**УДК 338.47**

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**Transport complex: experience of regional strategic planning**

*In the article approaches to strategic planning of a transport complex at the level of the territorial subject of the Russian Federation are considered. "The transport block" of region strategic development documents shall be constituted taking into account: the transport target development vectors, pledged at the federal level; specifics of economic development of the territory (its industry structure, spatial localization of economic activity and the existing settlement system); key parameters of social and economic development of this territory in the long term. Experience of strategic directions of the transport development for two territorial subjects of the Russian Federation is provided: The Jewish Autonomous Region and the Khabarovsk Territory. For each of regions the short analysis of transport complex functioning is given and the key development directions for the transport complex on prospect till 2030 are formulated.* *The dedicated directions correspond to the general objectives of social and economic development of the territories in the long term; allow improve operating conditions of business entities and to increase comfort of life for the population.*

**Транспортный комплекс: опыт регионального стратегического планирования**

*В статье рассматриваются подходы к стратегическому планированию транспортного комплекса на уровне субъекта РФ. «Транспортный блок» документов стратегического развития региона должен быть составлен с учетом: целевых векторов развития транспорта, заложенных на федеральном уровне; специфики экономического развития конкретной территории (ее отраслевой структуры, пространственной локализации хозяйственной деятельности и сложившейся системы расселения); ключевых параметров социально-экономического развития данной территории в перспективе. Представлен опыт разработки стратегических направлений развития транспорта для двух субъектов РФ: Еврейской автономной области и Хабаровского края. По каждому из регионов приведен краткий анализ функционирования транспортного комплекса и сформулированы ключевые направления развития на перспективу до 2030 г. Выделенные направления соответствуют общим целям социально-экономического развития территорий в долгосрочной перспективе, позволяют улучшить условия функционирования хозяйствующих субъектов и повысить комфортность жизни населения.*

***Keywords:*** *transport complex, Far East of Russia, strategic development of the transport, the Khabarovsk Territory, the Jewish Autonomous Region.*

***Ключевые слова:*** *транспортный комплекс, Дальний Восток России, стратегическое развитие транспорта, Хабаровский край, Еврейская автономная область.*

The content of the documents about socio-economic development strategic planning of the subjects of the Russian Federation is regulated by the Federal Law №172-FL of 28.06.2014 "On the strategic planning in the Russian Federation", the Budget Code of the Russian Federation and the laws of subjects of the Russian Federation about strategic planning. The content of the documents of strategic planning in section of individual economic sectors and activities depends on the specific economic structure of a particular region and its future development directions [1, 2]. Transport is a basic element of infrastructural framework for any territory. Transport provides functioning of various sectors of the economy [3, 4, 5] as well as spatial mobility for the people.

Feature of approach to the representation of the transport sector in the strategic documents includes:

- to take into account the general trends in the development of transport modes, fixed by the sectoral strategic documents on a higher level;

- to take into consideration the current dynamics and existing "narrow" places in the transport complex which are require the special measures;

- to keep the correlation between the ways and scale of the territory economic activity and the transport complex development.

So the transport can be a backbone element of the regional economy, taking an important role in the formation of the revenue part of the budget, at the creation of employment and at the technology transfer etc. It gives the added importance to the transport sector within the overall strategic designs.

In the frame of this article the brief results of the strategic planning for the transport complex of the Khabarovsk Territory and the Jewish Autonomous Region (JAR) for the period up to 2030 are considered. The structure of the material is traditional for such a works. The article includes the analytical part (allocation trends dynamics of the main indicators of transport, functioning problems) and strategic prospects of the territory transport frame (related to the overall objectives of social and economic development of the region in the long term [6]).

*Current situation and the strategic directions of the transport infrastructure development in the Jewish Autonomous Region*

Transport occupies a key position in the economy of the JAR. At the end of 2014 the share of transport was as follows: Investments in fixed assets - 31.4% (38.3% reduction by 2010); in the average number of employees - 10.4% (an increase of 1.3% in 2010); GRP - 18.4% (an increase of 7.3% in 2010) [7, 8]. The role of transport complex in the formation of the regional budget revenues is significant. For example the Far Eastern Railroad is the largest taxpayer in the JAR. It transferred more than 1.5 billion rubles to the regional budget during the period 2012-2014.

The Jewish Autonomous Region in terms of the national transport system is a transit link between:

• the western/central regions and eastern regions of the country;

• the Russia and China border regions.

During the transportation in the latitudinal direction are using 2 ways: 1) the Trans-Siberian Railway, crossing the JAR from west to east, 2) the federal highway "Amur" (Chita-Khabarovsk). The railway net in the JAR territory has some lines from the Trans-Siberian Railway: to the north-west till the Baikal-Amur Railway; to the south in the direction of the river port Nizhneleninskoye with the following access the highways leading to the Chinese cities as a Harbin, Tongjiang, Yichun. River navigation is carried out mainly in the southern regions of the JAR. The Amur and Tunguska are the navigable rivers here. River ports are located in the villages Nizhneleninskoye, Amurzet, Pashkov, Thalmann. The length of public railways on the territory of the JAR in the 2014 is amounted as 512.3 km, the length of paved roads was 2522.1 km and the length of navigable inland waterways was 685.0 km [9].

The density of JAR roads (73.6 km/thous.sq.km) exceeds the national average level (68.2 km/thous.sq.km) but the quality characteristics of the road surface does not always satisfy to the standard meanings. So in 2014 100% of federal roads (highway "Amur", length 353.9 km), 48% of regional roads[[1]](#footnote-2) and only 35,4% local roads[[2]](#footnote-3) have satisfied all the requirements.

As part of the air transport the landing pad "Birobidzhan" airline "East" is functioning. It deals with aircraft type’s AN-2, AN-28, AN-38 and all classes helicopters. The landing pad caters the flights of air ambulance, flights for the Russian Federation Ministry of Defence, flights for the Russian Federation Ministry of Civil Defence, Emergencies and Elimination of Consequences of Natural Disasters and flights for forest protection service.

With an overall uneven dynamics of functioning of transport complex, road transport is the main cargo transportation. At the end of 2013 it held 79.4% in cargo traffic structure. Railway transport carried 20.3% of the total volume of goods [7]. Reconstruction of the railway bridge across the Amur River and the opening of road transport significantly reduce the time of travel of vehicles from Birobidzhan to Khabarovsk. The car traffic between the Jewish Autonomous Region, Khabarovsk Territory and Chinese province Heilongjiang have been Intensified.

The general direction of the passenger transportation dynamics in the JAR during two last decades is negative (Table. 1) [10, 7].

*Table 1*

**The dynamic of the public transport passenger traffic (by transport modes)**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Transport modes** | **Units** | **1995** | **2000** | **2005** | **2010** | **2013** |
| Railway\* | thous.persons | 3574.0 | 1814.0 | 1596.0 | 796.0 | 729.0 |
|  - including suburban | thous.persons | 2990.0 | 1371.0 | 1309.0 | 585.0 | 548.0 |
| Motor  | mln.persons | 36.3 | 34.1 | 26.7 | 17.8 | 18.8 |
|  - including suburban and intercity | mln.persons | 4.8 | 2.4 | 0.7 | 1.2 | 1.1 |
| Inland water | thous.persons | 7.4\* | 0.5\* | 0.5\* | 51.7 | 32.6\*\* |

\* departure

\*\* information for the 2012

The sharp decline in the number of passengers in suburban traffic was the result of an increase in transportation tariffs, changes in the benefit system and the general organization of the suburban traffic system [see details in 11].

For the international traffic at the territory of the JAR three permanent multilateral mixed border checkpoints between the Russian Federation with China were organized. These are checkpoints in the river ports Amurzet, Pashkovo and Nizhneleninskoye. However checkpoint Pashkovo is not valid from the February 2012.[[3]](#footnote-4) (Fig. 1).

|  |  |
| --- | --- |
|  **Freight volume, thous. tons** |  **Passengers, thous. persons**  |
|  |  |

***Fig. 1. Characteristics of checkpoints across the Russian Federation state border on the territory of the Jewish Autonomous Region***

The development directions of the JAR transport system are based on the existing transport network characteristics and consideration of the key regional economic development vectors for the long term [12, 13].

The corresponding transport infrastructure development should take place in three axial directions emanating from the capital of JAR. Firstly, in an easterly direction is expected to create a high-speed transport links with the Khabarovsk agglomeration. We can do it with the organization of high-speed road and rail traffic between the cities of Khabarovsk and Birobidzhan. This will bring together urban markets and more effectively realize the potential of labor mobility. Secondly, the improvement of the transport network is expected from Birobidzhan in a westerly direction (Obluchye). This will improve the accessibility of recreational facilities (line up to the Kuldur) and external economic interactions (line up to the border checkpoint "Pashkovo"). Third, the most important in the long run will be the southern axis of the transportation: Birobidzhan-Leninist. It involves the formation of access roads to the "southern freight and logistics hub". It's a new point of economic activity in JAR is organized on the basis of multi-use capabilities of a bridge between Russia and China, and the system of logistics facilities, which will be complemented in the future with the production and refining capacity.

*The current situation and the development directions of the Khabarovsk Territory transport infrastructure*

The freight turnover has increased by 82.7% at the Khabarovsk Territory during 2010 – 2014. The volume of transported goods has increased by 4.1% for this period [14]. We can talk about rising of the transit function for the transport complex.

In general (excluding the pipeline transportation) amplification of the rail transportation concentration take place. The rail transport a share accounted for 79.4% of the total cargo turnover and 97.6% of the Khabarovsk Territory in 2014 (Fig. 2). [14].

 **Freight volume Freight turnover**



***Fig. 2. Structure of freight and cargo turnover of the transport complex of the Khabarovsk Territory,%***

This indirectly confirms the thesis about strengthening the transit function for the regional transport complex. The rail transport is used for transporting goods for the long and very long distances.

The railway network at the Khabarovsk Territory is presented as a Trans-Siberian and Baikal-Amur Railroads as well as meridional connectives between these main lines. The railway public roads length is 2126 km (25% of the total length of railways of the Far-Eastern Federal District). Only 9.3% (196 km Trans-Siberian Railway) of total length has an electric traction. The rest railway lines are served by diesel traction.

The length of the Khabarovsk Territory roads by the end of 2014 was as follows: federal – 455 km, regional – 3919 km, local – 5954 km. The length of the winter road is 278 km. There are some factors which significantly reduce the comfort of movement and limit the possibility of travel through the network of regional and local roads. These are: presence of substantial sections with gravel, gravel and unpaved, sections with defects of pavement (up to 90% of the length of individual roads) rut (up to 70% of the length of individual roads). There are three districts at the Khabarovsk region which have no constant communication with the regional center and the network of public roads. These are: Ayano-Maisky, Okhotsky and Tuguro-Chumikansky districts. The Verkhnebureinsky district has no year-round road transport connection. It has road suitable for use only in the winter due to road gap. The lack of road capacity at the main directions may be a problem in the future.

The negative trends are observed in passenger transport dynamics. There were the reductions in the number of passengers (for the whole transport by 26.1%) and passenger turnover (23.1%) during the 2010 – 2014. Only the passenger air transport had receiving owing to of the money support from the regional and federal governments. The main share at the passenger traffic has the road transport (77.6%) in 2014. In the structure of passenger turnover there are two leaders. These are railway (47.7%) and auto (45.0%) modes of transport.

Transport public air transport service are provided by the State Unitary Enterprise "Khabarovsk Airlines", OJSC "Airline" East "," FCP "Airports of the Far East", JSC "Komsomolsk Airport" and OJSC "Khabarovsk Airport". The last one was organized in 2014. It consists of the airports of local airlines with low-intensity flights number including some located in the Khabarovsk Territory: Okhotsk, Bogorodskoye Chumikan, Herpuchi, Ayan. The air transport has no alternative for the residents of the four northern districts of the Khabarovsk Territory with a total population of more than 45 thousand people. The number of airports in the Khabarovsk Territory has decreased during two last decades. Some of them had changed the status by going to the category landing places. At the same time the availability of air transport for the population is supported through subsidies from the federal budget (for some long-haul routes and inter-regional), as well as the regional budget: for example flights from Khabarovsk to Nikolaevsk-on-Amur and Ayan. The federal and regional programs of seasonal flights for the certain categories of citizens at lower rates are implemented in Khabarovsk Territory. The transportation with the tariffs in half the agreed are realized in the framework of the regional program. The number of passengers transported by the air has increased by 72% (from 44.8 to 77.2 thousands person) during 2009-2014 as a result of regional subsides program.

Bus route network consist of the 264 routes (includes 89 suburban and 39 intercity routs) is served by transport enterprises. Transport services for ten intersubject bus routes including routs to the administrative centers of the Far East region: Birobidzhan and Blagoveshchensk also carried out. Transport links with the capital of the FEFD with the settlements of Primorye Territory and the Jewish Autonomous Region provides. There are 145 carriers of the automobile and city electric vehicles of various forms of property (93.8% private ownership, 6.2% of municipal property) on the routes of the Khabarovsk Territory[[4]](#footnote-5).

The passenger movement in the Khabarovsk region is also served by the rail within the suburban traffic. The JSC "Primorye Express" from 2009 operates as an independent carrier and performs in the region three routes round the year and five routes in the summer time. The number of passengers (11.4%) and passenger turnover (11.6%) had decreased for the period 2012 – 2014.

The overall decline in passenger traffic and passenger turnover for the transport complex of the Khabarovsk Territory is due to the impact of: demographic factors (population decline), social trends (changes in transport mobility motivation of the population), economic factors (increase in motorization of the population, reduced affordability of individual types of public transport (river, rail suburban, air), high wear of the rolling stock of public bus fleet, reducing the river's route network, suburban rail, domestic air traffic, etc.).

During the formation of the strategic priorities for the Khabarovsk Territory were identified "growth poles" which are define the spatial directions of transport network development [15]. The main task of transport complex development is to ensure of the availability for the business and population to the concentrated markets and socio-cultural centers, primarily in the territory of the region. The reducing of the trips time and increasing the comfort level from the transportation and movement of the goods, services, and human interactions will be the main results of the transport complex development at the Khabarovsk Territory.

As a part of this task some key directions of the transport infrastructure development of the Khabarovsk Territory were shown. First of all the improving of the road network is the main direction. The consolidation of the economic space within the main poles of the strategic growth provided through the construction of high-speed sections of highways to the next directions:

- In the framework of economic agglomeration of Khabarovsk-Bikin, Khabarovsk-Smidovich (including the second turn of the road bridge across the Amur River.), Khabarovsk-Maiyak. It will provide the possibility of one-hours accessibility to the urban village Smidovich (111 km) and a two-hour accessibility to the Bikin (221 km). These routes will stimulate the creation of compact labor market and market of goods and services. These routes will be the prerequisite for the creation of the high-speed routs for the passenger traffic and goods between the Komsomolsk-on-the Amur and Khabarovsk cities in the future;

- Within the Sredneamurskaya (Komsomolskaya) economic agglomeration: Komsomolsk-on-Amur - Solnechniy and Komsomolsk-on-the Amur - Amursk. The road network will ensure the formation of a single area within the boundaries of this agglomeration.

The high-speed highways construction should be complemented by the development of the usual road network. The regional road system has to conjugate with aviation and river routes. This system will provide reliable year-round transport communication for the settlements and between settlements and the main regional cities. Road construction must be accompanied by modernization of technology in order to ensure the qualitative characteristics of the road surface, increasing the reserve maintenance periods, increasing the comfort level of travel, reduction in accident rate.

Secondly, it is necessary to develop a regional network of airports and landing strips for the providing a comfortable year-round transport link between the regional key cultural-economic centers and the second order centers. The air transport can help to save time and costs for the movement of people and goods.

There are some first-priority elements of a regional airports network such as the Nikolaevsk-on-Amur airport, Sovetskaya Gavan (May-Gatka) airport and Chegdomyn airport. They should provide the possibility of a comfortable passenger service and efficient handling using modern and advanced types of regional aircraft and helicopters. Regional airports and landing areas for airplanes and helicopters should be linked through the regular communication with two main regional airports (Khabarovsk "New" Airport and the Komsomolsk-on-Amur "Khurba" Airport).

The project of the Khabarovsk airport reconstruction has a fundamental importance for the maintenance and consolidation of the Khabarovsk Territory's status as economic and humanitarian areas. The Khabarovsk airport will be able to function as a transport hub not only for our region but also for national and international level as a result of the reconstruction.

The railway transport will remain the basic for the regional transport system. According to the plans of JSC "Russian Railways" in the framework of projects for the development of the eastern landfill will be the development of the railway infrastructure, including in the areas within the territory of the Khabarovsk Territory in the following areas: Trans-Siberian Railway: Khabarovsk – Belogorsk, Khabarovsk – Nakhodka; Baikal – Amur Mainline: Fevralsk – New Urgal, New Urgal – Postyshevo, Postyshevo – Komsomolsk-sorting, Komsomolsk-sorting – Vanino, Volochaevka II – Komsomolsk-sorting.

The emphasis on the transport sector in the framework of the strategic documents of the Russian Federation subjects with a clear correlation between the sectoral priorities and ways of social and economic development is reduces the risks associated with achieving the stated long-term goals and objectives.

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1. The total length of the regional roads on the territory of the JAR was 490.5 km. [↑](#footnote-ref-2)
2. The total length of the local roads on the territory of the JAR was 1826.4 km. [↑](#footnote-ref-3)
3. The work of the checkpoint has been temporarily suspended in accordance with the decree of the Russian Government dated 14.02.2012 number 198-p. [↑](#footnote-ref-4)
4. ###  The information from the Ministry of Industry and Transport of the Khabarovsk Territory.

 [↑](#footnote-ref-5)