Oranienbaum, and also along the northern coast of the Gulf of Finland up to Sestroretsk. In the 18th century, the nearby belt of the agglomeration united the metropolitan city of Saint Petersburg and the relatively compact nodes of fortification and industrial objects strung onto the departing overland and water high ways going “outside” the city, as well as the larger territorial areas of the suburban imperial ensembles of

palaces and parks and accompanying auxiliary and military settlements and towns of the Imperial Palace Department, with a ring of manors of the highest nobility and a uniform field of smaller noble estates dispersed located between the previous ones. More local subagglomerations continued to “evolve” in the structure of the nearby belt of the agglomeration:

- Kronstadt with the attendant surroundings of forts and batteries;
- Oranienbaum — Petergof — Strelna;
- The beginning of the manifestation of the initial “growth bud” of another future subagglomeration — Tsarskoye Selo — Pavlovsk [15], [16], [17], [18], [19] (“Fig. 3”).

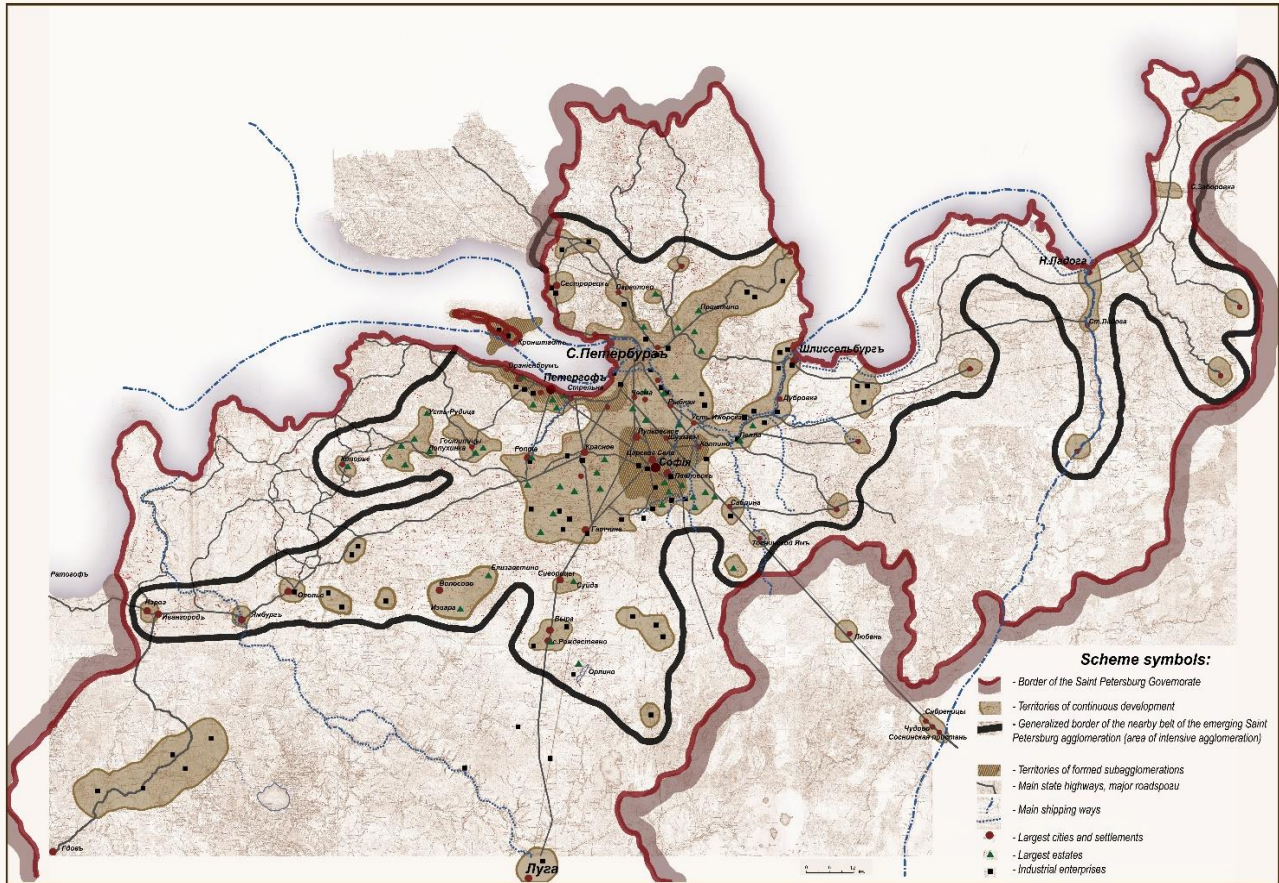


Fig. 3. 1800. Nearby belt of the Saint Petersburg agglomeration.

a. Reconstruction: Sergey V. Sementsov, Nadezhda A. Akulova

b. [The scheme is made on the topographic map of 1916]

D. Development of Metropolitan Saint Petersburg and the Saint Petersburg Agglomeration in 1801-1916

By the beginning of the 20th century, the borders of the Saint Petersburg Governorate stabilized, partially modified after the 1800-s because of a new wave of administrative-territorial reforms (see “Fig. 4”).

Even in the context of these territorial changes, the Saint Petersburg agglomeration itself experienced two significant stages of its reshaping, connected with fundamental changes in the road and transport system: 1) until the 1850s, the initial period before the construction of the railway network (taking into account the development of the network of overland and water highways), 2) after the 1850s — the period after the start of the construction of the railway

network (with the expansion of the combined networks of overland, water and railway highways).

The development of railway lines during the 19th century led to the fact that accessibility zones moved along the radii of railway lines farther from Saint Petersburg — Petrograd. For Saint Petersburg and for the whole of Saint Petersburg agglomeration in the late 19th – early 20th centuries, we can confidently note the three rings of country house construction (as one of the new elements and factors for the development of the nearby belt of the entire agglomeration), in the terminology of the “city-gardens” ideas, used in those days, these are “outskirts-gardens”, “suburbs-gardens”, and for the most distant from the city separate concentras and even large zones and belts — “holiday villages-gardens” [20], [21], [22], [23].

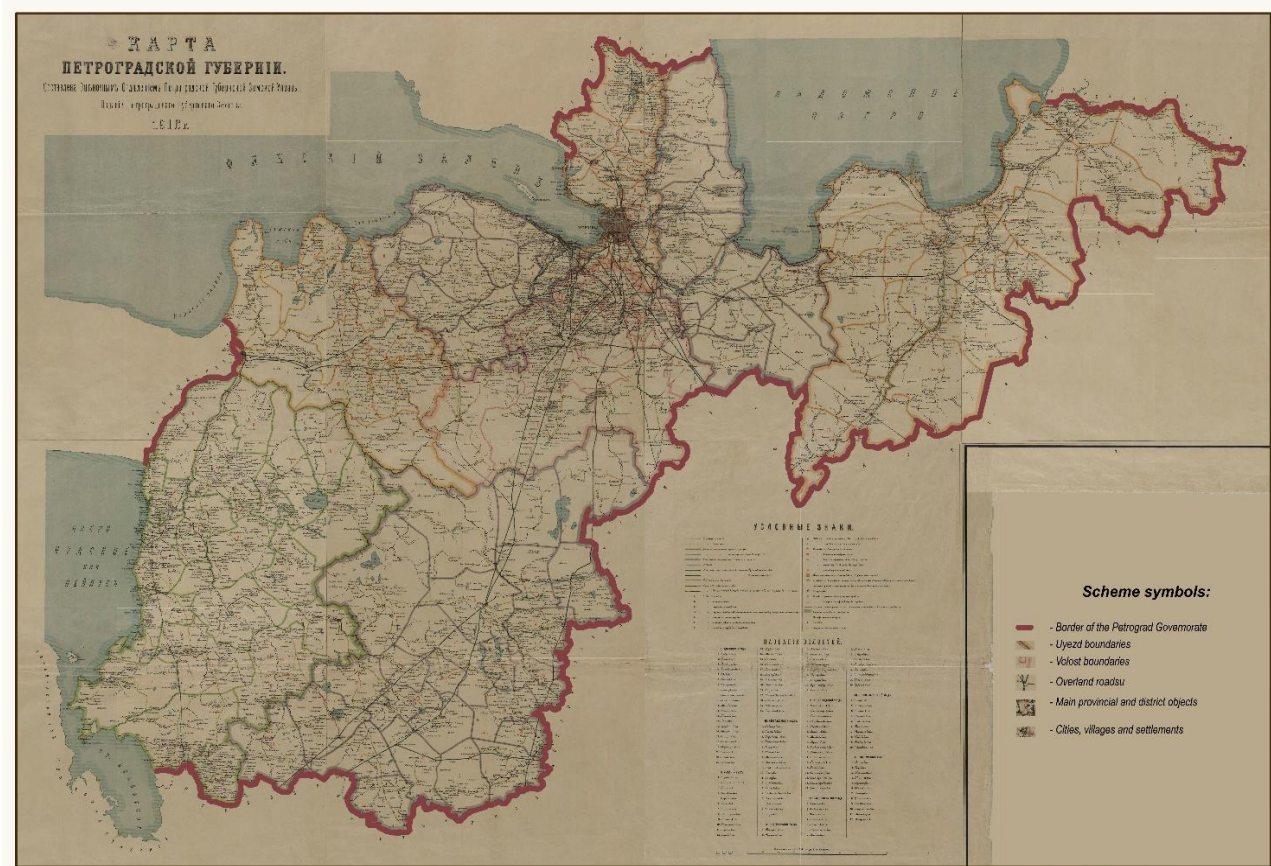


Fig. 4. 1916. "MAP OF THE PETROGRAD GOVERNORATE."

^a Compiled by the Appraisal Department of the Petrograd Provincial District Council. Edition of the Petrograd Provincial Zemstvo. 1916". Saint Petersburg. The National Library of Russia. OK 3 – Zap4-177

The previously united “nearby belt” began to gradually differentiate not only according to the status of the formed ensembles, complexes and objects, according to the functional and natural landscape features, but also according to the options for solving transport accessibility problems to the metropolitan city and solving the tasks of ensuring seasonality of recreation and residence. Therefore, the belt has acquired quite clear zoning by the beginning of the 20th century.

1) *First zone of the nearby belt:* On the periphery of the city (in the area of the administrative boundary of the city) and outside the city (adjacent to its borders) there is a zone of “outskirts-gardens” formed along the highways and within the accessibility of urban transport. Living in such “outskirts-gardens” provided significant advantages to residents in connection with combining the conditions for comfortable living in green areas with the possibilities of daily (also quite comfortable) commuting to work, within hourly (or one and a half hour) accessibility.

2) *Second zone of the nearby belt:* These are “suburbs-gardens” and “suburbs-gardens” zones. A bit further from the city along the lines of railways and highways was formed the second zone of “suburb gardens” with an equally precise regular planning system, with a high level of green

areas and cultural and public services, with the provision of comfortable accommodation for residents who lived in these suburbs and came daily to work in Saint Petersburg.

3) *Third zone of the nearby belt:* Individual settlements, large zones and vast belts of “holiday villages” existed here and developed in parallel. Further away from the city, grandiose, many-kilometer-long groups of holiday villages were formed, and they were located along all the lines of railways, the main highway routes emanating from Saint Petersburg, and the largest shipping ways. By the beginning of the 20th century, along these “outgoing” transport arteries (mainly the railway lines), the agglomeration force lines had significantly spread, reaching Narva–Ivan-Gorod, Luga, Chudovo-Sosninskaya pier. Practically all new settlements were built on the principles of “holiday villages-gardens” and taking into account the traditional for residents of Saint Petersburg trips “to summer cottages”, to the places of seasonal migration (mass departure to the cottages: at the end of May — beginning of June, mass return to Saint Petersburg for the autumn-winter season of residence: at the end of August to September) [24], [25], [26].

Such a concentration of not only production, but also recreational zones around Saint Petersburg shows significant functional changes in the developing Saint Petersburg

agglomeration. Even more significant was the fact that throughout the 19th century and the beginning of the 20th century, in the framework of the Saint Petersburg agglomeration, the processes of its hierarchical structuring developed in parallel, when, together with the development of the largest nodes (for example, the Kolpino – Admiralty Izhora Plants), four subagglomerations were finally formed:

- Kronstadt (Kronstadt and forts);
- Petergof (Strelna — Petergof — Oranienbaum);
- Tsarskoye Selo (Tsarskoye Selo — Pavlovsk — Tsarskaya Slavyanka);
- Formed from the end of the 19th century Sestroretsk subagglomeration [27], [28] (“Fig. 5”).

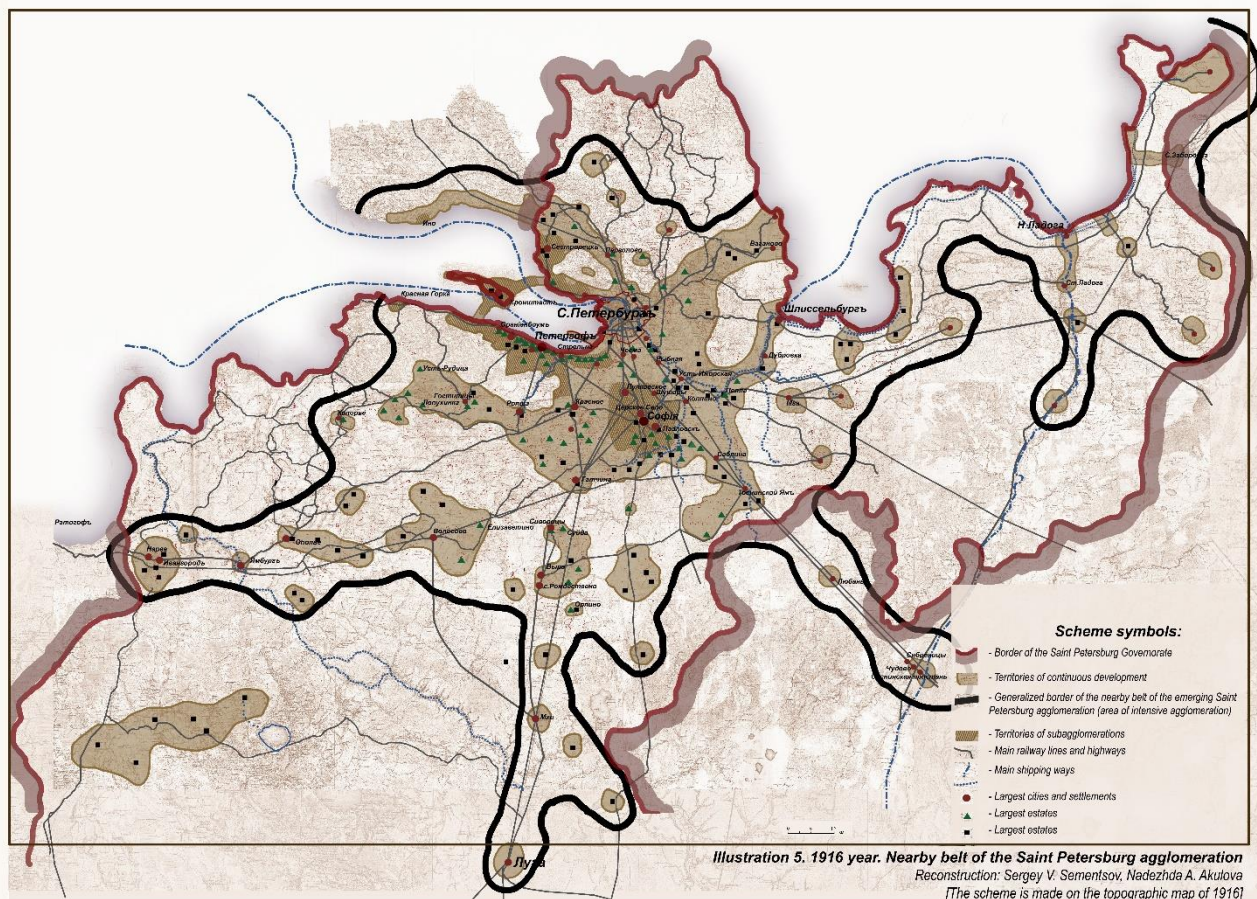


Fig. 5. 1916. Nearby belt of the Saint Petersburg agglomeration Reconstruction: Sergey V. Sementsov, Nadezhda A. Akulova.

IV. DISCUSSIONS

The study of the characteristics of the emergence and formation of the metropolitan Saint Petersburg agglomeration has so far remained outside the attention of researchers. This article briefly shows the features of these processes throughout the 18th - early 20th centuries. Three belts can be distinguished in the structure of the agglomeration: external, middle, and nearby. At the same time, the nearby belt of the agglomeration over the decades under consideration has significantly expanded along the lines of railways in the directions to Narva — Ivan-Gorod; Luga; Chudovo — Syabrynitsa — Sosninskaya pier on the Volkhov River. By the beginning of the 20th century, four subagglomerations were clearly manifested in the nearby belt system of the Saint Petersburg agglomeration:

- ^{a1.} The scheme is made on the topographic map of 1916.
- Kronstadt (Kronstadt, sea forms and overland fortresses-forts).
 - Petergof (Strelna — Petergof — Oranienbaum).
 - Tsarskoye Selo (Tsarskoye Selo — Pavlovsk — Tsarskaya Slavyanka).
 - Sestroretsk (with the series of holiday villages along the coast of the gulf).

V. CONCLUSION AND RECOMMENDATIONS

A. Conclusion

Thus, the analysis of the processes of the further development of the Saint Petersburg agglomeration over the 19th and early 20th centuries showed a fairly rapid expansion of the agglomeration territory following the

reformation of the non-Petersburg transport system, which included, along with the traditional from the 18th century overland and water ways, also railway lines from the mid-19th century. These transformations led to the birth of new functional landscape elements in the territories of a significantly expanded nearby belt of the agglomeration — holiday villages, zones and belts of holiday villages, created on the principles of regularity “city-gardens” and “suburb-gardens”. All this led to the continuation of the transformation processes of the forming agglomeration into the “ideal agglomeration” on the principles of “regularity”.

B. Recommendations

The article can be recommended to historians of architecture and urban planning, as well as modern town-planners, architects, urbanists, designers dealing with the problems of urban development and agglomerations.

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